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July 29, 2008

Katherine Puana Kealoha, Director
Office of Environmental Quality Control (OEQC)
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Kealoha,

Draft Environmental Assessment (DEA) for
Näwiliwili – Ahukini Shared-Use Path
County of Kaua'i Job No. CMAQ-0700(57), Contract No. 7538
TMK: (4) (por.) 3-2-plats: 02, 03, 04, 06, 07; 3-3-03: 3-5-plats 01, 02; 3-6-plats 02, 08; 3-7-02
Līhu'e, Island of Kaua'i, Hawai'i

The Department of Public Works, County of Kaua'i has reviewed the Draft Environmental Assessment for the subject project, and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish notice of availability for this project in the next OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, and one (1) PDF copy and four (4) hard copies of the project DEA. A copy of the project summary will be e-mailed to OEQC. Please call Jim Niermann at (808) 842-1133 if there are any questions.

Very truly yours,

DONALD M. FUJIMOTO
for County Engineer

Attachments
cc: Parks & Recreation Department

Draft Environmental Assessment

Nāwiliwili-Ahukini Shared-Use Path

County of Kaua'i Job No. 20987
County of Kaua'i

July 29, 2008

Prepared For:

County of Kaua'i
Department of Public Works

DRAFT ENVIRONMENTAL ASSESSMENT

Nāwiliwili- Ahukini Shared-Use Path

County of Kaua'i Job No. 20987

County of Kaua'i

July 21, 2008

Prepared For:

County of Kaua'i
Department of Public Works
County of Kauai
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Prepared by:

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1-20987-0P

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SECTION 1 – INTRODUCTION

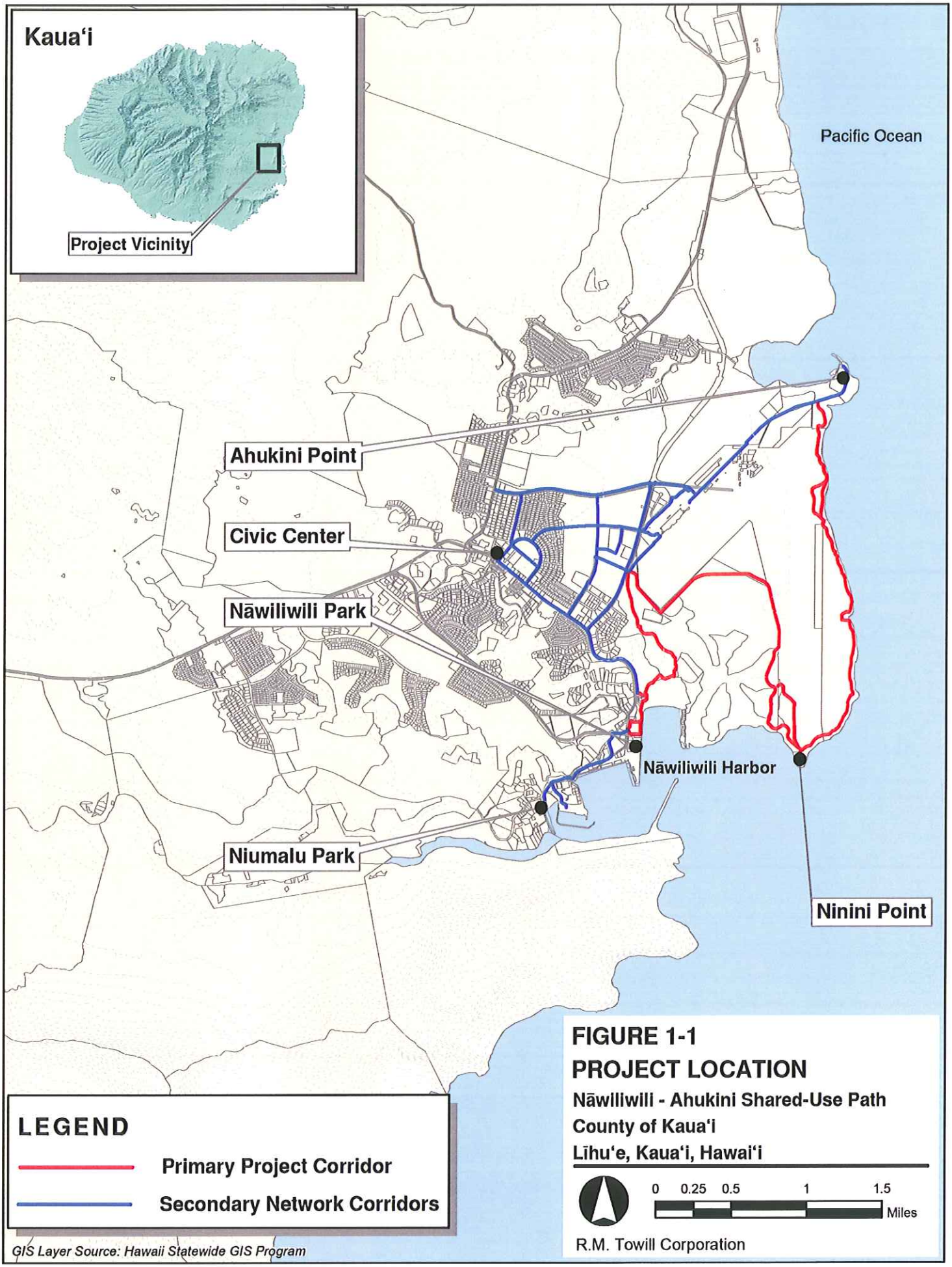
1.1 Project Overview

The County of Kaua'i proposes to develop a shared-use path to connect Nāwiliwili and Ahukini. The project is a key segment of the 16-mile Nāwiliwili to Anahola Bike and Pedestrian Path proposed in the 1994 State of Hawaii *Master Plan – Bike Plan Hawai'i*. The primary path corridor follows the coastline between Nāwiliwili Park and Ahukini Point. Secondary pathways are also considered in the plan to provide connections into the Līhu'e Civic Center. Path development will consist of a 10-foot wide concrete shared-use coastal path constructed of various low-maintenance materials. Bike lane and sidewalk improvements to existing and planned street corridors will provide additional connectivity through urban areas. The project will benefit residents and visitors to Kaua'i by preserving coastal access and supporting alternative modes of transportation to connect important destinations including residential communities, commercial centers, parks, and the airport and harbor. See **Figure 1-1: Project Location.**

Photo 1-1: Nāwiliwili to Anahola Bike and Pedestrian Path – Phases of Development.

1.2 Purpose and Need of Project

The purpose of the project is to support transportation alternatives to the automobile, to provide non-motorized path facilities for pedestrians and cyclists for recreation and fitness, and to preserve coastal areas and access. In addition, the project is being developed to enhance the quality of life for Kaua'i's residents by providing a safe and enjoyable place for families, friends, and individuals to play and socialize.


Kaua'i
Project Vicinity
Pacific Ocean
Ahukini Point
Civic Center
Nāwiliwili Park
Nāwiliwili Harbor
Niumalu Park
Ninini Point
LEGEND
Primary Project Corridor
Secondary Network Corridors
GIS Layer Source: Hawaii Statewide GIS Program
FIGURE 1-1
PROJECT LOCATION
Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Kaua'i, Hawai'i
0 0.25 0.5 1 1.5
Miles
R.M. Towill Corporation

1.3 Purpose of the Environmental Assessment

Federal, State of Hawai'i and County of Kaua'i lands and funds will be used for the proposed project. Segments of the path may also fall within the Shoreline Setback Area as well as the Conservation District. This project, therefore, is subject to preparation of environmental documentation in accordance with the National Environmental Protection Act, Chapter 200, Title 11, Hawai'i Administrative Rules (HAR), and Chapter 343, Hawai'i Revised Statutes (HRS).

1.4 Project History

The vision for a shared-use pathway connecting the towns along the east coast of Kaua'i originated in the early 1990's through the efforts of a citizen advisory committee convened by the County Council. During that time, the era of plantation agriculture was coming to an end on Kaua'i. The departure of sugar cane cultivation opened up large tracts of prime, coastal agricultural land to potential development. This historic change in land use presented unique opportunities for adaptive reuse of the former cane haul roads as bicycle and pedestrian pathways. The name chosen for the citizen advisory group reflects this opportunity, Ke Ala Hele Makalae, which translates as "the path that goes along the shore".

Ke Ala Hele Makalae's early work dovetailed with a state-wide bike plan then being prepared by the Department of Transportation (DOT). Through the participation of Ke Ala Hele Makalae members, the resulting 1994 *Bike Plan Hawaii* contained the proposal for a coastal bike path to connect Kaua'i's primary civic center in Līhue with the town of Kapaa, approximately 10 miles miles up the coast. The 2003 Bike Plan update carried the vision of the path further north to Anahola for a total length of approximately 16 miles.

The path's origins in community advocacy and planning found further outlet in improvements at Lydgate Park along the path corridor. Park improvements, including construction of Kamalani playground and bridge, were achieved primarily through community volunteer labor and material donations. The sweat-equity value of this effort, credited at over one-half million dollars, was used to unlock over two and one-half million dollars in federal grant money for additional improvements and path construction through Lydgate Park. The Lydgate Park improvements, completed in 2003, reinvigorated the County and community's resolve to fulfill the coastal path vision.

Since the successful completion of the Lydgate Park improvements, the County, with the participation of Ke Ala Hele Makalae, has continued to plan and build the Nāwiliwili to Anahola coastal path in segments:

- Lydgate Park – Ahukini: 4.0 mile segment. Environmental Assessment nearing completion.

- Kapa'a – Keālia: 2.3 mile segment completed and open for public use. Additional 1.8 mile segment under construction.
- Lydgate Park – Kapa'a: 2.1 mile segment. Construction to begin in 2009.
- Nāwiliwili – Ahukini: Approximately 5.0 mile segment. Currently in the Environmental Assessment phase. Final alignment not determined.
- Kapa'a – Anahola: Approximately 3.0 mile segment. Currently in the Environmental Assessment phase. Final alignment not determined.

In each of these projects the County is working with the community and the private sector to find opportunities to create local value matches to unlock transportation grant money. Further, the grassroots energy that created Ke Ala Hele Makalae has found additional life in Kaua'i Path, Inc., a community organization dedicated to the vision of preserving, protecting, and extending access island-wide through the design, implementation and stewardship of non-vehicular paths. Kaua'i Path, Inc. manages a variety of path programs, including Path Ambassadors, Friends of the Path activities, fund raising for path planning, development and maintenance, and other volunteer activities.

SECTION 2 – PROJECT DESCRIPTION

2.1 Plan Context

2.1.1 Location

The project is located in the Līhu'e District, on the east coast of the Island of Kaua'i. The project study area is generally defined by Ahukini Point, Nāwiliwili Beach Park, Niumalu Beach Park, and the Līhu'e Civic Center. The study area is bounded on the north by Ahukini Road, on the south by Nāwiliwili Harbor, on the west by Umi Street and the Līhu'e Civic Center, and on the east by the Pacific Ocean. Path route alternatives include the following Tax Map Key (TMK) Numbers:

3-2-02: 1 & Niumalu Road;

3-2-03: Niumalu & Wa'apā Roads;

3-2-04: Wa'apā Road, 1, 2 & 3;

3-2-06: Nāwiliwili Stream;

3-2-07: Nāwiliwili Stream;

3-3-03: Nāwiliwili Stream;

3-5-01: 4, 5, 8, 27, 102, 117, 118,

3-5-02: 2;

3-6-02: Ka'ana Street, Hardy Street, Rice Street, Umi Street, 1;

3-6-08: Wa'apā Road, Nāwiliwili Stream; and,

3-7-02: Ahukini Road.

2.1.2 Path Corridors

The primary goal of the Nāwiliwili –Ahukini Shared-Use Path Project is to create a dedicated pathway connection between Nāwiliwili Harbor and Ahukini Landing following a coastal path corridor. Between these two primary terminuses, opportunities exist to create a secondary network of on- and off-street path connections between other important destinations and trip generators. Secondary network paths offer potential enhancement to the broader transportation system, but are not a substitute to the coastal path route that is the focus of this project.

Combined, the primary corridor and secondary network connect four key destination points identified as follows:

Primary Project Corridor:

I Ahukini Landing to Nāwiliwili Beach Park

Secondary Network Corridors:

II Ahukini Landing to Līhu'e Civic Center

III Nāwiliwili Beach Park to Līhu'e Civic Center

IV Nāwiliwili Beach Park to Niumalu Beach Park

2.1.3 Path Segments

The primary project corridor and secondary network corridors are further broken down into path segments identified alphabetically. See **Figure 2-1 – Route Alternatives Map.**

Primary Project Corridor:

I Ahukini Landing to Nāwiliwili Beach Park

- A. Ahukini Landing to Ninini Point
- B. Ninini Point to Kalapakī Beach – Coastal Route
- C. Ninini Point to Kapule Highway
- D. Kapule Highway / Ninini Road Intersection to Kaua'i Marriott
- E. Kaua'i Marriott to Nāwiliwili Beach Park
- F. Nāwiliwili Beach Park Improvements

Secondary Network Corridors:

II Ahukini Landing to Līhu'e Civic Center

- G. Ahukini Landing to Līhu'e Airport
- H. Līhu'e Airport to Kapule Highway
- I. Ahukini Road – Kapule Highway to Umi Street
- J. Kapule Highway – Ahukini Road to Ninini Point Road
- K. Molokoa Public Facility Center
- L. Līhu'e Civic Center Connections

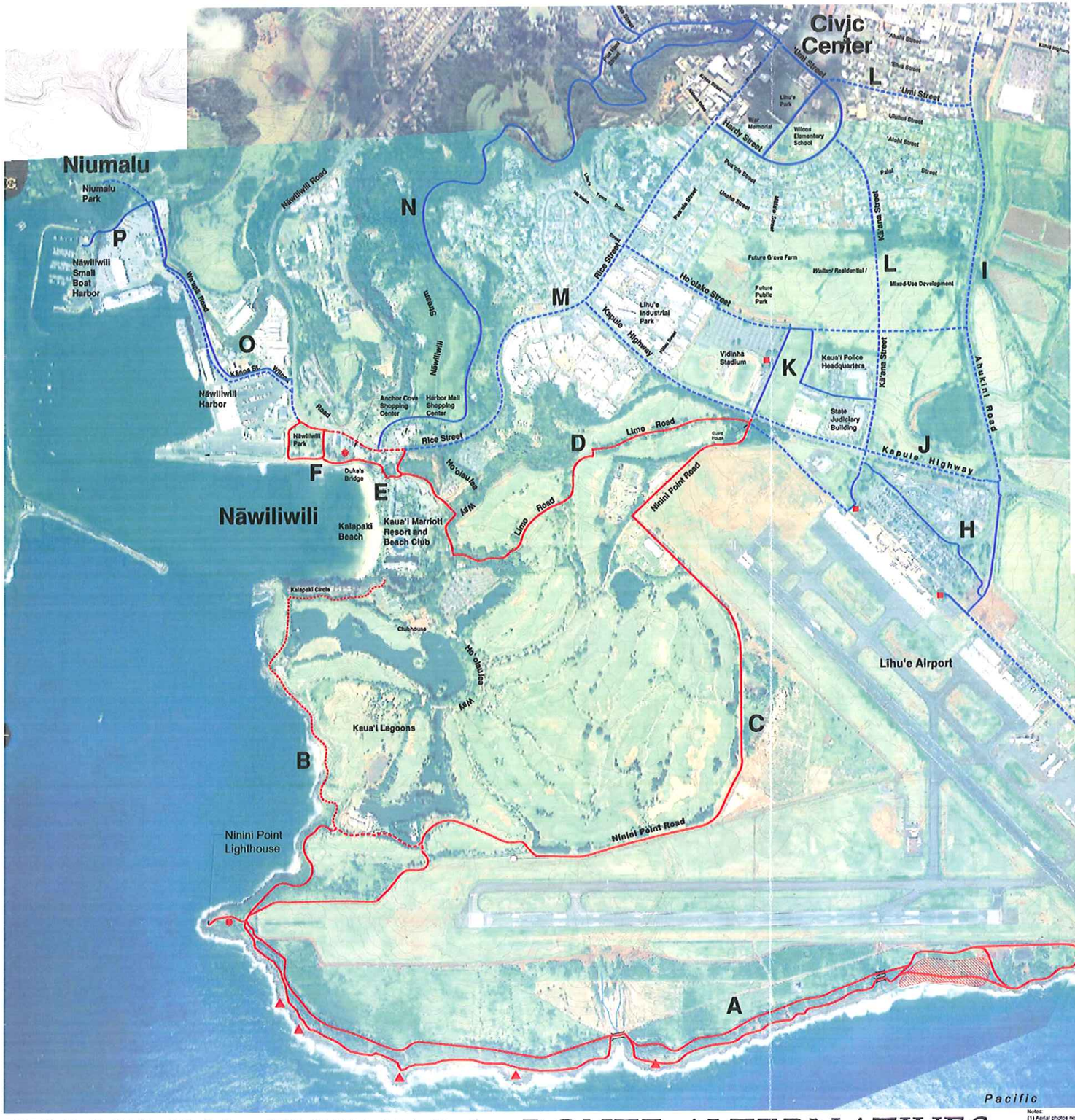
III Nāwiliwili Beach Park to Līhu'e Civic Center

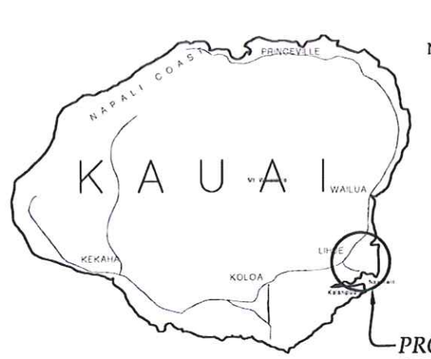
- M. Rice Street
- N. Nāwiliwili Stream Valley

IV Nāwiliwili Beach Park to Niumalu Beach Park

- O. Nāwiliwili Beach Park to Niumalu Beach Park (Rice Street to Wilcox Road / Kānoa Street / Wa'apā Road / Niumalu Road)
- P. Niumalu Road to Nāwiliwili Small Boat Harbor

Each segment is described by conditions, opportunities, issues, and alternatives. A preferred alternative is recommended for segments where the alignment achieves the County's vision for the project with minimal related impacts and within reasonable costs.





NOT TO SCALE

LEGEND

Primary Project Corridor

- Separated Multi-Use Path
- On-Street Path Facilities (sidewalk / shared use)

Secondary Network Routes

- Separated Multi-Use Path
- On-Street Path Facilities (sidewalk / shared use)
- Bike Depot
- Fishing Access
- Comfort Station
- Drainage Crossing

Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhue, Island of Kaua'i, Hawai'i

FIGURE 2-1 - ROUTE ALTERNATIVES

Notes:
(1) Aerial photos not orthographically rectified. Photo of makai areas taken March 28, 2007. Photo of mauka area obtained from SOEST based on NOAA/NOS aerial photography by the Pacific Disaster Center mapping program. Image taken between March and July 2000
(2) Topographic data digitized from 1972 aerial topo agricultural maps by R. M. Towill Corporation.
(3) TMK data from State DBEDT GIS data set, manually scaled and rotated to best fit.
(4) Exhibit is for planning and discussion purposes only, not for engineering design.

0 200 400 800 1200 Feet

R. M. Towill Corporation

Path alignment alternatives have been identified through site reconnaissance, meetings with key stakeholders and County officials, and from public comments obtained through two community outreach meetings. In addition, research of existing site conditions including cultural and archeological issues, vegetation and wildlife, soils, topography, land use and coastal processes were also considered when identifying and evaluating the various path alignment alternatives

2.1.4 Design Objectives and Guidelines

The design objective is to connect the destination points described above with a continuous, ADA accessible multi-use path separated from motor vehicle traffic to accommodate safe, two-way bicycle and pedestrian use.

- Wherever possible, the design will consist of a continuous, 10-foot wide, separated concrete path. Path width may be reduced to a minimum of 8 feet if dictated by route conditions. The 10-foot width is the preferred standard for a safe, two-way, shared bicycle/ pedestrian multi-use pathway.

- Along roadways where a separated path cannot be accommodated, sidewalks and bicycle lanes will be used to meet the objective of providing safe, grade-separated access. ADA standards require a minimum sidewalk width of 5-feet to accommodate two-way wheel chair access. This project proposes a minimum width of 6 feet to provide an additional measure of comfort, convenience, and safety. The minimum width for bicycle lanes is 4 feet for one-way traffic.

- Streets with low traffic volumes may be designated as signed shared roadways for bicycle use without the need for striping. A separated path or sidewalk with minimum width of 6 feet will be proposed along such routes for use by pedestrians and children on bicycles.

Path design, including slopes, surfaces, horizontal and vertical geometry, clearances, and safety features, is developed in accordance with the following standards and guidelines:

- American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*, 1999

- 36 Code of Federal Regulations (CFR) Part 1195 Architectural Barriers Act (ABA) *Accessibility Guidelines for Outdoor Developed Areas, Proposed Rule*

- *Americans with Disabilities Act Accessibility Guidelines* (ADAAG), *1990*

2.2 Path Alternatives

2.2.1 Primary Project Corridor: Ahukini Landing to Nāwiliwili Beach Park

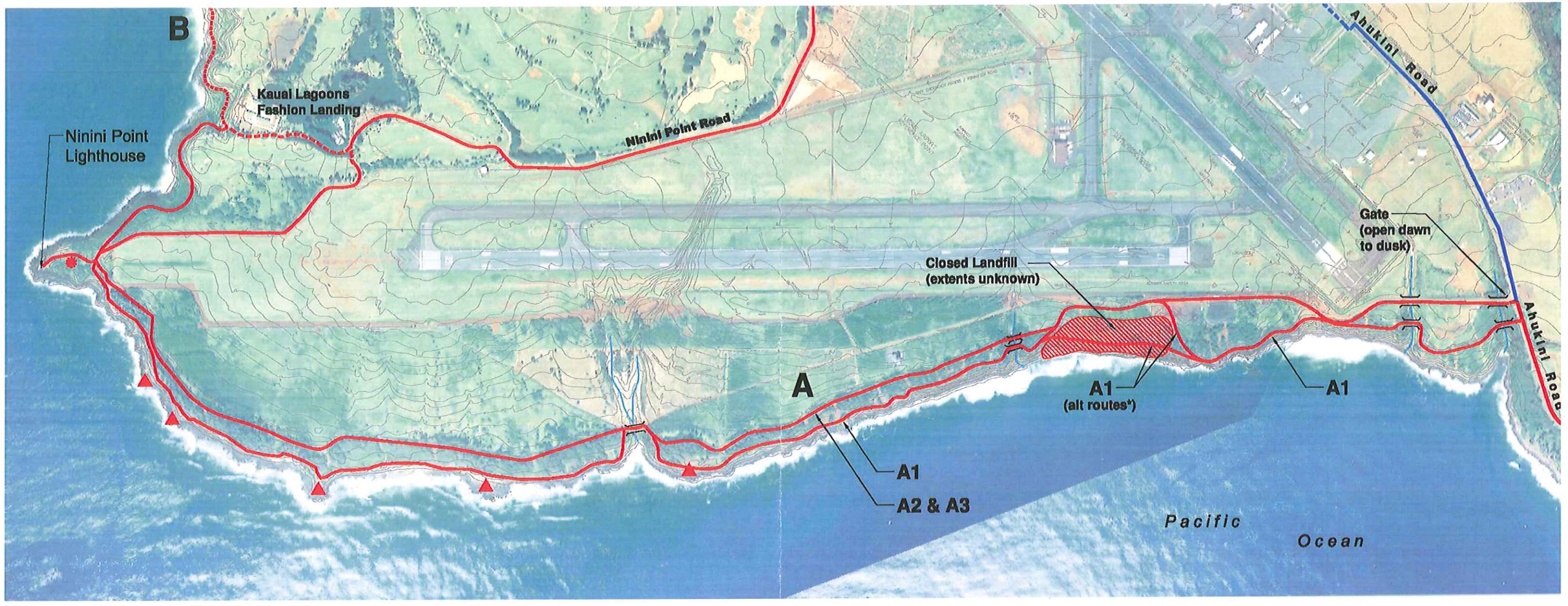
2.2.1.A Segment A – Ahukini Landing to Ninini Point

This approximately 2.6 mile segment connects the boat landing at Ahukini Point with the Coast Guard Lighthouse at Ninini Point. The path corridor goes through undeveloped, former agricultural land located along the coast makai of Līhu'e Airport. A 20-foot wide public access easement and unimproved dirt road provides access to the area with connection to Ahukini Road and Ninini Point Road See **Figure A1**, and **Photo A1**.

Photo A1 – Existing public access / dirt road through vacant agricultural lands.

Photo A2 - Spur road from public access / dirt road to shoreline fishing site. Erosion on fishing access roads will need to be repaired.

Access to fishing sites at the shoreline is possible by 4WD vehicle via several unimproved spur roads and trails along the dirt road. See **Photo A2.** Slopes toward the shoreline are steeper in the northern reach of Segment A, with greater incidence of erosion. Proceeding southward, slopes between the road and shoreline flatten out and offer easier access with reduced erosion hazard. Improved ADA access to viewpoints on the shoreline may be considered along the southern portion of Segment A where slopes are more gradual.



LEGEND

Primary Project Corridor:

- Separated Multi-Use Path
- On-Street Path Facilities (sidewalk / shared use)
- Pedestrian Accessway

Secondary Network Routes:

- Separated Multi-Use Path
- On-Street Path Facilities (sidewalk / shared use)

- Drainage Crossing
- Fishing Access
- Comfort Station

* Note: A Phase 1 Environmental Site Assessment prepared for the project (see appendices) identified a closed landfill on the preferred coastal alignment of alternative route A1. The landfill is under State jurisdiction and is currently the subject of remediation efforts. Until such time as the landfill site is safely contained and stabilized, the preferred path alignment will be routed mauka to completely avoid the site.

Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Lihue, Island of Kauai, Hawaii

FIGURE A-1

0 400 800 1600 2400 Feet

R. M. Towill Corporation

Photo A3 – Shared Public Access / Airport Perimeter Road. Ahukini Point is in the background on the right, the north end of Runway 3-21 is on the grassed rise to the left.

Use of the existing dirt access road for the bicycle / pedestrian path has potential for conflict with existing motor vehicle traffic. Bicycle / pedestrian activity should be kept separate from motor vehicle use.

Access to fishing sites along the coast must be maintained. However, motor vehicle access to the edge of the coast should be limited to select locations in order to control erosion caused by ATV's and four wheel drive vehicles. See **Photo A2.**

The public access easement shares a segment of the Līhu'e Airport perimeter security road at the north-east end of Runway 3-21. This segment of road was recently improved by the State Department of Transportation – Airports Division. See **Photo A3.**

Four major drainage crossings and numerous smaller crossings will have to be traversed by the bike path. Existing drainage improvements consist of large diameter pipes underneath the existing public access dirt road. New drainage pipe crossings were also installed as part of the recent airport perimeter road project. One of crossings located adjacent to the shoreline is subject to damage from high wave activity as well. See **Photo A4.**

Where drainage pipes are located, the path design will need to address drainage capacity and safety. Path segments aligned close to the shoreline within the VE zone will have to be designed to withstand wave energy as well as to provide safe crossing over drainage ways.

Photo A4 - Wash out area where a new culvert pipe and safety railings will be required in order to accommodate the path.

Table A SEGMENT A - Ahukini Landing to Ninini Point	
Ownership	Public Access Easement, State DOT-Airports Division, DLNR, Kaua'i Lagoons Resort, Co., U. S. Coast Guard (leased from State)
TMK	(4) 3-5-01: 4, 5, 8, 9, 85, 92, 102, 128, 158, 159, 160
SLUD	Urban, Agriculture, Conservation
County Zoning	Agriculture (AG), Conservation (C), Industrial-General/Special Treatment District (I-G/STP), Open (O)
Current Uses	Current uses include open space, livestock grazing, shoreline fishing, recreational off-road vehicle activity, and construction staging. An inactive landfill is located on the shoreline within Līhu'e International Airport property owned by the State of Hawaii. The State operates several navigational aid facilities. Approximately 138 acres of vacant land is owned by Kaua'i Lagoons and planned for resort condominium development.
Opportunities	• Open-space enjoyment: uninterrupted coastal views, undeveloped shoreline, fishing, bird watching, -nature viewing, solitude. • Interpretive Signage: - Unique flora and fauna, protected bird species known from the area including nesting colonies of Wedge-tail Shearwater and Nēnē. - Historic and cultural resources: Hawaiian village at Kalapakī, Ninini Heiau and Ahukini Heiau, history of Nāwiliwili Harbor, history of Līhu'e Airport. - Panoramic views of surrounding landmarks and natural features including Ha'upu, Nāwiliwili, and Kalapakī. - Whale watching.
Public Input	• Maintain fishing access • Preserve undeveloped character of the path. Do not develop vertical structures (e.g. comfort stations, covered picnic pavilions) along the shoreline. • Consider use of unobtrusive materials for path construction. • Provide doggie bags for disposal of animal waste.
Issues	• Flooding & Wave Inundation • Erosion – consider measures such as re-vegetation to mitigate erosion problems. • Landfill Site • Airport Security

A Phase 1 Environmental Site Assessment prepared for the project identified a closed landfill approximately 5 to 10 acres in size along the shoreline of TMK parcel (4) 3-5-001: 008. See **Figure 2-1** and **Appendix C**. Visual inspection of the area reveals a debris field approximately 40 feet deep and extending along the shoreline for a least one quarter mile. Constituent fill materials are unknown, but include metal, concrete, plastic and glass. The landfill site is under State jurisdiction and is currently the subject of remediation efforts by the State Department of Transportation. Adaptive reuse of the landfill site for pathway improvements is desirable and could transform an environmental liability into a public asset. However, until such time as the landfill is safely contained and stabilized, the path alignment will be routed to completely avoid the site.

Where the public access dirt road intersects with Ahukini Road, a path connection to the proposed path segment between Ahukini Landing and Līhu'e Airport Terminal will be required. See **Photo A5**, and **Section 2.2.1.G –Segment G**. A gate at the intersection of Ahukini Road and the coastal access road is open during daylight hours, but locked at night. Public access on the coastline is open 24 hours a day.

Photo A5 – View of Ahukini Road from the public access cane haul road

Segment A – Preferred Alignment

A1 – Path Aligned Along Shoreline

- Construct 10-foot wide concrete bicycle / pedestrian path as close to the shoreline as is reasonable and feasible to provide best possible view for path users. Note: A closed landfill is located along the preferred coastal alignment of alternative route A1. The landfill is under State jurisdiction and is currently the subject of remediation efforts. Until such time as the landfill site is safely contained and stabilized, the preferred path alignment will be routed mauka to completely avoid the site.
- Color the concrete to blend with the existing soil and landscape conditions.

- Construct path adjacent and parallel to existing dirt road where necessary to avoid physical constraints, i.e. wide drainage crossings, existing refuse landfill, steep grades.
- Provide separation between path and road by means of bollards constructed of boulders, timber, or concrete, or a low fence barrier to prevent motor vehicle access on the concrete path. Bollards will be designed and installed for minimal visual impact in the landscape. See **Figure A2.**
- Provide access across concrete path at select locations to allow motor vehicle access to fishing spots on shoreline. Install bollards at crossings to prevent motor vehicle access onto the concrete path. Fishing sites that will be accessible to motor vehicles are identified on **Figure A1.** All other fishing sites along the coast will remain accessible by foot or non-motorized vehicle.
- Construct a comfort station at Ninini Point Lighthouse with men's and women's lavatories, drinking fountain, and lighting. Use photovoltaic power for lighting requirements. Use individual septic system for waste water treatment.
- Develop a paved parking area with space for 10 automobiles.
- Provide interpretive signage at Ninini Point describing:
  - The history of Nāwiliwili Harbor and historic and cultural resources in the vicinity: Hawaiian settlement patterns, Ninini Heiau and Kuhiau Heiau, and development of Līhu'e Airport.
  - The natural history of the area, including surrounding landmarks and natural features (e.g. Ha'upu, Nāwiliwili, and Kalapakī), unique flora and fauna and marine animals, and protected bird species known from the area, (e.g. nesting colonies of Wedge-tail Shearwater and Nēnē);
  - Identify views and points of interest.
- Provide signage as necessary to inform path users about safety, orientation, conservation efforts, user's responsibilities, regulatory restrictions and other relevant information.

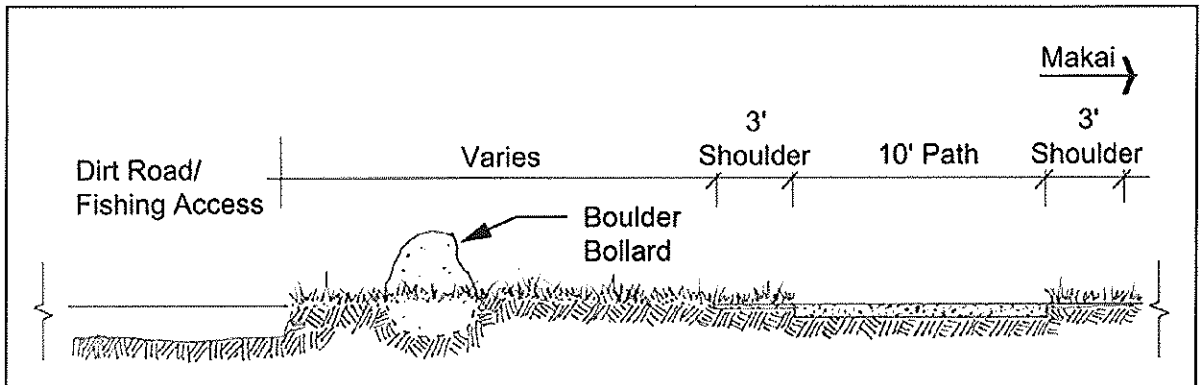


Figure A2: Path Section Detail – Path aligned adjacent to road with boulder bollard separation.

Basis for Selection

- The shoreline alignment fulfills the County's vision for a scenic, recreational coastal path. The alignment along the shoreline offers beautiful ocean views and good visual references for path users.
- Construction cost estimates are slightly higher ($5,949,525) than the alternatives ($5,522,013) for this route, but are comparable when giving extra consideration toward achieving the best design objective.
- Potential conflicts with motor vehicles are minimized by removing the path away from the road.
- The land at the shoreline is undeveloped and available for use for the pathway. Minimizing the amount of land makai of the pathway improves planning opportunities for mauka lands. A path alignment running further mauka is more likely to become a constraint on future land use plans for the large private parcel owned by Kaua'i Lagoons Resort, Co..

Segment A - Alternatives Considered

A2 – Path Aligned Parallel to Dirt Road

- Construct a 10-foot wide concrete bicycle / pedestrian path adjacent and parallel to the public access dirt road.
- Provide separation between path and road by means of a bollard or low fence barrier to prevent motor vehicle access on the concrete path. See **Figure A2**.
- Provide access across concrete path at select locations to allow motor vehicle access to fishing spots on shoreline. Install bollards at crossings to prevent motor vehicle access onto the concrete path. Fishing sites that will be accessible to motor vehicles are identified on **Figure A1**. All other fishing sites along the coast will remain accessible by foot or non-motorized vehicle.

Reason Not Selected

- Coastal views are blocked by vegetation along much of this alignment. In addition, the visual experience is reduced by the greater distance from the shoreline.
- An improved path running parallel to the road has greater potential for attracting unauthorized motor vehicle use than a path that is further separated or not visible from the dirt road.
- Proximity to motor vehicle traffic on the dirt road has potential to diminish path users' experience due to dust and noise generated on the unimproved road.

- The more mauka alignment of this alternative represents a greater potential constraint for future land planning on the large private lot makai of the airport.

A3 – Paved, Signed Shared Roadway with Separate Pedestrian Path

- Pave the existing public dirt road for shared bicycle and motor vehicle use.
- Construct a new 6-foot wide concrete pedestrian path along the shoreline.
- Provide separation between pedestrian path and road using boulder bollards or similar barrier to prevent motor vehicle access on the path.
- Provide access across the pedestrian path at select locations to allow motor vehicle access to fishing spots on shoreline. Install bollards at crossings to prevent motor vehicle access onto path.

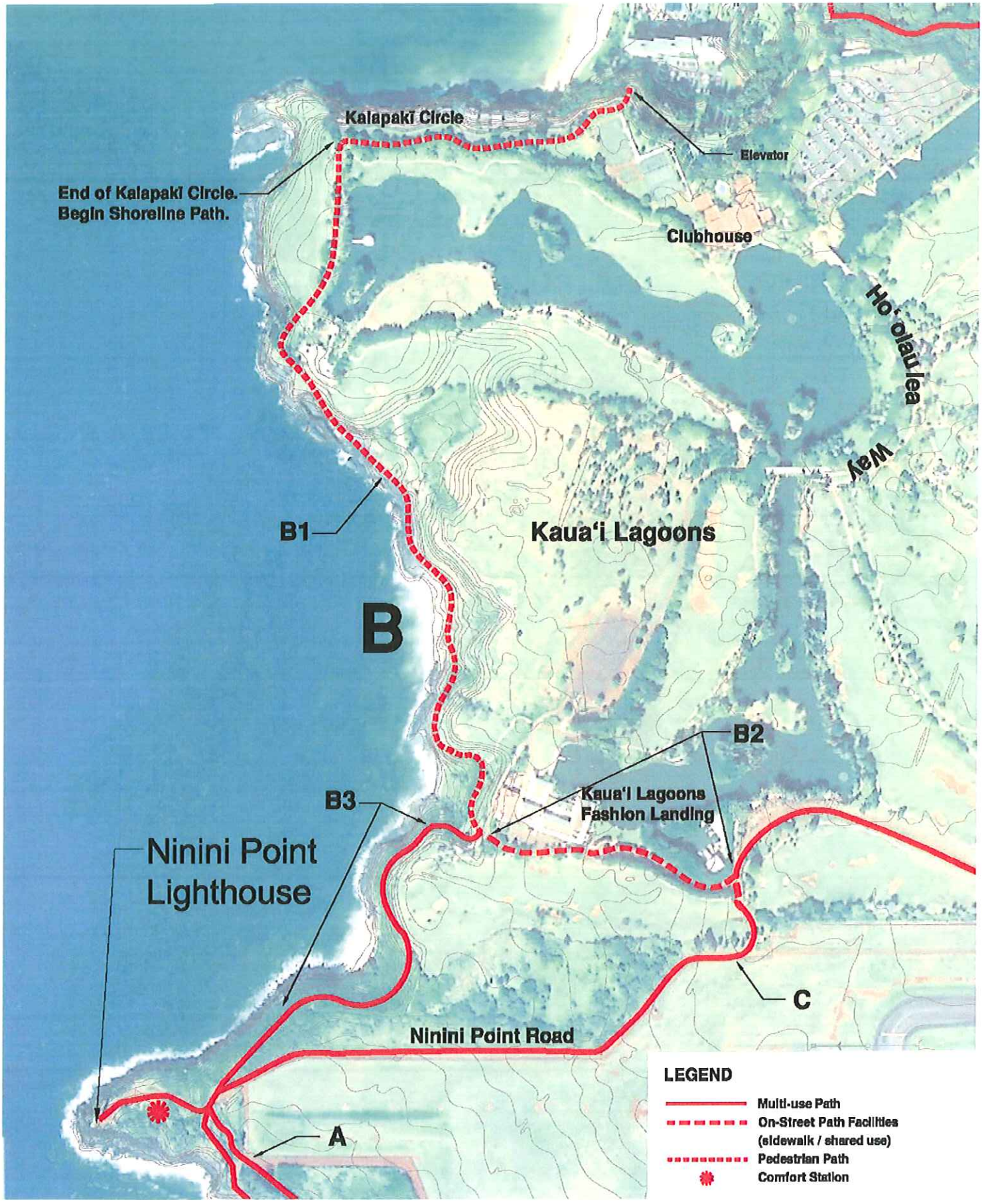
Reason Not Selected

- The cost of constructing a six-foot wide pedestrian path in addition to paving the dirt road for use as a signed shared roadway would exceed the cost of the preferred alternative and would not achieve the best design outcome for bicycle users.

2.2.1.B Segment B - Ninini Point to Kalapakī Beach Coastal Route

The coastal route between Ninini Point and Kalapakī Beach offers beautiful views of Nāwiliwili Harbor and Hokunui and Ha'upu mountains. The route crosses undeveloped airport lands and Kaua'i Lagoons property, including Kiele Golf Course. It offers potential connection to the Kaua'i Lagoons Fashion Landing, currently under renovation, and future resort residential development. Two sandy beaches, Ninini Beach and Running Waters Beach, are accessible from trails down steep coastal bluffs. See **Figure B1** and **Photo B1**.

Photo B1 – Ninini Point Lighthouse.



Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE B-1

0 250 500 1000 1500 Feet

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Table B SEGMENT B - Ninini Point to Kalapakī Beach Coastal Route	
Ownership	Public Access Easement, Marriott Vacation Club International, Kaua'i Marriott Resort, State DOT-Airports Division, U. S. Coast Guard (leased from State)
TMK	(4) 3-5-01: 4, 8, 27, 109, 128, 171, 172, 173 (4) 3-5-02: 1, 2, 19
SLUD	Urban, Conservation
County Zoning	Conservation (C), Industrial-General/Special Treatment District (I-G/STP), Open (O), Commercial-General (CG), Resort (RR)
Current Uses	Current uses include open space, golf course, lighthouse, navigation aid, resort residential condominiums, resort commercial, and public beach access.
Opportunities	• Open-space enjoyment: uninterrupted coastal views, beach access, fishing, bird watching, -nature viewing, solitude. • Shopping, dining, refreshments at Kaua' Lagoons Fashion Landing. • Interpretive Signage: - Unique flora and fauna with focus on protected sea birds known from the area. - Historic and cultural resources: Hawaiian village at Kalapakī, Ninini Heiau and Ahukini Heiau, history of Nāwiliwili Harbor.
Public Input	• Maintain access to Ninini Beach and Running Waters Beach • Consider use of unobtrusive materials for path construction.
Issues	• Avifauna - nesting birds (Newell's Shearwater, Nene) • Golf ball impact • Steep cliffs • Airport Security

Segment B – Preferred Alternatives

B-1 – Pedestrian Path from Kaua'i Lagoons Fashion Landing Complex to Kalapakī Beach
In accordance with Condition No. 9 of Special Management Area Use Permit SMA (U)-2005-8, Project Development Use Permit U-2005-26, Use Permit U-2005-25, Variance Permit V-2005-7, and Class IV Zoning Permit Z-IV-2005-30 and Condition No. 7 of Zoning Ordinance No. PM-2006-383, Kaua'i Lagoons Resort is providing public lateral shoreline access and recreational facilities between the end of Kalapakī Circle and Fashion Landing. Improvements will include hard-surface pathways, picnic shelters, outdoor showers and restroom facilities. See **Figure B2 – Public Access Improvements Site Plan.**

Under the terms of the current zoning ordinance, the public lateral shoreline access will begin in the vicinity of the makai end of Kalapakī Circle and will continue eastward, parallel to the shoreline, to the Fashion Landing area. See **Photo B2** and **Photo B3**. The County proposes to extend the public access way from the end of Kalapakī Circle to the elevator at Kalapakī beach to complete the public pedestrian connection between Kalapakī Beach and Ninini Point. See **Photo B4**.

Photo B2 – View from Fashion Landing of future path route along Coastal Bluff at Kiele Golf Course.

Planned improvements are as follows

- From Kalapakī Circle, the public lateral shoreline access will traverse approximately 1,400 linear feet (lf) eastward, up to the State Conservation District boundary within the project site. See **Figure 6-2: State Land Use Districts**. From this point, the shoreline access will continue for approximately 1,150 lf through State Conservation District land, including areas makai of the certified shoreline. The segment of the shoreline access located within the State Conservation District will remain unimproved and in its existing natural state. The shoreline access will then exit the State Conservation District and continue eastward for approximately 460 lf where it will end at Fashion Landing.

- Improved path segments are described as follows: From the makai end of Kalapakī Circle, the first 700 lf segment of the public access will be located along an existing 16-foot wide paved road. The public access will then continue for approximately 600 lf as a 10-foot wide concrete path to be shared with golf cart access. The final 100 lf segment leading up to the State Conservation District will be a 6-foot wide concrete foot

Photo B3 – Original buildings at Kaua'i Lagoons Fashion Landing, currently under renovation.

path. Upon exiting the Conservation District to the east, the remaining 460 lf path segment to Fashion Landing will be a 6-foot wide foot path constructed of a hardscape surface, such as concrete pavement, grasscrete or other similar material.

- Within the State Conservation District, the public accessway will remain in its existing natural state and will not be improved. In accordance with Hawaii State Law, all lands makai of the certified shoreline are public trust assets. Public access to and through the shoreline and ocean is a right preserved in the State Constitution for the citizens of Hawaii.

Photo B4 – Elevator to Kalapakī Beach located on Kalapakī Circle.

- A public recreation/picnic shelter, shower and restroom facility will be located mauka of the public lateral shoreline access. Pedestrian access to this facility from the shoreline will be provided from unimproved paths.

- A second public recreation/picnic shelter and shower facility will be located further to the east, mauka of the public shoreline access, near Running Waters Beach. A railing or similar safety barrier will be provided along the makai side of the recreation/picnic shelter for safety purposes. Pedestrian access to this facility will be from the hardscape lateral access path.

- A public restroom and shower facility will be provided at the former Fashion Landing commercial area, beneath a new restaurant that will be located at the former Whaler's Cove restaurant site.

Basis for Selection

- This segment of coastal pedestrian path is being developed by Kaua'i Lagoons Resort in cooperation with the County of Kaua'i. Development costs will be borne by the private property owner, while the public will enjoy improved access and amenities along the coast.

B-2 – Pedestrian Connection from Ninini Road (Path Segment C) to Kaua'i Lagoons Fashion Landing Complex.

- Construct a minimum 6-foot wide pedestrian path connection from the 10-foot wide bicycle / pedestrian path segment on Ninini Road (Path Segment C) to Fashion Landing.
- Designate the driveway from Ninini Road to the Fashion Landing / Public Beach Access parking lot as a signed shared roadway for bicycle use. See **Photo B5.**
- Provide bicycle parking area with racks at Fashion Landing.

Photo B5 – Driveway entrance to Fashion Landing (on right) from Ninini Road. Ninini road continues toward the left and ends at the unimproved airport perimeter road.

Basis for Selection

- These improvements are required to create the connection between the County's Bicycle / Pedestrian Path system and the coastal pedestrian path being developed by Kaua'i Lagoons Resort.

Segment B –Alternatives Considered

B-3 – Coastal Connection from Ninini Point to Kaua'i Lagoons Fashion Landing Complex

- Construct a 10-foot wide bicycle / pedestrian path along the edge of the coastal bluff between Ninini Point and the start of Kaua'i Lagoons coastal pedestrian path.
- Provide safety features, including guard rail along edge of bluff, and overhead screen to protect path users from golf balls.

Reason Not Selected

- This alignment traverses a coastal bluff area that is a known nesting site for the Wedge-tailed Shearwater, or 'Ua'u kani, (*Puffinus pacificus*). Wedge-tailed Shearwaters are protected under the federal Migratory Bird Treaty Act.
- This alignment is located within the golf ball impact zone at the end of Kiele Golf Course Fairway 5 which creates potential hazard for pathway users.

2.2.1.C Segment C - Ninini Point to Kapule Highway

Ninini Road serves as a perimeter road around the south boundary of Līhu'e Airport, providing access between Ninini Point Lighthouse and Kapule Highway. See **Figure 2-1**. It consists of improved and unimproved segments. The unimproved segment is a graded, gravel road with drainage improvements. See **Photo C1**. The improved segment has a 20-foot wide paved section, no curb and gutter, wide shoulders and grassed drainage swale. Utility power poles are installed on the Kaua'i Lagoons side of the alignment. See **Photo C2**.

Photo C1 – Airport Perimeter Road (Ninini Road continuation), owned by the State DOT - Airports Division.

The improved road segment is identified as part of Kaua'i Lagoons Resort's recreational path system and is used by local residents and visitors for bicycling, jogging, and walking. Ninini Road provides public motor vehicle access to Ninini Point Lighthouse and the undeveloped land makai of the airport. The road receives minimal vehicular traffic, however over the next 5 to 10 years it will be used as a primary construction vehicle access for development activities at Kaua'i Lagoons.

Photo C2 – Ninini Road looking makai. The airport property is on the left, Kaua'i Lagoons' Mokihana Golf Course is on the right.

Table C SEGMENT C - Ninini Point to Kapule Highway	
Ownership	Public Access Easement, Marriott Vacation Club International, State DOT-Airports Division
TMK	(4) 3-5-01: 4, 6, 8, 27, 109, 128, 167, 168, 173,
SLUD	Urban, Agriculture, Conservation
County Zoning	Agriculture (AG), Conservation (C), Commercial-General (CG), Industrial-General (IG), Industrial-General/Special Treatment District (I-G/STP), Open (O)
Current Uses	Current uses include open space, resort recreational path, golf course, airport uses,
Opportunities	• Open-space enjoyment: uninterrupted coastal views, bird watching, nature viewing, • Interpretive and Regulatory Signage: - Scientific and regulatory information on unique flora and fauna with focus on protected sea birds known from the area. - History of Līhu'e Airport.
Public Input	• Maintain access to Ninini Beach and Running Waters Beach • Consider use of unobtrusive materials for path construction.
Issues	• Avifauna - nesting birds (Newell's Shearwater, Nene) • Golf ball Impact • Airport Security • Construction Traffic • Impacts to Kaua'i Lagoons landscaping.

Segment C – Preferred Alternative

C-1– 10-foot Bicycle / Pedestrian Path Adjacent to Ninini Road

- Construct a 10-foot wide concrete bicycle / pedestrian path adjacent to Ninini Road on the Kaua'i Lagoons side (makai side) from the intersection at Kapule Highway to Ninini Point Lighthouse. Locate the path outside of the alignment of the utility poles. See **Photo C2 and C3** and **Figure 2-1**.
- Construct retaining walls in the adjacent landscape berms along Ninini Road as necessary to accommodate the 10-foot wide path.

Basis for Selection

- The 10-foot wide path is preferred in order to separate bicycle and pedestrian use from motor vehicle traffic on Ninini Road. Although current traffic levels on Ninini Road are low, the planned use of the road for public access to the shoreline and commercial center at Kaua'i Lagoons' Fashion Landing will result in increased motor vehicle activity on the road. In addition, Ninini Road will be used by construction vehicles throughout the redevelopment of the Kaua'i Lagoons property.

Photo C3 – Guardhouse at Ninini Road intersection with Kapule Highway.

- Estimated construction costs to develop a 10-foot wide path ($2,886,500) are not significantly higher than the 6-foot sidewalk alternative ($2,406,375) in light of providing a safer path facility.

Segment C - Alternatives Considered

C-2– Signed, Shared Ninini Point Roadway With Separate Pedestrian Sidewalk

- Designate Ninini Point Road from Kapule Highway to the end of the improved road as a signed shared roadway for bicycle access. Install signage as necessary.
- Construct a separated 6-foot wide pedestrian sidewalk adjacent to the road on the Kaua'i Lagoons side. Locate the path outside of the alignment of the utility poles. See **Figure C1**.
- Construct a 10-foot wide bicycle / pedestrian path alongside the airport perimeter road from the end of the improved road to Ninini Point Lighthouse

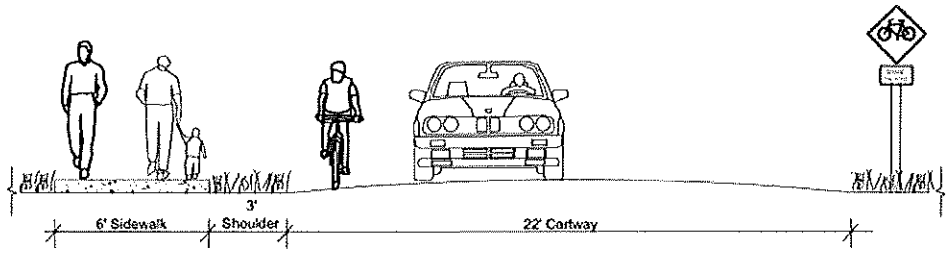


Figure C1 – Road Section: Signed shared Ninini Point Road with separate, 6-foot wide pedestrian sidewalk.

Reason Not Selected

- This alternative would require less grading and retention, and therefore less cost, than the preferred alternative and would meet the project design objectives, however it would require bicycle users to share Ninini Road with motor vehicle traffic and therefore is considered less desirable than the preferred alternative.
- While motor vehicle traffic activity on Ninini Road remains low, the signed shared roadway alternative is a viable option. If engineering constraints become apparent during the design phase of the 10-foot pathway, this alternative will be considered.

2.2.1.D Segment D – Kapule Highway / Ninini Road Intersection to Kaua'i Marriott

From the Ninini Road Intersection on Kapule Highway, there are two existing roadway routes to Nāwiliwili Beach Park: Rice Street and Limo Road.

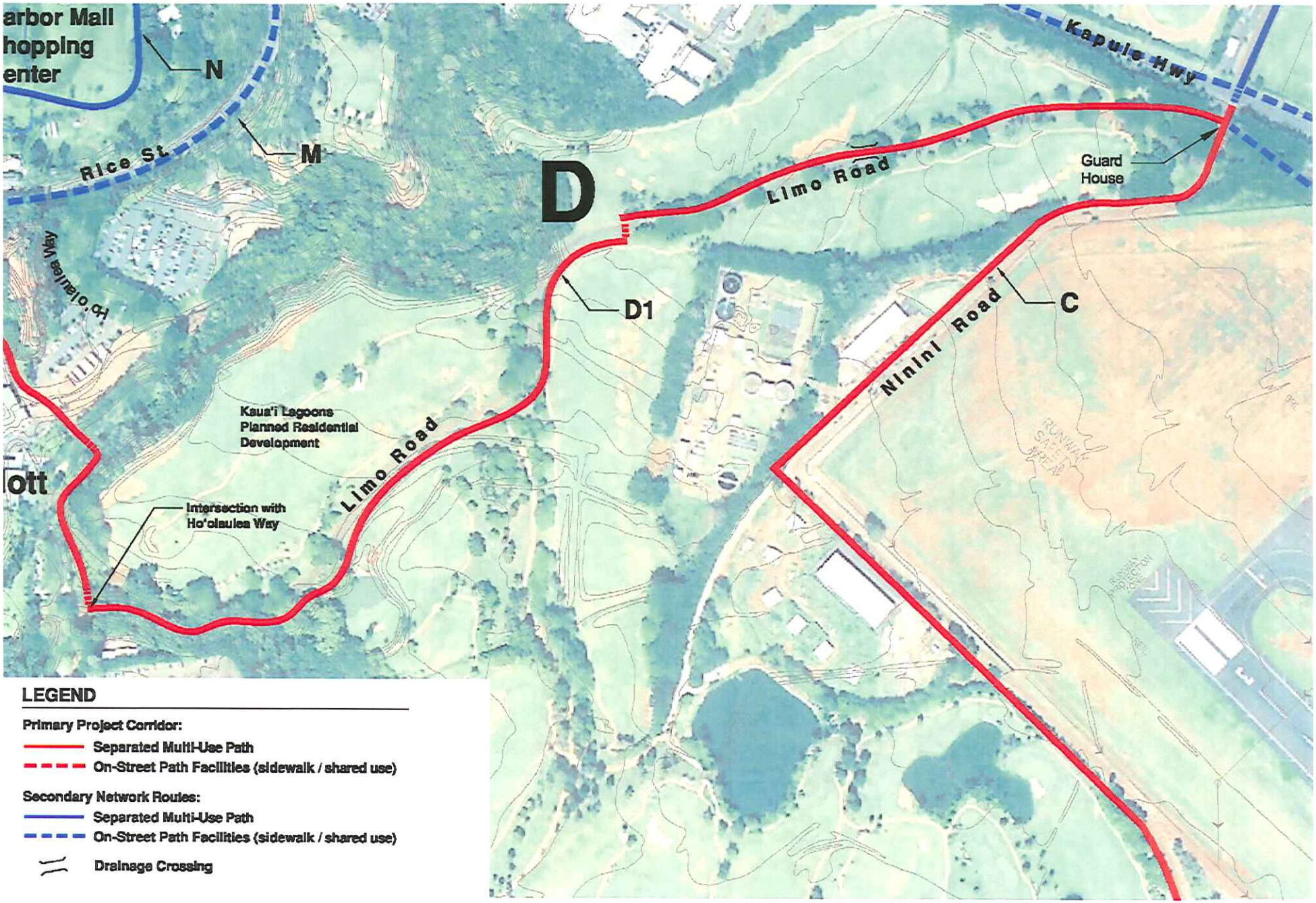
Rice Street intersects the south terminus of Kapule Highway in a T-intersection and serves as the primary roadway to Nāwiliwili Beach Park and Harbor. Rice Street is designated as a Bicycle Route in the State of Hawaii Bike Plan. Grades on Rice Street between Kapule Highway and Nāwiliwili Beach Park exceed maximum slope criteria established for the path (maximum 5% slope without resting intervals, per 36 CFR Part 1195, Accessibility Guidelines for Outdoor Developed Areas). Shoulders are very narrow and are constrained on one side by a vertical cut bank, and on the other by a steep drop-off into Nāwiliwili Stream Valley. In some sections, bicyclists are forced into the traffic lane. For these reasons, this alternative was rejected. See **Photo D1** and discussion below in **Section 2.2.1.L – Segment L.**

Photo D1 – Rice Street to Nāwiliwili has steep grades and lack of shoulder space for bicycle lanes and pedestrian sidewalks.

Limo Road is a 20-foot wide private paved roadway that connects the airport to Kaua'i Lagoons / Kaua'i Marriott property and is used to shuttle arriving guests directly to their accommodations. Limo Road passes through Kaua'i Lagoons' Mokihana Golf Course. It is designated as part of the resort's recreational path system. See **Figure D1** and **Photo D2** and D3.

Photo D2 – Limo Road through Mokihana Golf Course looking north-west. Path alignment is proposed on the right side through this segment. Future residential development is proposed on the left.

Limo Road is being developed to serve as the primary entrance into the resort property. Improvements include signalizing the intersection of Kapule Highway and Ninini Road and construction of a traffic circle at the Ninini Road / Limo Road connection. The Limo Road pavement section is to be widened to 24-feet, and straightened through selected segments. Existing, mature monkeypod trees lining the road will be preserved wherever possible.



Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE D-1

R. M. Towill Corporation

Table D SEGMENT D - Kapule Highway / Ninini Road Intersection to Kaua'i Marriott	
Ownership	Public Access Easement, Marriott Vacation Club International, Kaua'i Marriott Resort, State DOT-Highways Division (intersection improvements)
TMK	(4) 3-5-01: 01, 27 (4) 3-5-02: 02
SLUD	Urban
County Zoning	Agriculture (AG), Open (O), Resort (RR)
Current Uses	Kaua'i Lagoons' Mokihana Golf Course, resort recreational path, motor vehicle road between the airport and Kaua'i Marriott Resort.
Opportunities	• Best accessible route between Kapule Highway and Nāwiliwili. • Ties into the resort's existing recreational path system. • Connect the resort to the 16-mile coastal bike path for use by employees and guests.
Public Input	• No comments specific to this segment.
Issues	• Path appearance within resort grounds • Future path maintenance • Golf ball Impact • Use of road as primary resort entrance.

Segment D – Preferred Alternative

D-1 – Path Adjacent to Limo Road

- Construct a 10-foot wide concrete bicycle / pedestrian path adjacent to Limo Road between Ninini Road and Hoolaulea Way. The path will be located on the west side of the road adjacent to Mokihana Golf Course Holes 3 and 4. It will cross Limo Road to the east side adjacent to Mokihana Golf Course Holes 7 and 8. The path will join the cross golf cart path near the realigned Hole 5 tee box and cross again to the west side of Limo Road prior to the intersection with Hoolaulea Way.
- Locate the path outside of the monkeypod trees lining the road.
- Construct retaining walls as necessary to hold back cut conditions. Install boulder bollards, guard rails or other types of safety barriers at the top of retaining walls.

- Provide traffic calming features at road crossings.
- Where the bicycle / pedestrian path joins the golf cart path, increase the path width from 10 feet to 14 feet.
- Provide screening on path segments adjacent to the golf course to provide protection from golf balls.

Basis for Selection

- Limo Road is being developed by Kaua'i Lagoons Resort, Co. to serve as the primary entrance to the resort property. The resulting increase in motor vehicle traffic raises a safety concern for sharing the road with bicycle or pedestrian traffic. A separated, 10-foot wide path will provide safe access for path users.

Segment D - Alternatives Considered

D-2 – Signed, Shared Limo Road with Adjacent Pedestrian Sidewalk

- Construct a 6-foot wide concrete pedestrian path adjacent to Limo Road between Nininí Road and Hoolaulea Way.
- Designate Limo Road as a signed shared roadway for bicycles.

Reason Not Selected

- Anticipated increase in motor vehicle traffic on Limo Road makes it less safe as a signed shared roadway for bicycle use.

2.2.1.E Segment E – Kaua'i Marriott to Nāwiliwili Beach Park

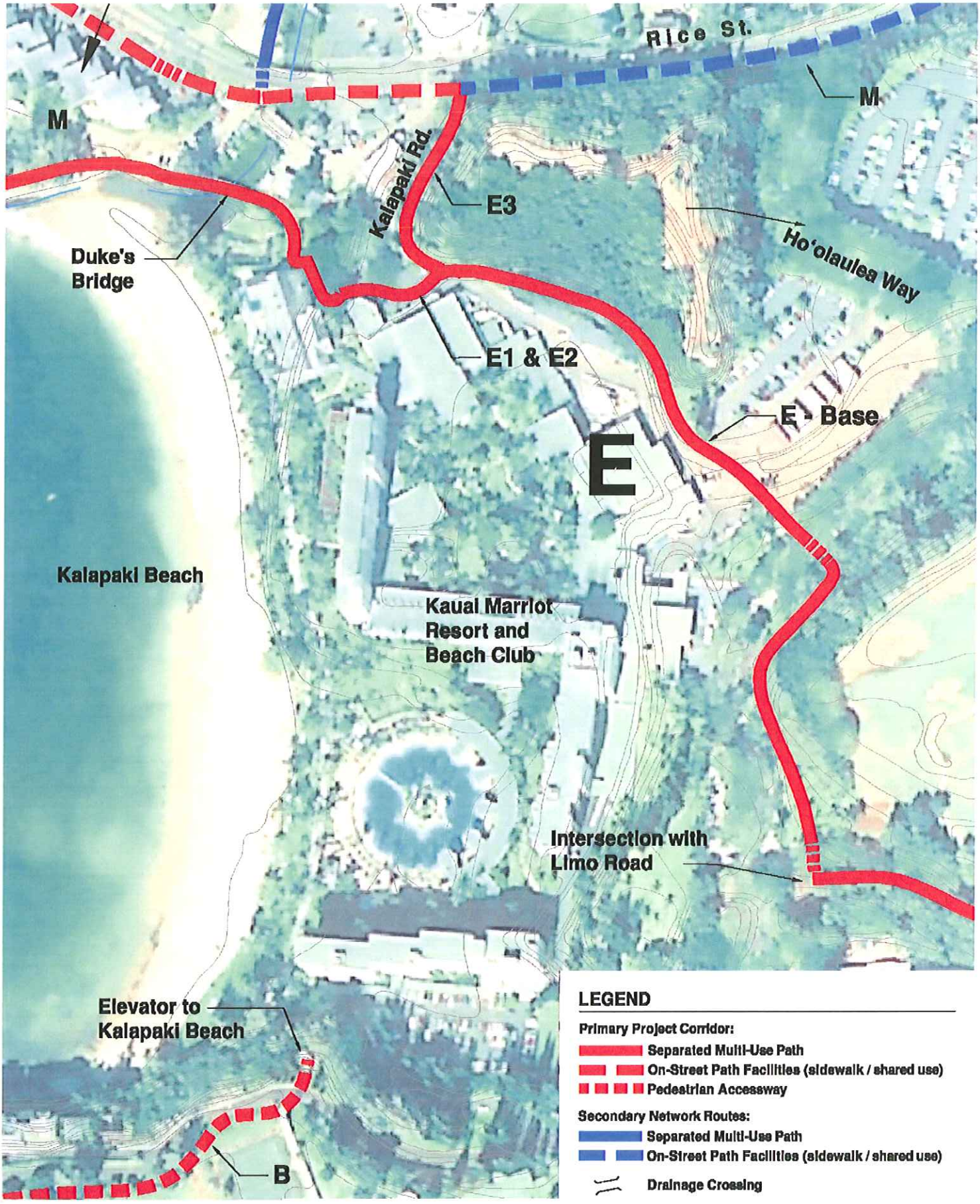
Segment E connects Limo Road, at its intersection with Hoolaulea Way (see **Photo E1)** to Nāwiliwili Beach Park via the Kaua'i Marriott Resort property. This path segment provides an essential link for achieving ADA compliant pathway grades between low-lying Nāwiliwili Harbor and the higher elevations of Līhu'e town on the Kalapakī plateau. The path would benefit employees at the hotel and the harbor with a safe transportation alternative to motor vehicles and the existing bicycle route along Rice Street. It would serve the public with a continuous connection to parks, commercial centers, and other points of interest along the coast.

Photo E1 – Entrance to Limo Road from Hoolaulea Way.

The path would also serve as a recreational amenity for local residents and visitors and offer walkers and joggers who currently use the road with a safe, grade-separated access way. The resort environment includes generous landscape areas capable of accommodating the proposed path. Design treatments must address steep topography, traffic, drainage, and aesthetic considerations. See **Figure E1.**

From the intersection of Limo Road and Hoolaulea Way, a 10-foot wide concrete path is proposed within the landscape area on the north side of Hoolaulea Way. See **Photo E2.** The path will cross Hoolaulea Way at the parking lot entrance nearest to the Marriott maintenance road. The path will be aligned generally parallel to the maintenance road but will be located within the slope behind the Marriott's maintenance warehouse buildings See **Figure E2.** The path will continue in the slope until it intersects with Kalapakī Road. Three alternatives for continuing the path were considered.

Photo E2 – Ho'olaulea Way Landscape area proposed for path alignment.



Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE E-1

0 100 200 400 600 Feet

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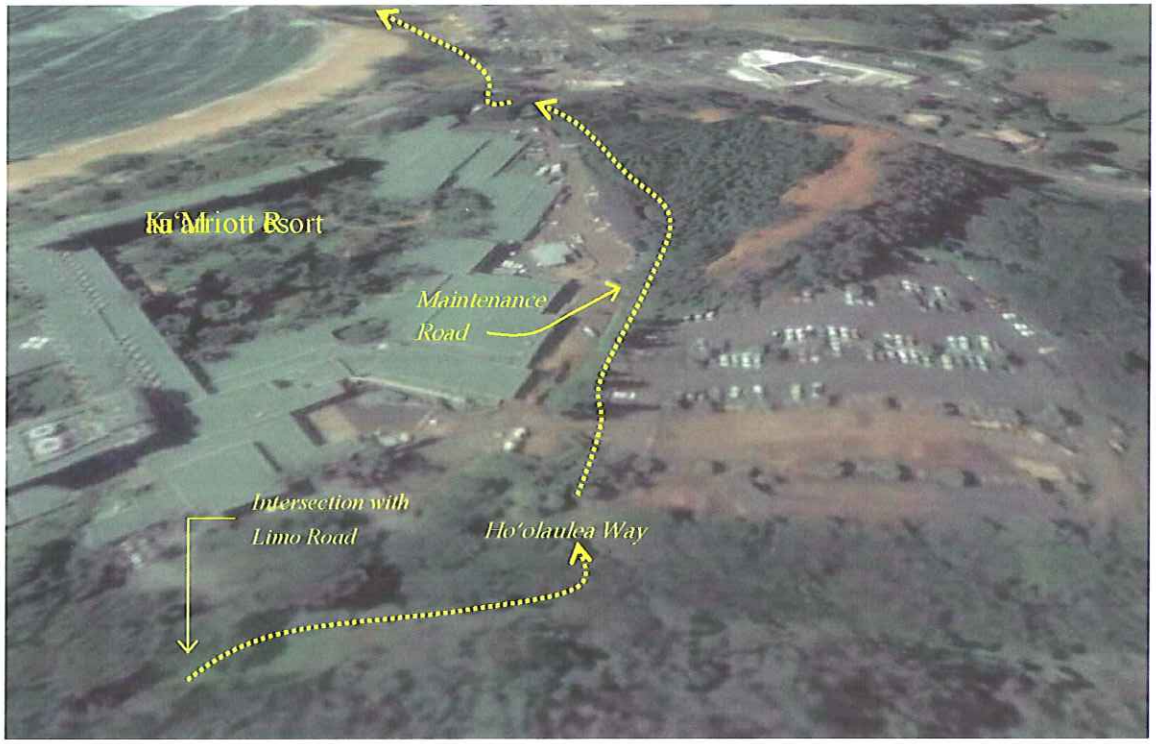


Figure E2 – Route through Kaua'i Marriott Resort.

Segment E – Preferred Alternative

E-1 – Kalapakī Road – Ramp Connection

- Grade the 10-foot wide path aligned behind the Marriott maintenance buildings to intersect Kalapakī Road at elevation 30 feet above mean sea level (msl).
- Create an at-grade crossing on Kalapakī Road with signage, striping and other traffic calming features as necessary.
- Construct a ramp utilizing keystone or similar retaining walls with compacted earth fill to a connect the Kalapakī Road crossing to match the grade on the existing pedestrian path leading to Duke's Bridge at elevation 5.0 above msl. Ramp slope criteria is as follows:
  - Max 5% slope = 585-foot run
  - Max. 8.33% slope = 350-foot run with 1 flat resting area at a minimum 200-foot interval.
  - Max 10% slope = 295-foot run with 10 flat rest areas at a minimum 30-foot interval
  - Max 12.5% slope = 235' run with 24 flat rest areas at a minimum of 10-foot intervals
- Align the ramp to minimize visual impacts to adjacent properties.

Basis for Selection

- The estimated construction cost estimate for this alternative ($1,406,105) is considerably lower than the tunnel connection alternative ($2,977,178).
- The ramp alternative allows for a continuous, separated path connection to Nāwiliwili Beach Park, while the at-grade path to Rice Street requires connection along a busy roadway with multiple driveway intersection crossings.

Table E SEGMENT E - Kaua'i Marriott to Nāwiliwili Beach Park	
Ownership	Kaua'i Marriott Resort, County of Kaua'i, Private residents at Nāwiliwili, State of Hawaii
TMK	(4) 3-2-04: 01, 03, 05, 47 (4) 3-5-01: 01 (4) 3-5-02: 02
SLUD	Urban
County Zoning	Open (O), Resort (RR), Commercial – Neighborhood (C-N)
Current Uses	Kaua'i Marriott Resort and Beach Club, commercial uses – restaurants, tavern, public recreation, pedestrian path, residential
Opportunities	• Achieve ADA compliant pathway grades. • Provide an alternative to motor vehicle transport for workforce transportation. • Best access between Kaua'i Marriott and the beach park. • Integrate with the existing resort recreational path system.
Public Input	No comments received for this segment.
Issues	• Path appearance within resort grounds • Steep Grades • Potential conflicts with private residents, resort maintenance vehicles and operations. • Existing utilities and infrastructure.

Segment E - Alternatives Considered

E-2 – Kalapakī Road – Tunnel Connection

- Construct a tunnel beneath Kalapakī Road to connect the 10-foot wide path to the existing pedestrian path leading to Duke's Bridge.
- Grade the 10-foot wide path behind the Marriott maintenance buildings to achieve a tunnel invert at least 16 feet below the high point on Kalapakī Road.
- Relocate existing utilities, including 2 water mains, 2 gas mains, and 1 sewer force main, and a propane gas tank and meter, to accommodate the tunnel.
- Reconstruct the existing retaining wall to accommodate the tunnel.
- Provide landscape screening between the path and adjacent residences.

Reason Not Selected

- High estimated construction costs: $2,977,178 vs. $1,406,105 for the preferred alternative.
- Requires relocation of 2 water lines, 2 gas lines and meter, and a sewer force main.
- Requires penetration and reconstruction of an existing retaining wall.

E-3 – Kalapakī Road – At-grade Path to Rice Street

- Grade the 10-foot wide path behind the Marriott maintenance buildings to achieve a finish elevation at least 5 feet below the high point on Kalapakī Road. Align the path parallel to the north edge of Kalapakī Road and continue to intersection with Rice Street.
- Construct retaining wall with guardrail to retain grade difference between the path and Kalapakī Road.
- Provide traffic calming features at intersection of Kalapakī Road and Rice Street (striping, signage, signal light, bulb-outs, table hump)
- Connect path to sidewalk along makai side of Rice Street.

Reason Not Selected

- This alternative directs bicycle / pedestrian traffic to a busy intersection at Rice Street and Kalapakī Street, thus creating a safety concern and creating a break in the path.
- Motor vehicle activity and limited space in and out of the driveway serving Nāwiliwili Tavern and Dukes Canoe Club parking precludes use of this route for the bike path and would require continuation of the pathway along Rice Street. Traffic calming measures would be required at all driveway crossings.

2.2.1.F Segment F – Nāwiliwili Beach Park Improvements

Nāwiliwili Beach Park is a natural point of convergence in the Nāwiliwili / Kalapakī area and a valuable public resource. However, due to deteriorating infrastructure and a lack of amenities, the park's potential to provide Kaua'i residents and visitors with an active and attractive recreational space is unrealized. The Līhu'e community has sought to remedy this through several community-based master planning efforts. The most recent of which was conducted in 1995 and updated in 1999. The master plan was never formally adopted by the community or the County, however it does represent community priorities for park improvements.

The Goals and Objectives of the 1995 Master Plan include the following:

- Reflect the unique character of the park's waterfront setting.
- Expand recreation opportunities for both residents and visitors of all ages and abilities.
- Preserve, protect and enhance the cultural and environmental aspects of the site.
- Provide a safe and accessible environment for all people.
- Provide a setting for a diverse group of people to make use of the park.
- Improve parking and pedestrian and vehicular circulation within the park.

The 1999 Nāwiliwili Park Master Plan serves as a guide for proposed improvements under the current bicycle / pedestrian path project. Development of the bicycle / pedestrian path facilities will directly address two of the stated goals of providing a safe and accessible environment, and improving parking, and pedestrian and vehicular circulation within the park. See **Figure F1 – Nāwiliwili Beach Park Master Plan.**

Segment F – Preferred Alternative

F-1 – Adopt Master Plan Improvements Related to Pathways

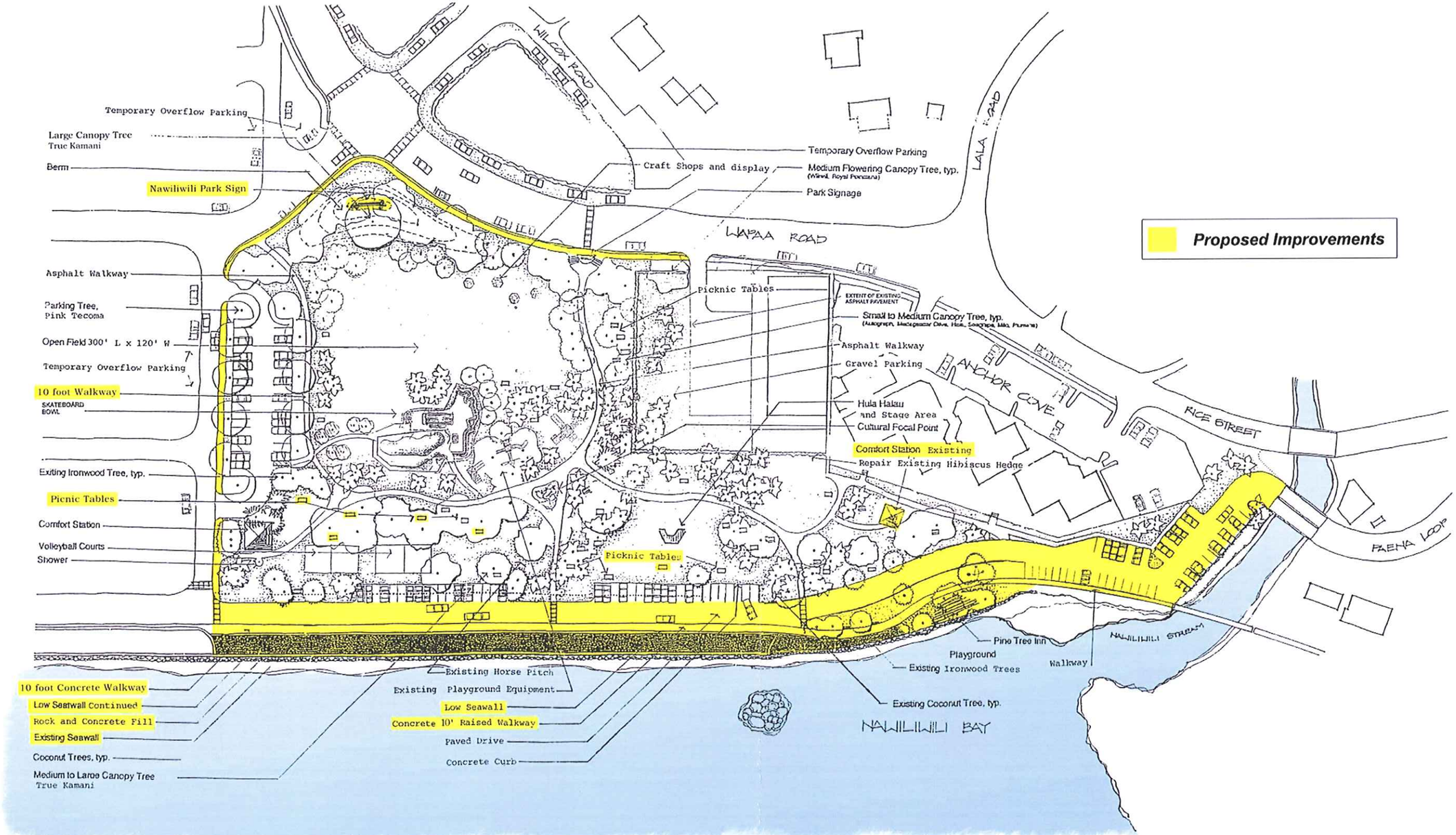
- Construct a 10-foot wide concrete path from the crossing at "Duke's Bridge", along the makai edge of the existing parking lot to Pine Tree Inn, then along the mauka boundary of Pine Tree Inn to continue along the improved breakwater path described below.
- Repair the existing seawall and construct a new 12 to 15-foot wide rock and concrete fill breakwater buffer. Construct a new, seat-wall along the mauka edge of the breakwater buffer, and a new 10-foot wide concrete bicycle / pedestrian path. Provide pedestrian cross-walks through the parking lot to connect with the Nāwiliwili Park.

Table F SEGMENT F – Nāwiliwili Beach Park	
Ownership	County of Kaua'i, State of Hawaii
TMK	3-2-04: 1, 2, 3, 5, and 47
SLUD	Urban
County Zoning	Commercial-Neighborhood (C-N), Open (O), Industrial-General (I-G)
Current Uses	Public Beach Park, surfing, swimming, paddling, surfboard rental, canoe hale, restaurants, commercial and retail activities.
Opportunities	• Utilize previous community-based master planning efforts. • Enhance the park's unrealized potential as an active and attractive public recreational resource. • Interpretive Signage: - Historical and cultural resources, including Paukini Rock Mokuweo Rock, the streams of Nāwiliwili , and history of Nāwiliwili Harbor from pre-contact, through sandalwood trade, mahele, and plantation era.. - Panoramic views of the bay identifying Ninini, Kalapakī, Ha'upu and other landmarks and natural features.
Public Input	The park is not safe. Long-standing support for park improvements Preserve the cultural aspects of the park. Preserve Pine Tree Inn Use the 1999 Master Plan as a guide
Issues	• Existing, unpermitted uses. • Flood zone / wave hazard

- Construct a 10-foot wide concrete path along the south and west edges of the park.
- Realign, repave and restripe the shoreline driveway and parking area for two-way vehicle traffic as shown in the master plan.
- Replace the existing comfort station (constructed in 1965) with a new comfort station. See **Photo F1** and **Figure F1.**

Install an information kiosk,

Photo F1 – Existing Comfort Station.



NAWILIWILI WATERFRONT PARK MASTER PLAN

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REVISED 3-1699

FIGURE F

- consisting of a pathway map, important information about Kaua'i and path/park rules and regulations on the southwest corner of the park. See **Photo F2.**
- Install up to five individual covered picnic tables along the makai edge of the park. See **Figure F3.**
- Install two covered pavilions inside the park and accessible to the path. The larger covered picnic pavilions should be able to accommodate up to 30 people each.

Additional Nāwiliwili Beach Park Master Plan improvements will be undertaken under a separate project in the future.

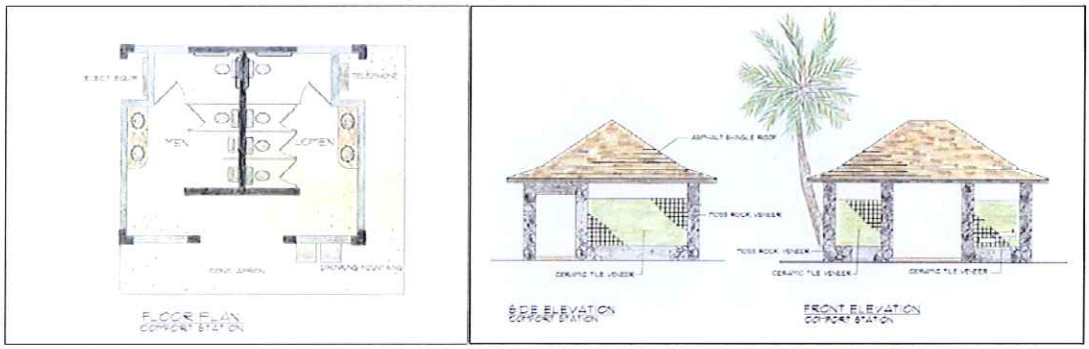
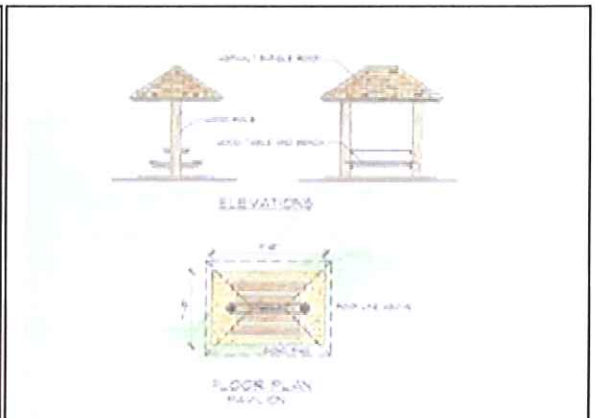


Figure F2 – Proposed Comfort Station Plan and Elevation

Photo F2 – Example of Information Kiosk used at Lydgate Park..



F

Figure F3 – Proposed covered picnic table.

2.2.2 Secondary Network Corridors:
Corridor II – Ahukini Landing to Līhu'e Civic Center

2.2.2.G Segment G - Ahukini Landing to Līhu'e Airport

The path connection to Līhu'e Airport completes an important multi-modal transportation link for people who want to use alternatives to motorized vehicles for their commute to work at the airport or as the first leg of an inter-island commute. This path segment continues from the Ahukini Landing comfort station, the terminus of Phase V of the Kaua'i Bike Path Project: Lydgate Park to Ahukini, and follows Ahukini Road to the Līhu'e Airport terminal. See **Figure 2-1** and **Figure H1**.

Photo G1 – Ahukini Road looking south toward the airport. The blue truck is parked on the public access road that will be used for the path.

The Ahukini Road corridor transitions from undeveloped agricultural lands to airport – industrial development with urban street improvements. See **Photos G1** and **G2**. The road gets light to moderate traffic and carries most of the vehicles destined for the lands makai of the airport described in Segment A above.

Segment G ends at a proposed bike depot at the north end of the airport terminal. See **Photo G3**. One of the key determinants that influence potential riders to choose bicycle transportation is the presence of end of ride facilities, such as bike lockers, changing rooms, and shower facilities. The proposed bike depot is a minimum-level facility provided to encourage bicycle use. Additional facilities may be added later subject to demand.

Photo G2 – Ahukini Road approach to the airport terminal looking north from vicinity of proposed bike depot.

Table G SEGMENT G- Ahukini Landing to Līhu'e Airport	
Ownership	Public Access Easement, County of Kaua'i, State DOT-Airports Division, DLNR, University of Hawaii, Visionary, LLC dba Līhu'e Land Company,
TMK	(4) 3-5-01: 8, 85, 92, 158, 159, 160 (4) 3-7-02: 01
SLUD	Urban, Agriculture, Conservation
County Zoning	Agriculture (AG), Conservation (C), Industrial-General (I-G), Industrial-General/Special Treatment District (I-G/STP), Open (O)
Current Uses	Open Space, Airport Operations, Helicopter Operations, Air Cargo, Vehicle Storage, County Refuse Transfer Station, Vacant Sugar Cane Fields, Former University of Hawaii Tropical Fruit Disinfection Facility, Recreational Boat Landing, Shore Fishing
Opportunities	• Connection to coastal recreational park (Ahukini Landing). • Alternative transportation connection to airport for employees and visitors • Interpretive Signage: - Historical and cultural resources, including pre-contact Hawaiian village, plantation, and Ahukini Camp, at Hanamaulu. - Native flora and fauna, including sea-birds known from the area.
Public Input	• Support for bike route / multi-modal transportation to the airport for employees and inter-island commuters.
Issues	• Flooding & Wave Inundation at Ahukini Landing • Erosion – consider measures such as re-vegetation to mitigate erosion problems. • Coordinating traffic circulation • Airport Security

Segment G – Preferred Alternative

G-1 – Combination Path and Signed Shared Roadway with Pedestrian Sidewalk

- Construct a 10-foot wide bicycle / pedestrian path along the north-west side of Ahukini Road from Ahukini Landing to connect with an existing 7-foot wide sidewalk on the makai side of the road. Provide a striped pedestrian cross-walk to connect the 10-foot wide path to the sidewalk.
- Designate Ahukini Road as a signed shared roadway for cyclists.
- Provide ADA pedestrian access to the airport on the existing 7-foot wide sidewalk.

- Construct a covered bicycle parking area ("Bike Depot") at the airport terminal with rack space for at least 12 bikes. In addition, bike lockers could be provided for airport employees who would prefer to store their bikes in a more secure storage system. Bike lockers are strong, rectangular or triangular shaped boxes that are large enough to house a bike, accessories and change of clothing. See **Photo G4**. For security purposes, lockers would be constructed of transparent plexiglass or mesh material to enable viewing of locker contents. The lockers would be rented at a nominal fee using a key or card-swipe locking system.

Basis for Selection

- This alignment provides an important, multi-modal transportation link.
- The proposed separated path transitioning to a sidewalk / signed shared roadway takes advantage of the existing roadway improvements.
- The existing 7-foot wide sidewalk exceeds the project's minimum design standards.
- End of ride facilities are desirable to encourage increased bicycle use.

Photo G3 – North end of the airport terminal. A covered bike depot is proposed for the grass area on the left of the photo.

Photo G4 – Typical bike locker that is proposed for the Bike Depot. Locker shown holds two bicycles separated by diagonal divider.

2.2.2.H Segment H –Līhu'e Airport to Kapule Highway

Completing this path connection will provide town residents with safe, convenient access to the airport terminal for work or inter-island travel. There are four potential access ways to the terminal, with two potential locations for end of ride facilities. Three of the routes involve improvements along the roadway corridor. One route takes advantage of the generous airport landscape space to provide a grade-separated path. See **Figure H1.**

Segment H – Preferred Alternatives

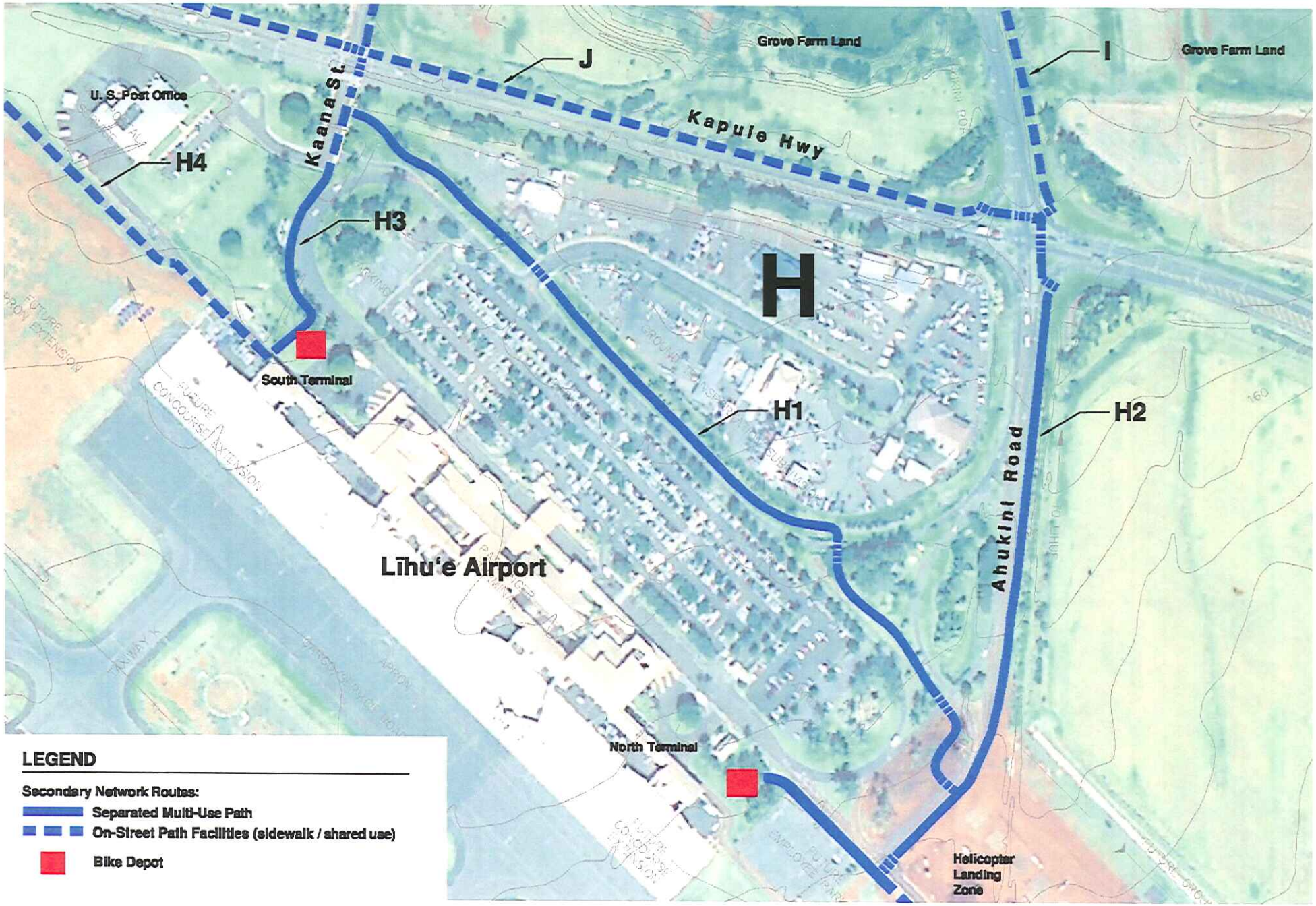
H-1 – Ahukini Road to Ka'ana Road – Airport Terminal Route

- Construct a 10-foot wide bicycle / pedestrian path from the north terminal bike depot through the airport landscape areas to connect to the intersection of Ka'ana Road and Kapule Highway. Provide traffic control or traffic calming features at 5 roadway crossings identified on **Figure H1**, and **Photo H1.**

Basis for Selection

- This alignment allows for a continuous pathway connection from the coastal segment at Ahukini Point to Ka'ana Street with key linkage to Līhu'e Airport. Ka'ana Street is planned as a major collector street through Līhu'e Town, and as such will serve as a primary access corridor between the Civic Center, Kapule Highway and the airport.
- This alternative avoids the intersection of Kapule Highway and Ahukini Road, which would require major renovations to provide a safe crossing for bicycle and pedestrian traffic.

Photo H1 – Proposed path route through airport landscape area, looking north.



Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE H-1

0 150 300 600 900 Feet

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Table H SEGMENT H- Līhu'e Airport to Kapule Highway	
Ownership	Public Access Easement, County of Kaua'i, State DOT-Airports Division and Highways Division, U.S. Postal Service, Visionary, LLC dba Līhu'e Land Company,
TMK	(4) 3-5-01: 8, 85, 92, 111, 142, 158, 159, 160 (4) 3-7-02: 01
SLUD	Urban
County Zoning	Industrial-General (I-G), Industrial-General/Special Treatment District (I-G/STP), Commercial-General / Special Treatment District (C-G/STP)
Current Uses	Līhu'e Airport operations, Helicopter Operations, Vacant Sugar Cane Fields, U.S. Post Office
Opportunities	• Alternative transportation connection to airport for employees and visitors. • Interpretive Signage: History of Līhu'e Airport.
Public Input	• Support for bike route / multi-modal transportation to the airport for employees and inter-island commuters.
Issues	• Coordinating traffic circulation • Airport Security

Segment H - Alternatives Considered

H-2 – Bicycle / Pedestrian Path Parallel to Ahukini Road

- Construct a 10-foot wide bicycle / pedestrian path along the north-west side of Ahukini Road between the Airport Terminal and Kapule Highway.
- Provide pedestrian cross-walk across Ahukini Road to connect the airport terminal with the bicycle / pedestrian path.
- Retrofit intersection at Kapule Highway to accommodate bicycle / pedestrian path crossing. See **Photo H2**.

Reason Not Selected

- This alternative would require significant renovations to the intersection of Kapule Highway and Ahukini Street in order to provide a safe crossing for bicycle and pedestrian access. Renovations would also be to the existing rock wall landscape features on the north-west corner of the intersection.
- Construction costs of the 10-foot wide path from the terminal to the intersection are estimated at $178,250. This number does not include costs for necessary intersection renovations, which would certainly exceed the estimated cost of the preferred alignment ($529,000).

Photo H2 – Proposed path route parallel to Ahukini Road at intersection with Kapule Highway

H-3 – Ka'ana Street Connection to South Terminal Bike Depot

- Construct a 10-foot wide bicycle / pedestrian path along the north side of Ka'ana Street between Kapule Highway and the open space area at the south end of the airport terminal.
- Construct a covered bicycle parking area ("Bike Depot") in the open space area at the airport terminal building with space for at least 12 bikes. In addition, bike lockers could be provided for airport employees who would prefer to store their bikes in a more secure storage system. Bike lockers are generally rented at a nominal fee. They are strong, rectangle shaped boxes made from various materials such a fiberglass or stainless steel that a large enough to house a bike, accessories and change of clothing. See **Photo G4** and **H-3**.

Photo H3 – Space at end of Ka'ana Street (beyond hedge) for south terminal bike depot (view west toward airport terminal).

Reason Not Selected

- This alternative creates a facility redundant to the preferred alternative. However, the location of a bike depot on the south end of the terminal near Ka'ana Street would be more convenient to residents of Līhu'e and can be achieved with relative modest improvements to the roadway. If the preferred alternative is not constructed, the Ka'ana Street connection to the south terminal bike depot should be re-considered.

H – 4 - Limo Road – Terminal to Ninini Road Connection

- Construct a 6-foot wide sidewalk along the makai side of Limo Road between the airport terminal and Ninini Road starting from the proposed south terminal bike depot.
- Use signage to designate Limo road as a signed shared roadway bicycle facility.

Reason Not Selected

- This alignment does not function as a critical link for bicycle / pedestrian access to the airport. It was therefore considered, but not selected in favor of higher-priority pathway connections.

2.2.2.I Segment I – Ahukini Road – Kapule Highway to Umi Street

Photo I1 – Ahukini Road existing "bike lanes".

Ahukini Road is a state-owned roadway that serves as a major, regional traffic corridor. It has a 120-foot right-of-way (ROW) with one 12-foot lane of traffic in each direction, 4-foot paved shoulders and 10-foot wide grassed swales. Future expansion plans call for two lanes of traffic in each direction , 10-foot paved shoulders and landscaping. Existing travel way improvements are offset south of the ROW centerline creating a large landscape buffer area along the north side reserved for future expansion. **See Photos I1 and I2 and Figure 2-1.** With full expansion, a 24-foot landscape buffer will be created on the north side of the ROW, and a 16-foot landscape buffer will be retained on the south side. The 24-foot buffer is adequate to accommodate a separate bicycle / pedestrian path and future right-hand turn-lanes into lands to the north. Bike path improvements within the ROW must accommodate future expansion plans.

Segment I – Preferred Alternative

I-1 – Bicycle-only lane within 10--foot shoulder

- Designate Ahukini Road as a signed shared roadway. Expand the paved shoulder to 10 feet wide, stripe and sign on both sides of Ahukini Street between Kapule Highway and Kuhio Highway to serve as a bicycle lane.
- Improve maintenance routines along the roadway to ensure that the bike lane remains clear of debris flushed to the shoulder by motor vehicle traffic.

Photo I2 – Ahukini Road landscape buffer area looking west.

Basis for Selection

- Ahukini Road serves as a major, regional traffic corridor. The addition of wide, striped bicycle lanes and shared road signage will highlight the road's muti-modal function, improve safety, and provide commuters with an alternative to motor vehicle transportation.
- As a commuter corridor, Ahukini Road carries substantial motor vehicle traffic. It is thus less likely to attract recreational bicyclists and is undesirable as a bicycle facility for children.

Segment I – Alternatives Considered

I-2 – Bicycle / Pedestrian Path in Landscape Strip on North Side of Highway

- Construct a separated 10-foot wide concrete bicycle / pedestrian path along the north side of Ahukini Road between Kapule Highway and Kuhio Highway.
- Construct a pedestrian cross-walk at Umi Street and connect to the new Umi Street road section proposed as part of the Līhu'e Civic Center Master Plan. The proposed Umi Street section includes 5-foot wide sidewalks and bike lanes between Ahukini Road and Hardy Street.

- Construct a pedestrian cross-walk at the future intersection with Ho'olako Street and connect to the future Ho'olako Street section proposed by Grove Farm.

Reason Not Selected

- The Ahukini Road alternative creates a redundant Civic Center connection versus the preferred alignment on Ka'ana Street. Moreover, to be included in the bicycle / pedestrian path system, this segment requires connection across the intersection with Kapule Highway. See **Segment H-2** discussion.
- Nevertheless, with future residential and commercial development along Ahukini Road, this corridor will grow in importance as an access route for bicycle and pedestrian access. Planning for a separated path now will ensure that bicycles and pedestrians will be safely accommodated in the future.
- The 24-foot landscape area that will be created along the north side of ROW with full build-out can accommodate a 10-foot wide separated path and future right-turn lanes that will be required with planned development on lands to the north.

Table I SEGMENT I- Ahukini Road – Kapule Highway to Umi Street	
Ownership	State DOT- Highways Division, Visionary, LLC dba Līhu'e Land Company,
TMK	(4) 3-7-01: 01. 34
SLUD	Urban, Agriculture
County Zoning	Agriculture (AG), Industrial-General (I-G), Commercial-Neighborhood (CN), Residential (R),
Current Uses	State Highway, Vacant Sugar Cane Fields, Residential
Opportunities	• Wide shoulders, undeveloped adjacent lands provide space for separated bike path. • Route provides direct regional-level connection.
Public Input	• Create separated path • Provide a barrier between motor vehicle traffic and bicycle / pedestrian path to block road debris (trash, dirt, vehicle parts, lost load items) from path.
Issues	• Future expansion of Ahukini Road

I-3 – Bicycle / Pedestrian Path on Grove Farm Land on South Side of Highway

- Construct a separated 10-foot wide concrete bicycle / pedestrian path along the south side of Ahukini Road between Kapule Highway and Kuhio Highway.
- Connect to the new Umi Street road section proposed as part of the Līhu'e Civic Center Master Plan. The proposed Umi Street section includes 5-foot wide sidewalks and bike lanes between Ahukini Road and Hardy Street.
- Connect to the future Ho'olako Street section proposed by Grove Farm.

Reason Not Selected

- The 16-foot wide landscape buffer along the south side of Ahukini Road is inadequate to accommodate a 10-foot wide separated path and right-turn lanes that will be required with future development.

2.2.2.J Segment J – Kapule Highway – Ahukini Road to Ninini Point Road

Kapule Highway is a state-owned highway that serves as a major, regional traffic corridor. It has a 100-foot ROW with one 12-foot lane of traffic in each direction and a 10-foot wide paved shoulder. The State Department of Transportation Highways Division (SDOT-H) is acquiring an additional 10 feet from landowners on each side of the highway between Ahukini Road and Ninini Road to create a 120-foot ROW. Land on the west side is undeveloped between Ahukini Road and Ka'ana Street. South of Ka'ana Street, development includes the Kaua'i Judiciary and Vidinha Stadium complex. The airport and post office occupy land to the east. **See Photos J1 and J2.**

Future expansion plans call for two lanes of traffic in each direction, 10-foot paved shoulders and landscaping. With full expansion of the future 120-foot ROW, a 36-foot landscape buffer will be created on the west side of the highway. This buffer is adequate to accommodate a separate bicycle / pedestrian path and future acceleration, deceleration, and right-hand turn-lanes. Bike path improvements within the ROW must accommodate future expansion plans.

Photo J1 – Kapule Highway view north with Judiciary on left.

Segment J – Preferred Alternatives

J-1 – Bicycle-only lane within 10-foot shoulder

- Designate Kapule Highway as a signed shared roadway. Stripe and sign the existing 10-foot wide shoulder on both sides of Kapule Highway between Ahukini Road and Rice Street to serve as a bicycle lane.
- Improve maintenance routines along the roadway to ensure that the bike lane remains clear of debris flushed to the shoulder by motor vehicle traffic.

Photo J2 – Kapule Highway view south with Kaua'i Veterans' Center on the right.

Basis for Selection

- Kapule Highway serves as a major, regional traffic corridor. The addition of wide, striped bicycle lanes and shared road signage will highlight the road's muti-modal function, improve safety, and provide commuters with an alternative to motor vehicle transportation.
- As a commuter corridor, Kapule Highway carries substantial motor vehicle traffic. It is thus less likely to attract recreational bicyclists and is undesirable as a bicycle facility for children.

Segment J - Alternatives Considered

J-2 – Bicycle / Pedestrian Path on West Side (mauka) of Kapule Highway

- Construct a separated 10-foot wide concrete bicycle / pedestrian path along the west (mauka) side of Kapule Highway between Ahukini Road and Ninini Road.
- Retrofit existing pedestrian cross-walks at Ka'ana Street to accommodate the new path.\

J-3 – Bicycle / Pedestrian Path on East Side (makai) of Kapule Highway

- Construct a separated 10-foot wide concrete bicycle / pedestrian path along the east (makai) side of Kapule Highway between Ahukini Road and Ninini Road.
- Retrofit existing pedestrian cross-walks at Ka'ana Street to accommodate the new path.

Reason Not Selected

- The Kapule Highway alternative creates a redundant connection between Ahukini Street and Ka'ana Street if the recommended Segment H-1 path route is constructed through the airport property.
- Kapule Highway serves as a major, regional traffic corridor better suited for use by higher-skilled bicycle commuters than the recreational path users this project is targeting.

Table J SEGMENT J – Kapule Highway – Ahukini Road to Ninini Point Road	
Ownership	State DOT- Highways Division, makai: County of Kaua'i, State DOT-Airports Division, U. S. Post Office, Marriott Vacation Club International, mauka: Visionary, LLC dba Līhu'e Land Company, County of Kaua'i, Kaua'i Veterans Council
TMK	(4) 3-5-01: 8, 27, 142 (makai segment) (4) 3-6-02: 1, 16, 18, 24, 25 (mauka segment)
SLUD	Urban, Agriculture
County Zoning	Agriculture (AG), Open (O), Industrial-General / Special Treatment District (I-G/STP), Commercial-General / Special Treatment District (C-G/STP)
Current Uses	State Highway, Vacant Sugar Cane Fields, Kaua'i Judiciary Complex, Līhu'e Airport, U. S. Post Office, Kaua'i Lagoons Entrance
Opportunities	• Wide shoulders, undeveloped adjacent lands provide space for separated bike path. • Route provides direct regional-level connection
Public Input	• Create separated path for safety • Provide a barrier between motor vehicle traffic and bicycle / pedestrian path to block road debris (trash, dirt, vehicle parts, lost load items) from path.
Issues	• Future expansion of Kapule Road • Land acquisition

2.2.2.K Segment K – Molokoa Public Facility Center

Public facilities at Molokoa include the State Judiciary Building, Kaua' Police Headquarters and Emergency Operating Center, The Kaua' Veteran's Center, and Vidinha Memorial Stadium and Recreational Complex. These facilities are a core component of Grove Farm Company's planned development, called Wailani, which is based on the 1995 Līhu'e – Hanamaulu Master Plan. The master plan identifies Molokoa as a mixed-use residential neighborhood with a central core of public and private services, employment, retail, and social and cultural opportunities. These public facilities are major trip generators as employment centers, public service centers, and as the largest recreational and entertainment facility in the Līhu'e area. Their location at the intersection of Ka'ana Street and Kapule Highway is planned to become a major gateway into and out of Līhu'e, linking these important civic functions directly to town residents and to the larger regional population. As such, these facilities comprise an important pathway hub. **See Figure K1 and Photo K-1.**

Photo K1 – Ka'ana Street / Kapule Highway intersection looking south-west from the airport toward the Judiciary building.

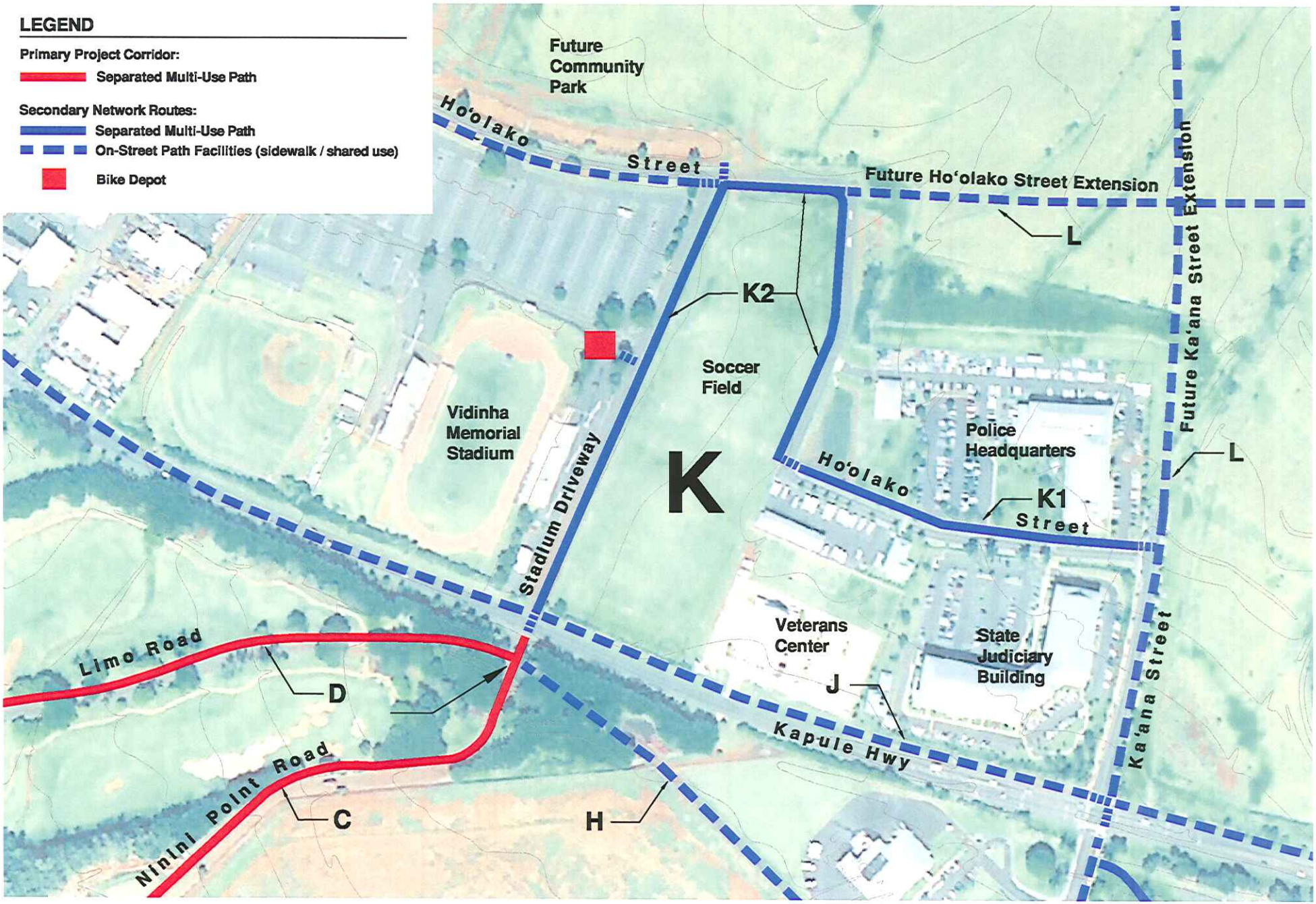
Connection to these public facilities can be made via several roadways: Ka'ana Street, Ho'olako Street, and the Vidinha Stadium Driveway (mauka continuation of Ninini Road across Kapule Highway). Improvements to Ka'ana Street and Ho'olako Street are described below **(Segment L)**. Improvements to Ninini Road are described above (Segment C).

Segment K – Preferred Alternative

The final connection to and through Vidinha Stadium and the soccer fields will be determined following completion of a master plan currently being prepared for the Vidinha Memorial Stadium and Soccer Field Complex by the County Department of Parks and Recreation. Improvements proposed as part of this project are as follows:

K-1 – Police Headquarters Sidewalk Expansion to 10-foot Multi-Use Path

- On Ho'olako Street adjacent to the Police Headquarters , expand the existing single 5-foot wide sidewalk to 10-feet and designate the road as a signed shared roadway for



Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE K-1

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bicycle / motor vehicle use. Provide pedestrian cross-walks at each driveway intersection.

- Provide a crosswalk across Ka'ana Street to connect with the proposed widened 10-foot sidewalk on Ho'olako Street.
- Maintain crosswalk connection across Ho'olako Street to provide access to the north side of the soccer field See **Photo K1.**

Basis for Selection

- Adequate space exists adjacent to the Police Headquarters to accommodate widening the sidewalk to create a 10-foot wide multi-use path.

Table K SEGMENT K - Judiciary Complex / Vidinha Stadium	
Ownership	State DOT- Highways Division, Visionary, LLC dba Līhu'e Land Company, County of Kaua'i, Kaua'i Veterans Council
TMK	(4) 3-6-02: 1, 16, 18, 19, 24, 25 (mauka segment)
SLUD	Urban, Agriculture
County Zoning	Agriculture (AG), Commercial-General / Special Treatment District (C-G/STP)
Current Uses	State Highway, Vacant Sugar Cane Fields, Kaua'i Judiciary Complex, Līhu'e Airport, U. S. Post Office, Vidinha Stadium Complex, Soccer Fields
Opportunities	• Undeveloped adjacent lands provide space for separated bike path. • Connectivity between residential area and public facilities at the stadium, airport, and Kaua'i Resort path segment to Nāwiliwili (Segments D, E & F). • Promote transportation alternatives to key civic centers.
Public Input	• Create separated path for safety • Provide a barrier between motor vehicle traffic and bicycle / pedestrian path to block road debris (trash, dirt, vehicle parts, lost load items) from path. • Support for bicycle "depot" at Vidinha Stadium
Issues	• Coordinate with land use planning on vacant cane lands (Līhu'e Land Company • Land acquisition • Retrofit existing roads serving the Kaua'i Judiciary Complex

Photo K1 – Existing 5-foot sidewalk on Judiciary Road looking north from edge of soccer field.

Photo K2 – Path route along north side of Ninini Road, view toward east.

Segment K – Alternatives Considered

K-2 – Vidinha Memorial Stadium and Soccer Field 10-foot Path System

- Construct a 10-foot wide path along the north and west boundary of the existing soccer fields to create a connection between Kapule Highway and Ho'olako Street.
- Continue the 10-foot wide path along the north side of the Stadium Driveway (Ninini Road mauka continuation) between Ho'olako Street and Kapule Highway. Provide pedestrian cross-walks to Vidinha Stadium. See **Photo K2**.
- Construct covered bicycle parking ("Bike Depot") at the Stadium near the north entrance.

Reason Not Selected

Planning for a path system within the Vidinha Memorial Stadium and Soccer Field Complex is being undertaken as part of a master planning effort by the Department of Parks and Recreation. Alternative K-2, described above, was considered on the following basis:

- A multi-use path system provides enhanced function as a recreational resource within the stadium setting and anticipates future, master planned park space west of Ho'olako Street (Līhu'e-Hanamaulu Master Plan). A multi-use path connection through the park would offer a safe, pleasant alternative to shared road or on-street bicycle / pedestrian facilities.
- Adequate open space exists within the Judiciary Complex and stadium facility to accommodate a separated multi-use path.

The path system within the stadium and soccer fields will ultimately be determined by the Department of Parks and Recreation through the master planning process.

2.2.2.L Segment L – Līhu'e Civic Center Connections

The Nāwiliwili –Ahukini Shared-Use Path project recognizes four streets that will serve as connectors to the civic center, based on plans currently being finalized by the County. See **Figure L1.** The four streets are:

- Ka'ana Street
- Umi Street
- Ho'olako Street
- Hardy Street

Bicycle / Pedestrian Path improvements on these streets will be designed based on the following plans being prepared for the County of Kaua'i by PBR Hawai'i & Associates, Inc.:

- ***Līhu'e Civic Center Master Plan,*** being prepared by the Building Department, and,
- ***Līhu'e Urban Design Guidelines,*** being prepared by the Planning Department.

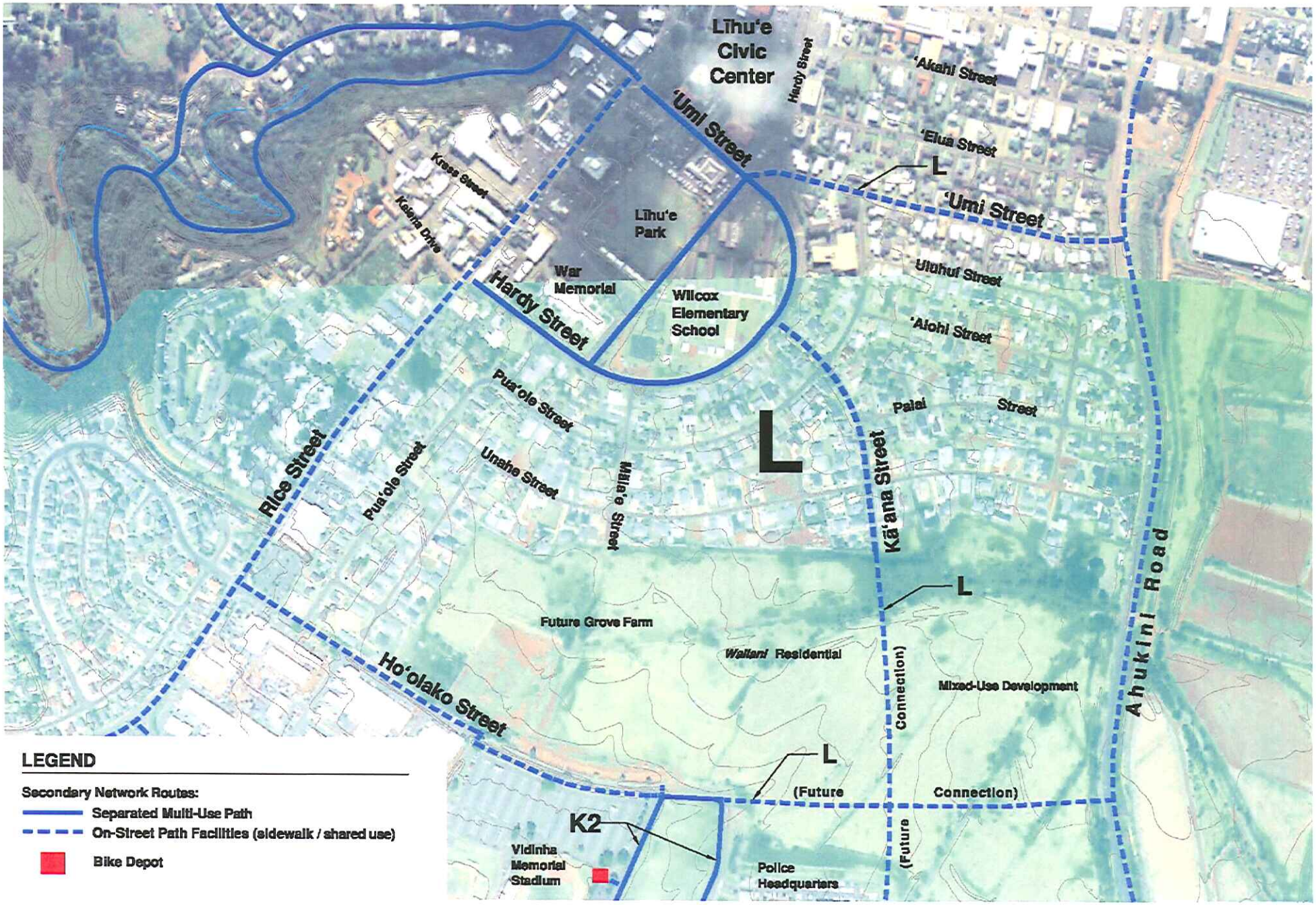
Preparation of these plans involved an extensive public outreach effort to develop road sections and design guidelines for residential streets through Līhu'e Town. The *Līhu'e Civic Center Master Plan* is shown in **Figure L2.**

In addition to these plans, Grove Farm Company is developing a project on the vacant lands, identified as "Molokoa" in the 1995 Līhu'e – Hanamaulu Master Plan, located south of Ahukini Road between Kapule Highway and the existing residential neighborhoods in Līhu'e Town. Street standards for the project, named Wailani, are based on zoning approvals obtained from the County for the 1995 master plan. See **Figure L3.**

Segment L - Alternatives Considered

L-1 – Ka'ana Street – Existing Section

- Within the existing 60-foot ROW, continue the street section established adjacent to the State Judiciary Building and Police Headquarters with 10-foot bike lanes and 4-foot sidewalks (note: minimum sidewalk width required to meet ADA standards is 5 feet). See **Photo L1.** Construct connection with future development of Grove Farm land.
- At the connection to the existing Ka'ana Street in Līhu'e town, reduce the bicycle lane width to 4 feet and provide striping. Widen sidewalks to minimum 5 feet and correct cross slopes at driveway aprons by moving the curbs on both sides 2 feet toward the street center line. See **Photo L2.**



Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE L-1

0 300 600 1200 1800 Feet

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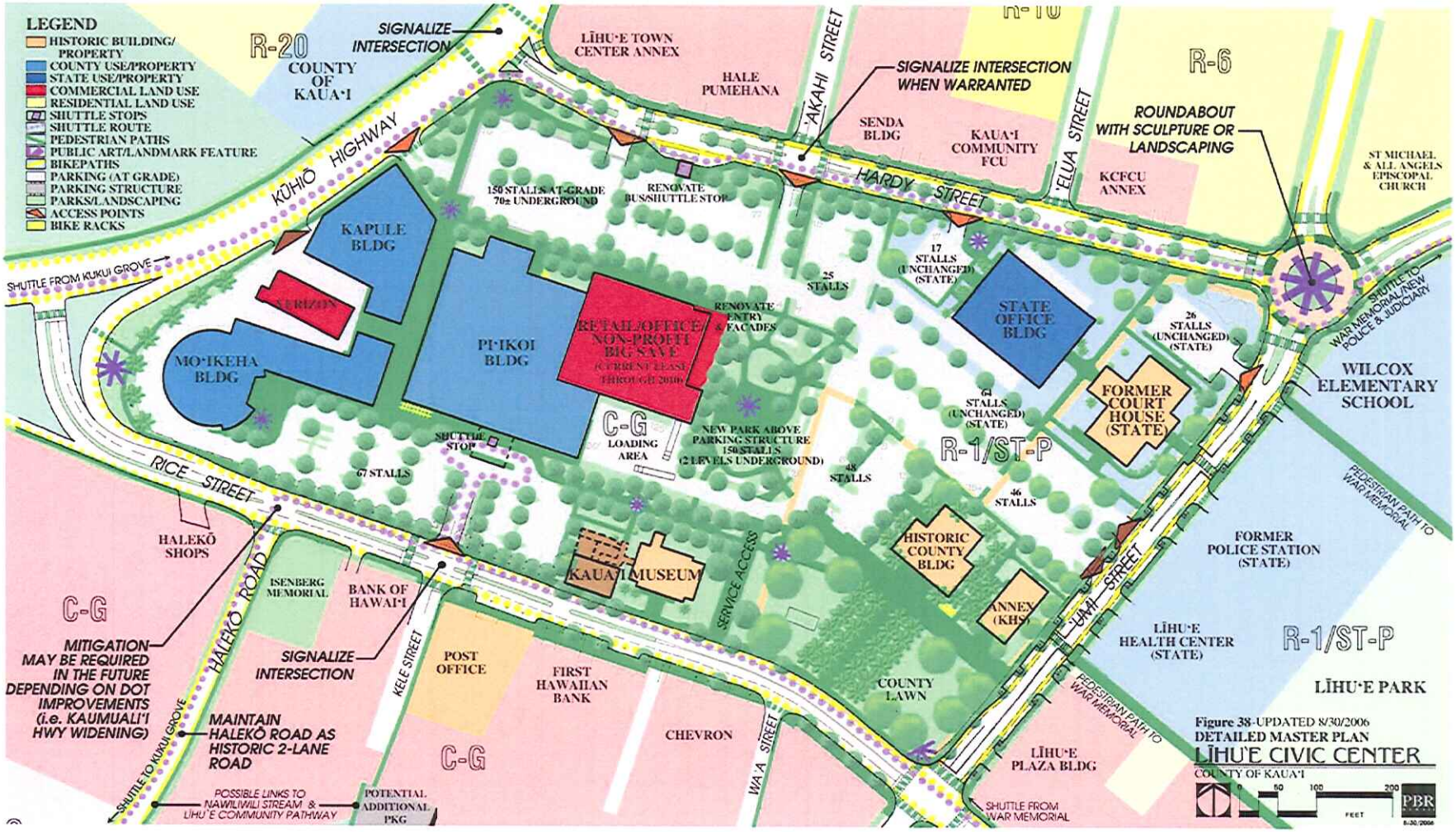

Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE L-2

0 100 200 400 600 Feet

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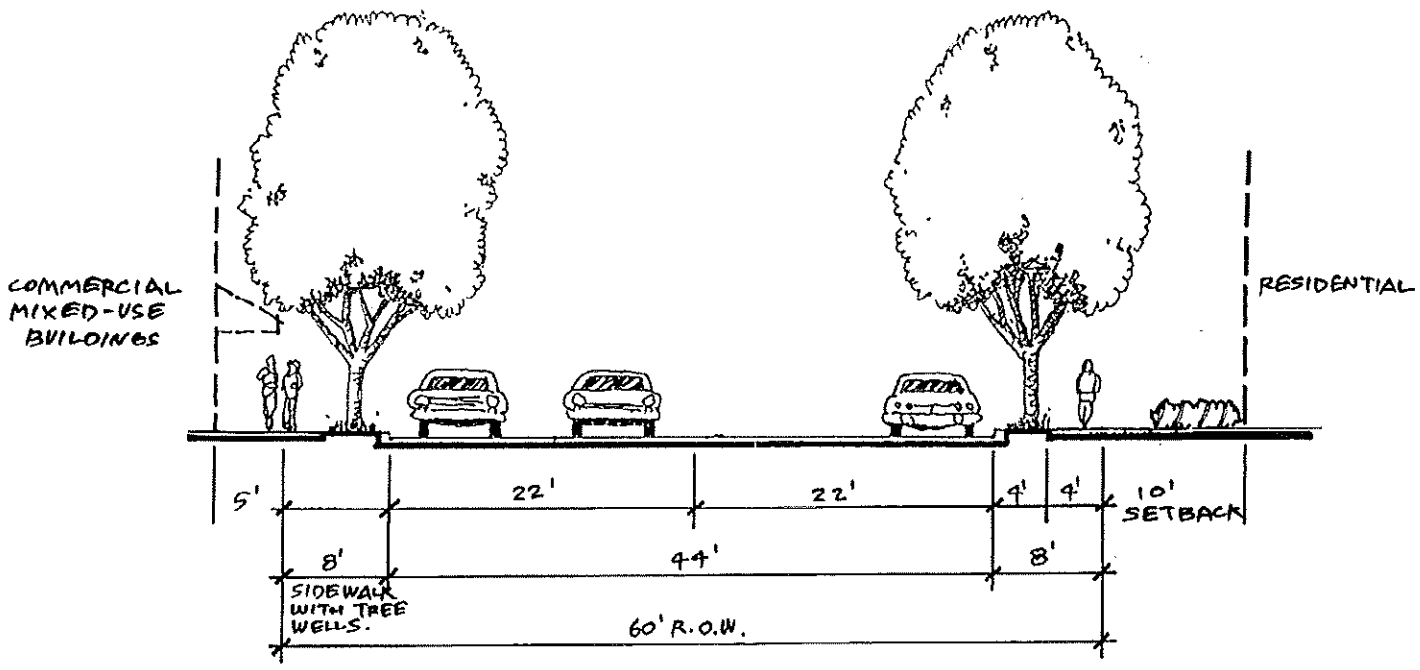
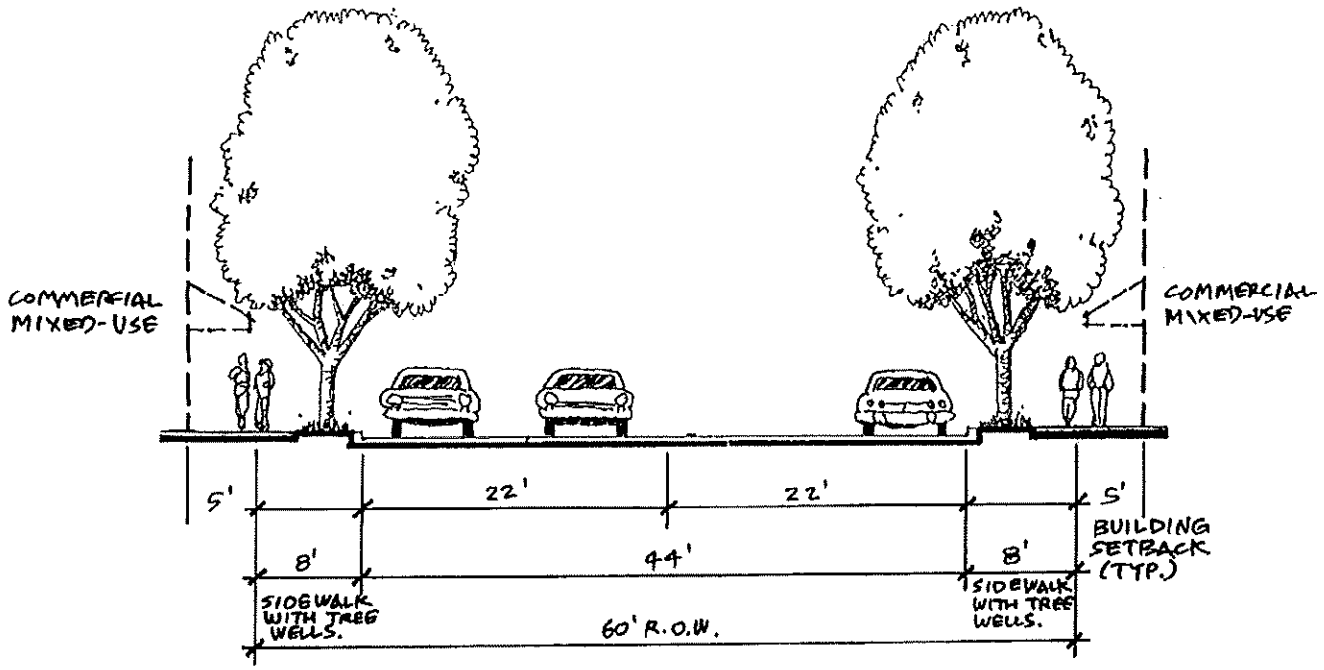


KA'ANA STREET SECTION



HO'OLAKO STREET SECTION

APPROVED STREET SECTIONS
LĪHU'E - HANAMĀ'ULU MASTER PLAN (1995, rev. 2005)

Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Island of Kaua'i, Hawai'i

FIGURE L-3

NOT TO SCALE
R. M. Towill Corporation

Photo L1 – Ka'ana Street section at Judiciary Complex.

Photo L2 – Ka'ana Street existing residential section looking west.

Photo L3 – Ka'ana Street at Palai Street, looking west.

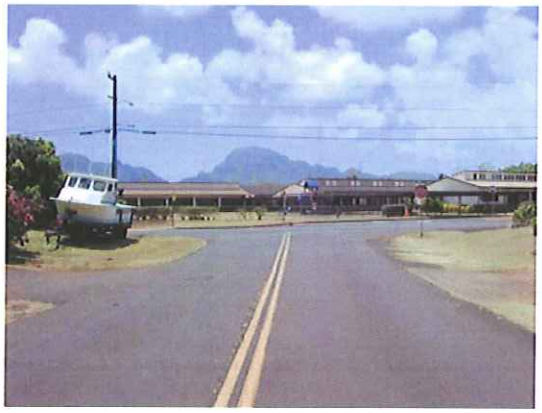


Photo L4 – Intersection of Ka'ana Street and Hardy Street.

- As Ka'ana Street passes over Unahe Street, the curb is no longer present on both sides of the road. Therefore, new curbs will need to be installed for both sidewalks as well as striping for the bicycle lanes (see **Photo L3**) all of the way to Hardy Street (see **Photo L4**) where a crosswalk will need to be added in order to access the proposed Hardy Street multi-use path.

L2 – Ka'ana Street – 10-foot Path with Transition to Bike Lane / Sidewalk.

- Construct a 10-foot wide path through along the north boundary of the planned Ka'ana Street connection between Kapule Highway and the existing residential neighborhood near the town center.

- At the connection point to the existing residential Ka'ana Street segment, end the path with a curb cut and cross walk to provide ADA access across the street.
- From the connection towards town, provide striped 4-foot wide bicycle lanes on both sides of the street. Widen sidewalks to minimum 5 feet and correct cross slopes at driveway aprons by moving the curbs on both sides 2 feet toward the street center line. See **Photo L2**.
- As Ka'ana Street passes over Unahe Street, the curb is no longer present on both sides of the road. Therefore, new curbs will need to be installed for both sidewalks as well as striping for the bicycle lanes (see **Photo L3**) all of the way to Hardy Street (see **Photo L4**) where a crosswalk will need to be added in order to access the proposed Hardy Street multi-use path.

L-3 – Umi Street – Urban Design Guideline

- Within the 60-foot ROW between Ahukini Road and Hardy Street, construct a road section with 5-foot sidewalk, 5-foot planting strip with curb and gutter, 6-foot bike lane, and 14-foot motor vehicle travel lane in each direction. See **Photo L5**.
- Adjacent to the Līhu'e Civic Center, construct a road section with 5-foot sidewalk, 8-foot parallel parking strip with landscape bulb-outs, curb and gutter, 5-foot bike lane, and 12-foot motor vehicle travel lane in each direction.

Photo L5 – Umi Street looking south toward the civic center.

L-4 – Umi Street – Sidewalk to 8-foot Multi-Use Path

- Within the 60-foot ROW between Ahukini Road and Hardy Street, construct a road section with 6-foot sidewalk, 5-foot planting strip with curb and gutter, 5-foot bike lane, and 14-foot motor vehicle travel lane in each direction.
- At the intersection with Hardy Street, provide a non-signalized crosswalk and continue along the inside loop of Hardy Street by replacing the existing sidewalk with an 8-foot wide path all the way to Rice Street. See **Photo L6**.

L-5 – Ho'olako Street – Urban Design Guidelines

- Within the 60-foot ROW between Ninini Road and Ka'ana Street, construct a road section with 5-foot sidewalk, 5-foot planting strip with curb and gutter, 6-foot bike lane, and 14-foot motor vehicle travel lane in each direction.

L-6 – Ho'olako Street – 10-foot path

- Construct a 10-foot wide bicycle / pedestrian path along the west side of Ho'olako Street between Halau Street and the Judiciary Road within the future proposed community park. Continue the path around the park perimeter as guided by a future park master plan. Provide crosswalks across Ho'olako Street to connect to the Judiciary / Stadium path system. **See Photo L7** and Segment K discussion above.
- Where the park ends, transition the path to connect to the 6-foot sidewalk and 5-foot bike lane proposed under the Urban Design Guidelines and continue to the intersection with Ka'ana Street.

Photo L6 – Umi Street intersection with Hardy Street.

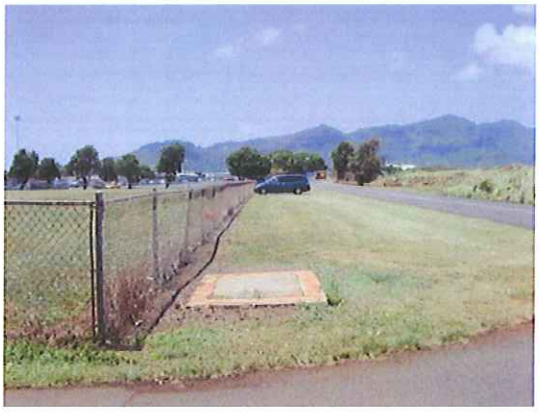


Photo L7 – Ho'olako Street looking south.

Table L SEGMENT L – Līhu'e Civic Center Connections	
Ownership	Visionary, LLC dba Līhu'e Land Company, County of Kaua'i, Kaua'i Veterans Council, State of Hawaii, Numerous individual homeowners and business owners
TMK	(4) 3-6- plats 02, 03, 05, 06, 12, 15, 16, 17, 18, 19, 20: 1, 16, 18, 19, 24, 25
SLUD	Urban, Agriculture
County Zoning	Agriculture (AG), Commercial-General / Special Treatment District (C-G/STP), Residential (R), Residential / Special Treatment District (R/STP), Industrial-Light (I-L) Open (O)
Current Uses	Vacant Sugar Cane Fields, Established Residential Communities, Light Industrial, Commercial Corridors,
Opportunities	• Undeveloped adjacent lands provide space for separated bike path. • Residential connection to public recreational and civic facilities, employment centers, Līhu'e Airport, regional coastal parks, and Kaua'i Resort path segment to Nāwiliwili (Segments D & E).
Public Input	• Create separated path for safety • Provide a barrier between motor vehicle traffic and bicycle / pedestrian path to block road debris (trash, dirt, vehicle parts, lost load items) from path. • Do not subordinate bicycle transportation to motor vehicle traffic.
Issues	• Utilize the County's recent planning efforts: Līhu'e Civic Center Master Plan and Līhu'e Urban Design Guidelines. • Coordination with land use planning on vacant cane lands (Līhu'e Land Company) • Land acquisition • Retrofit existing roads in Līhu'e Town and at the Judiciary Complex.

2.2.3 Secondary Network Corridors: Corridor III – Nāwiliwili Beach Park to Līhu'e Civic Center

2.2.3.M Segment M – Rice Street

The Rice Street alignment between Nāwiliwili and Kapule Highway was considered, but rejected due to slope conditions between Nāwiliwili and the Kapule Highway intersection that exceed the planning criteria. Additionally, the lack of shoulder space for a separated path would require significant cost to either cut the uphill bank, or construct retaining walls to create room for a safe, separated bicycle and pedestrian path along this segment of Rice Street. See Figure 2-1.

From Kapule Highway to the Līhu'e Civic Center, Rice Street carries two lanes of traffic in each direction. During non-peak traffic hours, the outside lane is reserved for parking. During peak hours, parking is prohibited and both lanes carry traffic flows. Sidewalks on each side of the street vary in width from four to six feet. Due to the narrow street section and presence of buildings constructed up to the building setback line, there is little to no room for expansion of the street section.

Segment M - Alternatives Considered

M-1 – Rice Street Bicycle-Priority Lane

Between Kapule Highway and Kuhio Highway, change the outside lane in each direction into a bicycle-priority lane through the use of striping, stenciling, signage, pavement tinting, or pavement texturing. During non-peak hours, the lane will remain in use for curb-side parking, with the remnant section striped for use as a bike lane. During peak traffic hours, parking will be prohibited and the lane will be a signed shared bicycle / motor vehicle lane with the speed limit determined by the pace of the cyclists. The inside traffic lane will be reserved for motor vehicles traveling within posted speed limits.

M-2 – Rice Street Bicycle-Only Lane

Between Kapule Highway and Kuhio Highway, eliminate on-street parking and re-stripe the road to create a bicycle-only lane on each side of the street. Create new, off-street parking lots at convenient intervals to serve area businesses on Rice Street.

Table M SEGMENT M – Rice Street	
Ownership	County of Kaua'i, Numerous individual homeowners and business owners on Segment L corridor
TMK	(4) 3-2-plats 04, 06, 08 (4) 3-5-plats 01, 02, 03, (4) 3-6- plats 01, 02, 03, 05, 07, 08, 12, 23, 24
SLUD	Urban
County Zoning	Commercial-Neighborhood (C-N), Commercial-General (C-G), Residential (R), Residential / Special Treatment District (R/STP), Industrial-Light (I-L), Resort (R), Open (O)
Current Uses	Open Space, Established Residential Communities, Light Industrial, Primary Commercial Corridor in Līhu'e, Civic Services, Public Park
Opportunities	• Most direct connection between Nāwiliwili and the Civic Center.
Public Input	• Hazard from traffic, steep grades, lack of shoulder, and parked cars on side of street make this undesirable. • Consider claiming the existing on-street parking for a dedicated bike lane. • Do not take on-street parking without creating new off-street parking at convenient intervals to serve the business community.
Issues	• Safety and ability to meet ADA access standards for path slopes. • Utilize the County's recent planning efforts: Līhu'e Civic Center Master Plan and Līhu'e Urban Design Guidelines. • Land acquisition • Retrofit existing roads

Reason Not Selected

- Lack of room to expand the existing travel way to accommodate two lanes of motor vehicle traffic and a safe bike lane in each direction for peak-hour traffic conditions. Lack of room to expand also prohibits renovation of the sidewalks to meet ADA access standards.
- No connection to other preferred segments of the bicycle / pedestrian path system.
- In addition to impacting peak-hour traffic, claiming one traffic lane for a new, dedicated bike lane would require construction of off-street parking facilities to make up for the lost on-street parking upon which Rice Street businesses depend during business hours. Land acquisition and possible condemnation would be required to find suitable space to develop parking facilities in locations that would support Rice Street businesses.

2.2.3.N Segment N – Nāwiliwili Stream Valley

Nāwiliwili Stream Valley posses inspiring natural beauty, rich history, unique community, and agricultural character that exemplify Kaua'i's social foundations and ongoing values. The valley cuts through the center of Līhu'e, dividing the town into two populations and separating residents south of the valley from the commercial centers and public services concentrated to the north. A valley path could become a signature feature of Līhu'e Town, reflecting the historic connections between town and harbor and establishing new connections between communities north and south of the valley.

As a practical matter, a bicycle / pedestrian path route through the valley offers a safer and scenic alternative to Rice Street and Nāwiliwili Road. Moreover, a valley path can be constructed to meet ADA accessibility standards for slopes while the existing roads to Līhu'e Civic Center cannot.

The valley route provides an opportunity to directly connect the residential communities south of the valley with the social, commercial, and service activities in the civic center on the north. At present, residents south of the valley must drive several miles on Rice Street, Nāwiliwili Road, Haleko Road, or Kuhio Highway to access the civic center, which is located merely one-third of a mile across the valley. A bicycle / pedestrian connection would provide residents with an alternative transit route, with potential benefits from increased physical activity, reduced reliance on fossil fuels, and, arguably, a convenience incentive to visit town more frequently thereby contributing to the vitality of Līhu'e. **See Figure 2-1.**

Segment N - Alternatives Considered

- Construct a 2.5 mile, 10-foot wide concrete bicycle / pedestrian path along Nāwiliwili Stream from Nāwiliwili Beach Park to the Līhu'e Civic Center.
- Construct an elevated, switch-back ramp from the valley floor to connect with Umi Street, Kalena Street, or Wa'a Road.
- Construct a path connection to Pua Nani Street and Aheahe Street on the south side of the valley.

Table N SEGMENT N – Nāwiliwili Stream Valley	
Ownership	Numerous individual land owners
TMK	Plats: 3-2-06; 3-2-07; 3-6-01; 3-6-04; 3-6-05; 3-6-07; 3-6-08; 3-6-10; 3-6-11;
SLUD	Urban
County Zoning	Commercial-Neighborhood (C-N), Commercial-General (C-G), Residential (R), Open (O), Open / Special Treatment Cultural (O-STC)
Current Uses	Open Space Stream Environment, Established Residential Communities, Agricultural Activity, Historic Landscape and museum
Opportunities	• Create a signature corridor to reestablish the historic connection between Nāwiliwili and Līhu'e Town. • Connect residential communities that are currently cut off by the stream valley. • Provide safe, scenic, direct connection between Nāwiliwili and Līhu'e Civic Center. • Interpretive Signage: - Historic and cultural resources, including Kuhiau heiau, lo'i cultivation, commercial plantation activities, , - Unique flora and fauna within the valley,
Public Input	• Long-standing support for the idea • Some affected property owners do not want the bike path to intrude.
Issues	• Property Owner Opposition • Land Condemnation Costs • Engineering Considerations • Flood hazard . • Riparian Environment. • Agricultural Use

Reason Not Selected

- **Property Owner Opposition** – The Nāwiliwili Stream path alignment crosses land owned by approximately 30 - 40 individual property owners, depending on the actual alignment. Property owners encountered during site visits and contacted by mail during the preparation of the environmental assessment expressed opposition to public access through their land specifically and through the stream valley in general. Without land owner support and permission to enter the properties, it is not feasible to conduct the studies necessary to effectively proceed with the assessment of this alignment.
- **Land Condemnation Costs** – Obtaining the necessary access and development entitlements to construct the path will require financial and political commitment to

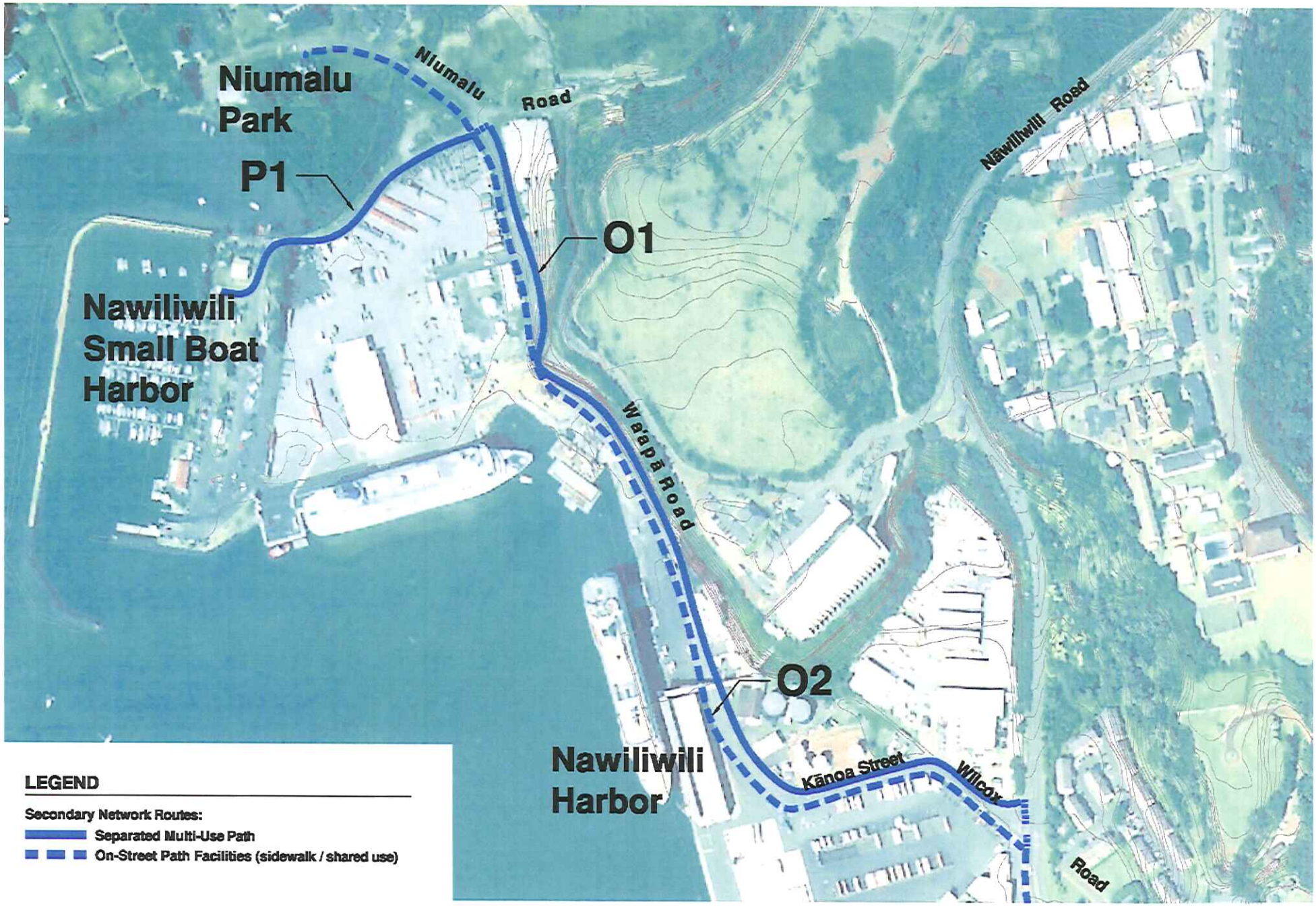
support land condemnation proceedings. Based on the 2006 tax assessment, land values along the valley floor range from approximately $20,000 per acre for Grove Farm Co. land (TMK 3-6-01: 02), to $1.3 million per acre (TMK 3-2-06: 02) at the mouth of Nāwiliwili Stream. Tax assessment values between $80,000 and $400,000 per acre are typical. Approximately 5.5 acres of land would be required for the path, which would cost the County an estimated $0.5 million to $2.5 million dollars based on 2006 assessed land values.

- **Engineering Considerations** – An elevation differential ranging from 30 to 50 feet exists between the floor of the stream valley and the top of valley wall near the Līhu'e Town Center. Connecting these elevations with an ADA accessible path (8.33% max. slope) will require substantial cut and fill over a long at-grade run up the side of the valley wall, or construction of a structural switch-back ramp. Both of these alternatives are technically possible, but costly.
- **Flood hazard** – The stream valley is located within the FEMA/FIRM AE flood zone. The corridor is subject to periodic inundation which poses engineering challenges and safety considerations.
- **Riparian Environment** – The stream valley contains riparian habitat that is expected to include sensitive flora and faunal resources, and challenging soil conditions for bike path construction.
- **Agricultural Use** – The corridor includes active pasture land, truck crop lands, and residential vegetable gardens. The bike path introduces foreseeable conflicts in use that will aggravate owner opposition.

2.2.4 Secondary Network Corridors: Corridor IV – Nāwiliwili Beach Park to Niumalu Beach Park

2.2.4.O Nāwiliwili Beach Park to Niumalu Park (Rice Street to Wilcox Road / Kānoa Street / Wa'apā Road / Niumalu Road)

This segment would support one of the principal objectives of the bicycle / pedestrian path project: link coastal recreational parks with a safe, non-motorized vehicle access way. The path segment between Nāwiliwili Beach Park and Niumalu Park would also serve residents in Niumalu with improved access and provide additional opportunity to connect with Nāwiliwili Small Boat Harbor and Nāwiliwili Harbor docks. A bicycle / pedestrian path connection to these facilities would benefit the many harbor employees by offering an alternative form of transportation to and from work. In addition, cruise ship patrons who depart the ship on foot would benefit from a clear path and good directions to recreational and commercial opportunities in the vicinity and points of interest beyond. **See Figure O/P-1, and Photo O1.**



Nawiliwili - Ahukini Shared-Use Path
County of Kauaʻi
Līhuʻe, Island of Kauaʻi, Hawaiʻi

FIGURE O/P-1

0 200 400 800 1200 Feet

R. M. Towill Corporation

Table O SEGMENT O – Nāwiliwili Beach Park to Niumalu Park (Rice Street to Wilcox Road / Kānoa Street / Wa'apā Road / Niumalu Road)	
Ownership	State DOT- Harbors Division, County of Kaua'i
TMK	Plats: 3-2-02; 3-2-03; 3-2-04;
SLUD	Urban, Agricultural
County Zoning	Residential (R), Open (O), Industrial-General (I-G)
Current Uses	Harbor, Industrial, Cruise Ship Landing, Public Access
Opportunities	• Link coastal park system with the bicycle / pedestrian path • First impression for arriving cruise ship passengers. • Harbor employment is a trip generator. • Interpretive signage: - History of Nāwiliwili Harbor development. - Orientation to the cultural history of Nāwiliwili, Kalapakī, and Niumalu, including directions to landmark features in the area.
Public Input	No comments received
Issues	• Port Security • Industrial Traffic. • Narrow right-of-way with utilities in shoulder..

Segment O – Preferred Alternative

O-1 – Niumalu Connection via Shared-Use Path

- Widen the existing, makai sidewalk on Rice Street/Nāwiliwili Road between Nāwiliwili Beach Park and Wilcox Road to 10-feet. Provide pedestrian cross-walks at all driveways and intersections.
- Provide a crosswalk with refuge island across Wilcox Road at the intersection with Nāwiliwili Road.
- On Wilcox Road and Kānoa Street, utilize the existing makai 5-foot wide sidewalk for pedestrian access. Construct a new 10-foot wide shared-use path on the mauka side separated by a jersey barrier. See **Photo O1**

Photo O1 – Kānoa Road corridor – view towards south with cruise ship dock in view. Shared-use path proposed for the mauka (west) side of the road.

- On Wa'apā Road between Kānoa Street and Niumalu Road, construct a new 10-foot wide concrete shared-use path on the mauka side of the street to avoid crossing cargo terminal entrances. Provide signed crosswalks at all driveways. See **Photo O2** and **03**.
- Install jersey barriers between the shared-use path and road for safety purposes and to reduce State and driver liability.
- Install a crosswalk at the intersection Niumalu Road to provide access to the Nāwiliwili Small Boat Harbor and path continuation to Niumalu Park.
- Designate Niumalu Road a shared-use road to connect to Niumalu Park. See **Photo O4**.

Photo O2 – Wa'apā Road corridor – view towards west. Shared-use path with jersey barrier proposed for mauka (north) side of road.

Photo O3 – Wa'apā Road corridor – view towards west. Shared-use path with jersey barrier proposed for mauka (north) side of road.

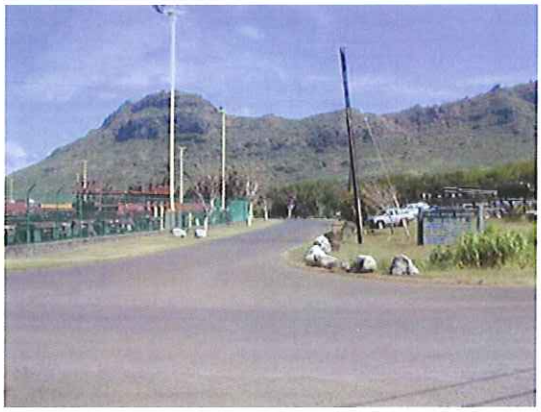


Photo O4 – Intersection at Niumalu Road / Nāwiliwili Small Boat Harbor driveway.

<u>Basis for Selection</u>

- The mauka alignment avoids crossing cargo terminal entrances at the harbor and is thus less likely to interfere with maritime industrial traffic movements of large container trucks, commercial vehicles and other heavy equipment. A separated path and jersey barriers are necessary to improve path user safety and reduce State and Driver liability.

Segment O – Alternatives Considered

O-2 – Niumalu Connection via Sidewalk and Signed Shared Roadway

- Widen the existing, makai sidewalk to 10-feet on Rice Street/Nāwiliwili Road between Nāwiliwili Beach Park and Wilcox Road. Provide pedestrian cross-walks at all driveways and intersections.
- On Wilcox Road and Kānoa Street, utilize the existing 5-foot wide sidewalk for pedestrian access and designate the roadway as a signed shared roadway for bicycles and motor vehicles.
- On Wa'apā Road and Niumalu Roads, construct a new 6-foot wide concrete sidewalk on the makai side of the street and designate the roadway as a signed shared road for bicycles and motor vehicles.

Reason Not Selected

- The makai alignment crosses harbor cargo terminal entrances and increases the potential for conflict with the maritime industrial areas high traffic movements of large container trucks, commercial vehicles, and other heavy equipment.
- A shared-use road increases the potential for conflicts between bicycles and maritime industrial traffic. See **Photo 05.**

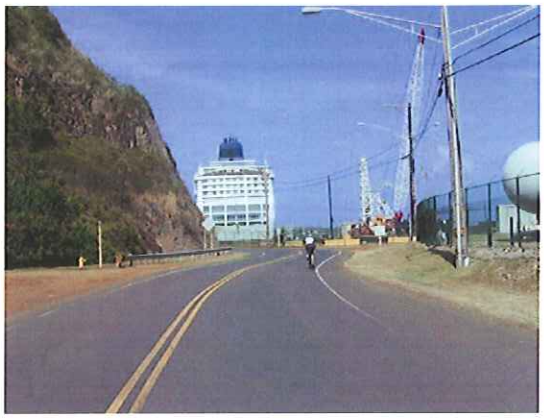


Photo O5 – Wa'apā Road corridor – view towards east with stern of cruise ship in view.

2.2.4.P Niumalu Road to Nāwiliwili Small Boat Harbor

As discussed in Section 2.2.4.O above, connection to the Nāwiliwili Small Boat Harbor supports the project's overall objective of linking public recreational facilities with a non-motorized vehicle path system. Improved pedestrian and bicycle access to the small boat harbor would enhance its function as a public resource and benefit harbor users and employees with transportation alternative to the automobile.

Table P SEGMENT P – Niumalu Road to Nāwiliwili Small Boat Harbor	
Ownership	State DOT- Harbors Division, County of Kaua'i
TMK	3-2-03: 43
SLUD	Urban
County Zoning	Industrial-General (I-G)
Current Uses	Nāwiliwili Small Boat Harbor
Opportunities	• Link the small boat harbor as part of the coastal park system with the bicycle / pedestrian path • Interpretive signage: - History of Nāwiliwili Harbor development. - Orientation to the cultural history of Nāwiliwili, Kalapakī, and Niumalu. - Views of natural landmark features.
Public Input	No comments received.
Issues	Port security.

Segment P – Preferred Alternative

P-1 – 8-foot Path to Nāwiliwili SBH

- On the Nāwiliwili Small Boat Harbor entrance drive, construct a new minimum 8-foot wide concrete path along the east (dock side) of the entrance. Provide a pedestrian cross-walk across the driveway entrance for the sidewalk continuation onto Niumalu Beach Park. See Photo O4.

Basis for Selection

- The existing driveway has adequate space to accommodate an 8-foot separated multi-use path. While traffic volumes are low enough on this driveway to support a shared-road facility, much of the traffic includes heavy vehicles with boat trailers. A separated path will minimize conflicts with larger vehicles and provide safe access for pedestrians and bicyclists along the driveway.

2.3 Alignment Alternatives Cost Estimates

Table 2-1 provides estimated construction costs for each of the alignments described above. Where n/a (not applicable) is indicated, a cost estimate has not been prepared due to an overriding basis for rejecting that alignment from further evaluation. Cost estimates for Segment K are to be determined (tbd) pending finalization of Kaua'i County's Urban Design Guidelines.

Table 2-1
Alignment Alternatives Cost Estimate

Segment		Description	Cost
PRIMARY PROJECT CORRIDOR			
A	**Ahukini to Ninini Point**		
	Base	Comfort station	$791,775
	A-1	10-foot wide shoreline path	$5,157,750
	A-2	Path parallel to dirt road	$4,730,238
	A-3	Signed shared roadway. Not ADA compliant. No cost prepared.	n/a
B	**Ninini Point to Kalapakī Beach Coastal Pedestrian Path**		
	B-1	Pedestrian path only (by others). No cost prepared.	n/a
	B-2	Ninini Road to Fashion Landing sidewalk and shared-use signage.	$92,000
	B-3	Ninini Point to Fashion Landing coastal route.	$276,000
C	**Ninini Point to Kapule Highway**		
	C-1	10-foot wide multi-use path	$2,886,500
	C-2	6-foot wide sidewalk and signed shared roadway	$2,406,375
D	**Kapule Highway / Ninini Road Intersection to Kaua'i Marriott**		
	D-1	Path adjacent to Limo Road	$5,030,503
	D-2	Signed shared Limo Road with 6-foot wide path. No cost prepared.	n/a
E	**Kaua'i Marriott to Nāwiliwili Beach Park**		
	Base	10-foot wide path on Hoolaulea Way to Kalapakī Road	$512,325
	E-1	Kalapakī Road – ramp connection	$1,406,105
	E-2	Kalapakī Road – tunnel connection	$2,977,178
	E-3	Kalapakī Road – at-grade path to Rice Street. No cost prepared.	n/a
F	**Nāwiliwili Beach Park Improvements**		
	F-1	1999 Master Plan – path-related improvements	$8,974,600

Table 2-1
Alignment Alternatives Cost Estimate

Segment		Description	Cost
SECONDARY NETWORK			
G	**Ahukini Landing to Līhu'e Airport**		
	G-1	Combination path and signed shared roadway with pedestrian sidewalk	$1,049,290
H	**Līhu'e Airport to Kapule Highway**		
	Base	500 linear feet of 10-foot wide path	$89,125
	H-1	Bicycle / pedestrian path parallel to Ahukini Road	$178,250
	H-2	Ahukini Road to Ka'ana Road through airport property	$529,000
	H-3	Ka'ana Road connection to south terminal bike depot	$310,875
	H-4	Limo Road – terminal to Ninini Road sidewalk shared-use connection	$196,363
I	**Ahukini Road – Kapule Highway to Umi Street**		
	I-1	10-foot wide path on north side of Ahukini Road	$908,500
	I-2	10-foot wide path on south side of Ahukini Road	$885,500
	I-3	10-foot wide striped bicycle lanes on roadway	$129,375
J	**Kapule Highway – Ahukini Road to Ninini Point Road**		
	J-1	10-foot wide path on west side of Kapule Highway	$598,000
	J-2	10-foot wide path on east side of Kapule Highway	$598,000
	J-3	10-foot wide striped bicycle lanes on roadway	$89,125
K	**Molokoa Public Facility Center**		
	K-1	Police Headquarters sidewalk widening and crosswalk installation	$195,500
	K-2	Stadium and soccer field 10-foot wide multi-use path	$477,250
L	**Līhu'e Civic Center Connections**		
	L-1	Ka'ana Street: Continue existing sidewalk / bike lane section	tbd
	L-2	Ka'ana Street: 10-foot path transition to sidewalk / bike lane	tbd
	L-3	Umi Street: Urban Design Guideline	tbd
	L-4	Umi Street: sidewalk / bike lane to 8-foot multi-use path	tbd
	L-5	Ho'olako Street: Urban Design Guideline	tbd
	L-6	Ho'olako Street: 10-foot path transition to sidewalk / bike lane	tbd
M	**Nāwiliwili Beach to Līhu'e Civic Center**		
	M-1	Rice Street bicycle priority lane. Alternative not selected. No cost	n/a

Table 2-1 Alignment Alternatives Cost Estimate			
Segment		Description	Cost
		prepared.	
	M-2	Bicycle-only lane. Alternative not selected. No cost prepared.	n/a
N		**Nāwiliwili Stream Valley**	
	N-1	Path through valley. Alternative not selected. No cost prepared.	n/a
O		**Nāwiliwili Beach Park to Niumalu Beach Park**	
	O-1	Niumalu Connection via Shared-Use Path with Jersey Barriers	$1,117,225
	O-2	Sidewalk and signed shared roadway improvements	$663,550
P		**Niumalu Road to Nāwiliwili Small Boat Harbor**	
	P-1	8-foot wide path along driveway	$165,600

2.4Preferred Alignment Estimated Costs

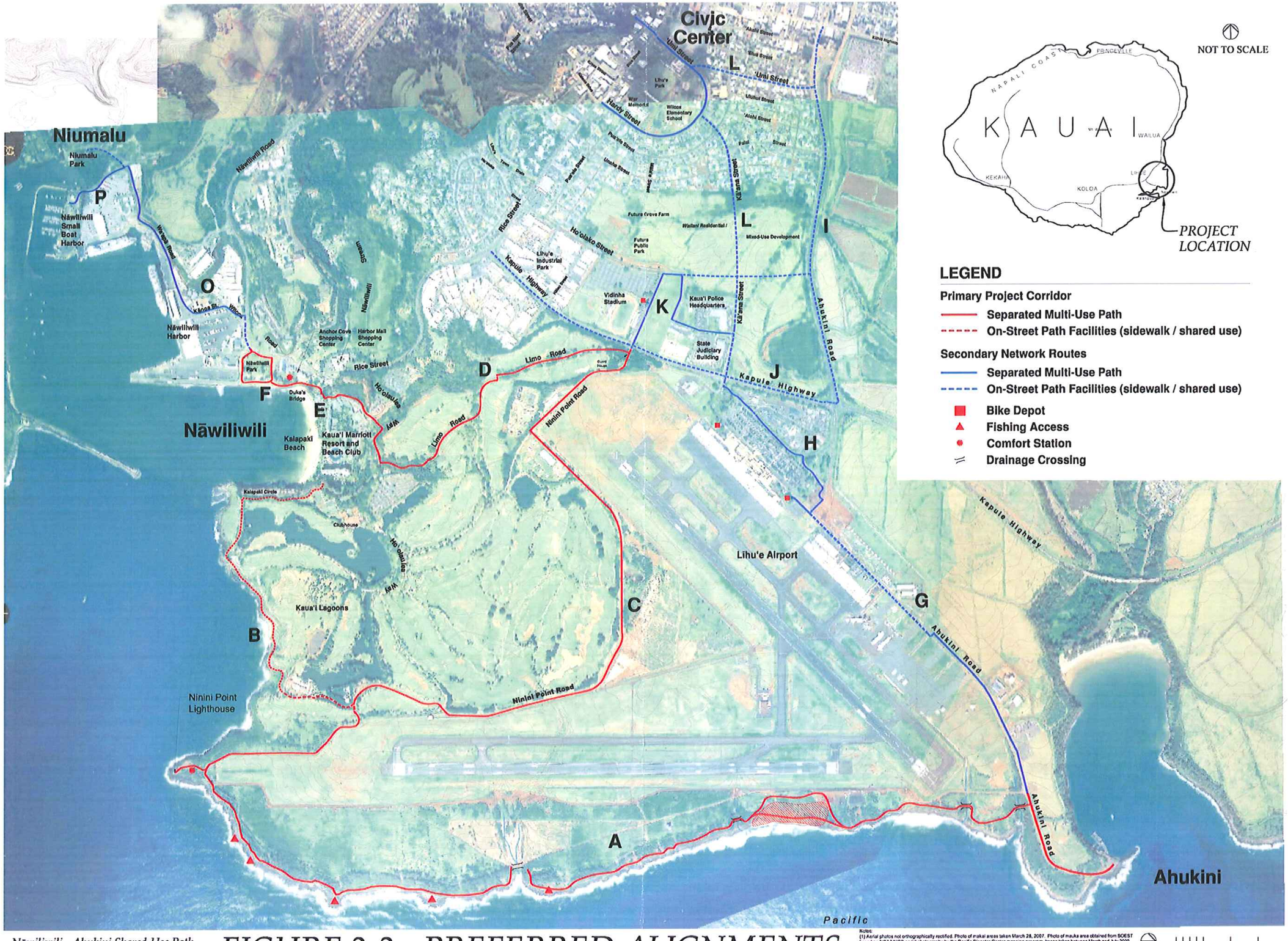
See **Figure 2-2** for a map of the preferred alignments, and Table 2-2 for a summary and total of costs estimated for each preferred segment.

Table 2-2 Preferred Alignments Cost Estimate			
Segment		Description	Cost
PRIMARY PROJECT CORRIDOR			
A		**Ahukini to Ninini Point**	
	Base	Comfort station	$791,775
	A-1	10-foot wide shoreline path	$5,157,750
B		**Ninini Point to Kalapakı Beach Coastal Pedestrian Path**	
	B-1	Pedestrian path only (by others). No cost prepared.	n/a
	B-2	Ninini Road to Fashion Landing sidewalk and shared-use signage.	$92,000
C		**Ninini Point to Kapule Highway**	
	C-1	10-foot wide multi-use path	$2,886,500
D		**Kapule Highway / Ninini Road Intersection to Kaua'i Marriott**	
	D-1	Path adjacent to Limo Road	$5,030,503

Table 2-2 Preferred Alignments Cost Estimate			
Segment		Description	Cost
E	**Kaua'i Marriott to Nāwiliwili Beach Park**		
	Base	10-foot wide path on Hoolaulea Way to Kalapakī Road	$512,325
	E-1	Kalapakī Road – ramp connection	$1,406,105
F	**Nāwiliwili Beach Park Improvements**		
	F-1	1999 Master Plan – path-related improvements	$8,974,600
		PRIMARY PROJECT CORRIDOR TOTAL	**$24,851, 558**
		SECONDARY NETWORK	
G	**Ahukini Landing to Līhu'e Airport**		
	G-1	Combination path and signed shared roadway with pedestrian sidewalk	$1,049,290
H	**Līhu'e Airport to Kapule Highway**		
	Base	500 linear feet of 10-foot wide path	$89,125
	H-2	Ahukini Road to Ka'ana Road through airport property	$529,000
	H-3	Ka'ana Road connection to south terminal bike depot	$310,875
I	**Ahukini Road – Kapule Highway to Umi Street**		
	I-1	10-foot wide path on north side of Ahukini Road	$908,500
J	**Kapule Highway – Ahukini Road to Ninini Point Road**		
	J-1	10-foot wide path on west side (mauka) of Kapule Highway	$598,000
K	**Molokoa Public Facility Center**		
	K-1	Police Headquarters sidewalk widening and crosswalk installation	$195,500
L	**Līhu'e Civic Center Connections**		
	L-1	Ka'ana Street: Continue existing sidewalk / bike lane section	tbd
	L-2	Ka'ana Street: 10-foot path transition to sidewalk / bike lane	tbd
	L-3	Umi Street: Urban Design Guideline	tbd
	L-4	Umi Street: sidewalk / bike lane to 8-foot multi-use path	tbd
	L-5	Ho'olako Street: Urban Design Guideline	tbd
	L-6	Ho'olako Street: 10-foot path transition to sidewalk / bike lane	tbd

Table 2-2
Preferred Alignments Cost Estimate

Segment		Description	Cost
O	Nāwiliwili Beach Park to Niumalu Beach Park		
	O-1	Niumalu Connection via Shared-Use Path with Jersey Barriers	$1,117,225
P	Niumalu Road to Nāwiliwili Small Boat Harbor		
	P-1	8-foot wide path along driveway	$165,600
		SECONDARY NETWORK TOTAL	**$4,963,115**
		COMBINED PRIMARY AND SECONDARY NETWORK TOTAL	**$29,814,673**



NOT TO SCALE

LEGEND

Primary Project Corridor

- Separated Multi-Use Path
- On-Street Path Facilities (sidewalk / shared use)

Secondary Network Routes

- Separated Multi-Use Path
- On-Street Path Facilities (sidewalk / shared use)
- Bike Depot
- Fishing Access
- Comfort Station
- Drainage Crossing

Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhue, Island of Kaua'i, Hawai'i

FIGURE 2-2 - PREFERRED ALIGNMENTS

Notes:
(1) Aerial photos not orthographically rectified. Photo of makai areas taken March 28, 2007. Photo of mauka area obtained from SOEST based on NOAA/NOS aerial photography by the Pacific Disaster Center mapping program. Image taken between March and July 2000.
(2) Topographic data digitized from 1972 aerial topo agricultural maps by R. M. Towill Corporation.
(3) TMK data from State DBEDT GIS data set, manually scaled and rotated to best fit.
(4) Exhibit is for planning and discussion purposes only, not for engineering design.

0 200 400 800 1200 Feet

R. M. Towill Corporation

SECTION 3 – NATURAL ENVIRONMENT

3.1 Climate

The climate in Līhu'e is characterized as semi-tropical and is influenced by Hawai'i's geographic location within the tropics, southwest of the Pacific High or anticyclone region. The outstanding features of the climate are the equable temperatures from day to day and season to season, the persistent northeasterly trade winds and the marked variation in rainfall from the wet to the dry season, and place to place. The average annual temperature recorded at the Līhu'e International Airport ranges between 79.1 degrees Fahrenheit during the warmest month and 71.3 degrees Fahrenheit during the coolest month. Normal annual rainfall is over 40 inches. Three-fourths of this total, on the average, falls during the seven month wet season which extends from October through April. The dry season includes the months of May through September. Winds at the Līhu'e Airport are predominantly from the northeast at speeds of 10 to 13 knots. Relative humidity, moderate to high in all seasons, is slightly higher in the wet season than in the dry. The average relative humidity recorded at Līhu'e Airport is 67 percent in mid-afternoon and 83 percent in the early morning hours. Completely cloudless skies are quite rare. On the average, clouds cover six tenths to seven tenths of the sky during the daylight hours.

Impacts and Mitigation

The proposed project will not affect the climate of the region. The favorable trade wind and temperature conditions of the site, however, are anticipated to enhance and contribute to the general use of the proposed project.

3.2 Geography, Topography and Soils

The majority of the project is located on a plateau area within the ahupua'a of Kalapakī and Hanamā'ulu. The plateau area slopes gently downward west to east towards the ocean at an average 8 percent slope The project area is bounded on the north by Hanamā'ulu Stream Gulch and on the south by Nāwiliwili Stream Gulch. The elevation of the project area ranges from ocean level to 207 feet near the State and County buildings. The coastline from Ahukini to Nininī consists of steep cliffs that drop twenty to thirty feet to a cobble shoreline in most areas.

The general Līhu'e area is located in the Līhu'e basin which is a large (approximately 40 square miles) semicircular depression bound by steep cliffs and filled by the Koloa Volcanic series which resulted from flows that began two million years after the island was formed. The Koloa Volcanic series include lava flows of olivine, basalt, melilitite-nepheline basalt, and basanite,

related cinder and tuff cones and ash beds, and closely associated and intercalated sedimentary breccias and conglomerates. Portions of Nāwiliwili are also located on alluvium beach and dune sand, lagoonal clays and marls created by erosional forces and sedimentation over the millennium.

Soils information for the project site was obtained from the ***Soil Survey of Islands of Kaua'i, O'ahu, Maui, Moloka'i and Lana'i, State of Hawai'i,*** as prepared by the U.S. Department of Agriculture, 1972. The soil in the project area belongs primarily to the Līhu'e-Puhi soil association. These soils are characterized by a surface layer which ranges from firm silty clay (LhB0) to gravelly silty clay (LIB, LIC). The subsoil is firm silty clay and the sub-stratum is soft, weathered basic igneous rock. The slope ranges from 0 to 8 percent (LhB, LIB) and 8 to 15 percent (LIC). Soil along the coast generally belongs to the Waikomo-Kalihi-Koloa association which is characterized by a surface layer of firm stony silty clay, a subsoil of firm silty clay and substratum of hard rock. The slope in these coastal regions ranges from 3 to 8 percent (KvB) and 15 to25 (KvD) percent. Rocky outcrops are also found along the coastline. Soil types found in and around the project area are illustrated in **Figure 3-1**.

Impacts and Mitigation

No significant impacts to soils, topography or geology are expected to result from this project. Grading and excavations required for construction of the path and related amenities will be designed to minimize the amount of cut and fill required. The path alignment was selected to take advantage of natural grades in order to meet ADA accessibility standards for slopes with a minimal amount of ground disturbance and related costs. Erosion control measures will be employed during construction. Following project complete, permanent soil stabilization will be achieved through landscaping with various plant materials and ground covers.

3.3 Water Quality

3.3.1 Surface Water and Wetlands

Surface water in the project area consists of perennial streams, man-made and natural freshwater and brackish ponds, and ocean water. The stream system begins in the upper mountain areas where rain either runs off the land into the streams or percolates through the soil into the groundwater. In the dry seasons this groundwater discharge is the main source of

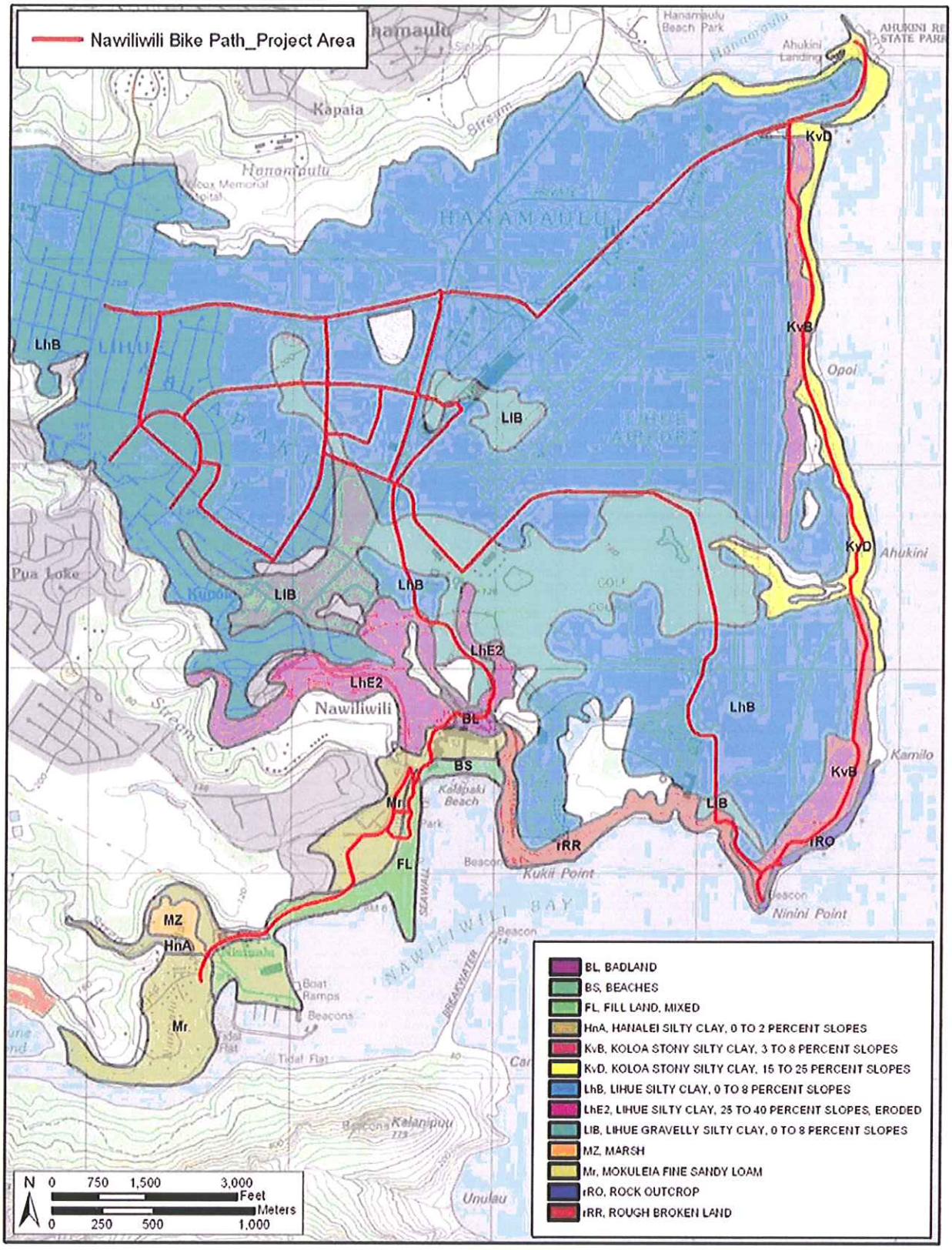


FIGURE 3-1: Soils Map

project area. Nāwiliwili Stream enters Kalapakī Beach after flowing through Nāwiliwili. Koena'awanui Stream once flowed through the ahupua'a of Kalapakī, where the project site is located, and entered the ocean in the middle of Kalapakī Beach. It now flows underground through concrete channels below the Marriot hotel. Other streams in the Nāwiliwili area include Hulē'ia to the south. Hanamā'ulu Stream defines the northern boundary of the project area and discharges into Hanamā'ulu Bay north of Ahukini point.

The United States Fish and Wildlife Service (USFWS) have identified several man-made and natural wetlands in the project area. USFWS classifies wetland areas according to identifying features such as general appearance, dominant form of vegetation, composition of bottom, and permanency. A large reservoir basin is located near the junction of Ahukini and Kapule Highway. The reservoir is an intermittently flooded impoundment, codified L1UBHh. Several smaller surface water detention areas have been identified on the Kaua'i Marriot and the Kaua'i Lagoons properties. One of these ponds has been coded PUBHh which indicates that it is has either been created or modified by a man-made barrier or dam. An intermittently flooded pond, codified PUBF, is located along the coast, north of Ninini Point. A permanent fresh water pond located north of Kalapakī beach has been classified PUBH. This pond is bordered on the south by a freshwater, seasonally emergent wetland, code PEM1C. Northwest of this point lies a forested wetland, PFO3A, that has a surface water level which lies below the soil surface most times of the year. Further west surrounding the Nāwiliwili Stream are areas of seasonally flooded wetlands (PEM1C) characterized by perennial aquatic vegetation present for most times of the year. Also found in close proximity to the stream are freshwater forested/shrub wetlands, that have a surface water level present for extended periods of time throughout the year. Several other unidentified ponds are also located in the project area but are not coded by USFWS.

The marine waters adjacent to the Ahukini to Nāwiliwili portion of the path have been classified as Class A waters by the State of Hawai'i, Department of Health (DOH) Administrative Rules, Chapter 54, Water Quality Standards. Class A waters are protected for recreational purposes and aesthetic enjoyment. Discharges covered by a National Pollutant Discharge Elimination System general permit, approved by the U.S. Environmental Protection Agency and issued by the DOH are allowed in this class of waters.

Nāwiliwili Harbor has been classified by DOH as a Water Quality Limited Segment, meaning that it cannot reasonably be expected to attain or maintain State Water Quality Standards without additional action to control nonpoint sources of pollution.

Impacts and Mitigation

The bike path corridor will be routed around wetland resources. This will include routing the corridor to avoid the potential for stormwater runoff from adversely affecting any wetlands. No impacts to wetlands are anticipated.

No impacts to surface or other inland waters are expected to result from the project. Construction activities will be conducted in compliance with Hawai'i Administrative Rules (HAR) 11-54 Water Quality Standards; HAR 11-55, Water Pollution Control; County of Kaua'i grading and erosion control standards; and other standards as prescribed by law.

3.3.2 Groundwater

The Līhu'e area lies in the Hanamā'ulu Aquifer system. Virtually the entire aquifer is layered by the Kōloa Volcanic Series formation which consists of a system of layered basalts of variable density and thickness with generally poor to moderate permeability. The Līhu'e Basin has lower hydraulic conductivities, a thicker freshwater lens, steeper horizontal and vertical head gradients, higher inland water levels, and a greater proportion of groundwater discharge to streams then other parts of Hawai'i. Ground water sources for the Līhu'e area come from the Kālepa Ridge well, Kilohana Well A, Kilohana Well B, Kilohana Well I, Hanamā'ulu Well No. 3, Surface Water Treatment Plant, Garlinghouse Tunnel, Līhu'e Grammar School Well, and Pukaki Well.

Groundwater quality is generally good and requires no treatment except disinfection. However, 2005 State of Hawai'i Department of Health Groundwater Contamination Maps indicates that contaminants have been found in the following wells: Grammar School Well (Isophorone 0.6), Garlingtonhouse Tunnel (Atrazine 0.06), Desethyl Altrazine NQ< 0.05) Kilohana B (Isophorone 1.6) and C (Atrazine 0.08, Bromacil .2) and Kālepa (Isophorone 1.6). None of the contaminant levels exceed State or Federal Standards. In 2006 drinking water was tested for regulated microbiological, radioactive, inorganic, organic, and volatile organic contaminants as well as other unregulated contaminants. The study found no contaminants that exceeded State or Federal Standards.

Impacts and Mitigation

Development of the bike path is not expected to result in adverse impacts to groundwater. Project activities will be conducted in compliance with regulatory standards including the National Pollutant Discharge Elimination System (NPDES) requirements as regulated by the State Department of Health (DOH). Wastewater from new comfort stations will be collected and treated in accordance with DOH wastewater

regulations as prescribed in HAR, Chapter 11-62, Wastewater Systems. Due to the long distance from the nearest waste water collection system connection, the proposed comfort station will utilize a septic aerobic or leach field system for wastewater treatment.

3.4 Drainage

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. Within the primary project corridor between Ahukini and Ninini Point (Path Segment A), runoff flows through four major natural drainage channels that discharge to the ocean. Pipes and culverts are installed under the airport perimeter road and the public access dirt road at these locations. Runoff also follows smaller natural channels and/or sheet flows into the ocean along this segment. These channels also convey storm drainage originating from the airport and the Ahukini Road Corridor makai of Kapule Highway (Path Segments G and H).

West of Ninini Point (Path Segments B and C) drainage is directed via an unlined swale along Ninini Point Road and directed into a large natural drainage gully that discharges into Nāwiliwili Harbor in the vicinity of Ninini Beach. As Ninini Point Road approaches the south-west end of Runway 3-21 (Path Segments C and D), runoff is directed through the Kaua'i Lagoons golf course via a system of swales, inlets and pipes and is concentrated into two natural drainage channels located east and west of Limo Road. Two large culvert inlets convey the concentrated runoff through the resort's subsurface drainage system to discharge at a drainage outfall at the mouth of Nāwiliwili Stream adjacent to Duke's Restaurant. This system also receives storm water flows that originate at the Molokoa Civic Center Facilities (Kaua'i Police Headquarters, State Judiciary Building, Vidinha Memorial Stadium and Soccer Complex) and the Līhu'e Industrial Park on Kapule Highway (Path Segments J, K, L).

Runoff on Ahukini Road makai of Kapule Highway (Path Segment I) flows through ditches, trenches, swales and pipe crossings that were part of the former cane field drainage system and discharges into the ocean. Storm water in Līhu'e town (Path Segments L and M) is conveyed via an improved, subsurface drainage system into a large, lined drainage channel located perpendicular to Rice Street south-west of the intersection with Ho'olako Street. The Līhu'e town drainage channel discharges into Nāwiliwili Stream within the Nāwiliwili Stream Valley (Path Segment N). Runoff on Kānoa Street, Wilcox Road, Wa'apā Road and Niumalu Road (Path Segment O and P) is collected in swales, drain inlets and pipes and is conveyed to various points of discharge into Nāwiliwili Harbor.

Within developed projects areas, pathway improvements will include installation of drain pipes, inlets, lined and unlined swales, and other improvements as necessary to tie into the existing drainage systems.

Planned improvements in the undeveloped areas between Ahukini and Ninini Point include installation of drainage culverts and/or bridge spans at the four major drainage ways to provide safe crossing for the shared-use path. In addition, smaller drain pipes will be installed as needed along the pathway to convey smaller, localized flows. Runoff from the path will surface flow to adjacent, grassed shoulders. The existing drainage pattern will remain as is: runoff will discharge to the ocean within the drainage channels or via surface flow. Sizes of pipes and culverts will be determined during the design phase.

On Ninini Point Road and Limo Road, the path will rely on the existing system of drainage swales, inlets and pipes to collect and convey runoff. Path construction will include pipe and culvert crossings as necessary to preserve existing drainage patterns and tie into the existing drainage system within the resort property.

Impacts and Mitigation

Planned improvements will require excavation and grading work to achieve proper elevations and grades for path construction, installation of at-grade drainage crossings, and construction of proposed comfort stations at Ninini Point and Nāwiliwili Park. Potential impacts include discharge of sediments or other pollutants in construction-related storm water runoff. Because planned improvements will result in more than one acre of ground disturbance during construction, project activities will be subject to a National Pollutant Discharge Elimination System (NPDES) Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity permit from the State Department of Health, Clean Water Branch. The permit requires implementation of Best Management Practices (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. Impacts related to construction activities will be of short duration and will cease upon completion of the project.

In the long-term, construction of the concrete path, Ninini Point comfort station and improvements at Nāwiliwili Beach Park 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. Nevertheless, drainage improvements will be designed to accommodate runoff increases. In addition to the improvements described above, additional measures may include use of vegetated detention strips and basins as part of path landscaping, use

pervious pavements, and use of underground storm water detention chambers. No significant impacts to existing drainage patterns are anticipated to result from the planned path improvements.

3.5 Flora

Vegetation along the proposed bike/pedestrian corridor is dominated by introduced, alien, and exotic species. None of the plants observed along the proposed segments of the corridor are listed as endangered or threatened, or currently proposed for listing under either federal or State of Hawai'i endangered species statutes.

No adverse effects are anticipated. Landscaping is planned along portions of the corridor to improve soil retention and promote filtration of any stormwater runoff from the path. The landscaping will be designed to be consistent with the character and physical environment of the area, incorporating native species whenever feasible.

Impacts and Mitigation

The construction of the proposed path is not anticipated to result in deleterious impacts 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. The plant material used for landscaping (i.e. at comfort stations) will be selected to fit the character and physical environment of the area incorporating the use of native species whenever feasible.

3.6 Fauna

Birds

Field surveys documented the presence of native avian species (water birds) within and adjacent to the project area. Four of the species found are listed as endangered under both federal and state of Hawai'i endangered species statutes. The four listed species within the project area were the Hawaiian Goose, or Nēnē (*Branta sandvicensis*), Hawaiian Duck, or Koloa (*Anas wyvilliana*), the Hawaiian endemic sub-species of the Common Moorhen, or 'Alae 'ula (*Gallinula chloropus sandvicensis*), and the Hawaiian Coot, or 'Alae ke'oke'o (*Fulica alai*). All four species were seen in and around the Kaua'i Lagoons property, located immediately to the west of the Līhu'e International Airport main runway. The three other waterbird species detected during the biological surveys, Hawaiian Duck, Common Moorhen and Hawaiian Coot

were all recorded on Kaua'i Lagoons property or immediately adjacent to it on lands abutting the western side of the Līhu'e International Airport.

In addition to the water birds detected within the project area, a number of other resident native avian species including both resident and migratory species were recorded. These native and indigenous species include the Hawaiian endemic sub-species of the Short-eared Owl, or Pueo (*Asio flammeus sandwichensis*), and the resident Black-crowned Night-Heron, 'Auku'u (*Nycticorax nycticorax hoactli*), as well as the migratory Pacific Golden-Plover, or Kōlea (*Pluvialis fulva*), and Ruddy Turnstone, or 'Akekeke (*Arenaria interpres*). A significant nesting colony of Wedge-tailed Shearwater, or 'Ua'u kani, (*Puffinus pacificus*) is present adjacent to a portion of the path, between Ninini Point Lighthouse, and Ninini Beach. The colony extends from just above the high water mark, inland, onto the flats above the cliff face. Wedge-tailed Shearwaters are not protected under either federal or State of Hawai'i endangered species statutes, they are protected under the federal Migratory Bird Treaty Act. Additionally, both the endangered Hawaiian Petrel, or 'Ua'u (*Pterodroma sandwichensis*), and the threatened Newell's Shearwater, or 'A'o (*Puffinus auricularis newelli*) overfly the project area on an annual basis on their way back and forth to their colonies located inland.

Currently a relatively large flock of Nēnē is present on the Kaua'i Lagoons property. Over the past several years as many as 50 pairs have nested on the grounds of the golf course and surrounding property. No known nests or nesting territories are known from within the various alignments under consideration. The U.S. Fish & Wildlife Service and the State of Hawaii Department of Land and Natural Resource, Division of Forestry and Wildlife are actively working to translocate a large portion of this Nēnē flock. Currently young birds are being translocated to private property located in the Kōloa area, it is expected that by 2009 young birds from this flock will start to be translocated to other islands. The main reason that the wildlife agencies are undertaking this management action is due to concerns over the potential Bird Air Strike Hazards posed by the geese to aircraft using the Līhu'e International Airport.

Mammals

One endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) was recorded foraging above a small ephemeral storm water run-off pond on land owned by the Kaua'i Lagoons Golf Course which fronts one of the proposed path alignments. This species though endangered is generally considered to be fairly common on Kaua'i. It is regularly seen during crepuscular hours in many lowland areas on the island. Hawaiian hoary bats use a wide array of tree species and habitats in which to roost, and are opportunistic feeders, preying on a wide variety of native and alien flying insects. Their presence within the general project area was expected, as there are few if any lowland areas on the island of Kaua'i in which this species s not present at least on a seasonal basis.

All other mammalian species recorded during the course of the biological surveys are considered to be alien to the Hawaiian Islands, and are by in large deleterious to native species and the habitats that they depend on for their survival. Non-native mammalian species recorded included, cats, dogs, pig, European house mice and at least one species of rat. The U.S. Fish and Wildlife Service notes that the federally protected Hawaiian Monk Seal (*Monachus schauinislandi)* has used the coastal regions of the project as a birthing and pup-rearing site.

Impacts and Mitigation

Waterbirds:

With the exception of the Nēnē all other listed waterbird species detected within the proposed path alignments were restricted to the Kaua'i Lagoons property. It is not expected that the development of the proposed path will result in deleterious impacts to Hawaiian Ducks, Hawaiian Coots or the Hawaiian endemic sub-species of the Common Moorhen. Construction activities and use of the completed path potential could result in deleterious impacts to Nēnē, especially during and immediately after the nesting season. Nēnē are very susceptible to disturbance at the nest, and have been recorded abandoning active nests when overly disturbed. Additionally, goslings are flightless for up to two weeks following fledging from the nest, and are thus very susceptible to predators and physical injury from construction activity. Following the build-out of the path, users of the path may also disturb individual birds, though this is probably not a serious threat as many of these birds are used to humans as they encounter them on the Kaua'i Lagoons property on a daily basis. Path users who may have unleashed dogs with them while using the path pose the greater threat. Dogs naturally chase birds, and have repeatedly been documented killing birds, especially in and around nesting areas, and colonies.

Seabirds:

Potential threats posed by the development and operation of the path to the resident Wedge-tailed Shearwater colony present along the shoreline between Ninini Point and Ninini Beach are similar to those posed to Nēnē. Wedge-tailed Shearwaters nest in a dense colony, that is very susceptible to trampling and burrow collapse if humans enter the colonies. The birds are also at extreme risk from alien mammalian predators such as cats, dogs and rats, and possibly the introduced Barn Owl (Tyto alba), since they are extremely naïve of the threats posed by these alien predators, since they did not co-evolve with each other.

Potential threats posed by the development and operation of the path to the endangered Hawaiian Petrel and the threatened Newell's Shearwater revolve around exterior lighting. Exterior lighting can disorient nocturnally flying seabirds, especially fledglings

on their way to sea in the summer and fall. When disoriented, seabirds often collide with man-made structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals. Once on the ground neither of these birds is normally able to take off again. Both Hawaiian Petrels and Newell's Shearwaters have been grounded immediately adjacent to the project site on an annual basis over the past 29-years. There are neither nesting colonies, nor suitable nesting habitat for either seabird species within or close to the project site.

Monk Seals

The planned shared-use path will be setback from the shoreline and located away from sandy beaches favored by monk seals. However, upon project completion, path use is expected to result in an increased number of people accessing the shoreline along the path route, including areas used by monk seals such as Running Waters Beach and Ninini Beach. Increased contact with monk seals and use of their habitat by recreational beach goers could disrupt the seals' normal behavior.

Recommendations

- Conduct a Nēnē nesting survey before the onset of the nesting season to determine if any active nests are close to the construction area.
- If nesting is encountered the area around the nest needs to be screened from the construction site.
- Limit nighttime construction activity between September 15 and December 15 each year to avoid attracting either Hawaiian Petrels or Newell's Shearwaters by construction lighting.
- Maintain a pet carrier at the construction site at al times to be used to hold any downed seabirds that may be encountered by construction personnel.
- Immediately call the Save our Shearwater Program (SOS Program) if a downed seabird is encountered.
- Lighting should be kept to a minimum along the pathway all lights should be shielded.
- The boundary and a buffer zone should be fenced around the existing Wedge-tailed Shearwater colony to restrict both human and dog traffic in the colony.
- The exact locations and types of fencing should be further detailed in a protection plan developed by a biologist or other professional knowledgeable in conservation of threatened and endangered species and habitats.

- A series of Education and Information signs should be located at areas along the path that may be near trust resources such as Nēnē, Wedge-tailed Shearwater, and other protected species. These signs should contain information on the species in question and why they are important, along with the rules covering leashing dogs, not harassing or disturbing the birds, observing and staying within the designated pathway.
- Signage will be installed along shoreline areas frequented by monk seals to educate the public about the species status, behavior, and what to do if a monk seal is observed in the area. Additional mitigation measures will be developed in consultation with the National Marine Fisheries Service. Measures may include cordoning off areas of the beach and posting special warning signs when monk seals are present.

3.7 Scenic and Visual Resources

The 1976 Līhu'e Development Plan identifies many scenic and visual resources located throughout the project site. Scenic resources of the Līhu'e area are located in the framework of five "major geographic features". One of these major geographic features is the coastline on the eastern edge of the project area, including the proposed pathway segment from Ahukini to Ninini Point Light House. "Major scenic areas" in the project area include the area surrounding Hanamā'ulu Bay, Nāwiliwili Bay and Kalapakī Beach, and the Nāwiliwili Stream area up to the section from Halekō Shops to the Līhu'e United Church and the First Hawaiian Church. "Major scenic places" are places and features of less visual impact than "major scenic areas," but are still of relatively high visual quality. The area from Halekō Shops to the First Hawaiian Bank is classified as a "scenic place." Visual structures refer to major features that give an area its own distinct character. These include major paths, minor paths, and visual districts. Major Paths in the project area include Rice Street, and Ahukini Road. Minor paths include Hardy Street and 'Umi Street. "Visual Districts" in the project area are the Līhu'e Airport/cane fields, the former Kaua'i Surf, (now the Marriot), cane fields at Grove Farm, Nāwiliwili, and Līhu'e Town.

The Kaua'i General Plan, 2000, identifies the portion of Kapule Highway between Ahukini Road and the end of Vidinha Stadium as a scenic roadway corridor. It is the policy of the County to preserve scenic qualities of lowlands/open space features, such as the shoreline and coastal bluffs. Structures should not impede or intrude upon public views of the feature and should not alter the character of the immediate area around the land feature.

Impacts and Mitigation:

The project is not expected to negatively impact scenic areas in urban Līhu'e or the developed areas within Nāwiliwili Park, Kaua'i Marriott, Kaua'i Lagoons Resort, and the airport. Proposed improvements between Ahukini Landing and Ninini Point have been purposefully minimized to preserve the natural setting and open space values. Planned improvements along this segment include construction of a paved pathway and one new comfort station at Ninini Point Lighthouse, and installation of limited pathway signage to provide educational, regulatory, and safety information. Aside from signage, no vertical structures will be constructed between Ninini Point and Ahukini Road.

The comfort station at Ninini Point will be sited and designed to minimize its visual presence in the landscape. Building materials and colors, lighting design, and landscape screening will be selected and designed to blend into the natural surroundings. (See additional discussion about nighttime lighting in **Section 3.6** – Fauna.) Similarly, concrete used in the path will be colored to match the surrounding native soil. Based on the planned mitigation measures, no significant impacts to scenic resources are expected to result from the project.

3.8 Coastal Conditions and Processes

The primary shared-use path corridor follows the coast line from Ahukini Landing to Ninini Point, then turns inland towards the airport and through Kaua'i Lagoons and Kaua'i Marriott Resort property before reconnecting with the developed shoreline at Nāwiliwili Park. The shoreline segment between Ahukini Landing and Ninini point is characterized by a generally stable, steeply banked, rocky coastal bluff with top-bank elevations ranging from 20 to 60 feet above mean sea level. At the toe of the bluff, the tidal zone along this segment is typically comprised of large cobble and boulders and fixed basaltic rock formations with intermittent pockets of sandy beach. Above the bluff, the landscape is comprised of gradually sloping, vacant, former sugar cane lands characterized by deep red soils and weedy vegetative cover. Along the southern extents of this segment, the natural grades soften and offer easier access to the shoreline. Numerous trails and unimproved 4-WD roads have are established perpendicular to the shoreline to provide access to fishing spots. Lateral shoreline access is difficult due to the rocky terrain and tidal wash which reaches the face of the bluff in some locations.

Where the proposed shared-use path reconnects to the shoreline near Dukes Bridge at the Kaua'i Marriott Resort, the shoreline is highly developed. An existing concrete path that connects Duke's Restaurant with the parking area on the opposite side of Nāwiliwili Stream defines the developed edge of the coast line up to the Duke's Bridge crossing. The mouth of the stream is subject to seasonal sand build-up that often blocks the stream flow and causes impoundment of the water. On the south side of Nāwiliwili Stream, the shoreline is developed

with a parking lot that serves the Anchor Cove shopping center and roadway connection into Nāwiliwili Park. A stone and concrete seawall is constructed along the makai edge of the park forming a hardened shoreline that extends to the end of the Nāwiliwili Pier.

Coastal Erosion

Due to the rocky character of the coastal bluff, the Ahukini Landing to Ninini Point segment is generally stable, but experiences episodic and chronic erosion in specific locations associated with semi-improved drainage ways, use of dirt roads by off-road vehicles, and the presence of a closed landfill along approximately one quarter mile of the coastline north of Ahukini Point that is gradually sloughing off debris into the ocean. According to the *Atlas of Natural Hazards in the Hawaiian Coastal Zone*, published by the United States Geological Survey, the erosion hazard assessment is moderately low in the project corridor extending from Ahukini Landing to Nāwiliwili Harbor.

Impacts and Mitigation:

Potential impacts are primarily related to construction activities, such as earth-work near the coastline. In order to prevent erosion the following actions are proposed:

Best Management Practices (BMPs)

There are four types of BMPs that will be applied to the proposed project including general BMPs to address the area of work, and BMPs that would be applied before, during, and after construction.

General

- 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.

After Construction

- Following construction, all areas of ground disturbance will be stabilized with landscaping consisting of various plant species and ground covers.

Long-term impacts due to coastal erosion will be minimized by the initial design of the path which will include: (1) a concrete or other durable all weather surface; and (2) use of vegetative controls to stabilize areas of disturbed soils. Regular maintenance of the bike/pedestrian path will be provided by the County.

In addition, renovations to the seawall fronting Nāwiliwili Park are proposed as part of the bike path improvements. Proposed improvements are described in further detail in **Section 2.2.1.F.**

3.9 Air Quality

Air quality in the Līhu'e area is generally good. In 1972 the State DOH, Clean Air Branch established an air quality monitoring station at the District Health Office on 'Umi Street, downtown Līhu'e. It is the only monitoring station on the island of Kaua'i. The area is primarily commercial and residential with surrounding agricultural lands.

In 2005 the measurement of particulate matter (PM-10) detected ranged from an average of 22 to 11 of 30 $\mu g/m^3$ which is well below the Hawai'i State Standard and the Federal and Primary and Secondary Standard of 50 $\mu g/m^3$ (annual). Although information on other pollution sources was not generally available from the DOH for the proposed project, the DOH in its assessment of statewide air quality noted, "Air quality in the State of Hawai'i continues to be one of the best in the nation, and criteria pollutant levels remain well below state and federal ambient air quality standards." (DOH, 2006).

Impacts and Mitigation:

Some short-term impacts on air quality will occur either directly or indirectly as a consequence of project construction activities. The operation of vehicles, heavy equipment, and generators at the project site will generate some fugitive dust and pollution emissions. Adjacent areas will be temporarily affected during the period of construction by dust and pollution, however, these impacts will be temporary and will cease when construction is completed.

No long term negative consequences related to air quality are expected as a result of the project. The project may result in long-term benefits to air quality through increased use of bicycles by commuters, and corresponding reduction in vehicle exhaust from reduced automobile use.

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;
- Landscaping bare areas, including slopes, starting from the initial grading phase; and,

- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction.
- Construction-related exhaust emissions will be mitigated 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.

3.10 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 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, including diesel engine powered bulldozers, trucks, backhoes, front-end loaders, graders, etc. will probably be the noisiest equipment used during construction.

Impacts and Mitigation

Construction noise will be temporary and will cease when construction is complete. Adverse impacts from construction noise are not expected to pose a hazard to "public health and welfare" due to the temporary nature of the work, the absence of sensitive land uses in the surrounding area, and the application of mitigation measures that will be employed to minimize noise impacts.

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.

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.

3.11 Flood Hazards

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates that the project corridor passes through the following special flood hazard areas inundated by 100-year flood: VE (in which flood elevations of 13-22 feet msl have been determined) and AE (in which flood elevations of seven feet msl have been determined). The project corridor also passes through Zone X which has been determined to be outside the 0.2% annual chance floodplain. See **Figure 3-2: FEMA-FIRM.**

Impacts and Mitigation

The project is not expected to exacerbate or reduce flood zone areas, as identified by Federal Emergency Management Agency Flood Insurance Rate Maps. The path will be designed outside of the flood zone when possible. Alternative routes will also be provided to allow path users to detour away from flooded areas if and when they should occur. Construction of the path way will be designed to withstand flood occurrences as estimated by FEMA. See Section 3.12.4., Impacts and Mitigation, for further discussion on flood zones along the coastline between Ahukini and Ninini Point.

Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Lihue, Island of Kauai, Hawaii

FIGURE 3-2: FEMA-FIRM Map

0 250 500 1000 1500 Feet

R. M. Towill Corporation

3.12 Other Hazards

In addition to flooding, other natural hazards include volcanic, seismic activity, storms, tsunamis, and high waves. The overall hazard assessment for the coastal section of the project is moderate according to The United States Geological Survey, *Atlas of Natural Hazards in the Hawaiian Coastal Zone.*

3.12.1 Earthquake

The 2006 International Building Code (IBC) provides minimum design criteria to address potential for damages due to seismic disturbances. The IBC scale is rated from Seismic Zone A through Zone E, with A the lowest level for potential seismic induced ground movement. Kaua'i has been designated within Seismic Zone B.

3.12.2 Hurricane

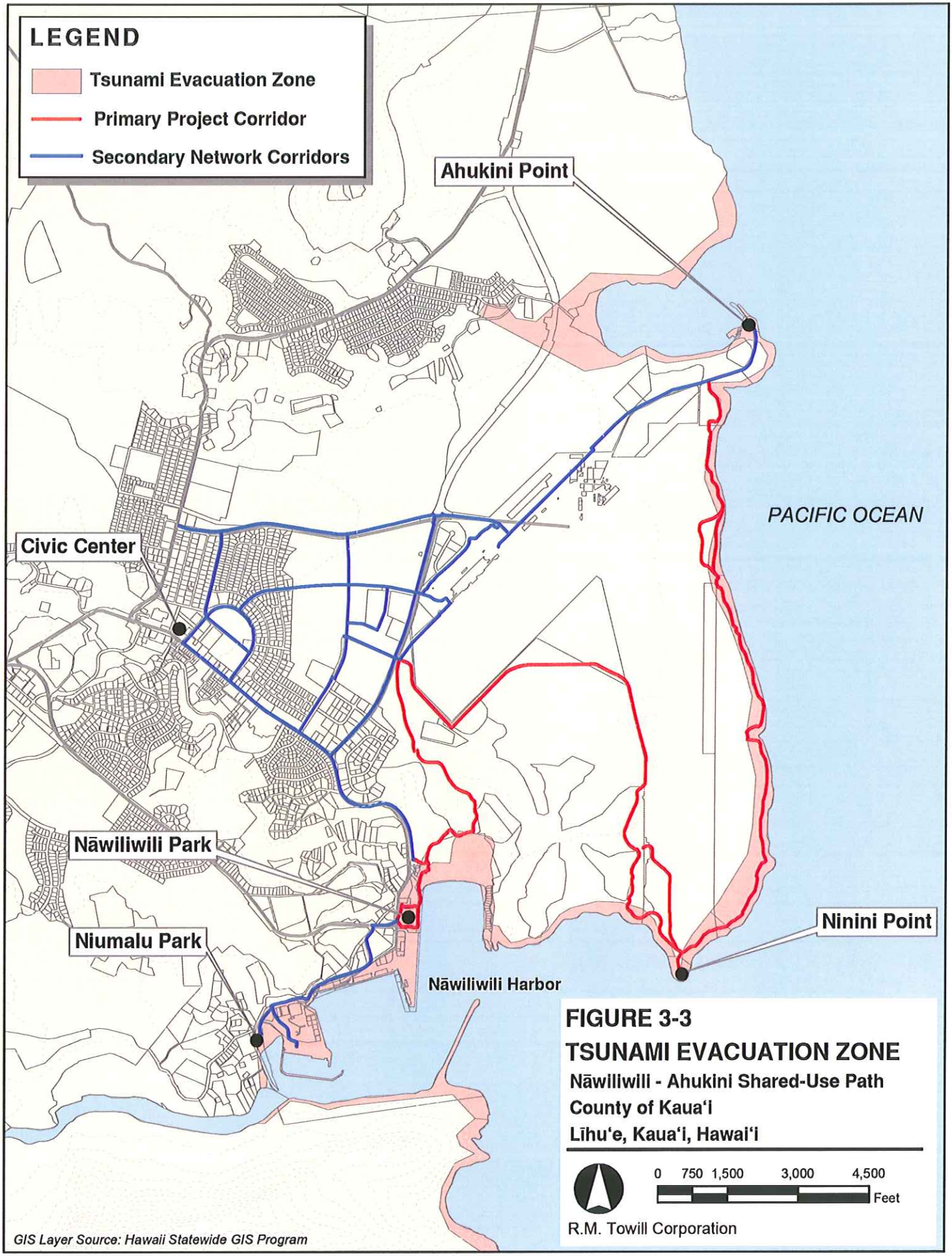
The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The County of Kaua'i has been affected twice since 1982 by devastating hurricanes, 'Iwa in 1982 and 'Iniki in 1992. It is difficult to predict these natural occurrences, but it is reasonable 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.

3.12.3 Tsunami

Natural hazards endemic to all of Hawai'i, including Kaua'i, involves tsunami action. There have been four episodes since 1946. These occurrences happened in 1946, 1957, 1960 and 1964 respectively. The run-up heights vary from 1 foot to 14 feet. **Figure 3-3** shows the tsunami evacuation zone within the project area.

3.12.4 High Waves

Strong trade wind events are responsible for the majority of large wave action along the eastern coast of Kaua'i. Passing hurricanes have generated the highest wave heights along the east 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.


LEGEND
Tsunami Evacuation Zone
Primary Project Corridor
Secondary Network Corridors
Ahukini Point
PACIFIC OCEAN
Civic Center
Nāwiliwili Park
Niumalu Park
Ninini Point
Nāwiliwili Harbor
FIGURE 3-3
TSUNAMI EVACUATION ZONE
Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Kaua'i, Hawai'i
0 750 1,500 3,000 4,500
Feet
R.M. Towill Corporation
GIS Layer Source: Hawaii Statewide GIS Program

Impacts and Mitigation:

The project is not expected to exacerbate or reduce the consequences of these natural occurrences. However, some improvements may be subject to damage if and when these events occur. The path, between Ahukini and Ninini Point, will be aligned outside of the wave zone and will not be subject to wave action. At Nāwiliwili Beach Park, pathway improvements will follow existing developed corridors along the breakwater. Improvements will be designed to withstand periodic saltwater inundation and energy from high wave conditions. Alternative connections will be provided to allow path uses to detour away from the breakwater alignment. The comfort station at Ninini Point will be located outside of the Federal Emergency Management Agency (FEMA) VE Zone, which has a range identified on the Flood Insurance Rate Maps (FIRM) of 13 feet. All proposed structures will be constructed based on IBC Zone B seismic design standards.

SECTION 4 – PUBLIC SERVICES

4.1 Traffic and Roadways

4.1.1 Ahukini Road

Ahukini Road (Route 570) is a State east-west collector road that connects Kuhio Highway and Kapule Highway and extends makai to provide access to Lihue Airport and Ahukini Landing. Between Kuhio Highway and Kapule Highway, Ahukini Road is a two-lane roadway. Separate left turn, right turn and through lanes are provided in both directions on Ahukini at its signalized intersection with Kapule Highway. Within the Lihue Airport property east of Kapule Highway, Ahukini Road is a divided roadway that channelizes airport access traffic and then returns to a two-lane undivided highway down to Ahukini Landing (Kaua'i Long Range Transportation Plan).

4.1.2 Kapule Highway

Kapule Highway (Route 51) is a high-quality State arterial two-lane highway between Rice Street in Lihue and its intersection with Kuhio Highway on the north side of Hanama'ulu Town (Kaua'i Long-Range Transportation Plan). Kapule Highway is a two-way, two-lane arterial highway between Lihue and Hanama'ulu. North of Hanama'ulu, Kapule Highway continues as Kuhio Highway. Kapule Highway is signalized at its fully channelized intersection with Ahukini Road with separate left-turn, through, and right-turn lanes on all approaches. Kapule Highway is stop controlled at its channelized Tee-intersection with Rice Street.

4.1.3 'Umi Street

'Umi Street is a two-lane County street within a 60-foot right-of-way. It provides local north-south access between Rice Street and Hardy Street. It also provides connection between Ahukini Road and Hardy Street. This portion of 'Umi is a residential corridor and does not have sidewalks or gutters. Parallel parking is permitted on both sides of 'Umi but there are no sidewalks on the Civic Center side of 'Umi Street. There are sidewalks only on the eastern side of the road. Due to the bend in Hardy Street, the intersection of 'Umi Street and Hardy Street has wide distances between curbs. Bicycle and pedestrian access improvements are proposed for the entire length of 'Umi Street as part of the County's *Lihue Urban Design Guidelines* project and *Lihue Civic Center Master Plan* project. See **Section 2.2.2.L** for additional discussion.

4.1.4 Kā'ana Street

Ka'ana Street is a two-lane County road within a 60-foot right-of-way. It provides access through residential neighborhoods between Hardy Street and Unahe Street. After intersecting with Unahe Street , Ka'ana Street terminates at the edge of vacant, former agricultural lands

that are planned for development by Grove Farms Company based on the 1995 Lihue – Hanamaulu Master Plan. East of these lands, Ka'ana Street continues within a private road lot owned by Visionary, LLC (dba Lihue Land Company) that provides public access to the Police Headquarters and Emergency Operating Center, State Judiciary Building, and Vidinha Stadium from Kapule Highway. At its intersection with Kapule Highway, Ka'ana provides signalized right and left turn access into and out of the U.S. Post Office through airport property, and serves as an egress point for the airport terminal and rental car operations.

Based on the Lihue – Hanamaulu Master Plan, Ka'ana Street will be extended as a major collector street connecting Lihue town and Kapule Highway. The road alignment will abut commercial mixed-use and residential development. As currently entitled, Ka'ana Street will have a 60-foot right of way with four lanes of traffic. Each side of the right-of-way will have two 11-foot travel lanes, 4 feet for curb, gutter and planter strip, and a 4-foot sidewalk. During non-peak hours, the two outside lanes are to be used for on-street parking. During peak hours, all four lanes are to be used for motor vehicle traffic. See **Section 2.2.2.L** for additional discussion and **Figure L2** for the approved Ka'ana Street cross-section.

4.1.5 Ho'olako Street

Ho'olako Street is a two-lane collector street, which provides access to the Vidinha Stadium Complex from Rice Street through the Lihue Industrial Park. Ho'olako Street continues around the existing soccer fields and between the State Judiciary Building and Kauai Police Headquarters to connect with Ka'ana Street.

Based on the Lihue – Hanamaulu Master Plan, Ho'olako Street will be straightened and extended as a major collector street with intersections at Ka'ana Street and Ahukini Road. The road will abut existing industrial uses, and existing and planned park and recreation facilities, commercial mixed-use and residential development. As currently entitled, Ho'olako Street will have a 60-foot right of way with four lanes of traffic. Each side of the right-of-way will have two 11-foot travel lanes, 4 feet for curb, gutter and planter strip, and a 4-foot sidewalk. During non-peak hours, the two outside lanes are to be used for on-street parking. During peak hours, all four lanes are to be used for motor vehicle traffic. See **Section 2.2.2.L** for additional discussion and **Figure L1** for the approved Ho'olako Street cross-section.

4.1.6 Ho'olaule'a Way and Limo Road

Hoolaulea Way, also known as "Marriott Road" intersects with Rice Street and serves as the main entry road into and through Kauai Marriott Resort and Kauai Lagoons. The roadway is 22 feet wide and designated for automobile, golf cart, and pedestrian use by the resort. Limo Road provides access between Hoolaulea Way and Ninini Point Road at its intersection with Kapule Highway with continuation to the Lihue Airport via a private, paved road. Limo Road serves as

a direct transit route between the resort and airport for resort guests and residents. It currently functions as the back entrance to the resort, however it is planned to be improved as the primary entry drive serving Kauai Marriott and Kauai Lagoons.

4.1.7 Rice Street

Rice Street is a four-lane County road that serves as the main thoroughfare through Līhu'e Town connecting Kuhio Highway to Kapule Highway and on to Nāwiliwili Harbor. In Līhu'e town, street parking is permitted during off-peak traffic periods limiting Rice Street to two lanes, one lane in each direction. During peak traffic periods, from 7:00 to 9:00 A.M. and from 3:00 to 5:00 P.M traffic flows in all four lanes- two lanes of travel in each direction. South of Kapule Highway, Rice Street extends to Nāwiliwili Harbor as a two-lane road with limited paved shoulders.

4.1.8 Hardy Street

Hardy Street starts at Rice Street and continues around Wilcox Elementary until it intersects with 'Umi Street. It then proceeds west along the northern edge of the Lihue Civic Center and connects with Kuhio Highway. On-street parking is permitted on both sides of the street. There is a bus stop shelter on the Civic Center side of Hardy Street. Hardy Street has a sidewalk on the north side but none on the Civic Center side of the street. The street has no curbs an d gutters.

4.1.9 Ninini Point Road

Ninini Point Road is a private roadway that provides access between Kapule Highway and Ninini Point. It is located on Kauai Lagoons property aligned adjacent to the boundary with Lihue Airport. The improved segment of the road ends at Kauai Lagoons Fashion Landing driveway. An unpaved, graded and graveled segment continues along the airport perimeter to access the lighthouse at Ninini Point. A public access easement exists over the road and continues past Ninini Point Lighthouse over a dirt road that provides access to the shoreline between the lighthouse and Ahukini Landing.

4.1.10 Wa'apā Road

Wa'apa Road connects Kānoa Street and Niumalu Road at Nāwiliwili Harbor. It is a State roadway facility approximately 4,000 feet long with two travel lanes, one in each direction. It has segments of paved and unpaved shoulders on both sides. It primarily serves maritime industrial traffic from the Harbor with access into the harbor cargo terminals. It is also the primary access into Niumalu Gardens subdivision, via Niumalu Road, and to the Nāwiliwili Small Boat Harbor.

4.1.11 Kānoa Street

Kānoa Street connects Wilcox Road and Wa'apā Road at Nāwiliwili Harbor. It is a State roadway facility approximately 500 feet long with two travel lanes, one in each direction, one sidewalk on the makai side, and a generous paved shoulder on the mauka side that is blocked by a concrete barrier and striped for angled parking. It primarily serves maritime industrial traffic from the Harbor.

4.1.12 Wilcox Road

Wilcox Road connects Nāwiliwili Road with Kānoa Street. It is a two-lane road, approximately 400 feet long with sidewalks on both sides. Another portion of road also called Wilcox Road exists approximately 150 feet northeast of the aforementioned Wilcox Road, also connected to Nāwiliwili Road by Ka'ilikea Street.

4.1.13 Nāwiliwili Road

Nāwiliwili Road (Route 58) is an improved State highway between Kaumualii Highway and Nāwiliwili Harbor. It is improved as a four-lane divided highway between Kaumualii Highway and Halehaka Road; and then continues southeastward as a two-lane highway to its point of connection with Rice Street near Wa'apa Road in Nāwiliwili.

Impacts and Mitigation:

Within the primary project corridor, there is potential for impacts to traffic from construction activities that will take place immediately adjacent to Ahukini Road, Ninini Point Road, Limo Road, Hoolaulea Way, Kalapakī Drive, and within Nāwiliwili Park. Within the secondary network corridors, construction on preferred path segments may result in impacts to traffic on Ahukini Road, Lihue Airport terminal roadways, Ka'ana Street, Ho'olako Street, Hardy Street, and Umi Street, Nāwiliwili Road, Kānoa Street, Wilcox Road, Wa'apā Road, and Niumalu Road.

Construction activities may result in temporary slow-downs for motor vehicle, bicycle, and pedestrian traffic due to construction detours and the presence of large, slow-moving vehicles and heavy equipment in the project area. A traffic control plan will be prepared for the project during the design phase and will be submitted to the County with the construction drawings for approval during plan review. Traffic control measures may include barricades, cones, signage, and lighting as necessary to alert drivers and delineate construction boundaries. Approach signs and a flag person will be positioned to direct traffic through temporary traffic control zones, and officers from the

Kauai Police Department (KPD) will be employed to direct traffic at road intersections as necessary. To minimize traffic impacts to the nearby residents, the contractors may be required to schedule heavy truck activity as much as possible between the hours of 9:00 a.m. and 3:00 p.m. on weekdays. The KPD will be notified prior to periods of heavy truck activity or during transport and operation of heavy equipment. All traffic control measures will be designed to minimize impacts on continued traffic flow. With traffic control measures in place, significant short-term adverse impacts to traffic are not anticipated.

The project will also 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.

In the long-term, creation of a separate and clearly delineated pedestrian/bicycle path will have a positive impact on traffic in general 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. 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 path 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.

4.2 Parks and Recreational Resources

Recreational resources in the project area include one state park recreational facility, four county parks, two eighteen hole golf courses (Kaua'i Lagoons' Mokihana and Kiele courses), and fishing areas along the coastline.

State facilities consist of:

- The State Department of Land and Natural Resource (DLNR), Division of State Parks (DSP) maintains Ahukini State Recreation Pier located at the end of Ahukini Road (Highway 570) at the northernmost limit of the project area. Activities are limited to ocean pier fishing and crab netting. A comfort station is planned at Ahukini Landing as part of the County's Lydgate to Ahukini bike path project.

The four County parks include:

- Līhu'e County Park – A 3.28-acre neighborhood park located adjacent to Wilcox Elementary and the Convention Hall (White Dome Building), with little league and pony fields, tennis courts, soccer field, and comfort station.
- Vidiṇha Stadium – A 34.00-acre stadium and district park located mauka of Kapule Highway between Ahukini Road and Rice Street. Vidinha Stadium includes an athletic complex, baseball field, lighted football field, and track. A 10-acre parcel adjacent to Vidinha Stadium has been improved for use as soccer fields. The County Department of Parks and Recreation is currently developing a master plan to expand the facilities with a tennis court complex, comfort station, pavilion, gymnasium and parking.
- Nāwiliwili Beach Park - Nāwiliwili Park, 6.27 Acres –located along Rice Street past the Kaua'i Marriot at the northern shore of Nāwiliwili Bay, beach park, playground, volleyball, picnic-comfort station, picnic
- Niumalu Park - Niumalu Park, 3.41 acres – located at the west end of Nāwiliwili Bay, along Hulē'ia Stream on Wa'apā Road, beach park with picnic areas, boat ramp, pavilion/restrooms, playground equipment

Shoreline Fishing:

- The coastal corridor that runs from Ahukini to Ninini Point is a popular shoreline fishing area. Access to the area is provided by an unimproved road within a public access easement. Kalapakī Beach, in front of the Kaua'i Marriott, is a popular swimming and sunbathing beach. Nāwiliwili is also a popular surfing and fishing spot.

Impacts and Mitigation:

One of the primary project objectives is to improve connections to coastal recreational resources as part of the larger pathway system between Anahola and Līhu'e. Nāwiliwili Beach Park will realize the most improvement from this project. At Nāwiliwili Beach Park the project will make needed improvements to existing facilities including paths, picnic tables, comfort station and informational and interpretive signage.

Access to coastal fishing areas will be preserved in perpetuity by development of the path. Motor vehicle access to fishing sites along the coastline between Ahukini and Ninini Point, which is currently enjoyed by many without restriction, will be limited by the project to designated access points across the shared-use path. Non-motor vehicle access to shoreline fishing sites will remain unimpeded.

No adverse impacts to recreational resources will result from this project.

4.3 Schools

Schools serving the project area are Wilcox Elementary (Kindergarten-Fifth Grade), Kamakahelei Middle School (Sixth Grade-Eighth Grade), and Kaua'i High School (Ninth Grade-Twelfth Grad). Wilcox Elementary, located on Hardy Street in the mauka portion of the project area, is the only school adjacent to the project corridor. Kaua'i High School, 3577 Lala Road, is in the project area, but is not located along the corridor. Kamakahelei located on 4431 Nuhou Street is not located in the project area.

Impacts and Mitigation:

The creation of the pathway will improve access to Wilcox Elementary. No other schools are directly affected and no adverse impacts are expected to area schools.

4.4 Fire, Police and Medical Services

The Līhu'e Fire Station provides emergency service for Līhu'e and surrounding areas. The Station has a maximum staff of eight personnel on duty 24 hours a day and is equipped with one pumper truck with 1,250-gallon per minute capability and a HAZMAT vehicle.

The Līhu'e area is served by the Līhu'e Police Station. The County Police Department is staffed with approximately 130 officers.

Medical service is available at Wilcox Hospital in Līhu'e. The hospital has a 189-bed capacity and is equipped with a 24-hour emergency room. One private ambulance company operates in the Līhu'e area.

Impacts and Mitigation:

The project is not expected to result in an increase in calls for emergency services. Development of a dedicated path is expected to improve bicycle and pedestrian safety by separating those activities from motor vehicle traffic. The bike path will also provide improved access for emergency response along shoreline. An emergency telephone at the proposed Ninini Point comfort station will further improve emergency service.

4.5 Water System

The County of Kaua'i Department of Water (DOW) is a semi-autonomous agency responsible for the management, control and operation of the island's municipal water system. DOW supplies water to the Līhu'e area.

The project area is served by the Puhi-Līhu'e-Hanamā'ulu (PLH) Water System which draws approximately 4.5 million gallons a day (mgd) from the Hanamā'ulu Aquifer System. The Hanamā'ulu Aquifer has an estimated sustainable yield of 40 mgd and recharge of 79 mgd. The aquifer system is composed predominantly of high-level aquifers, which occur as bodies of water perched on beds of weathered soil, ash, and dense lavas, and as bodies of water constrained at high levels by the relatively low permeability of the aquifer. The aquifer system also consists of basal groundwater near the coast, contained deep below the surface in Koloa lava formations underlying the high-level aquifer.

Impacts and Mitigation

Project related water demands will be limited to construction of one new comfort stations and replacement of an existing comfort station. Water will also be required for landscape irrigation purposes around the comfort stations, and at amenities within Nāwiliwili Park. The path segment between Ahukini and Ninini Point will remain in its natural state and not be landscaped or irrigated. Water demands for the project are not expected to be significant. A water allocation for planned improvements will be sought from DOW during the design phase.

4.6 Wastewater

Wastewater treatment varies by community. Wastewater treatment is provided by the County, other community or larger developments with a private treatment system, or Individual Wastewater Systems (IWS) i.e. cesspools and septic tank systems. The Līhu'e-Hanamā'ulu area is served by one of the four County waste water systems. Capacity is operating at approximately at 50% of capacity. Capacity is being reserved for the Hanamā'ulu Triangle, Molokoa residential subdivision, existing residential and industrial areas off lower Rice Street, and a second hotel at Kaua'i Lagoons.

Impacts and Mitigation:

The comfort station at Nāwiliwili Park, where sewer service is available, will be connected to a sewer collection and treatment system. The proposed comfort station at Ninini Point will utilize septic tanks and leach field, or a septic aerobic unit for waste water treatment and disposal.

4.7 Electrical Demand

Kaua'i Island Utility Co-op (KIUC) provides four levels of service: residential, commercial, large power, and street lighting. KIUC generates its own power from a 96-megawatt diesel-fired power plant located at Port Allen and purchases 14-megawatt of firm capacity from Līhu'e Plantation. The Līhu'e area is served by four transmission circuits from KIUC's island-wide

transmission system. Although Līhu'e Plantation provides power to the system, the primary source of electricity is the Port Allen Generating Station.

Impacts and Mitigation:

The present electric system is adequate to meet the needs of the project in both the construction and maintenance phases. Short-term electrical power will be required during construction. Long-term electrical power will be required for limited lighting along the pathways and at comfort stations and the "bike depot" building. Power will also be required for irrigation controllers.

4.8 Communications (Cable, Internet, Telephone)

Local cable providers include Oceanic Time Warner Cable and Hawaiian Telcom.

Cellular phone service in a majority of the project area is covered by Verizon, Tmobile, AT&T, Sprint, and Nextel. Reception is generally good along the project corridor with the exception of the coastline between Ahukini and Ninini Point. Based on phone company coverage area maps, the coastline between Ahukini and Ninini Point is best served by AT&T and Sprint.

Internet service is provided by Clearwire, Island Internet, Oceanic Time Warner Cable, Hawaiian Telcom, Pacific LightNet Inc, and Seabrooks Inc.

Impacts and Mitigation:

No impacts to cable, television, or telephone infrastructure or services will result from planned project activities.

4.9 Airport Facilities

The primary project corridor follows an existing public access easement around the makai perimeter of the airport connecting with Ahukini Road on the north end and Ninini Point Road on the south end. Airport facilities within this corridor include:

- Airport Surveillance Radar (ASR) Site – located within the vacant lands makai of Runway 17-35, approximately 400 feet setback from the shoreline and aligned approximately with the mid-point of the runway. The facility includes an antennae tower, support buildings, and perimeter fence. A clear area extending in a 1,500 radius around the site must be maintained. All of the path alignments considered are aligned makai of the ASR site.
- Federal Aviation Administration (FAA) Middle Marker Navigational Aid – An FAA airport Middle Marker navigational aid is located near the site of the proposed comfort station at Ninini Point Lighthouse. The FAA requires an unobstructed setback of 300 feet around the Middle Marker. The comfort station will be located in compliance with FAA requirements.

- Airport Perimeter Road (exterior) – DOT-A is undertaking improvements to the existing exterior airport perimeter road and fencing to provide continuous vehicular access around the entire airport property for security and maintenance purposes. The perimeter road will have both paved and unpaved segments, with the option of complete paving in the future. Roadway construction includes culvert crossings for drainage and installation of an 8-foot tall chain link and barbed wire fence. The public access easement follows segments of the perimeter roadway around the northern end of Runways 3-21 and 17-35, and the southern end of Runway 17-35 before veering onto the makai dirt road that provides access to the shoreline. The perimeter road also shares a segment of the paved Ninini Point Road along the western edge of Runway 17-35 adjacent to Kauai Lagoons' Mokihana and Kiele Golf Courses. The perimeter road will continue to provide public access over those segments. The preferred shared-use path alignment will utilize the public access segments of the airport perimeter road and Ninini Point Road.

  Impacts and Mitigation:

  The ASR site is located more than 100 feet mauka of the preferred path alignment and separated by intervening topography and vegetation. Path construction activities are not expected to adversely impact the site. Use of the path may result in increased awareness of the site, but does not facilitate access to the site that does not already exist via the public access dirt road. Signage positioned at the perimeter of the ASR site should be maintained to alert the public of the penalties of interfering with ASR facilities. No additional signage is recommended for the shared-use path.

  The proposed comfort station and shared-use path at Ninini Point will be sited and designed in consultation with the FAA Hawaii District Office and in compliance with design requirements for the Middle Marker navigational aid. No improvements will be developed that will adversely impact the function of the Middle Marker. Signage positioned at the perimeter of the Middle Marker location should be maintained to alert the public of the penalties of interfering with ASR facilities. No additional signage is recommended for the shared-use path.

  Where the shared-use path follows existing public access on the airport perimeter road alignment, it will be constructed as a separated, 10-foot wide concrete path on the outer perimeter of the motor-vehicle travelway. An intervening barrier, such as boulder bollards or guardrail, will be installed for safety purposes to prevent motor vehicles from accessing the pathway.

  No adverse impacts to airport facilities are anticipated to result from development of the project as planned.

4.10 Harbor Facilities

The primary project corridor stops at Nāwiliwili Park. Proposed improvements to the park that could potentially impact harbor facilities include:

- Improved park driveway and parking area with access off of Ka'ilikea Street. Ka'ilikea Street serves as the primary access to the Nāwiliwili jetty and ferry berth, and to DOT-H maintenance and storage facilities.
- Construction of a 10-foot wide concrete path within the park adjacent to Ka'ilikea Street.

No other improvements within the primary project corridor directly impact harbor facilities. However, the secondary network corridor connecting Nāwiliwili Park and Niumalu Park follows Wilcox Road, Kānoa Street, Wa'apā Road and Niumalu Road which together serve as the primary accessway into and through the Nāwiliwili Harbor facilities, including the cruise terminal, cargo terminal, Matson Container Yard, Inter-island Barge Terminal, and fuel storage facilities. (Path Segment O and P). All of the affected roads are public rights-way-of under the authority of the State DOT-Harbors Division. See **Section 2.2.4.O** and **2.2.4.P** for additional details.

Impacts and Mitigation:

Construction of a shared-use path along this travel corridor raises concerns about safety and liability for both the path users and for operators of motor vehicles and heavy equipment used in harbor operations. These roadways carry the maritime industrial area's high traffic movements of large container trucks, commercial vehicles, and other heavy equipment. The majority of the traffic activity occurs on the makai side of the roadway as it originates at the docks. Driveway entrances along this side of the street are particularly active and pose a hazard for crossing pedestrians and bicyclists. As a result, the preferred path alignment through this corridor is located on the mauka side of the street where the potential for conflict with maritime industrial vehicle use is reduced. Path improvements consist of a single, separated concrete pathway for two-way travel and installation of a protective concrete barrier (jersey barrier) between the path and the motor vehicle travelway for enhanced safety. Traffic control and safety signage is also proposed to alert path users and motor vehicle operators to traffic safety issues and right-of-way conditions. No other improvements are recommended.

SECTION 5 – SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

5.1 Socio-Economic Characteristics

The project area is entirely located within the Līhu'e Census Designated Place No. 405. In 2000, Kaua'i's population was 58,463 people. It is currently estimated at 63,004 people, an annual increase of approximately 1.1 percent, and projected to grow to 70,200 by the year 2015 (DEBT&T, 2005), an annual increase of 1.14 percent. Of the total population, approximately 12,022, or 20.56 percent, reside in Līhu'e District. A comparison of local and statewide socio-economic characteristics is shown in **Table 5-1: Demographic Characteristics** based on 2000 census data.

In 2004, The top four employers by industry were 1) Leisure and hospitality (including accommodation and food services), 2) Trade, transportation, and utilities, 3) Government and, 4) Professional and business services. By 2012, leisure and hospitality and trade, transportation and utilities are expected to represent over half of the total employment positions added in Kaua'i County (Hawai'i Workforce Informer, Department of Labor and Industrial Relations).

Table 5-1
Demographic Characteristics (2000 Census Data)

	Līhu'e CDP No. 405		County of Kaua'i		State of Hawaii	
	Number	Percent	Number	Percent	Number	Percent
POPULATION						
Total population	5,674		58,463		1,211,537	
Male	2,722	48	29,252	50	608,671	50.2
Female	2,952	52	29,211	50	602,866	49.8
Median Age	44	(X)	38.4	(X)	36.2	(X)
Under 5 years	318	5.6	3,605	6.2	78,163	6.5
18 years and over	4,378	77.2	43,020	73.6	915,770	75.6
65 years and over	1,271	22.4	8,069	13.8	160,601	13.3
RACE						
One Race	4,513	79.5	44,525	76.2	952,194	78.6
White	1,291	22.8	17,255	29.5	294,102	24.3
Black or African American	12	0.2	177	0.3	22,003	1.8
American Indian and Alaska Native	13	0.2	212	0.4	3,535	0.3
Asian	2,794	49.2	21,042	36	503,868	41.6
Native Hawaiian and Other Pacific Islander	365	6.4	5,334	9.1	113,539	9.4
Some other race	38	0.7	505	0.9	15,147	1.3

Table 5-1
Demographic Characteristics (2000 Census Data)

	Līhu'e CDP No. 405		County of Kaua'i		State of Hawaii	
	Number	Percent	Number	Percent	Number	Percent
Two or more races	1,161	20.5	13,938	23.8	259,343	21.4
Hispanic or Latino (of any race)	370	6.5	4,803	8.2	87,699	7.2
HOUSEHOLD						
Household population	5,547	97.8	57,831	98.9	1,175,755	97
Group quarters population	127	2.2	632	1.1	35,782	3
Average household size	2.55	(X)	2.87	(X)	2.92	(X)
Average family size	3.16	(X)	3.34	(X)	3.42	(X)
Total housing units	2,399		25,331		460,542	
Occupied housing units	2,178	90.8	20,183	79.7	403,240	87.6
Owner-occupied housing units	1,289	59.2	12,384	61.4	227,888	56.5
Renter-occupied housing units	889	40.8	7,799	38.6	175,352	43.5
Vacant housing units	221	9.2	5,148	20.3	57,302	12.4
SOCIAL						
Population 25 years and over	4,152		38,872		802,477	
High school graduate or higher	3,533	85.1	32,368	83.3	678,666	84.6
Bachelor's degree or higher	969	23.3	7,551	19.4	210,041	26.2
Civilian veterans (civilian population 18 years and over)	611	13.7	5,688	13.2	120,587	13.7
Disability status (population 5 years and over)	1,288	23.9	10,662	19.6	199,819	18.4
Foreign born	510	8.7	7,574	13	212,229	17.5
ECONOMIC						
In labor force (population 16 years and over)	2,736	58.1	28,355	63.1	612,831	64.5
Mean travel time to work in minutes (workers 16 years and over)	14	(X)	21.5	(X)	26.1	(X)
Median household income in 1999 (dollars)	44,906	(X)	45,020	(X)	49,820	(X)
Median family income in 1999 (dollars)	56,875	(X)	51,378	(X)	56,961	(X)
Per capita income in 1999 (dollars)	22,619	(X)	20,301	(X)	21,525	(X)
Families below poverty level	24	1.7	1,224	8.4	22,101	7.6
Individuals below poverty level	262	4.6	6,085	10.5	126,154	10.7

Impacts and Mitigation:

No impacts to population are expected as a result of the project. Short-term economic benefits include expenditure of funds and creation of jobs during construction. Long-term, the project may stimulate economic activity by improving linkages between coastal commercial nodes in the towns of Anahola, Kelīlia, Waipouli, Wailua and Kapa'a. The path is also expected to be a recreational attraction for residents and visitors which may, in turn, encourage new demands for good and services in the project area. In addition, the path will benefit residents by offering a transportation alternative to the automobile whether commuting, traveling to recreational destinations, or accessing the shoreline for fishing and other activities. This will help alleviate traffic congestion that will likely accompany projected population growth.

5.2 Archaeological and Historical Resources

An archaeological field inspection and literature review was conducted by Cultural Surveys Hawai'i (CSH) to identify the presence of any cultural or historic sites along the proposed bike-pedestrian path alignments. CSH's report is appended to this document. Archaeological investigation consisted of literature research of the project area and surface inspection of the proposed alignment alternatives between Nāwiliwili, Ahukini, and the Līhu'e Civic Center. The results of the investigation are as follows:

- Seven historic properties—all in the coastal portion—have been previously identified in or immediately adjacent to the project area: three pre-Contact sites (a cultural layer at the shoreline, SIHP No. 50-30-11-424, an oval-shaped stone alignment or terrace, SIHP No. 50-30-11-421, and a 400-foot long stone wall considered to be a possible extension of Ninini Heiau, SIHP No. 50-30-11-100) and four historic-era sites (two stone wall remnants, SIHP Nos. 50-30-11-422 & 423, the ruins of a plantation camp near Ahukini Landing, SIHP 50-30-08-9000, and a plantation-era piggery, SIHP No. 50-30-08-3958). SIHP Nos. -100, -422 and -423 *may* be impacted by the proposed project; the other historic properties should not be affected by the proposed project. See **Figure 5-1**.
- A historic cemetery designated 11-B004 (cf. Kikuchi and Remoaldo 1992) is located near Nāwiliwili Park. No description is noted for this cemetery.
- Paukini Rock, designated 11-1999, is located within the waters of Kalapakī Bay. Paukini Rock is associated with Kuhiau Heiau (site 11-099) and is said to be its sister heiau and the possible home of the kahuna of Kuhiau.
- Two historic bridges are located within existing rights-of-way / proposed path alignments: an old railroad bridge previously modified as a pedestrian walkway spans the Nāwiliwili Stream, and an old one-lane bridge in disrepair spans the Pū'ali Stream in Niumalu.

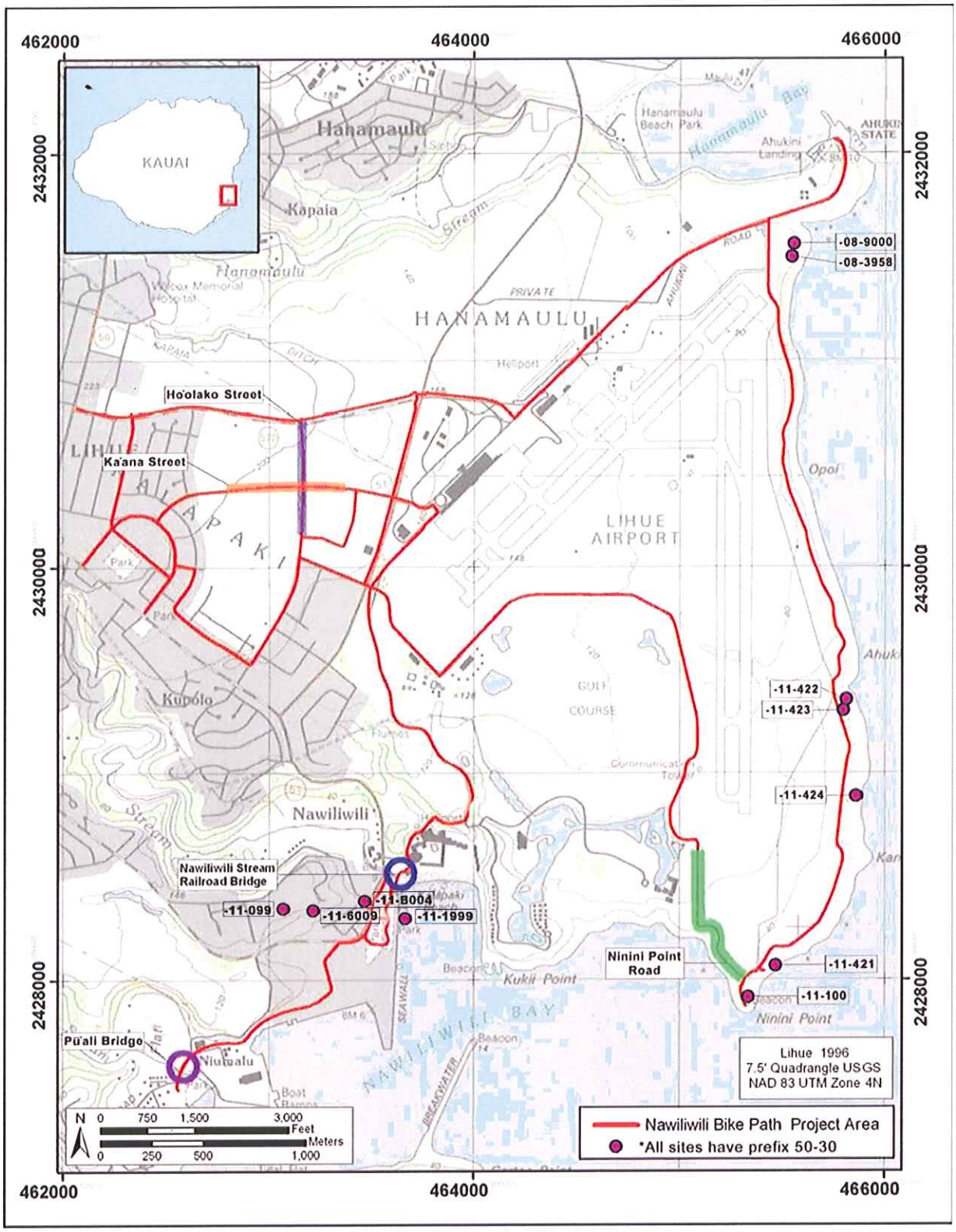


FIGURE 5-1: State Historic Sites

- Several coastal areas may contain historically-significant subsurface archaeological deposits, especially from Ninini Point to the previous location of the long-destroyed Ahukini Heiau (located at Ahukini Point, about halfway up the coast from Ninini to Ahukini Landing). The old Hawaiian village of Kalapakī was once located in this area as well. The coastal area near Niumalu Park may also contain historically-significant subsurface archaeological deposits.
- The remaining portions of the project area have been previously under commercial sugar cane cultivation and/or have been modified by modern development; it is therefore unlikely that additional historic properties (either on the surface or in subsurface deposits) are present throughout most of the project area.

Impacts and Mitigation:

1. The archaeological field inspection prepared for the project identifies known historic properties, as well as areas along the path routes where the potential for encountering previously unknown cultural or historic properties is higher. The preferred path alignment is routed to avoid known archaeological and historic sites. The final alignment will be established during the design phase when ground survey will be used to precisely locate known historic properties and ensure they are avoided by the path.

2. An Archaeological Monitoring program satisfying HAR Chapter 13-279 will be developed and implemented consisting of a combination of on-site and on-call monitoring, particularly along the coastal alignment between Ahukini and Ninini Point and in Nāwiliwili Park. Monitoring is probably not necessary in any of the mauka (inland) areas away from the coast, since these have all been severely modified by prior historic and modern disturbances.

3. An Archaeological Inventory Survey (AIS) satisfying HAR Chapter 13-276 will be considered in consultation with the State Historic Preservation Division for three undeveloped, vegetated areas considered for path alignments if those path segments are ultimately developed. The three areas are:

    - Path Segment B-3 – This alignment was considered, but rejected in favor of Segments B-1 and B-2 due to the presence of a nesting colony of Newell's Shearwater. See **Section 2.2.1.B** for additional information.

    - Path Segment L-1, Ka'ana Street and,

    - Path Segment L-5 Hoolako Street. Path improvements along the Ka'ana Street and Ho'olako Street alignments will be constructed as part of Grove Farm's Wailani development. An archaeological inventory survey conducted for this area in 1994 as part of the Līhu'e – Hanamā'ulu Master Plan EIS (PHRI, 1994). Due to extensive modification of the land from agricultural activities, no historic or cultural resources were discovered during the 1994 field survey. SHPD will be consulted to determine

if additional archaeological inventory survey work is required for these path segments. The focus of additional investigation would be on plantation era agricultural infrastructure (ditch works, utility structures). See **Section 2.2.2.L for additional information.**

- An AIS is recommended for the coastal alignment corridor between Ahukini Point and Ninini Point (portion of Segment A-1). Pursuant to on-going consultation with SHPD, subsurface testing may be required within the footprint of proposed improvements where drainage structures or other improvements involving significant ground disturbing activities (e.g. comfort station, septic leachfields) are planned given the likelihood of encountering historically-significant cultural materials in this area.

4. The historic cemetery designated B004 by Kikuchi and Remoaldo (1992) is located near the Nāwiliwili Park portion of the proposed bike- and pedestrian-path alignment. There is no description of this cemetery and the extents are unknown. Nāwiliwili Park and the adjacent areas makai of Rice Street have undergone extensive development and modification over the decades. Planned improvements within the park are located in areas currently developed with park and roadway improvements and it is unlikely that project activities will encounter unknown historic or cultural remains. Nevertheless, work in the area will be conducted in accordance with an approved archaeological monitoring plan developed in consultation with SHPD.

5. In the event that unknown or unexpected historic or cultural features, deposits, or burials are discovered during project activities, all work in the area will be suspended immediately until the monitoring archaeologist evaluates the significance of the findings and notifies the SHPD to determine the appropriate course of action.

6. The two bridges located within existing rights-of-way / proposed alignments will be documented and formally assessed for historic significance by a qualified Architectural Historian.

7. No impacts to historical and cultural resources are anticipated in the remainder of the project area and no further historic-preservation work is recommended for the remainder of the project area (i.e., all those lands not specifically mentioned above)

8. Proposed interpretive signage at Ninini Point and Nāwiliwili Park will include educational information on the history of the area and on the historical and cultural resources that existed in the past and in the present day.

5.3 Cultural Resources and Practices

A cultural impact evaluation (CIE) was conducted by Cultural Surveys Hawai'i to determine if the proposed bike-pedestrian path would significantly impact traditional uses of the area. CSH's report is appended to this document as Appendix B. As part of the CIE, individuals were identified and interviewed to identify traditional uses of the area and to identify specific cultural practices that may have occurred or is currently occurring in the area of the bike-pedestrian path.

Hawaiian organizations, agencies, and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), and Kaua'i Island agencies pertinent to the proposed project area such as the Kaua'i Island Burial Council (KIBC), Kaua'i Historical Preservation Review Commission (KHPRC), State Department of Land and Natural Resources Kaua'i Land Division, Kaua'i Paths, Royal Order of Kamehameha, Kaumuali'I Chapter No. 3, and Kaleo O Kaua'i.

Thirty-two agencies/organizations or individuals were contacted for this CIE. Seventeen community agencies/organizations or individuals participated in brief informal interviews or provided referrals. The findings of this CIE suggest that there are three major areas of cultural interest and concern regarding the proposed Nāwiliwili-Ahukini Bike/Pedestrian Path Project:

(1) There is concern that the Nāwiliwili-Ahukini Bike / Pedestrian Path may cut off or restrict existing motor vehicle access to shoreline fishing spots. Additionally, there is concern that the path will draw more people to the area who engage in fishing. There is concern that there will be increased fishing by non-residents which may lead to overfishing. It is hoped that seasonal fishing restrictions will be monitored and enforced.

(2) There may be Native Hawaiian burials (*iwi*) in Nāwiliwili Valley (Kahumoku Road). There is general concern for potential for disturbance of *iwi* in the project area.

(3) Many historic and cultural properties and places exist along the pathway, especially in Nāwiliwili Valley. Every effort should be made to route the final path alignment away from historic and cultural sites to avoid adverse impacts.

Impacts and Mitigation Measures

1. While there is much to recommend development of a path alignment through Nāwiliwili Valley, this alternative is no longer being considered as part of the preferred path alignment. Therefore no mitigation measures specific to Nāwiliwili Valley are required or recommended as part of this project. See **Section 2.2.2.N** for further discussion.

2. The preferred path alignment is routed to avoid known archaeological and historic sites. The final alignment will be established during the design phase when ground survey will be used to precisely locate known historic properties and ensure that they are avoided by the path.

3. An Archaeological Monitoring program satisfying HAR Chapter 13-279 will be developed and implemented consisting of a combination of on-site and on-call monitoring, particularly along the coastal alignment between Ahukini and Ninini Point. Monitoring is probably not necessary in any of the proposed mauka (inland) areas away from the coast, since these have all been severely modified by prior historic and modern disturbances. See Section 5.2 for additional discussion.

4. Access to and along the coastline for fishing, surfing, resource gathering and ceremonial activities will be preserved in perpetuity with the development of the path. Motor vehicle access will be limited to designated locations where safe path crossings are to be installed. Non-motor vehicle access will remain unimpeded to all areas makai of the proposed path. Concerns about the path facilitating an increase in newcomers fishing along this stretch of coastline with resulting reduction in stocks of near-shore fish will be communicated to DLNR Division of Conservation and Resource Enforcement (DOCARE). DOCARE is the State agency responsible for enforcement of existing fishing regulations and catch limits.

5. Interpretative signage will be developed in consultation with community members who have knowledge of cultural sites and practices. Efforts will build upon the work of the Coastal Path Historical and Cultural Committee Draft Report, included as **Appendix E** of this document.

5.4 Shoreline Access

Currently the public can access the shoreline between Ahukini and Ninini Point via a public access easement that follows Ninini Point Road and the unimproved dirt road along the coastline makai of the airport. The public access easement connects with Ahukini Road, a public right-of-way under the administration of the State Department of Transportation, Airports Division. The road provides access to Ahukini Landing, a State recreational facility open to the public. The area is regularly accessed by fishermen and other recreational users.

The 1991 Kaua'i Beach Access Inventory Update identifies all existing, potential and desirable beach accesses both public and private. Seven access points within the project area are identified as "existing public beach accesses." These include Niumalu Park, Nāwiliwili Harbor, Nāwiliwili Small Boat Harbor, Nāwiliwili Park, Kalapakī Beach, Airport/Ninini, and Ahukini Landing. The Kaua'i Beach Access GIS Project was developed to begin the process of updating

the Inventory and document new public beach access ways recoded since 1991. The 2005 report of The Commission on Public Access, Open Space, and Natural Resource Preservation outlines recommendations to improve public access, and identifies priority sites for acquisition. No sites within the project area were recommended as priority sites for public access acquisition.

Impacts and Mitigation:

The proposed project is being developed to preserve public access to coastal and shoreline areas. The new path will facilitate easier access for pedestrians and bicyclists to the Ahukini to Ninini Point shoreline. Path improvements will conform with ADA accessibility standards to ensure that individuals with disabilities are also able to enjoy these coastal areas. Existing access for fishing will also be preserved, however motor vehicle access to fishing spots will be limited to five designated locations where vehicles can cross the path. The entire coastline will remain unimpeded for non-motorized vehicle and pedestrian access.

Improvements to the Kaua'i Lagoons lateral shoreline access path and trail will likewise facilitate public shoreline access along a stretch of coast that has previously been difficult to reach. See **Section 2.2.2.B** for more information.

None of the seven access points identified in the Kaua'i Beach Access Inventory will be adversely affected by this project. Construction of the proposed path will enhance public shoreline access. No special mitigation measures concerning shoreline access are required or recommended.

5.5 Public Safety / Crime

Since data collection began in 1975, the year 2005 showed record low property crime rates, burglary rates, and larceny-theft rates in Kaua'i County. Crime statistics are separated into two different categories: Index Crime and Part II Offenses. Index Crime includes murder, forcible rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson. Part II offenses include all criminal offenses not classified as index crimes. Part II offenses include juvenile offenses as well as offenses such as embezzlement, drug abuse violations, gambling, driving under the influence, and vandalism.

The total number of Index Crimes reported in Kaua'i County decreased 17.8% from 2004 to 2005; violent crimes decreased 33.2%, while property crimes decreased 16.5%. In 2005, the number of reported Index Crimes in Kaua'i County decreased for six of the eight categories: forcible rape, 13.5%; robbery, 36.4%; aggravated assault, 38.1%; burglary, 4.2%; larceny-theft, 22.8%; and arson, 30.0%; motor vehicle theft showed an increase of 36.3%; the total of two

murders reported for 2005 showed no change from the previous year. Part II Offenses increased by 13.5% in 2005.

Over the past 10 years, the population of Kaua'i County increased 10.8%. During that same period, the total number of reported Index Offenses decreased 25.4%, violent crimes increased 124.2%, and property crimes dropped 28.6% (Crime In Hawai'i 2005, Department of the Attorney General).

Impacts and Mitigation

Certain segments of the preferred bike path alignment will be located in remote and/or densely vegetated areas which could provide opportunity and cover for unwanted activities. These segments include: Ninini Point road from Kapule Highway to the Light House, and Ninini Point Lighthouse to Ahukini Landing.

Mitigation measures may include: routine maintenance to cut back vegetation from the pathway; nighttime lighting, public phones at the comfort station; gating the shoreline road at its intersection with Ahukini Road during night time hours to limit motor vehicle traffic, routine patrols by law enforcement or volunteer path docents, and signage to educate the public about prohibitions and precautions. Specific mitigation measures will be developed in cooperation with the Kaua'i Police Department, Kaua'i Path, Inc., the Transportation Security Administration, and other government agencies and organizations as appropriate.

SECTION 6 – RELATIONSHIP TO COUNTY, STATE, AND FEDERAL LAND USE PLANS, POLICIES AND CONTROLS

6.1 Kaua'i County

6.1.1 General Plan

The Kaua'i County General Plan (GP) was adopted in November 2000. The GP provides guidance for land use regulations, the location and character of new development and facilities, and planning for County and State facilities and services.

According to the GP District Land Use Maps, the project area lies primarily within the Urban Center, Resort, Open, and Transportation Districts. Nāwiliwili Park and Vidinha Stadium are within the Park Land Use Designation. The project will comply with County standards and permitted uses within each GP Land Use Designation.

Traffic circulation in the Līhu'e area was an issue identified in the GP. To address the issue, the GP calls for the development of safe routes and facilities supporting bicycle transportation. Specifically, the GP refers to the Anahola to Nāwiliwili bike path, as beneficial to those commuting between Kapa'a and Līhu'e, as well as offering scenic views of the coastline.

The project will provide a safer access route for bicyclists in the Lihue town area, which may encourage the use of bicycles as a realistic alternative to motorized vehicles. The project will also link to the larger bike path system, connecting the coastal communities of Anahola, Keālia, Waipouli, Wailua and Kapa'a.

In addition to addressing the issue of traffic circulation in Līhu'e and along the coastline, the proposed plan is in accordance with the following policies:

> *Section 3.2 Scenic Views*
>
> *(a) In developing public facilities and in administering land use regulations, the County shall seek to preserve scenic resources and public views. Public views are those from a public place, such as a park, highway, or along shoreline. The County shall observe the following general principles in maintaining scenic resources:*
>
> *(b)(3) Preserve the scenic qualities of lowland/open space features, such as the shoreline, the edge of a coastal bluff, a marsh, a fishpond, or a historic or cultural property. Structures should not impede or intrude upon public views of the feature and should not alter the character of the immediate area around the land feature, historic or cultural property.*

Discussion:

The coastline between Ahukini and Ninini Point is designated as a conservation/open space area in the GP. The proposed bike-pedestrian path 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 along the coastline between Ahukini and Ninini Lighthouse in order to maintain open space and the visual resources of the area. The proposed comfort station at Ninini Point Lighthouse will be sited and designed to blend into the surrounding landscape.

Section 3.5 Coastal Lands

(d) Following are general guidelines for coastal development, including resorts and residential subdivisions, but excepting harbors and other uses which are specifically dependent on locating near the water:

(3) Provide a permanent pathway laterally along the coast, located in the buffer zone mauka of the shoreline.

(5) Site buildings to preserve views corridors from roads or public places to the ocean and from the ocean mauka.

Discussion:

The project will create a ten foot wide paved pathway laterally along the coastline from Ahukini to Ninini Point and improve existing pathways on the western portion of Nāwiliwili Bay, adjacent to Nāwiliwili Beach.

No vertical structures will be located on the coastline between Ahukini and Ninini Point in order to preserve views along the coastline. A comfort stations is proposed at Ninini Point Lighthouse but will not significantly obstruct views to the ocean, or from the ocean looking mauka. See **Section 2.2.1.A** for additional details.

Section 7.3 Bikeways

Support funding to develop Kaua'i's bikeway system to provide for alternative means of transportation, recreation, and visitor activities (economic development).

Discussion:

The project is County, State and federally funded and will provide a safer and more enjoyable access way for pedestrians and bicyclists for the purpose of transportation and recreation.

6.1.2 Līhu'e Development Plan

The purpose of the Līhu'e Development Plan (LDP) (1975) is to provide more detailed specifications than the General Plan for the Līhu'e area. The LDP promotes the creation of bike paths as a means of alleviating congestion and pollution problems created by automobile traffic. The LDP includes a plan for a continuous bike path system linking scenic, residential and commercial areas. The proposed project implements the bike path proposed in the LDP and is in alignment with the LDP's vision and objectives for transportation.

6.1.3 County Zoning

The pathway alignment will pass through most County land use zones. The bike path acts as both a public transportation facility and an open space recreational resource. In one capacity or the other, the proposed pathway is a permitted use in all County land use zones. Special overlay zoning districts also apply including:

Tsunami District

Park and recreational facilities are a permitted use within the tsunami district. All structures and developments will be subject to additional construction and development standards, if required, as provided in Section 15-1, Flood Plain Management, Kaua'i County Code.

Shore District

Park and recreational facilities are a permitted use within the shore district. All proposed development will be subject to development standards and permitting requirements as provided in Section 8-13 of the Kaua'i County Code, and Chapter 205 Hawaii Revised Statutes.

Special Treatment District- Public

There are two Special Treatment Districts with in the project area. The first, the Līhu'e Town Center area, is zoned Residential (R1), with Special Treatment District- Public overlay. The second, the Līhu'e Airport area, is zoned Industrial General, also with a Special Treatment District- Public overlay. Where the path falls within these districts, the alignment will follow existing roadways. Improvements in these Districts will not substantially change the form or appearance of structures or land.

6.1.4 Special Management Area

Sections of the project are located within the Special Management Area (SMA) boundary established in accordance with the State Coastal Zone Management Law (Chapter 205A, Hawai'i Revised Statutes, see **section 7.2.4**). A Special Management Area Permit will be required from the County of Kaua'i for coastal portions of the pathway alignment. **See Figure 6-1.**

The potential effects of the proposed project are evaluated based on the SMA guidelines established by Kaua'i County. The following is a discussion of the applicability of the guidelines to the proposed Nāwiliwili-Civic Center-Ahukini Bike and Pedestrian Path:

A. All development in the special management area shall be subject to reasonable terms and conditions set by the Authority to insure that:

(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:

Currently the Ahukini to Ninini Point coastline is used as a popular fishing area. Public access is provided by an unimproved dirt road that follows an existing twenty foot wide easement. Coastal access will be maintained for fishermen and other recreational users via this easement.

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

The project will provide new pedestrian and bicycle access to the coastline between Ahukini and Ninini Point. The improvements along this segment will include a ten foot wide concrete bike path with directional and interpretive signage. A comfort station is planned for the existing developed areas at Ninini Point Lighthouse. No other vertical improvements will be constructed along this path segment in order to preserve the existing undeveloped character of the shoreline.

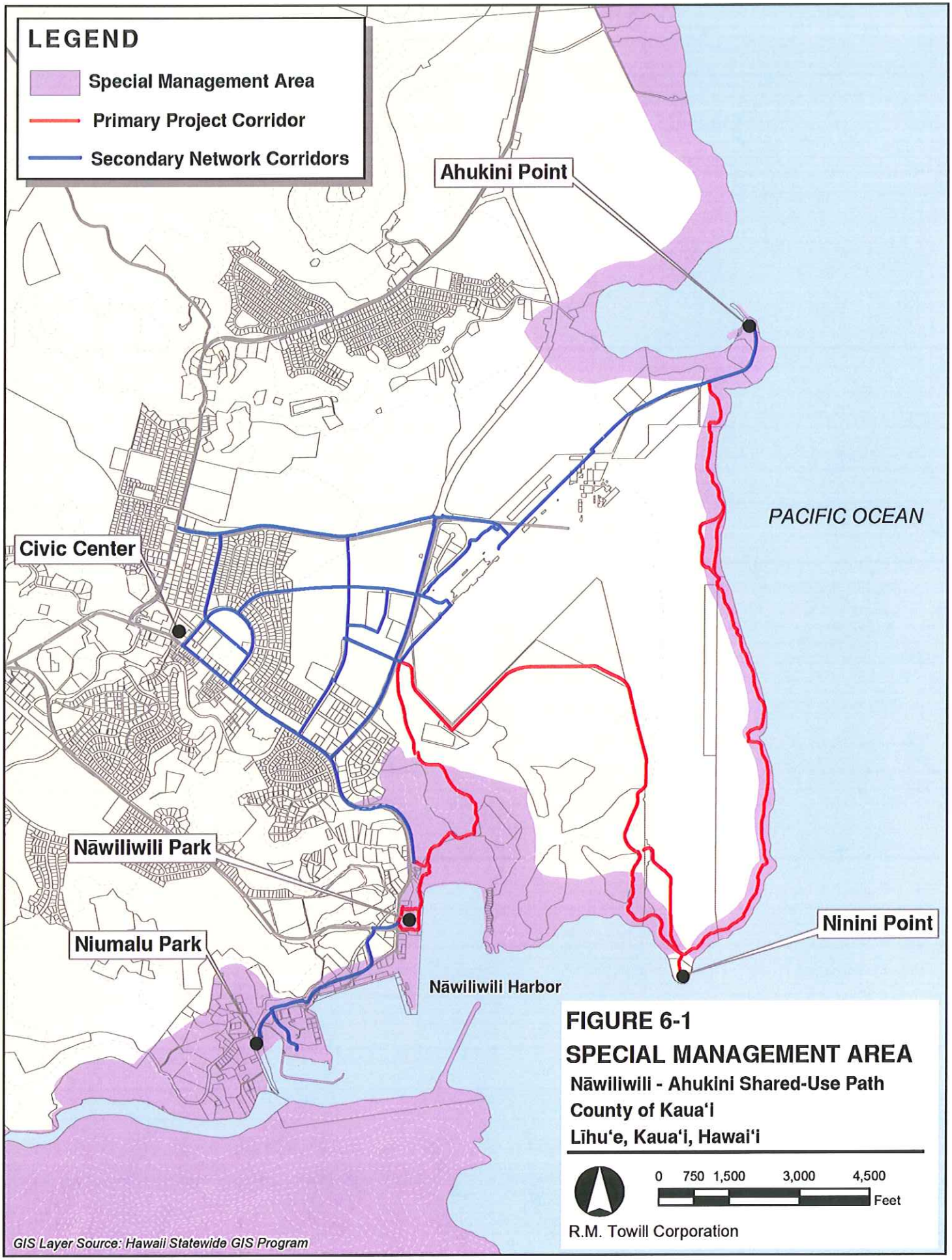


FIGURE 6-1
SPECIAL MANAGEMENT AREA
Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Kaua'i, Hawai'i

0 750 1,500 3,000 4,500
Feet

R.M. Towill Corporation

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

Where sewer service is available, such as at Nāwiliwili Park, comfort stations will be connected to a sewer collection and treatment system. As an alternative where sewer service is unavailable, such as at Ninini Point, comfort stations will utilize septic tanks and leach fields. Construction activities will result in a temporary increase in wastewater generation. Port-a-Johns will be used during construction and will be discharged off-site in compliance with State and County regulations.

Solid waste generated on County facilities is collected by the County of Kauai and disposed of at the Keaha Landfill, which serves the entire island. A refuse transfer station in Lihue is also used for solid waste collection. Refuse collected at the transfer station is ultimately disposed in the landfill. The proposed project is not expected to result in a significant increase in solid waste generation. Trash cans will be provided along the pathway for use by path users. Collection and disposal will be handled by the existing solid waste service. As part of a solid waste management program, the County will consider the reuse of green waste generated by landscape maintenance. Green waste will be chipped and/or composted for reuse as mulch, as practicable. All solid waste generated by construction activities will be disposed of off-site by the project contractor in compliance with County regulations.

B. No development shall be approved unless the Authority has first found that:

(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, safety, and welfare, or compelling public interest. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each of which taken in itself might not have a substantial adverse effect and the elimination of planning options.

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 impacts should be considered in light of the project's public safety and interest.

Bike paths serve the public interest in the following ways:

- Promoting alternative modes of transportation thus reducing dependence on automobiles.
- Promoting improved cardiovascular health and weight loss by encouraging physical activity through walking and bike use.
- Creating economic opportunity for businesses and services along the path alignment.
- Preserving public shoreline access.

(2) The development is consistent with the objectives and policies, as enumerated in Chapter 205A, HRS, and special management area guidelines set forth in these Rules and Regulations.

The project is in compliance with the objectives and policies set forth in Chapter 205A-2 Hawaii Revised Statutes (HRS), and Special Management Area guidelines contained in HRS Section 205A-26. See **Section 6.3.5**, HRS 205 Coastal Zone Management, for further discussion.

(3) The development is consistent with the County General Plan, and zoning ordinances. Such a finding of consistency does not preclude concurrent processing where a general plan or zoning amendment may also be required.

The proposed project will be developed in conformance with the Kaua'i General Plan's policies for *Scenic Views, Coastal Lands, and Bikeways*. The project will also be developed in conformance with the County of Kaua'i Zoning Ordinances as described in **Section 6.1.3**.

C. The Authority shall seek to minimize, where reasonable:

(1) Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough, or lagoon.

The project will not involve dredging, filling or alteration of the shoreline configuration. Planned improvements on the shoreline consist of renovating the existing seawall at Nāwiliwili Park. The project corridor and associated comfort station located at Nāwiliwili Park, adjacent to Nāwiliwili Bay, will improve upon already existing facilities and will not alter the configuration of the Bay or Nāwiliwili River. No estuary, salt marsh, slough or lagoon is located near the preferred alignment and none will be affected by the project activities.

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

No beaches along the coastal shoreline will be reduced in size. The current unpaved public easement will be maintained to ensure continued access to the shoreline between Ahukini and Ninini Point for fishermen and other recreational users. Improvements at Nāwiliwili Park will not replace existing park amenities or reduce the size of the recreation area.

(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.

The project will not reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the Special Management Area, or the mean high tide line along the Ahukini-Ninini Point coastline where there is no beach. Planned path improvements will enhance public access to the shoreline.

(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, or from existing public views to and along the shoreline.

The Līhu'e Development Plan has designated the coastline between Ahukini and Ninini Point as a major scenic geographical feature. The Kaua'i General Plan has designated this area as open space/conservation. The Līhu'e Development Plan also lists Nāwiliwili Bay and Kalapakī Beach as major scenic areas.

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 along the coastline between Ahukini and Ninini Lighthouse in order to maintain open space and the visual resources of the area. The proposed comfort station at Ninini Point Lighthouse will be sited and designed to blend into the surrounding landscape. Improvements at Nāwiliwili Park, near Kalapakī Beach, will enhance present park amenities and may include the use of native plants typical to the area to enhance the visual quality of the Park.

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

Project improvements will not encroach on any water bodies. The project will preserve existing access to shoreline fishing areas but is not expected to result in significant increase in fishing activity that would adversely affect fisheries or fishing grounds. No estuarine sanctuaries occur along the preferred alignment. Where the pathway passes through agricultural lands it will follow existing access corridors and it will not reduce the amount of land used for agricultural purposes. Preservation in perpetuity of public coastal access represents the enduring public benefit of preserving public coastal access in perpetuity outweighs the productive value of agricultural lands surrendered for bike path construction. The coastal location of the bike path is unique and irreplaceable for the purposes of coastal protection in contrast to the agricultural benefit of the land which can be realized in other locations.

6.1.5 Other County Plans

Līhu'e Civic Center Master Plan

The Līhu'e Civic Center Master Plan was created to revitalize the seventeen acre, two block area located at the most mauka (western) portion of the project area. The site is bound by Rice Street, 'Umi Street, Hardy Street and Kūhiō Highway. State and County buildings, the Kaua'i Museum, Big Save, Hawaiian Telcom, the County Lawn, parking lots and a transit stop are located in the Civic Center area.

Several goals were identified in order to revive the Civic Center area as the heart of Līhu'e Town. Two of those goals address the issue of bike use: Improve traffic circulation around the area, and support multi-modal transportation systems with bike paths and shuttle service. One aspect of improving traffic circulation calls for bike lanes to be striped on both sides of Hardy Street and 'Umi Street. No bike lanes were planned for Rice Street and Kūhiō Highway due to lack of space. The plan recommends that bicyclists on these two streets either share the roadways with vehicles or use alternate routes. Bicycle racks are planned for the Pi'ikoi Building at the southwest corner and north adjacent to the building entry, and the southeast corner of the Historic County Building along the promenade. The plan also suggests that the County consider installing bike racks along public streets where sidewalk widths would permit.

The bicycle facilities discussed in the Līhu'e Civic Center Master Plan were developed in conjunction with the County Planning Department's *Līhu'e Town Core Urban Design Plan's* more comprehensive Līhu'e bike path network. See **Section 2.2.2.L** for additional discussion.

6.2 State of Hawai'i

6.2.1 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 project complies with the Hawai'i State Plan according to 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 226-18 Objectives and policies for facility systems--energy.

(c)(7) Promote alternate fuels and energy efficiency by encouraging diversification of transportation modes and infrastructure.

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.

6.2.2 State Land Use District Classification

The State Land Use Law (Chapter 205, HRS) was adopted in 1961, and is meant to preserve and protect Hawai'i lands, and encourage the uses to which the lands are best suited. All lands in Hawai'i are classified as Urban, Rural, Agricultural or Conservation.

The project is with in the State Agriculture, Urban and Conservation Districts. The following segments of the project are within the State Urban District: Nāwiliwili to Marriott and Kaua'i Lagoons Main Entrance Drive; Līhu'e Airport Connection; Airport and Marriott/Kaua'i Lagoons to the Stadium/Judicial Area and Līhu'e Town; Nāwiliwili to Līhu'e Town. The Marriott and Kaua'i Lagoons Main Entrance Drive to the Ninini Point Lighthouse segment lies primarily within the Use Urban District, with the Ninini Point portion located in the Conservation District. The Ninini Point Lighthouse to Ahukini Road segment passes through the State Urban and Conservation Districts. **See Figure 6-1.**

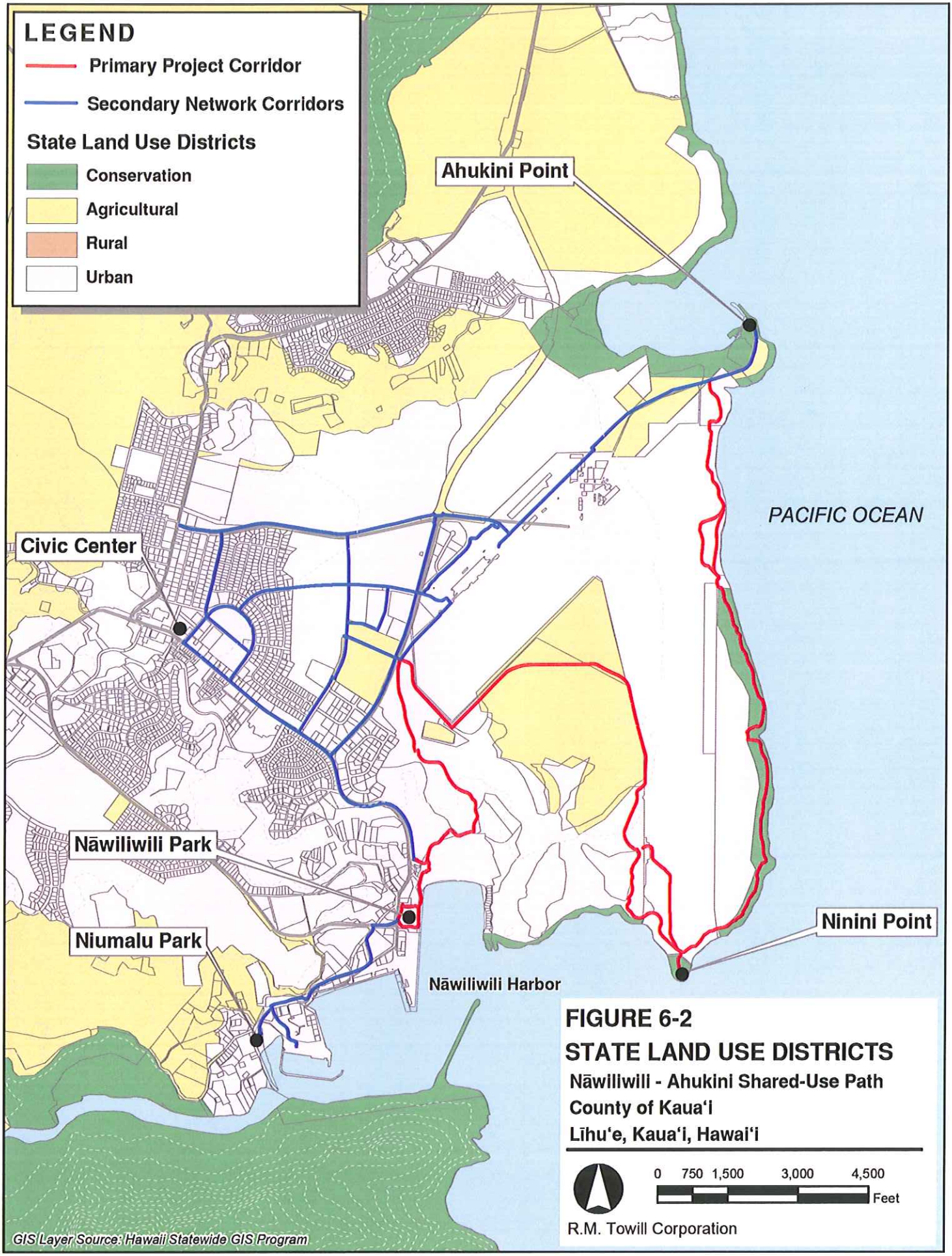


FIGURE 6-2
STATE LAND USE DISTRICTS
Nāwiliwili - Ahukini Shared-Use Path
County of Kaua'i
Līhu'e, Kaua'i, Hawai'i

0 750 1,500 3,000 4,500 Feet

R.M. Towill Corporation

The project is consistent with allowed uses for the Urban and Agricultural Districts. A Conservation District Use Permit will be obtained for project use in the Conservation District.

6.2.3 Hawai'i Statewide Transportation Plan

The Hawai'i Statewide Transportation Plan (HSTP) is a policy document that establishes the framework to be used in the planning of Hawai'i's transportation system. The mission of the HSTP is to provide for the sage, 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.

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.*
- *Increase the mileage of bicycle lanes and bicycle routes.*
- *Provide wide shoulders along roads where bicycle lanes are not feasible or merited.*
- *Sweep and maintain roadway shoulders and bike/multi-use paths regularly.*

6.2.4 Bike Plan Hawai'i

The 2003 Bike Plan Hawai'i is an updated master plan which outlines how the state intends to accommodate and encourage bicycle use. The following lists are objectives and recommendations specifically for the island of Kaua'i:

Objectives:

- *Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.*
- *Develop a circumferential bikeway facility along the existing highways.*
- *Identify scenic routes along existing highways and off-highway corridors to promote areas of safe, comfortable, and attractive bike rides.*
- *Develop designated bike lanes in communities with relatively high populations or smaller communities with high through-traffic volumes.*
- *Identify opportunities to incorporate former cane haul roads and other backroads into the bikeway network.*
- *Where appropriate, provide non-motorized access to the island's ecologically and culturally important sites.*

Kaua'i Near-Term Recommendations:

Bike lane on Ahukini Road from Kūhiō Highway to Kapule Highway
Bike Lane on Hardy Street- Kūhiō Highway to 'Umi Street
Signed Shared Road- Nāwiliwili Road from Kaumuali'i Highway to Lala Road

Priority II Proposals (Mid-Term):

Ahukini Road Kapule Highway- State Recreation Pier
Kūhiō Highway- Rice Street to Hanamā'ulu
Kaua'i Commuter Bikeway Vicinity- Kaumuali'i to Wailua River
'Umi Street- Rice Street to Ahukini Road
Rice Street- Kūhiō Highway to Kapule Highway
Lala Road- Nāwiliwili Road to Rice Street
Līhu'e Community Pathway along Nāwiliwili Stream/ RR ROW to Civic Center

Priority III Proposals (Long-term)

Connection A to Future Bikeway Isenberg Park Future Commuter Bikeway
Halekō Road- Nāwiliwili Road to Rice Street
Pua'ole-Ho'olako Streets- 'Umi Street to Kapule Highway
Wa'apā Road- Niumalu Road to Nāwiliwili Beach

Priority IV Proposals (Contingent on Roadway Project)

Future Bypass Highway- Kaumuali'i Highway North of Hanamā'ulu

Discussion:

The project is in conformity with the bikeway objectives for Kaua'i. The project is located in the most populated region on the island and will eventually connect the Līhu'e area to the larger bike path network. The corridor connects areas of commercial and residential use to the coastline. The project will utilize existing roadways and create new pathways to promote safe, comfortable and attractive bike rides. Where possible the project will work in conjunction with bike path proposals for already existing roadways and proposed roadways as described in the Līhu'e Civic Center Master Plan and the Līhu'e Town Core Urban Design Plan.

The preferred path alignment incorporates the areas identified by the Bike Plan Hawai'i recommendations for Kaua'i. First, second and third level priority segments have been included in the project. First level priorities include a coastal shared use path from Ahukini to Ninini Point, connecting with Ho'olako Street; Hardy Street, from Kūhiō Highway to 'Umi Street; and Ahukini Street, from Kapule Highway to Kūhiō Highway. Second level priorities include Ahukini Road, Kapule Highway to the State Recreation Pier; 'Umi Street, from Rice Street to Ahukini Road; Rice Street, from Kūhiō Highway to Kapule Highway; Rice Street, Lala Road to Kapule Highway; and the Līhu'e Community Pathway, which would run along Nāwiliwili Stream. Finally, third level priority segments include, Pua'ole-Ho'olako Streets, from 'Umi Street to Kapule Highway; and Wa'apā Road from Niumalu Road to Kaumuali'i Highway.

6.2.5 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 Chapter (A)-250, HRS, 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 Land and Natural Resources) may designate for the purpose of administering the CZMP.

The project is being developed on public and private lands with County, State and Federal funds. The CZM review of the project 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 Chapter 205(A)-2, HRS:

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;

(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

(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;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.

Discussion:

The project is federally funded and coordinated through County of Kaua'i Department of Public Works for the purpose of improving recreational coastal access. The Nāwiliwili-Civic Center-Ahukini Bike Path is part of a larger pathway system that will link coastal recreational resources between Anahola and Nāwiliwili.

The project will provide new pedestrian and bicycle access to the coastline between Ahukini and Ninini Point. Currently the Ahukini to Ninini Point coastline is used as a popular fishing area. Public access is provided by an unimproved dirt road that follows an existing twenty foot wide easement. Coastal access will be maintained for fishermen and other recreational users via this easement.

The improvements along this segment will include a ten foot wide concrete bike path with directional and interpretive signage. A comfort station is planned for Ninini Point Lighthouse. No other vertical improvements will be constructed along this path segment.

The project corridor will run adjacent to the western edge of Nāwiliwili Harbor, but will utilize and improve already existing paths. As part of this project improvements will be made at Nāwiliwili Park. Improvements may include covered picnic tables, landscaping, parking, informational signage and comfort station. Renovation of the existing seawall along the front of Nāwiliwili Park is also proposed.

Interpretive signage will be placed along the project corridor educating users on the important natural and recreational resources through out the coastal area and ways to aid in the conservation and protection of those resources.

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. Proposed improvements will not alter existing drainage pattern.

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:

An archaeological field inspection and cultural impact evaluation prepared for the project (See Appendices A and B, and Section 5.2 and 5.3), identify known historic properties, as well as areas along the path routes where the potential for encountering previously unknown cultural or historic properties is higher. The preferred path alignment is routed to avoid known archaeological and historic sites. The final alignment will be established during the design phase when ground topography will be used to precisely locate known historic properties and ensure they are avoided by the path. Proposed mitigation measures include on-site and on-call monitoring during construction activities. In addition, pursuant to on-going consultation with SHPD, subsurface testing may be required in specific locations where more extensive excavation is planned (e.g, installation of drainage culverts, comfort station, and septic leachfield).

Path improvements include installation of signs to communicate interpretive and regulatory information to path users concerning the history of the area, the presence of cultural and historic resources, and ongoing efforts to preserve and learn from the physical remains of our predecessors.

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 the Coastal Zone Management Program Objective three, Scenic and Open Space, which encourages the protection, preservation and where desirable, restoration or improvement of the quality of coastal scenic and open space resources. The Līhu'e Development Plan has designated the coastline between Ahukini and Ninini Point as a major scenic geographical feature. The Kaua'i General Plan has designated this area as open space/conservation. The Līhu'e Development Plan also lists Nāwiliwili Bay and Kalapakī Beach as major scenic areas.

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 along the coastline between Ahukini and Ninini Lighthouse in order to maintain open space and the visual resources of the area. The proposed comfort station at Ninini Point Lighthouse will be sited and designed to blend into the surrounding landscape. Improvements at Nāwiliwili Park, near Kalapakī Beach, will enhance present park amenities and may include the use of native plants typical to the area to enhance the visual quality of the Park.

4. Coastal ecosystems;

(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

(B) Improve the technical basis for natural resource management;

(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:

The project is not part of a coastal ecological management program but will include interpretive signage to educate the public about significant habitats, threatened and endangered species, and preservation efforts. Project activities do not involve alterations to stream channels or other water bodies or water sources.

During construction, best management practices will be employed in compliance with NPDES permit requirements to prevent pollutant discharge 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 site-specific Best Management Practices (BMP) plan by the project 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:

There are no Hawai'i Visitors Bureau (HVB) designated tourist destinations (signified by the Warrior Icon) located in the coastal areas of the project, however, additional areas within the coastal zone that are promoted by the HVB as tourist destinations include: Ahukini Landing, Nāwiliwili Harbor, Nāwiliwili Beach Park, Kalapakī Beach and two golf courses at Kaua'i Lagoons.

The project would provide bicycle access linking passengers arriving at Nāwiliwili Harbor to Ahukini Landing, Nāwiliwili Beach Park and Kalapakī beach as will as Līhu'e town center and Līhu'e Airport. The project will also provide connection to the larger bike path system with access to the coastal towns of Kapa'a, Wailua, Waipouli, Keālia, and Anahola. Bike paths also have the potential to provide economic stimulus where they provide linkage between commercial districts, as part of a recreational and multi-modal commuter system. In addition bike paths may 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 Chapter 343, HRS. With the implementation of mitigation measures outlined in this document no adverse impacts are expected to result from this project.

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:

The Federal Emergency Management Agency Flood Insurance Rate Map indicates that the project corridor passes through the following special flood hazard areas inundated by 100-year flood. Between Ahukini and Ninini, flood elevations are designated as VE (in which flood elevations of 13-22 feet msl have been determined). In the Kalapaki, Nāwiliwili, and Niumalu areas, flood elevations are designated as AE (in which flood elevations of seven feet msl have been determined). The project corridor also passes through Zone X which has been determined to be outside the .2% annual chance floodplain.

Long-term impacts due to coastal erosion will be minimized by the initial design of the path. Grading and excavations required for construction of the path and related amenities will be designed to minimize the amount of cut and fill required. The path alignment was selected to take advantage of natural grades in order to meet ADA accessibility standards for slopes with a minimal amount of ground disturbance and related costs. Erosion control measures will be employed during construction. Following project completion, permanent soil stabilization will be achieved through landscaping with various plant materials and ground covers. In addition, the path will be constructed of concrete or other durable all-weather surface to minimize potential for erosion.

Natural hazards endemic to all of Hawai'i, including Kaua'i, involves tsunami action. There have been four episodes since 1946. These occurrences happened in 1946, 1957, 1960 and 1964 respectively. The run-up heights vary from 1 foot to 14 feet. **Figure 3-3** shows the tsunami evacuation zone within the project area. Strong trade wind events are responsible for the majority of large wave action along the eastern coast of Kaua'i. Passing hurricanes have generated the highest wave heights along the east 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.

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The County of Kaua'i has been affected twice since 1982 by devastating hurricanes, 'Iwa in 1982 and 'Iniki in 1992. It is difficult to predict these natural occurrences, but 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.

The project is not expected to exacerbate or reduce flood zone areas, as identified by Federal Emergency Management Agency Flood Insurance Rate Maps. The path will be designed outside of the flood zone when possible. Alternative routes will also be provided to allow path users to detour away from flooded areas if and when they should occur. The path and amenities will be designed to withstand flood occurrences as estimated by FEMA.

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 within the State land use category of Urban, Agricultural, and Conservation. Land uses with in the Urban and Agricultural designations are subject to regulation by the County. Land uses with in the Conservation district are subject to regulation by the Department of Land and Natural Resources (DLNR). A Conservation District Use Permit will be obtained from DLNR for use with in the Conservation District.

All work activities will be conducted in compliance with Federal, State, and County rules and regulations. This environmental assessment document is prepared to identify and, where necessary, propose mitigation measures to address impacts anticipated from the construction and operation of proposed improvements. This document will be published for public review and comment in compliance with procedures set forth in Chapter 343, HRS (see section eight below for further discussion).

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:

The project is being developed through a public outreach process that includes three public informational meetings to develop the preferred path alignment and amenities. The meetings will be broadcast on the Kaua'i public access television station, Ho'o'ike. A public hearing before the Planning Commission will also be conducted as part of the SMA permit approval process. Additionally, public notice of the proposed action will be provided through publication of the environmental assessment, CZM Federal Consistency Review, Shoreline Certification Application, and SMA permit application in the Office of Environmental Quality Control (OEQC) Bulletin. As part of the environmental review process, the public will have an opportunity to review and comment on the project during the 30-day public review period. All public comments will be addressed in writing. Mitigation measures will be developed where appropriate to address issues and conflicts raised during 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:

One new comfort station is proposed at Ninini Point. The comfort station building will be sited away from the shoreline and situated to conserve open space. Bridge and/or culvert crossings at major drainage ways along the coastline will be designed to avoid interference with natural processes and to withstand natural hazards including erosional forces. Additional improvements are proposed for Nāwiliwili Park, including replacement of the existing comfort station, installation of new picnic tables, and landscaping. No shoreline hardening is proposed as part of this project with the exception of renovation of the existing seawall along the front of Nāwiliwili Park. Planned 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 on 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 sea birds and the protected Hawiian monk seal, include educational and regulatory signage to instruct the public about conservation efforts and appropriate actions individuals should take to preserve marine resources.

6.3 Federal

6.3.1 Clean Water Act Section (401) (404)

(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, Regulatory Branch, and the Clean Water Branch, Department of Health, are being consulted to identify permitting requirements as pertains to their jurisdiction under to the Clean Water Act. It is expected that a Section 401 Water Quality Certification and Section 404 permit will be required for proposed improvements to the seawall at Nāwiliwili Park that result in discharges to near shore waters. In addition, a National Pollutant Discharge Elimination System (NPDES) permit will be required from the State Department of Health for construction-related storm water runoff.

6.3.2 Department of Transportation Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in Federal law at 49 USC §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:

Consultation was initiated with organizations and individuals that have an interest in the project area and particularly along the proposed bike path alignment. Individual and organizations contacted were specifically asked to identify areas of concern as it pertains to historic resources, recreation resources, public parks, wildlife refuges, and plant or animal species that may be impacted by the project. Correspondence is included in **Appendix G – Federal Consultation.** Comments were received from the State Department of Land and Natural Resources (DLNR) and the County of Kauai Department of Public Works:

- The State Department of Land and Natural Resources (DLNR) Division of State Parks (DSP) concluded that the proposed project will enhance existing parks, including Ahukini Recreational Pier State Park, and expand outdoor recreation. The project also meets one of the recreation priority needs identified in the 2003 Hawaii Statewide Outdoor Recreation Plan (SCORP) which is the need for more linear paths to accommodate bicycles and pedestrians. Additional consultation is ongoing.

- The Kauai County Department of Public Works requests additional information on potential impacts to the Kauai Museum, the War Memorial Convention Hall, Vidinha Memorial Stadium and Soccer Complex, and Niumalu Park. These facilities are included in this project as part of the Secondary Network Path System. Bicycle / pedestrian access improvements adjacent to and within these facilities will be undertaken as part of separate, on-going planning efforts by the County, including:

  Līhu'e Civic Center Master Plan, being prepared by the Building Department

  Līhu'e Urban Design Guidelines, being prepared by the Planning Department

  Vidinha Memorial Stadium and Soccer Complex Master Plan being prepared by the Depart of Parks and Recreation.

Use of 4(f) properties is expected to enhance the recreational value of those resources. No impacts to historic properties, wildlife refuges, wetlands, or other significant sites is expected to result from the proposed project.

6.3.3 Endangered Species Act

The purpose of the Endangered Species Act (ESA) of 1973, is to protect and conserve ecosystems upon which endangered and threatened species are dependant, and to provide for the conservation of endangered and threatened species. The ESA is administered by the U.S. Department of Interior through the Fish and Wildlife Service and the U.S. Department of commerce through the National Marine Fisheries Service, National Oceanic and Atmospheric Administration.

Discussion:

Consultation was initiated with organizations and individuals that have an interest in the project area and particularly along the proposed bike path alignment. Individual and organizations contacted were specifically asked to identify plant or animal species that may be impacted by the project. Responses were received from DLNR, Division of Forestry and Wildlife and from the U. S. Fish and Wildlife Services (USFWS). Their comments are reflected in the identification of flora and fauna known from the project area and proposed mitigation measures described in **Sections 3.5** and **3.6** of this document.

6.3.4 National Historic Preservation Act Section 106

The National Historic Preservation Act (NHPA) became law in 1966, and was last amended in 2000. The NHPA requires government agencies to evaluate the impact of government funded construction projects through the process known as Section 106 Review. The goal of the process is to identify historic properties potentially affected by the proposed project, assess its 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 Officers.

Discussion:

Consultation was initiated with organizations and individuals that have an interest in the project area and particularly along the proposed bike path alignment. Individual and organizations contacted were specifically asked to identify historic or cultural sites that may be impacted by the project. Further, these organizations and individual was asked if the proposed project would curtail the traditional access or cultural practices. Responses were received from DLNR-SHPD, DLNR-DSP, The Historic Hawaii Foundation, and the Office of Hawaiian Affairs (OHA).

SHPD-Architecture review and the Historic Hawaii Foundation had no concerns about impacts to existing historic structures. The comfort station located at Nāwiliwili Park that is proposed for demolition and replacement was constructed in 1967 and is thus ineligible for listing on the State historic register. Two historic bridges identified as part of the archaeological field reconnaissance conducted for the project, one across Nāwiliwili Stream and one across Puali Stream near Niumalu, will be the subject of an additional in-depth historic assessment report.

SHPD and OHA commented on the potential for impacts to historic sites resulting from the project, including remnants of pre-contact settlement areas, recorded heiau sites, and other known or unknown sites within the project area. The preferred path alignment is routed to avoid known archaeological and historic sites. The final alignment will be established during the design phase when ground survey will be used to precisely locate known historic properties and ensure they are avoided by the path. The archaeological field inspection and cultural impact evaluation prepared for the project (See **Appendices A** and **B**, and **Section 5.2** and **5.3**), identifies known historic properties, as well as areas along the path routes where the potential for encountering previously unknown cultural or historic properties is higher. Proposed mitigation measures include on-site and on-call monitoring during construction activities. In addition, pursuant to on-going consultation with SHPD, subsurface testing may be required in specific locations where more extensive excavation is planned (e.g, installation of drainage culverts, comfort station, and septic leachfield).

6.3.5 Coastal Zone Management

The Coastal Zone Management Act (CZMA), enacted in 1972, provides 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 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 bike-pedestrian path 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.

SECTION 7 – NECESSARY PERMITS AND APPROVALS

7.1 State of Hawai'i

7.1.1 Conservation District Use Application (CDUA), Department of Land and Natural Resources (DLNR)

Approval of a CDUA is required prior to development within the State Conservation District. A CDUA permit will be required for the comfort station at Ninini Point, segments of the path along the coastline makai of the airport.

7.1.2 Shoreline Certification

Certification of the shoreline by DLNR to establish the location of the shoreline along the coast is necessary for proposed development within the shoreline setback. It is also required for other laws related to activities within coastal areas and is applicable to all real properties within the State of Hawai'i which border the ocean.

7.1.3 Community Noise Control –Department of Health

A Noise Permit is required from the State Department of Health for construction activities that exceed noise levels established by the Community Noise Code; and will be required for construction outside of normal daylight hours.

7.1.4 Wastewater Systems- Department of Health (DOH)

Review of wastewater plans by DOH is required where connection to municipal service is anticipated, or if individual wastewater systems (IWS) are utilized.

7.1.5 Commission on Persons with Disabilities

The proposed project is subject to review to ensure compliance with American Disability Act Accessibility Guidelines (ADAAG) for accessibility to persons with disabilities. Project plans will be submitted to the Commission on Persons with Disabilities and to the Disability and Communication Access Board (DCAB).

7.1.6 National Pollutant Discharge Elimination System Permit (NPDES)

NPDES permits are required by the State Department of Health for the management and control of construction stormwater discharges, hydro-testing discharges, and the discharge of groundwater.

7.1.7 State Department of Transportation (DOT)

The project requires ongoing consultation with the State DOT for review of plans that impact airport facilities, highway facilities, and harbor facilities.

7.2 County of Kaua'i

7.2.1 Special Management Area Permit (SMA)

Development within the SMA area requires a permit from the Planning Commission. The SMA, along with the Building Permit, will also address flood zone issues.

7.2.2 Shoreline Setback Variance (SSV)

Will be required from the County of Kaua'i, if the path is within the setback from the certified shoreline. The SSV, along with the SMA and Building Permit, will also address flood zone issues.

7.2.3 Building Permit

Will be required from the County of Kaua'i prior to the construction of buildings such as comfort stations. The Building Permit, along with the SMA and SSV, will also address flood zone issues.

7.3 Utility Companies

Plan review by local utility companies will be undertaken as required and appropriate.

SECTION 8 AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED

8.1 County of Kaua'i

Mayor's Office
Fire Department
Kauai Historic Preservation Review Commission
Planning Department
Police Department
Public Works
Water Department
Parks Department

8.2 State of Hawai'i

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

Department of Health
Department of Land and Natural Resources
- Aquatic Resources Division
- Division of State Parks
- Land Division
- Office of Coastal and Conservation Lands
- State Historic Preservation Division

Department of Transportation
- Airports Division
- Highways Division
- Harbors Division

Office of Environmental Quality Control
Office of Hawaiian Affairs

8.3 Federal Government

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
Transportation Security Administration
Federal Aviation Administration
U.S. Coast Guard

8.4 Elected Officials

Kaua'i County Council

Mel Rapozo
JoAnn A. Yukimura
Jay Furfaro
Bill "Kaipo" Asing
Ronald D. Kouchi
Shaylene Iseri-Carvalho
Tim Bynum

State Senators

Senator Gary Hooser, 7th District, Kaua'i, Ni'ihau

State Representatives

Representative James Tokioka, 15th District, Līhu'e, Koloa

8.5 Community Organizations and Individuals

Kaua'i Island Utility Co-op
Hawaiian Telcom
Kaua'i Lagoons
Kaua'i Marriot Resort
Lihue Business Association
Kauai Path, Inc.
Historic Hawaii Foundation

SECTION 9 – SIGNIFICANCE DETERMINATION

9.1 Significance Determination

According to the Department of Health Rules (HAR 11-200-12), an applicant or agency must determine whether an action may have a significant impact on the environment, including all phases of the project, it's expected consequences, both primary and secondary, it's cumulative impact with other projects, and it's short and long term effects. In making the determination, the Rules establish "Significance Criteria" to be applied as a basis for identifying whether significant impact environmental impact will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria:

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

The proposed project will not cause any irrevocable loss of natural or cultural resources. The park features on the corridor have been historically used socially for park use, recreation and fishing. View corridors from inside the path to the ocean will not be impacted with the construction of the trail, and the comfort station will be located on the mauka side of the path.

As previously noted, no significant archaeological or historical sites are visible on the corridor. Should any archaeologically significant artifacts, or other indicators of previous on-site activity be uncovered during the construction phase, their treatment will be conducted in strict compliance with the requirements of the Department of Land and natural Resources.

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

The proposed path system will result in irretrievable use of the physical environment occupied by the improvements, however the use of the path will improve public access along the shoreline thereby enhancing the range of beneficial uses of the coastal environment. Benefits include preservation of coastal access and open space in perpetuity, preservation of access to fishing sites, provision of a new public resource for recreation, fitness activities, and socializing, and opportunities for public education through exposure to the natural, historic and scenic resources along the path and related interpretive and informational signage. The path and related amenities occupy a very small amount of space within the larger landscape, leaving extensive tracts of coastal land open for other uses.

3. Conflicts with the State's long term environmental policies 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 project is consistent with the Environmental Policies established in Chapter 344, HRS, and the National Environmental Policy Act (NEPA).

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

The proposed project will provide a significant and positive impact on the Kaua'i community in the short term with employment opportunities, and in the long term with enhanced and improved recreational opportunities.

5. Substantially affects public health;

During construction, there will be minor impacts to air quality and noise levels. After completion of the construction work, these will be insignificant or undetectable. The positive aspects of the proposed project in the areas of economic and social benefits of the community are greater than the "No Action" alternative.

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

Impacts on public facilities will not be an issue. It is expected that the bike path project will provide greater recreation opportunities for the people of Kaua'i, but it is not expected that the bike path project will bring an increase in population to live in Kaua'i.

7. Involves a substantial degradation of environmental quality;

The bike path project will not degrade the environment either by its construction or by its use.

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

The Ahukini Point-Civic Center-Nāwiliwili Bike and Pedestrial Path will make the parks usable and will be sited away from environmentally sensitive areas, and does not commit resources or energy for a larger action.

9. Substantially affects are rare, threatened or endangered species or it's habitat;

No endangered plant or animal species will be affected by the project. Mitigation measures developed by specialists in biology, zoology and botany, in consultation with the state federal

regulatory authorities will be implemented to prevent adverse impacts to protected birds and mammals known to inhabit the project area.

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

There are no air quality or noise issues surrounding this project. All measures will be taken during construction to prevent runoff from entering the ocean or streams.

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

Although some segments of the path are located along the oceanfront, the path will be built away from areas subject to erosion, wave inundation, or other hazardous conditions and will not affect erosion or bank stabilization.

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

The views into or out of the project corridor will not be affected by the path.

13. Requires substantial energy consumption;

The construction of the path and/or comfort station will not require substantial consumption of energy or resources, nor will use of the path following project completion.

SECTION 10 FINDINGS

In accordance with the provisions set forth in Chapter 343, Hawaii Revised Statutes, and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, Hawai'i Administrative Rules, this assessment has determined that the project will have no significant adverse impact to water quality, air quality, existing utilities, noise levels, social welfare, archaeological sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area. Impacts that have been identified will be mitigated. Based on analysis and review of the above factors, it has been determined that an Environmental Impact Statement (EIS) will not be required, and that a Finding of No Significant Impact (FONSI) be issued for this project.

SECTION 11 REFERENCES

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APPENDIX A

Archaeological Literature Review and Field Inspection Report

Archaeological Literature Review and Field Inspection Report for the Nāwiliwili-Ahukini Bike Path Project Nāwiliwili, Kalapakī and Hanamā'ulu Ahupua'a Līhu'e District, Kaua'i Island

TMK: (4) 3-2-004; 3-5-001, 002 & 3-6-002, 019, 020, and various rights-of-way between various plats

Prepared for

R.M. Towill Corporation

Prepared by

Chris Monahan, Ph.D.

and

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(Job Code: NAWILIWILI 1)

July 2008

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Management Summary

Reference	Archaeological Literature Review and Field Inspection Report for the Nāwiliwili-Ahukini Bike Path Project, Nāwiliwili, Kalapakī and Hanamā'ulu Ahupua'a, Līhue District, Kaua'i Island, TMK: (4) 3-2-004; 3-5-001, 002 & 3-6-002, 019, 020, and various rights-of-way between various plats
Date	May 2008
Project Number	Cultural Surveys Hawai'i (CSH) Job Code NAWILIWILI 1
Investigation Permit Number	The field inspection was conducted under archaeological permit number 08-14 issued by the Hawai'i State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR), per Hawai'i Administrative Rules (HAR) Chapter 13-282.
Project Location	The project area is located in coastal and near-coastal portions of three *ahupua'a* in Līhu'e District, Island of Kaua'i; Hanamā'ulu, Kalapakī and Nāwiliwili. The proposed bike- and pedestrian-path route alignments are located near and adjacent to the Ahukini Landing, Ninini Point Lighthouse, Līhu'e Airport, Kaua'i Lagoons and Marriot Resort, Līhu'e Civic Center and residential areas *makai* (seaward) of the civic center, Nāwiliwili Park and Harbor, and Niumalu Park. This area is depicted on portions of the 1996 Līhu'e and 1996 Kapa'a USGS 7.5-minute topographic quandrangle maps (see Figure 1)
Land Jurisdiction	Public and private land
Agencies	SHPD
Project Description	The subject project is one phase of a larger project to connect Nāwiliwili with Anahola by a bike and pedestrian path. The subject project links Nāwiliwili, Ahukini Landing, and the Līhu'e Civic Center (see Figures 1 and 2).
Size of the Project Area	Approximately 8 miles (12.9 km) of bike- and pedestrian-path routes are included in the current alignment options for the subject phase of the project; design and widths of the various alignment options vary.
Area of Potential Effect (APE)	The Area of Potential Effect (APE) consists of all the alignment-option corridors between Nāwiliwili, Ahukini Landing and Līhu'e Civic Center, defined as the center line of the corridors and their immediately adjacent alignment shoulders.
Historic Preservation Regulatory Context	The Area of Potential Effect (APE) consists of all the alignment-option corridors between Nāwiliwili, Ahukini Landing and Līhu'e Civic Center, defined as the center line of the corridors and their immediately adjacent alignment shoulders.
Fieldwork Effort	CSH archaeologists Gerald K. Ida, B.A. and Missy Kamai, and principal investigator Hallett H. Hammatt, Ph.D., conducted the fieldwork on May 15 and 16, 2008.

Results	1. Seven historic properties—all in the coastal portion—have been previously identified in or immediately adjacent to the project area: three pre-Contact sites (a cultural layer at the shoreline, SIHP No. 50-30-11-424, an oval-shaped stone alignment or terrace, SIHP No. 50-30-11-421, and a 400-foot long stone wall considered to be a possible extension of Ninini Heiau, SIHP No. 50-30-11-100) and four historic-era sites (two stone wall remnants, SIHP Nos. 50-30-11-422 & 423, the ruins of a plantation camp near Ahukini Landing, SIHP 50-30-08-9000, and a plantation-era piggery, SIHP No. 50-30-08-3958). SIHP Nos. -100, -422 and -423 *may* be impacted by the proposed project; the other historic properties should not be affected by the proposed project. 2. A historic cemetery designated B004 (cf. Kikuchi and Remoaldo 1992) located near Nāwiliwili Park *may* be impacted by the proposed project. 3. Two historic bridges are located within existing rights-of-way / proposed alignments: an old railroad bridge previously modified as a pedestrian walkway spans the Nāwiliwili Stream, and an old one-lane bridge in disrepair spans the Pū'ali Stream in Niumalu. 4. There are three areas of dense vegetation that have not been developed with roads or trails: two alignments near the center of the project area may contain sugar cane-era sites on the ground surface. The other alignment area, near Ninini Point Lighthouse, may contain older stone ruins and / or plantation-era sites or features. 5. Several coastal areas may contain historically-significant subsurface archaeological deposits, especially from Ninini Point to the previous location of the long-destroyed Ahukini Heiau (located at Ahukini Point, about halfway up the coast from Ninini to Ahukini Landing). The old Hawaiian village of Kalapakī was once located in this area. The coastal area near Niumalu Park may also contain historically-significant subsurface archaeological deposits. 6. The remaining portions of the project area have been previously under commercial sugar cane cultivation and/or have been modified by modern development; it is therefore unlikely that additional historic properties (either on the surface or in subsurface deposits) are present throughout most of the project area.

Recommendations	1. Archaeological Inventory Survey (AIS) satisfying the Hawai'i Administrative Rules (HAR) Chapter 13-276 is recommended for limited portions of the project area, including: (a) the three areas in which the proposed alignments traverse densely-vegetated lands without roads, trails or pathways; (b) the coastal alignment corridor between Ninini Point and Ahukini Landing, especially the southern half of this coast, from Ahukini *Point* to Ninini Point. Where drainage improvements or other improvements requiring significant ground disturbance are planned, subsurface testing (excavation) within the footprint of the proposed improvements is recommended, given the likelihood of encountering historically-signficant cultural materials in this area. 2. An Archaeological Monitoring program satisfying HAR Chapter 13-279 should be developed and implemented consisting of a combination of on-site and on-call monitoring. Monitoring specifications will depend upon results of the AIS. Monitoring should also include the alignment in Niumalu Park. Monitoring is probably not necessary in any of the *mauka* (inland) areas away from the coast, since these have all been severely modified by prior historic and modern disturbances. 3. The two bridges located within existing rights-of-way of proposed alignments should be documented and formally assessed for historic significance by a qualified Architectural Historian. 4. The historic cemetery designated B004 by Kikuchi and Remoaldo (1992) is located near the Nāwiliwili Park portion of the proposed bike- and pedestrian-path alignment. Archaeological Monitoring should accompany any ground disturbance along the alignment in the vicinity of Nāwiliwili Park given the potential for inadvertent finds. 5. No further historic-preservation work is recommended for the majority of the project area (i.e., all those lands not specifically mentioned above)

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Section 1 Introduction

1.1 Project Background

At the request of R.M. Towill Corporation, Cultural Surveys Hawai'i, Inc. (CSH) prepared this Archaeological Literature Review and Field Inspection for the Nāwiliwili-Ahukini Bike Path Project, which is located in coastal and near-coastal portions of three *ahupua'a* in Līhu'e District, Kaua'i: Hanamā'ulu, Kalapakī and Nāwiliwili. The proposed alignments are located adjacent to Ahukini Landing, Ninini Point Lighthouse, Līhu'e Airport, Kaua'i Lagoons, Marriot Resort, Līhu'e Civic Center and residential areas *makai* (seaward) of the civic center, Nāwiliwili Park and Harbor, and Niumalu Park. This area is depicted on portions of the 1996 Līhu'e and 1996 Kapa'a USGS 7.5-minute topographic quandrangle map (Figures 1 and 2).

The subject project is one phase of a larger project to connect Nāwiliwili with Anahola by a bike and pedestrian path, a distance of some 17 miles (27.4 km) of coastline along windward Kaua'i. The subject project (Phase VI of the overall project) links three main sub-areas at the southern end of the overall project corridor: Nāwiliwili, Ahukini Landing, and the Līhu'e Civic Center. Preliminary planning includes several main alignment options (see Figures 1 and 2), all of which were inspected for this study.

Approximately 8 miles (12.9 km) of bike- and pedestrian-path routes are included in the current alignment options for Phase VI. Design specifications and widths of the different alignment options vary. The Area of Potential Effect (APE) consists of the entire approximately 8 miles of alignment-option corridors between Nāwiliwili, Ahukini Landing and Līhu'e Civic Center, defined as the center line of the corridors and their immediately adjacent alignment shoulders.

1.2 Scope of Work

The subject document is not intended to satisfy the Hawai'i Administrative Rule (HAR) governing Archaeological Inventory Survey (HAR Chapter 13-276). This study was designed to identify known archaeological sites, and to provide recommendations relavent to the State of Hawai'i's historic-preservation review process. The scope of work was as follows:

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

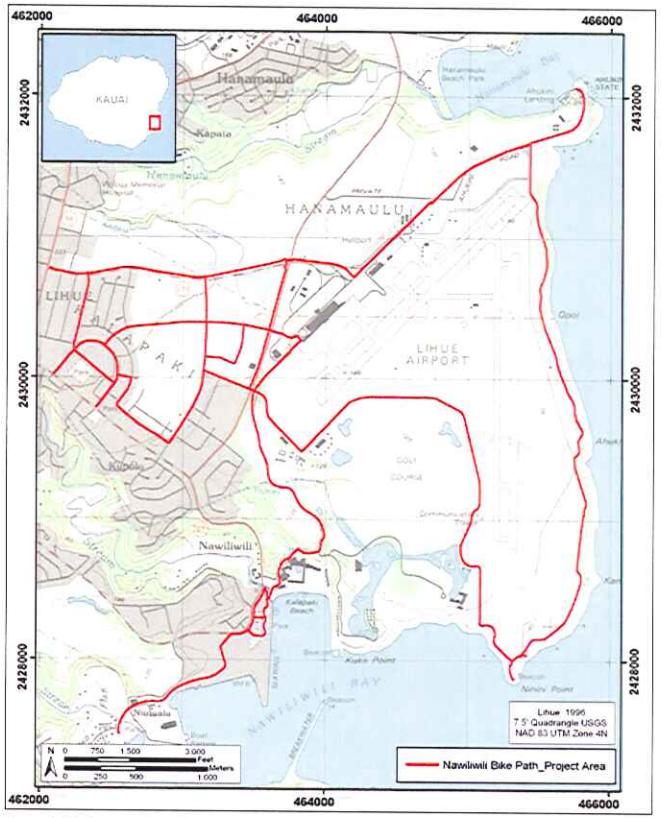

Figure 1. Project area location shown on portions of the USGS 1996 Līhu'e and 1996 Kapa'a quadrangles 7.5-minute topographic map; red line depicts all proposed alignments

Figure 2. Project area location shown on aerial image (source: Orthoimagery 2005); red line depicts all proposed alignments

mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.

1.3 Environmental Setting

1.3.1 Natural Environment

The project area extends from the coastline, between Ahukini Landing in the north to Ninini Point in the south, inland approximately 2.7 kilometers (1.7 miles), rising from sea level to approximately 220 feet above mean annual sea level in Līhu'e Town. The area's topography is gently sloping up to the west; there are several shallow intermittent, unnamed drainages between Līhu'e Town and the coast (Juvik and Juvik 1998).

Located on the southeast coast of Kaua'i, the project area is exposed to the prevailing northeast trade winds, and receives 40 to 50 inches of rainfall annually along the coast and up to 100 inches annually inland (western portion of the project area). The annual average temperature ranges form 75-80° F at the airport (Giambelluca et al. 1986; Juvik and Juvik 1998).

Soils in and around project area consist primarily of Līhu'e silty clay (LhB and LhC) and Līhu'e gravelly silty clay (LlB) (Foote et al. 1972) (Figure 3). Līhu'e soils have a surface layer of dusky-red to dark reddish-brown firm silty clay. The substratum is soft, weathered basic igneous rock. Sugar cane has been the main commercial crop in this area in historic times.

Given the relatively large area covered by the proposed bike- and pedestrian-path route alignments, and given the presence of developed areas, road ways, resorts and other facilities (e.g., parks, harbors and the airport), vegetation in and around the project area is quite variable. Areas around the airport, for example, consist of landscaped lawns and introduced ornamental and exotic plants. Tall invasive grasses cover much of the project area that was once utilized for commercial sugar cane. The coastal strip is covered in dense vegetation with both native and introduced species, including *Naupaka* (*Scaevola sericea*), *'Ilima* (*Sida fallax*), *Koa haole* (*Leucaena leucocephala*), Christmasberry (*Schinus terebinthifolius*), Ironwood (*Casuarina* spp.) and tall grasses.

1.3.2 Built Environment

Background research indicates that nearly the entire project area was, prior to the construction of the Līhu'e Airport, under commerical sugar cane agriculture. This agricultural use of most of the project area resulted in the grading and repeated plowing of the project area. With the construction of the airport, residential areas to the west in Līhu'e Town, the resorts between Ninini Point Lighthouse and Nāwiliwili, and other facilties and infrastructure (e.g., roadways and utilities), most of the project area was further modified by modern land uses. The coastal strip area has been less affected by modern land use, but still shows clear evidence of modifications, such as dirt trails and tracks and illegal dumping of refuse materials.

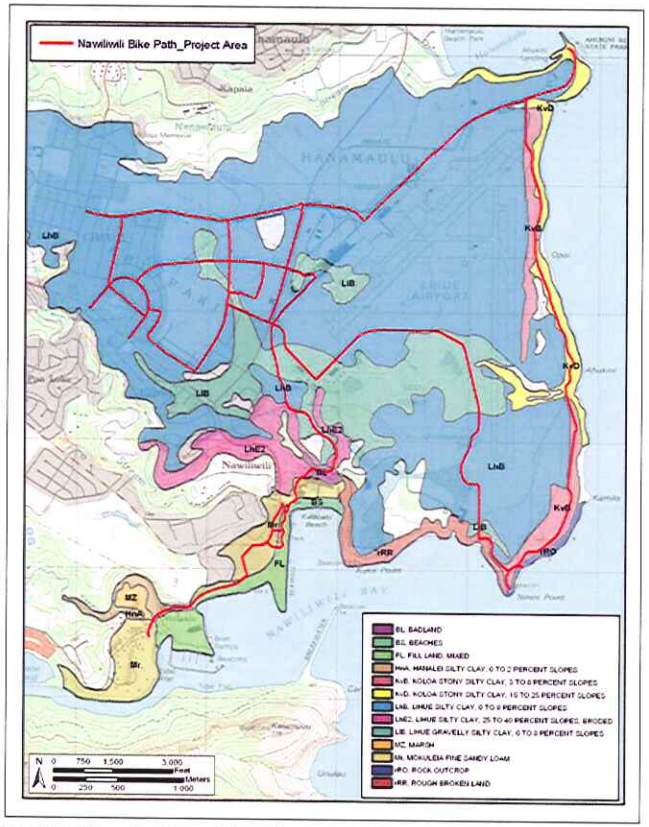

Figure 3. Soil types in and around the project area (data from Foote et al. 1972)

Section 2 Methods

2.1 Field Methods

The scope of work called for an archaeological field inspection of the project area to identify any surface archaeological features; to investigate and assess the potential for impact to such sites; and to identify any sensitive areas that may require further investigation or mitigation prior to proposed project. The field inspection was not intended to satisfy current standards for Archaeological Inventory Surveys in Hawai'i; rather, the primary objective of this report is to serve as a planning document to facilitate the environmental review process for the proposed project.

Fieldwork was conducted on May 15 and 16, 2008, by CSH archaeologists Gerald K. Ida, B.A., and Nancine "Missy" Kamai, and principal investigator Hallett H. Hammatt Ph.D. With the exception of one or two heavily-vegetated areas, the entire proposed bike-path route was inspected. Most of the inspection area was covered by vehicle, with frequent stops for documentation, which consisted of digital photography and hand-written field notes. Pedestrian inspection occurred at and around the Marriot Hotel where portions of the bike-path route follow existing pedestrian paths.

2.2 Laboratory Methods

Given the scope of work for this project, which included only limited field inspection of surface sites, no materials were collected or recovered, and no laboratory work was undertaken.

2.3 Document Review

Numerous published and unpublished accounts, surveys, maps and photographs found in public and private collections pertaining to the project area were investigated by CSH. Historical documents, maps and existing archaeological information pertaining to sites in the vicinity of this project were researched at the SHPD library, CSH library and the University of Hawai'i's Hamilton Library.

2.4 Consultation

Community consultation was undertaken for a companion Cultural Impact Evaluation (CIE) for this project (CSH Job Code NAWILIWILI 2). No formal consultation was undertaken for the subject Archaeological Literature Review and Field Inspection.

Section 3 Traditional Background

3.1 Overview

This section focuses on the traditional background of coastal and near-coastal portions of three *ahupua'a* in the *moku* (traditional district) of Puna: Hanamā'ulu, Kalapakī and Nāwiliwili (Figure 4). The subject project area is located between the two main bays and streams of Nāwiliwili (to the south) and Hanamā'ulu (to the north). These two meandering streams, which drain the slopes of Kilohana Crater (1143 feet elevation), were once home to thousands of native Hawaiians living a traditional subsistence lifestyle.

Handy (1940:67) describes these two valleys in his chapter on the main *kalo* (taro) growing locations in Puna Moku:

> [Nāwiliwili] For 3 miles inland from the sea the Nawiliwili River twists (*wiliwili*) through a flat valley bottom which was formerly all in terraces. Inland, just above the bay, three Hawaiian taro planters cultivate wet taro in a few small terraces. Most of the land is [now] in pasture.
>
> Hanamaulu River, rising below Kilohana Crater, winds its zigzag way to the sea through a relatively broad gulch, which had many small terraces commencing at a point about 2.5 miles up from the sea and continuing down to the delta of the river which begins about a mile inland. The small terraces inland from the highway are unused. The delta region is a continuous area of flatland now mostly under sugar cane and house sites. Formerly this [delta] must have been planted in taro.

A fishing village called Kalapakī was located between these two major stream valleys, near the seashore, before the historic period. This general area between the streams and *makai* of the present town of Līhu'e, *mauka* of the village house sites, had several fishponds and small drainages. The village was located east and north (around and up the coast) from Kalapakī Beach. There are some unique aspects of traditional land use and settlement in the subject project area, as discussed below (Section 3.4 Subsistence and Settlement).

Kalapakī, famous for its wind, appears to have had closer ties with Nāwiliwili than with Hanamā'ulu. Kalapakī is well-known in a traditional sense for its several *heiau*. Hanamā'ulu is probably best known as the birth place of Kawelo, the famous hero and Mō'ī (king) of Kaua'i in the late 17th to early 18th century. Nāwiliwili is well-known for its *heiau* at Kuhiau, reportedly at least four acres in size, and its associated *pōhaku* (rock) called Paukini located in the bay.

3.2 Place Names

Translations presented without attribution in this subsection are from Pukui et al. (1974), unless indicated otherwise.

Pukui et al. (1974) list but do not translate Kalapakī, defined simply as a "beach" in Līhu'e district. Pukui and Elbert (1986) define the word kalapakī (with a small "k") as "double-yolked egg, *Kaua'i*." Aside from its beach and landing, Kalapakī is probably best known in a traditional sense for its *heiau* of Ahukini and Ninini (and possibly another at Kūki'i). Ahukini has been

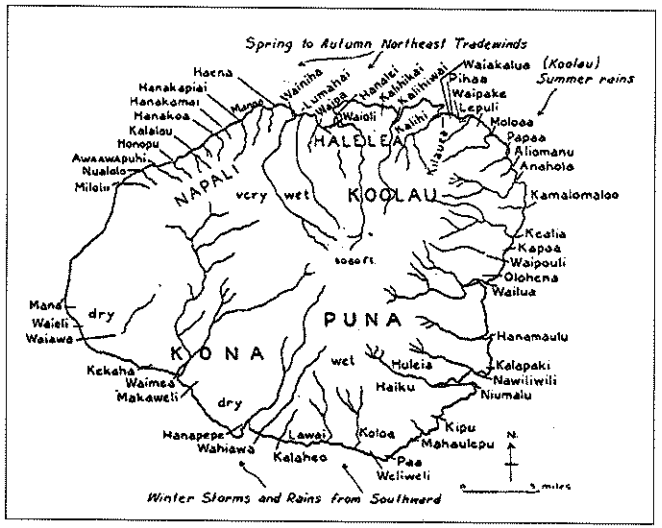

Figure 4. *Moku* (traditional districts) and *ahupua'a* of Kaua'i; note the location of "Hanamaulu," "Kalapaki," and "Nawiliwili" (Handy 1940)

translated as "altar [for] many [blessings]" (brackets inserted by Pukui et al. 1974), and this was also the name for a *heiau* in Kāne'ohe. Ninini has been translated as "pour," as in *ninini wai* (to pour water).

Most sources suggest Nāwiliwili takes its name from the *wiliwili* tree (*nā* is the plural article, as in "the *wiliwili* trees" or "place of the *wiliwili* trees"). According to Pukui and Elbert (1986), the *wiliwili* (*Erythrina sandwicensis*) is a native leguminous tree whose flowers and pods are used for *lei*, and whose light wood was once used for surfboards, outriggers, and net floats. Handy (1940:67) suggests a *kaona* (hidden meaning) for the name Nāwiliwili based on a reduplication of the word *wili*, which means "twisted," as in the meandering Nāwiliwili Stream.

Hanamā'ulu has been translated as "tired (as from walking) bay," which may be related to *mo'olelo* (oral history) and *'ōlelo no'eau* (poetical sayings) about the "stingy" people of this place (see below).

Līhu'e (literally translated as "cold chill") became the modern political name for the traditional *moku* (district) of Puna. It is clear that Līhu'e is a traditional place name, but less certain that the subject project area was specifically called this name prior to the historic era. (It is also well known that Līhu'e was a traditional settlement area near the current Schofield Barracks on O'ahu.) Historical documents suggest the name Līhu'e was first applied to this area of Kaua'i by Kaikioewai (Governor of Kaua'i) in the 1830s, perhaps after Kaiwioewai's upcountry residence on the island. On the other hand, Nathaniel Emerson's translation of the famous *oli* (chant) cycle of Hi'iaka and Pele (see below) mentions Līhu'e with the other main places names of this area.

Kilohana, source of the water of the Nāwiliwili and Hanamā'ulu Streams, has several possible meanings: Pukui et al. (1974) list three: "lookout point," "outer tapa," or "best, superior."

3.3 Mo'olelo Associated with Specific Place Names

There are many *mo'olelo* associated with the project area environs. For example, one of the oldest and most famous legendary accounts in Hawaiian oral tradition describes the travels and exploits of Pele, the Hawaiian volcano goddess, and one of her sisters, Hi'iakaikapoliopele (more commonly known simply as Hi'iaka). Pele, in her lengthy *oli* (chant) of literally hundreds of named winds of Kaua'i, lists those of Nāwiliwili, Kalapakī, Ahukini, Līhu'e, Kapaia, and Hanamā'ulu (Nogelmeier 2006):

He he'one ka makani o Nāwiliwili
He Wāmua ka makani o Kalapakī
He 'Ehukai ka makani o Ahukini
He Pahola ke kiu ho o kii makani lele kula o Līhu'e
He Kuli'āhiu ka makani o Kapaia
He Ho'oluakaineke ka makani o Hanamā'ulu

The wind of Nāwiliwili is a Hu'eone
The wind of Kalapakī is a Wāmua
The wind of Ahukini is an 'Ehukai
A Pāhola wind is the scout that fetches the winds sweeping the Līhu'e plains
The wind of Kapaia is a Kuli'āhiu
The wind of Hanamā'ulu is a Ho'oluako'ineke

A full description of the numerous oral-historical associations with the subject project area is beyond the scope of this document. The Cultural Impact Evaluation (CIE) for the subject project area (CSH Job Code NAWILIWILI 2) contains an extensive oral-historical presentation, including specific *mo'olelo* about Kalapakī, Nāwiliwili, Hanamā'ulu, Ahukini and Nininí, Kuhiau Heiau and its *pōhaku* Paukini, and Kilohana.

3.4 Subsistence and Settlement

The *ahupua'a* of Hanamā'ulu, Kalapakī and Nāwiliwili were permanently inhabited and intensively used in pre-Contact times, based on a large amount of archaeological, historical, and oral-historical documentation. The coastal areas were the locus of permanent house sites and temporary shelters, *heiau*, including *ko'a* and *kū'ula* (both types of relatively small shrines

dedicated to fishing gods), and numerous trails. There were fishponds at Kalapakī and Nāwiliwili. Further from the current project area, there were numerous house sites and intensive cultivation areas within the valley bottoms of Nāwiliwili and Hanamā'ulu Streams.

Before the historic era, there was a village at Kalapakī (probably between Kalapakī Beach and Ahukini), and another, likely larger, at Nāwiliwili to the southwest. Another village was located near the mouth of the Hanamā'ulu Stream.

The upland areas of these *ahupua'a* contained native forests and were cultivated with crops of *wauke* (paper mulberry, *Broussonetia papyrifera*), *'uala* (sweet potatoes, *Ipomoea batatas*), and *ipu* (bottle gourd). Legends and historic documentation (especially Land Commission records) elaborate on many of these important natural resources.

The archaeological record of the Līhu'e District indicates a date range of circa A.D. 1100 to 1650 for pre-Contact Hawaiian habitations (Walker et al. 1991). A radiocarbon date of A.D. 1170-1400 was obtained from excavated sediments near the mouth of Hanamā'ulu Stream.

Land Commission documents (described in more detail below) indicate a land use pattern that may be unique to this part of the island, or to Kaua'i, in general, in which *lo'i* (irrigated terraced gardens) and *kula* lands in same *'āpana* (portion of land), with houselots in a separate portion. In most places, *kula* lands are defined as drier landscapes and they do not typically occur next to, and among, wetter *lo'i* lands.

3.5 Streams

Nāwiliwili and Hanamā'ulu Streams have their *maka* (source) on the slopes of Kilohana Crater, four-and-one-half miles to the west. Kilohana is associated with *mo'olelo* about a giant, bird hunters who lure him to his death, and *koa* (warriors) that come to avenge the giant's murder only to be thrown to their deaths by the young bird hunter Lahi. It is important to point out that the water in these two streams running by the subject project area, literally defining its northern and southern margins, would have been closely associated with Kilohana in the parlance and expressions of native Hawaiians living a traditional lifestyle in and around the project area.

Two smaller streams, Koena'awa nui and Koena'awa iki, are identified in Land Commission documents, although neither of these is named on any extant maps. Given the gently-sloping character of the natural lay of the land from Līhu'e to the coast, it is possible that there were once a few other smaller drainages traversing what is now the airport, resort and golf course area; and, that native Hawaiian planters made use of this water (Figure 5).

3.6 Heiau

There are several historic map sources showing multiple *heiau* along the seashore and stream mouths in and around the general footprint area of the proposed project (Figures 6 and 7). For the most part, all physical evidence of these *heiau* has been obliterated by historic activities and more recent development. Despite this, however, many people still appreciate the sacred nature of the landscape areas in and around these *heiau* (e.g., the rocky points at Nininí, Ahukini, and Kūki'i). These differences between western and indigenous ideas about value and significance are rarely mentioned in archaeological studies, but they are fundamental to the understanding traditional resources of this area.

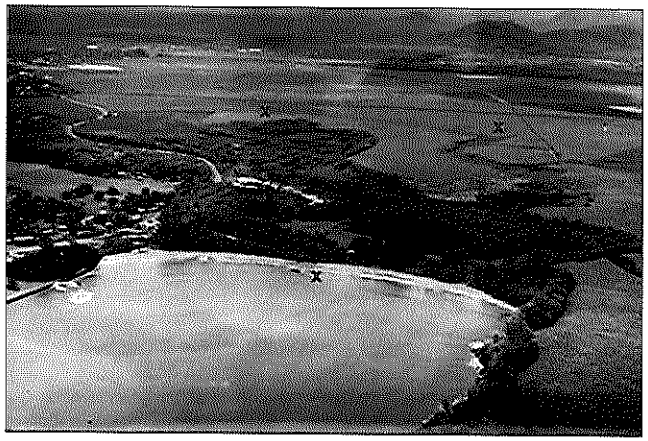

Figure 5. Kalapakī Bay, showing location of two streams and their outlets (red Xs) to Kalapakī Bay; Koena'awa stream is on the left (undated photograph in Kaua'i Museum files, see http:www.hawaii.edu/environment.ainakumuwai.htm)

Lt. George G. Jackson's 1881 map of Nāwiliwili Harbor shows there were major *heiau* on both sides of the mouth of Nāwiliwili Stream (see Figure 6). On the east side, in Kalapakī Ahupua'a, Jackson's map depicts "remnants of ancient heiau" near Kūki'i Point. On the west side of the bay, in Nāwiliwili Ahupua'a, there is an area labeled "Kuhiau" near the court house; this was the previous location of Kuhiau Heiau.

In addition to the *heiau* at Kūki'i and Kuhiau, Damon's (1931) map shows two additional sites located in coastal Kalapakī Ahupua'a: Nīnini Heiau at the point of the same name, located east of Kūki'i, and Ahukini Heiau, located about halfway to Hanamā'ulu Ahupua'a (see Figure 7).

Bennett's (1931) archaeological survey of the late 1920s documented three *heiau* within the general footprint area of the proposed project (see Section 5 Previous Archaeological Research for Bennett's map). Kuhiau Heiau, State Inventory of Historic Properties (SIHP) No. 99, was located at Nāwiliwili near the site of the old courthouse. By Thrum's time, approximately two decades before Bennett's work, this *heiau* was already described as "long since destroyed" (Bennett 1931:124). Thrum described it as:

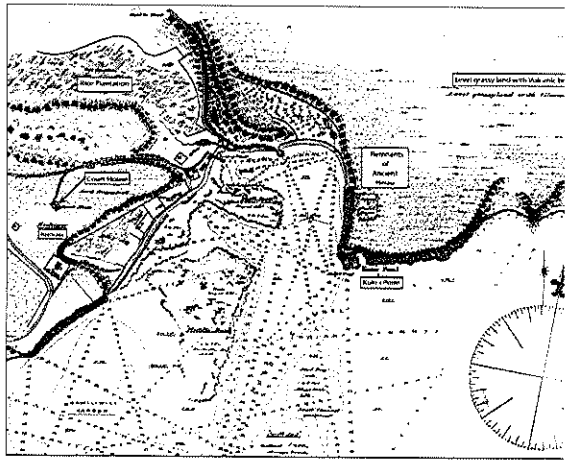

Figure 6. Detail of 1881 map of Nāwiliwili Harbor by Lt. George G. Jackson, showing remnant of ancient heiau also note the area called "Kuhiau" near the court house (left-hand side), previous location of Kuhiau He

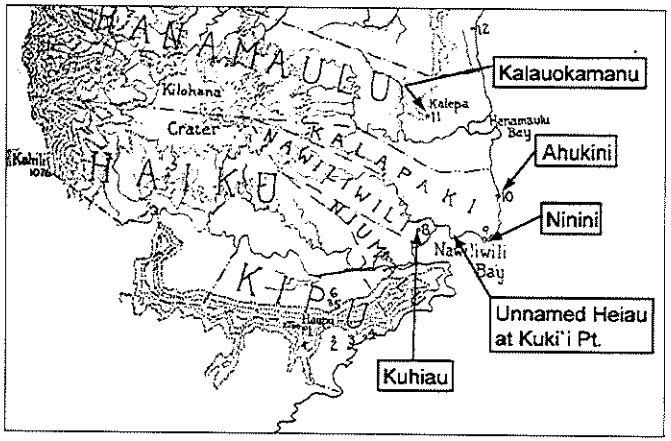

Figure 7. Damon's (1931) map showing *heiau* along the coast sections of Hanamā'ulu, Kalapaki, and Nāwiliwili Ahupua'a

> [a] large paved heiau, whose enclosure covered an area of about four acres...The rock Paukini, now separated from but formerly connected with the shore, was where the kahuna lived. This is said to have been the largest and most famous on Kauai in its day. (Bennett 1931:124)

Ninini Heiau (SIHP No. 100) and Ahukini Heiau (SIHP No. 101) were both described by Bennett as totally destroyed. According to Thrum (Bennett 1931:125), Ahukini was "[a] heiau of medium size; foundations only now remain." Thrum's (1907) island-wide listing of *heiau* on Kaua'i includes another "destroyed" *heiau* called Pohakoelele.

Section 4 Historical Background

This section is based on prior works by Damon (1931), Hammatt and Creed (1993), and Creed et al. (1999). Damon's *Koamalu* (a history of the Rice Family) contains excerpts from a large number of 19th century primary sources, including first-hand observations of life and times in and around Līhu'e / Nāwiliwili. Creed's work, in particular, contains extensive documentation and interpretation of Land Commission documents. Dorrance and Morgan (2000), Donohugh (2001), Wilcox (1996) and Condé and Best (1973) all document historical aspects of commercial sugar cane, railroads, irrigation, plantations, and other 19th and 20th century changes.

4.1 Early Historic Period

The first written accounts of Kaua'i are from travelers, missionaries, and surveying expeditions. Missionary accounts of first half of the nineteenth century provide the majority of the early written records for this particular part of Kaua'i (Figure 8).

Damon (1931:401) wrote about Hiram Bingham's 1824 observations from his memoir, *A Residence of Twenty-One Years in the Sandwich Islands*, published in 1847:

> In 1824, when walking around the island from Waimea to counsel the people after the wreck of *The Cleopatra's Barge*, Rev. Hiram Bingham crossed from Hanapepe, as has been seen, over the old upland trail back of Kilohana, and wrote of it as 'a country of good land, mostly open, unoccupied and covered with grass, sprinkled with trees, and watered with lively streams that descend from the forest-covered mountains and wind their way along ravines to the sea, - a much finer country than the western part of the island.'

In the 1830s, another missionary, Rev. Peter Gulick, was living on Kaua'i at Waimea and Kōloa. He made the following observation about the kind of provisions one could find in Hanamā'ulu at the time:

> ...The governor [Kaikioewai] reached Hanamaulu in his canoe just as we entered on horse back... This is the governor's custom, when he travels. A man is sent before to give notice that provision may be made, at the different stopping places, for him and his train: which frequently amounts to two hundred [people]... I with a few natives had a comfortable house at Hanamaulu. The inhabitants brought us fish fresh from the ocean, fowls, taro, potatoes, and a pig, all except the fish roasted or baked in the ground... A youth who went with me for the purpose prepared my food. My bed, which was made with mats, was covered with ten tapas; these were the bed clothes which according to custom were presented to the guest for whom they were spread. (Damon 1931:360)

At this same time, in the 1830s, the Governor (Kaikio'ewa) founded a village at Nāwiliwili that eventually developed into Līhu'e. According to Hammatt and Creed (1993), the name Līhu'e was not consistently used until the establishment of commercial sugar cane agriculture in the middle 19th century'; and from the 1830s to the *Māhele*, the names Nāwiliwili and Līhu'e

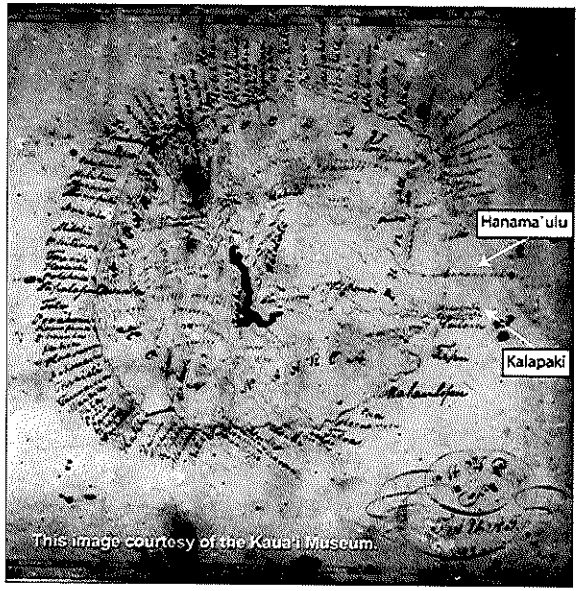

Figure 8. 1824 map of Kaua'i showing Hanamā'ulu and Kalapaki (source: Kaua'i Museum)

were used interchangeably to some extent to refer to a settlement along Nāwiliwili Bay. Some sources attribute the decision to call this area Līhu'e (literally translated as "cold chill") to Kaikioewa, who apparently named it after his nearby upcountry home. Waimea and Kōloa were preferred anchorages compared with Nāwiliwili, which opens directly east to the trade winds. Gales were known to blow ships onto the rocks. During the whaling era, Kōloa, which was home to the earliest major commercial operations in the Hawaiian Islands, was the preferred anchorage because of the ready supply of nearby food stuffs for resupply of the ships.

By 1830, the sandalwood trade had waned and the whaling industry was just beginning. At the same time, commercial agriculture was being established on Kaua'i. When the first crop of sugar cane was harvested at Kōloa, the king himself commanded that portions of his private land be planted in cane. The Governor of Kaua'i Kaikio'ewa in 1839 began farming the slopes of

Nāwiliwili Bay where there was more rain than at Kōloa (Dorrance and Morgan 2000). He also built a house and church in Nāwiliwili Ahupua'a.

Donohugh (2001:94) describes Governor Kaikio'ewa's attempt to establish the first commercial sugar mill and plantation in Līhu'e in 1839:

> During the early decades of Koloa Plantation, other sugar plantations had started up on the island. One was to result in the ascendancy of Līhu'e to the principal town and seat of government on Kaua'i, replacing Wailua. When Kaikio'ewa was appointed governor, he located his home in what is now the Līhu'e District. He planned to grow sugar cane but died in 1839 before his plans could be realized. Kaikio'ewa was responsible for the name [Līhu'e], which means "cold chill," the name of his previous home at a higher and chillier altitude on O'ahu.

Donohugh (2001:94) describes observations by James Jarves, who passed through Līhu'e in 1838:

> ... [He] found only a church built by Kaikio'ewa and a few grass houses. He commented the governor had selected Hanamā'ulu Bay as the harbor, "entirely overlooking the fact that it opened directly to the windward."

Kaikio'ewa died in 1839 soon after the start of the sugar plantation, which lasted only one year and closed down in 1840 (Dorrance and Morgan 2000).

Around this time, perhaps as late as 1842, the first missionaries settled in the Līhu'e area led by Dr. and Mrs. Thomas Lafon, and assisted by Rev. and Mrs. Peter Gulick from Kōloa. Schools were opened, and some missionaries attempted to grow cotton as the first intensive cash crop, but were unsuccessful (Damon 1931).

An account of the United States Exploring Expedition, which passed through Līhu'e in 1840, talks about the area, but also mentions the forced removal of *kama'āina* from the coastal areas:

> At noon they reached Lihui, a settlement lately undertaken by the Rev. Mr. Lafon, for the purpose of inducing the natives to remove from the sea-coast, thus abandoning their poor lands to cultivate the rich plains above. Mr. Lafon has the charge of the mission district lying between those of Koloa and Waioli. This district [Līhu'e] was a short time ago formed out of the other two.
>
> The principal village is Nawiliwili, ten miles east of Koloa. This district contains about forty square miles, being twenty miles long by two broad. The soil is rich: it produces sugar-cane, taro, sweet-potatoes, beans, etc. The only market is that of Koloa. The cane suffers somewhat from the high winds on the plains.
>
> The temperature of Lihui has much the same range as that of Koloa, and the climate is pleasant: the trade-winds sweep over it uninterruptedly, and sufficient rain falls to keep the vegetation green throughout the year. No cattle are to be seen, although the pasturage is good. (Wilkes 1845:67-68)

With the death of Kaikio'ewa, governorship of Kaua'i was transferred for a brief period to his widow Keaweamahi. Then followed the brief tenure of Chiefess Kekau'ōnohi and her husband Keali'iahonui (son of King Kaumuali'i) after which the governorship passed to Paulo Kanoa in

1848. Kanoa had two houses overlooking Nāwiliwili Bay: one on the bluff south of Nāwiliwili Stream (the present site of Kaua'i High School) and another at Papalinahoa, north of the bay (Damon 1931).

William DeWitt Alexander, son of Waioli missionary William P. Alexander, traveling from Kōloa to the north shore of Kaua'i in 1849 recorded some descriptive notes of Hanamā'ulu :

> A few miles further on we crossed the picturesque valley of Hanamaulu. This valley is prettily bordered by groves of Kukui, koa, & hala trees, and is well cultivated with taro. A fine stream flows through the midst of it, which makes a remarkable bend at this place like a horse shoe. We then traveled along the seashore at the foot of a range of hills through groves of hau, & among hills of sand. It was now after dark, but the moon shone brightly, and there was no difficulty in finding our way. About eight o-clock we arrived at the banks of the Wailua river. (Kauai Historical Society 1991:121)

One of the last vestiges of the pre-cash crop landscape is depicted in the diary entry for the Rice family's arrival on Kaua'i in 1854. During the second half of the nineteenth century, western settlers and entrepreneurs set their sights on southeast Kaua'i. Damon describes the Līhu'e landscape at the time of the family's arrival at Nāwiliwili Bay:

> From the deck of their river craft in 1854 Mrs. Rice and the children could plainly see above the rocky shore and ruins of Kuhiau, the old heiau, or temple, and nearby on the bluff the flaming blossoms of a great wili-wili tree among koa trees which ten grew almost down to the water's edge. (Damon 1931:17-18)

4.2 Middle to Late 19th Century

The middle 19th century brought great changes to Līhu'e, including private and public land ownership laws known as the *Māhele* (literally, 'to divide' or 'to section'), and commercial sugar cane agriculture, which firmly established Līhu'e's place in state and global economic markets. Coulter's (1931) population density estimates for 1853 (Figure 9) show a relatively large settlement around Nāwiliwili Bay.

4.2.1 The Māhele

In the middle 19th century, during the time of Kamehameha III, a series of legal and legislative changes were brought about in the name of 'land reform' (see the works of Jon Chinen 1958, 1971 for a thorough and well-written explanation). Previous to the *Māhele* (, all land belonged to the *akua* (gods), held in trust for them by the paramount chief, and managed by subordinate chiefs. Following the enactment of a series of new laws from the middle 1840s to middle 1850s, all land in the Hawaiian Kingdom was divided into three main types: government (or Crown) land; *ali'i* (chiefly) lands; and commoner lands, which *maka'āinana* could in principle obtain in fee simple, following passage of the Kuleana Act in 1850. This act allowed *maka'āinana* (in principle) to own land parcels at which they were currently and actively cultivating and/or residing. In theory, this 'set aside' of hundreds of thousands of acres as

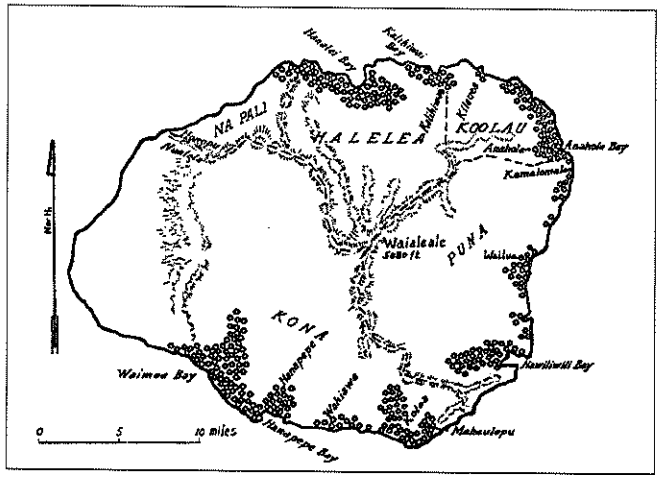

Figure 9. Population estimates for Kaua'i generated by Coulter (1931), each symbol represents 50 people; note densely settled area at Nawiliwili Bay, with a modest population (150 people) are the coastal boundary between Hanamā'ulu and Kalapakī

potential *kuleana* parcels ultimately led to about 10,000 claimants obtaining approximately 30,000 acres, while 252 chiefs, for example, divided up about a million acres. Many or most Hawaiians were simply disenfranchised by these acts.

4.2.1.1 Hanamā'ulu

Land Commission documents for Hanamā'ulu describe *lo'i*, *kula*, and house sites along both sides of the Hanamā'ulu River, extending from the shore up to the village of Kapaia. Kula and *lo'i* lands are often included together in one *'āpana* (portion of a claim), with house sites belonging to separate *'āpana*, slightly removed from the floodplain. There are four claims in the back bay area of Hanamā'ulu and two claims for house lots (LCA 3650 and 3653) near the beach, south of Kapule Highway. Most of the *kuleana* claims for Hanamā'ulu are located in lands that have been under sugar cane cultivation for much of the 20th century; occasionally, traditional artifacts can still be found in the cane fields.

4.2.1.2 Kalapakī

In Kalapakī Ahupua'a, *kalo* (taro) *lo'i* claims were on the north side of Nāwiliwili River (the *wauke* land in Claim 3907 on the south side of the river being the sole exception) and along the smaller drainages of Kalapakī and Koena'awa, where there were also reportedly springs. Two streams, Koena'awa-nui and Koena'awa-iki, were also identified in the claims, but neither is named on current maps. These two streams, however, can be seen an undated photograph on file at the Kaua'i Museum (see Figure 5, above).

Most Kalapakī claimants lived at the shore in the *kulana kauhale*, or village, of Kalapakī, located near Nāwiliwili Bay. Several claimants describe their village house lots in relation to the fishponds of Koena'awa (Koena'awai-nui and Koena'awa-iki). There is also a description of the *muliwai*, or estuary, of Koena'awa-nui.

Claim 3640 mentions a footpath for the *'ili* of Limawela near the shore at the boundary between Hanamā'ulu and Kalapakī. These documents therefore indicate a north/south path along the shoreline, and other paths going inland from the shore, which is a traditional transit pattern for Kaua'i *ahupua'a*.

Paulo Kanoa, Governor of Kaua'i at the time of the Māhele, claimed both the *ahupua'a* of Hanamā'ulu and Kalapakī but was awarded neither. Instead, Victoria Kamāmalu was awarded both *ahupua'a* under LCA (Land Commission Award) No. 7713:2. A portion of this award (7713:2 part 7) includes land within the present project area. Following the death of Victoria Kamāmalu in 1866, Princess Ruth Ke'elikōlani inherited her lands. In 1870, Ke'elikōlani sold large portions of her Kalapakī and Līhu'e lands to William Hyde Rice of Līhu'e Plantation. In addition, in 1870, Paul Isenberg purchased the *ahupua'a* of Hanamā'ulu from J.O. Dominis, which includes the land of the present airport area. William Hyde Rice made subsequent land purchases from Princess Ruth in 1879:

> William Hyde Rice, who already had his own home on the hill east of the mill, bought a large makai section of the ahupuaa of Kalapaki from Princess Ruth in 1879 and there conducted the Lihue Ranch. In later years he sold most of this land to the plantation. (Damon 1931:747)

The large tracts of inland areas (*kula*), not in the river valleys or at the shore, are not described in the claims but were probably in use. This *kula* land at the time of the Māhele belonged to Victoria Kamāmalu. Land use is not elaborated in her claims for Hanamā'ulu or Kalapakī. Traditional *kula* resources for all claimants would have been medicines, herbs, construction materials such as *pili* grass and trees for building houses, canoes, and perhaps lithic materials for tools. Sweet potatoes and other dryland crops, such as *wauke*, probably were cultivated in patches throughout the area at one time or another.

4.2.1.3 Nāwiliwili

Victoria Kamāmalu was awarded over two thousand acres of Nāwiliwili Ahupua'a (LCA 7713), along with much of Niumalu, Ha'ikū and Kīpū, as well as Kalapakī and Hanamā'ulu. In addition to Kamamalu's large award at Nāwiliwili, there were many smaller *kuleana* awards. According to Hammatt and Creed (1993):

> Within the valley floor and adjacent to the alluvial plain [in Nāwiliwili] ... are 14 land Commission Awards for which there are testimonies available in the Land Commission records ... The awards vary in size between one to two acres and are generally around one acre. The majority of land recorded is for *lo'i* (wetland agriculture) but *kula* (dryland plots) are present as are a few houselots.
>
> In all there are 54 *lo'i* recorded. Each award is generally two to three *lo'i* plots. The largest award comprised eight *lo'i*; a single award consisted of one *lo'i*. All awards contained *lo'i* and nine of the fifteen total awards had *kula* lots. Without exception, the nine awards containing *kula* mention only one *kula* per award. This is of interest because it shows that the alluvial plain was not entirely dedicated to wetland planting and that a small *kula* lot was essential for subsistence agriculture.

Some awards at Nāwiliwili mention houselots along the shoreline.

4.2.2 Commercial Sugar Cane Agriculture

As a direct result of the availability of large tracts of land for sale during the *Māhele*, in 1849, Līhu'e Plantation "was established on the site Kaikio'ewa had chosen, and the cluster of homes and stores around it was the start of the town of Līhu'e." (Donohugh 2001:94). The plantation was started by Henry A. Pierce, Judge Wm. Little Lee, chairman of the Land Commission, and Charles Reed Bishop, doing business as Henry A Pierce and Company (Damon 1931). The first 3,000 acres were purchased in Nāwiliwili and an additional 300 acres were purchased in Ahukini in 1866. The Lihue Plantation became the most modern plantation at that time in all Hawai'i. It featured a steam-powered mill built in 1853, the first use of steam power on a Hawaiian sugar plantation, and the ten-mile-long Hanamā'ulu Ditch built in 1856 by plantation manager William H. Rice, the first large-scale irrigation project for any of the sugar plantations (Moffatt and Fitzpatrick 1995:103). Dorrance and Morgan (2000:28) provide a slightly different list of achievements for Līhu'e Plantation: "The first irrigation ditch in Hawai'i was dug in 1857 [at Līhu'e], and in 1859 the first steam engine in a Hawai'i mill was installed at Lihue Plantation."

The residential and administrative heart of Lihue Plantation was located in the western portion of the subject project area, now downtown Līhu'e, Kaua'i's political center and most developed area. There are many documentary resources about the history of commercial sugar cane in Līhu'e (see, e.g., the Kaua'i Museum's website, http://www.kauaimuseum.org). Dorrance and Morgan (2000) have summarize highlights of the history of both the Lihue and Hanamaulu Plantations (see pp. 28-29), and there are other, more detailed histories of these operations (e.g., Condé and Best 1973; Wilcox 1996; Donohugh 2001).

The success of the Lihue Plantation allowed it to continue to expand. When the owner of Hanama'ulu Ahupua'a, Victoria Kamāmalu, died in 1870, all 9,177 acres in the *ahupua'a* were purchased by Paul Isenberg, the manager of Lihue Plantation from 1862-1878 (Damon 1931:742-747). By 1870, the plantation owned 17,000 acres in Hanamā'ulu. A total of 30,000 leased acres in Wailua were later added in 1878. Lihue Plantation built a second mill in 1877, north and west of the present airport, recorded in an 1885 map of Hanamā'ulu Bay by Lt. George G. Jackson. This mill operated until 1920, when it was converted into housing for laborers.

4.2.3 Changing District Names

The traditional districts, or *moku*, of Kaua'i were replaced in the middle to latter part of the 19th century by modern political-district names (Figure 10). Given its economic importance to the island, Lihu'e became the modern district name, as described by Rice:

> The name, Lihue, applied in a larger sense, included the districts of what are now Kawaihau and Lihue, reaching from Anahola to the Gap, being made so by law in about the year 1861, according to early court records, but some years later divided into the present two districts. The large district was also known as the Puna district, and is found on early maps as such. It was August thirteenth, 1880, that the district was divided into two, by act of Legislature with King Kalākaua's signature. . . . Lihue, in a local sense, and from which the name of the district was derived meant only that little portion of land upon which the present village, as consisting of bank, post office and store, now stands. (Rice 1914:46)

4.2.4 Later 19th century

Māhele records indicate that taro continued to be cultivated in Nāwiliwili Valley through the middle 19th century. However, later in that century, much of the taro lands in Nāwiliwili, as in other wetland regions of the Hawaiian Islands, were converted to rice cultivation. This shift was, dictated by changes in the ethnic make-up of the islands' population and economic demands. Little is known of the rice industry in Nāwiliwili; however, an 1881 map of Nāwiliwili Bay shows the entire *makai* portion of Nāwiliwili Valley under rice cultivation. Early 20th century photographs in the Bishop Museum Archives show large rice terraces within the valley. Rice was also grown in the flatlands *makai* of the *pali* (cliff) of Kuhiau.

According to Dorrance and Morgan (2000:24-25), there were at least four different major sugar cane operations (i.e., mills and / or plantations) in the near vicinity of the subject project area during the later 19th century, including the Lihue and Hanamaulu Plantations (founded 1870, closed 1898) as well as the Hanamaulu Mill Company (founded 1870, closed 1880) and Charles L. L'Orange (founded 1882, closed 1888).

In 1870, the Lihue Plantation Company bought up approximately 17,000 acres of undeveloped land in Hanamā'ulu, which were then used to grow sugar cane and to capture and deliver water to both plantations. Later, in 1870, George N. Wilcox started the first sugar cane plantation in Hanamā'ulu, the Hanamaulu Plantation (Dorrance and Morgan 2000).In 1898, Hanamaulu Plantation was merged into Lihue Plantation.

Historic maps show most of the subject project area, especially the current airport, was not yet in commercial sugar cane agriculture by the late 19th century (Figure 11), but this would change by the early 20th century when nearly the entire subject project area was plowed under for cane.

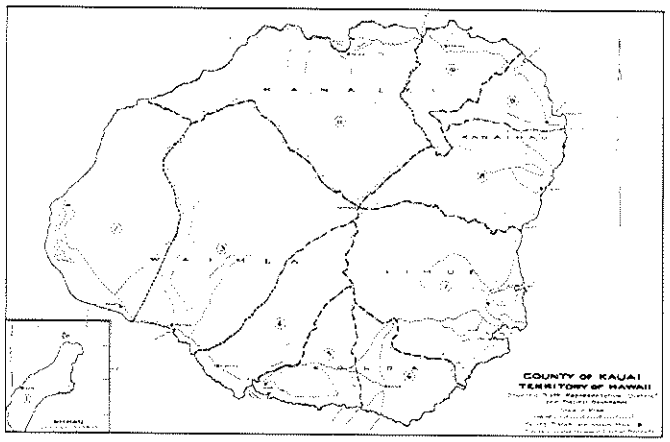

Figure 10. 1936 map of the political districts of the County of Kaua'i, Territory of Hawai'i

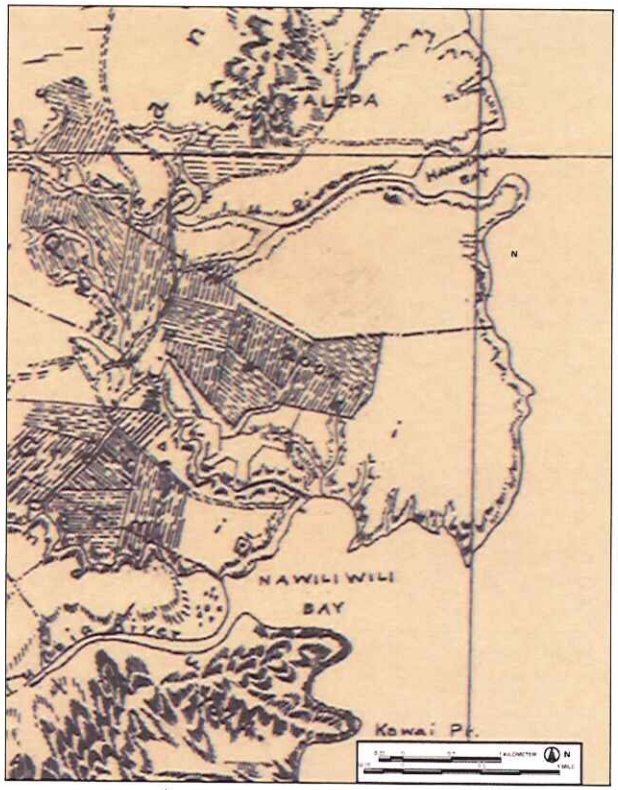

Figure 11. Detail of late 19th century Hawaiian Government Survey map clearly showing the general footprint area of the proposed project not yet under cultivation of sugar cane

4.3 Twentieth Century

This subsection outlines important aspects of the 20th century history of the subject project area. A full description of relevant oral-historical accounts is beyond the scope of this document. The CIE for the subject project area (CSH Job Code NAWILIWILI 2) contains an extensive oral-historical presentation, including previously gathered interviews with *kama'āina* and other residents of Kaua'i, and ongoing practices and uses of the landscape.

4.3.1 Līhu'e Plantation

Commercial sugar cane agriculture continued in Līhu'e until 2000, when it and the Kekaha Sugar Co. finally shut down and terminated approximately 400 workers. The nearby Kipu Plantation, founded in 1907, operated until 1942 (Dorrance and Morgan 2000).

Lihue Plantation remained a vibrant and successful commercial operation throughout most of the 20th century, in part, because of a continued interest in technological innovation (Figure 12). For example, in 1912, Lihue Plantation installed two 240-kilowatt generators above the cane fields on the slopes of Kilohana Crater, becoming one of the first hydroelectric power producers (along with Kekaha, Kaua'i) in the Hawaiian Islands (Dorrance and Morgan 2000).

There are many first-hand recollections about life in the early 20th century plantation days of Līhu'e, including extensive documentary archives maintained by the historical museum at Grove Farm Homestead (refer to the companion CIE for details).

4.3.2 Ahukini Port and Village

There are many remembrances about the nearly-forgotten port village of Ahukini, located at the northern end of the proposed bike-path route, but also referring more generally to the coastal area of Hanamā'ulu (Figure 13). According to Donohugh (2001), a dock for large ships was initially built at Ahukini in 1921 because Hanamā'ulu Bay, totally exposed to the trade winds, was so treacherous. In 1950, Ahukini was abandoned as a commercial dock in favor of Nāwiliwili Bay.

A series of newspaper articles (Baptiste 1993a, b) documented the impacts of the 1946 tidal wave on Ahukini, which had been transformed by the 1930s and 1940s into a relatively prosperous little port village. Robert Yotsuda talked fondly about those days, and the effects of the big wave:

> ...Coconut groves, fish. We used to fish all the time. We caught little fish with our little bamboo poles. We'd stand around and crabs crawling on our feet ... Since the tidal wave in 1946, the path of the Hanamaulu river has changed. It changed the bottom of the ocean, too ... Fish were in the trees all over. (Baptiste 1993b:1)

4.3.3 The Development of Nāwiliwili Harbor

The federal River and Harbor Act of March 2, 1919 authorized the construction of a modern harbor at Nāwiliwili. Some aspects of the construction phases of this bay can be gleaned from historic maps and aerial photographs (Figures 14–16).

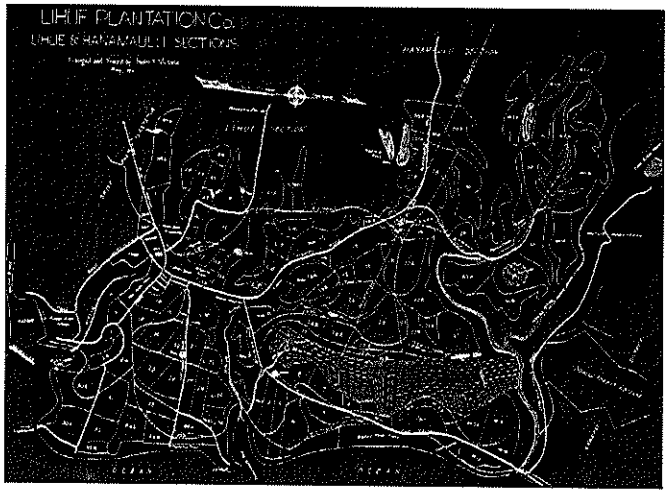

Figure 12. Lihue Plantation Co. in 1941 with subject project area in lower left-hand portion of the image (source: Condé and Best 1973:168)

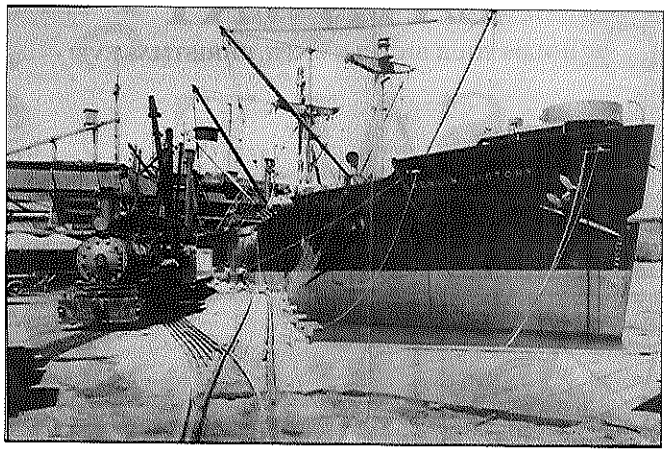

Figure 13. Ahukini port in 1946 (from Baptiste 1993a)

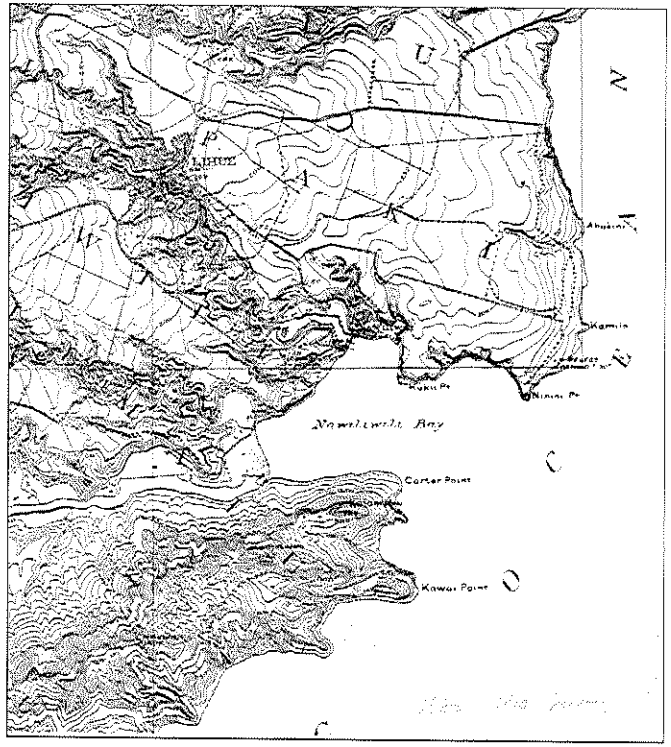

Figure 14. Portion of 1910 US Geological Survey map of Nāwiliwili and the subject parcel to its immediate north

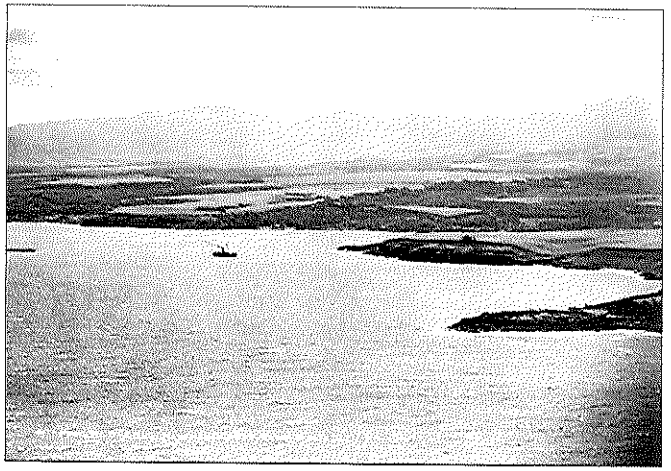

Figure 15. 1924 photograph showing Nāwiliwili Bay before construction of the harbor facility on the north side of the bay (Bishop Museum Archives)

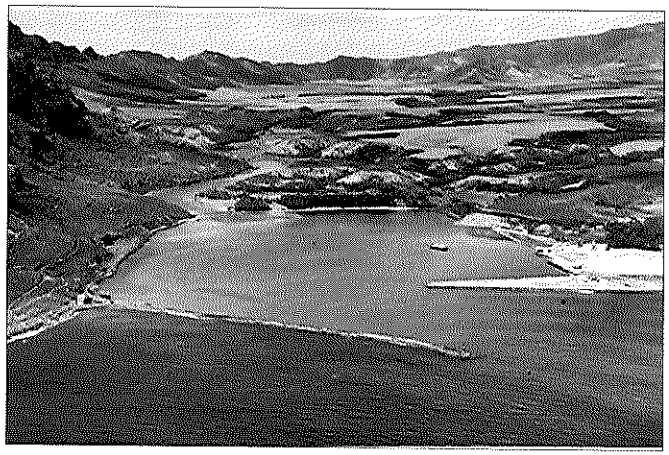

Figure 16. Circa 1930 photograph showing Nāwiliwili Harbor under construction (Bishop Museum Archives)

The selection of Nāwiliwili as the harbor of the future on Kaua'i was preceded by a year's worth of debate between advocates of Hanapēpē and Nāwiliwili. The specifications for the harbor included support from local government and business interests:

> Upon completion of a rubble-mound breakwater 2,450 feet long along the reef dividing the inner and outer harbors, the entrance channel would be dredged to a depth of 35 feet, a minimum width of 400 feet, and a length of 2,400 feet. Also included in the estimated cost of $1,086,000 was a harbor basin 35 feet deep, 1,025 feet wide, and averaging 2,000 feet in length. The same act provided an initial appropriation of $250,000 for construction of the harbor. Local interests were to assure eventual railroad connections between Nawiliwili and the southern part of the island 'in reasonable time,' while the Territory of Hawaii or the County of Kauai was to give the Secretary of War $200,000 toward the project. (van Hoften 1970: 12)

The dredged material would be used as fill for the proposed wharf areas. Construction of the breakwater, the initial phase of the harbor project, began in October 1921.

By 1924, a total of 1,454 feet of breakwater had been set in place. However, dredging within the now semi-protected bay could not begin until the Territorial Legislature appropriated the $200,000 promised to the project. Action by the legislature was delayed when the sugar companies on west Kaua'i – continuing to press for Port Allen at Hanapēpē as the island's major harbor facility – threatened to boycott the Nāwiliwili harbor after its completion. The Legislature finally approved its share of the funding in 1925, and the breakwater was completed in March 1926. Development of the harbor continued apace as:

> ...the Territory took over the Federal camp and equipment and began construction of a concrete wharf. As soon as the Government dredge A. Mackenzie finished [dredge work] at Hilo she began work at Nawiliwili in fiscal year 1929, and dredging was completed in July 1930. The official opening of the $1.3 million harbor on 12 July inaugurated an entrance channel 600 feet wide, 2,400 feet long, and 35 feet deep, a harbor basin 1,100 feet wide, 2,000 feet long, and 35 feet deep; and a rubblemound breakwater 2,150 feet long. (van Hoften 1970:18–19)

Construction of the wharf facilities continued throughout the 1930s.

Historic maps and photographs document Nāwiliwili Bay before and after the construction of the harbor. A USGS map of 1910 shows the original configuration of the shoreline at Nāwiliwili Bay before the construction of the harbor (see Figure 14). The early stages of the breakwater construction are evident in an aerial photograph taken on July 4, 1924 (see Figure 15), in which the end of the newly constructed breakwater is visible in the left-central portion of the photograph. Construction of the harbor facility on the north side of the bay had not yet begun by this time.

Another aerial photograph from c. 1930 shows the continued development of the harbor (see Figure 16). By this time, the filling-in for the harbor had not been completed; the area of the current pier facility is still open water; the land behind the constructed jetty was built up by imported fill. More recent maps of the harbor, compared with the 1910 map, reveal that the modern pier area is located entirely upon a 20th century landfill.

Section 5 Previous Archaeological Research

5.1 Overview

This section focuses on the most relevant archaeological research in and directly around the general footprint area of the proposed project. Results from previous studies of coastal and near-coastal areas of Hanamā'ulu, Kalapakī, and Nāwiliwili are briefly summarized. This is followed by a detailed treatment of prior research and results from the shoreline at Kalapakī and Hanamā'ulu (south of the Hanamā'ulu Stream), immediately east (*makai*) of the airport. Collectively, these observations provide some expectations regarding the types of cultural and historic resources that may be located in the subject project area.

The shoreline at Kalapakī and Hanamā'ulu is the most sensitive archaeological area; most of the rest of the general footprint area has been substantially modified by commercial sugar cane operations, the development of Līhu'e Town, Nāwiliwili Harbor, Ahukini port, and the airport, the Marriot resort and golf course, and other development. Except for its shoreline segment—which runs from Ahukini Landing (i.e., south-side of Hanamā'ulu Bay) to Ninini Point (north side of Nāwiliwili Bay), the proposed bike-path route mostly travels along existing rights-of-way whose subsurface sediments have already been substantially disturbed. There are no extant *heiau* or reconstructions of *heiau* in the general footprint area of the proposed footprint, despite the fact that at least three large shrines were once located along the coast from Ahukini to Kūki'i.

This archaeological review is based on a prior CSH report documenting the results of an archaeological inventory survey of the proposed impacts of improvements to Līhu'e Airport (Bell et al. 2006); and other original source materials from archaeological studies of the specific coastal area of concern (Hammatt 1988, 1990; Creed et al. 1999).

Figure 17 shows prior archaeological investigations in the general footprint area of the proposed project. Figure 18 shows historic properties that have been documented in this area as a result of these studies. Tables 1 and 2 summarize previous archaeological studies and results in and around the project area. These data show there are at least 33 known cultural and historic sites of interest in this area; 26 of these are historic properties listed on the State Inventory of Historic Properties (SIHP); the other seven sites of interest are cemeteries not listed on the SIHP.

5.2 Early Documentation of *Heiau*

Thomas G. Thrum (1907), publisher of the *Hawaiian Almanac*, gathered lists of *heiau* on all the islands; and reported five from the *ahupua'a* of Hanamā'ulu, Kalapakī and Nāwiliwili:

1. Ninini, Kalapakī, near site of Nāwiliwili light house; described as destroyed (SIHP No. 100)
2. Ahukini, Kalapakī; described as a *heiau* of medium size, with some foundation stones in evidence at the time of Thrum's work (SIHP No. 101)
3. Pohakoclele, Kalapakī; described as a medium-sized *heiau*; destroyed by the time of Thrum's survey (no site number)

4. Kalauokamanu, Hanamā'ulu; described as a large walled *heiau* that stood above the present mill; destroyed around 1855- of *po'okanaka* (sacrificial) class (SIHP No. 102)
5. Kuhiau, Nāwiliwili, near site of court house - a large paved *heiau*, whose enclosure covered an area of about four acres; long since destroyed (SIHP No. 99). The rock Paukini, now separate from but formerly connected with the shore, was where the *kahuna* (priest) lived

The first comprehensive archaeological survey of Kaua'i was undertaken by Wendell Bennett in the late 1920s and published by the Bishop Museum in 1931. Bennett used Thrum's list for reference and documented many additional (mostly non-*heiau*) sites. Bennett listed two *heiau* for Hanamā'ulu Ahupua'a and one for Kalapakī (both described as "destroyed"). He also noted sand-dune burials (SIHP No. 103) towards the Wailua River (Figure 19). Bennett repeats the descriptions provided by Thrum for the "destroyed" Sites 100–102, and adds the following:

> Site 103. Dune burials. In the sand dunes that run along the shore halfway between Hanamā'ulu and Wailua River are many burials. (Bennett 1931:125)
>
> Paukini Rock, a heiau or priest's house now under water in Nawiliwili harbor [this site is now designated SIHP No. 50-30-11-1999] (Bennett 1931:48)

In addition to SIHP No. 103, which is located outside (north) of the general footprint area of the proposed project, several other sand-dune burials or grave sites have been noted in Hanamā'ulu; for example, at Kālepa (SIHP Nos. 50-30-08-746 and -1827), documented by Rosendahl (1990) and CSH archaeologist Kaipo Akana during a field survey of damage after Hurricane 'Iniki by the Kaua'i/Ni'ihau Island Burial Council in 1992.

Hammatt's (1990:11) archaeological reconnaissance of the Kaua'i Lagoons Resort identified a "...high well-constructed wall running 400' north of Ninini Lighthouse [as a] possible prehistoric wall and possibly related to the former Ninini Heiau (SIHP No. 100)." A dune midden scatter (SIHP No. 421), two probable cattle walls (SIHP Nos. 422 and 423), and an oval terrace alignment (SIHP No. 424) were also recorded.

Bennett places Ahukini heiau (SIHP No. 101) "in Kalapaki, near Ahukini Point on the bluff overlooking the sea. This is now entirely destroyed" (Bennett 1931:125).

Bennett (1931:152) lists Pohakoele'ele Heiau in Kalapakī under "Kauai sites not located." Damon probably would have mentioned its location if she had known about it. There do not seem to be other references to Pohakoele'ele Heiau in Kalapakī, and it is unknown if Damon used Thrum for her source, or if she knew the information from persons on Kaua'i. Although Bennett could not verify its existence, and its location is speculative, it is included as a non-located site of pre-Contact Kalapakī, passed down in local memory. There was a *heiau* in the neighboring (north) *ahupua'a* of Wailua called Pōhaku'ele'ele, said to have been located just *mauka* of the junction of 'Ōpaeka'a Stream and the Wailua River (Dickey 1917:29). It is possible that these two *heiau* are the same, and Thrum was confused on the location. It is also possible that this was the name of an unnamed *heiau* on Kūki'i Point. Neither Thrum nor Bennett mention a *heiau* noted by Lt. George G. Jackson, Navy surveyor for the Hawaii Government Survey Office in 1881 (see Figure 6) at Kūki'i Point. The Kaua'i Community College newsletter, *Archaeology on Kaua'i* (1973:4), notes that the "remains of ancient heiau" noted by Jackson are "where the cottages of the Kauai Surf now stand."

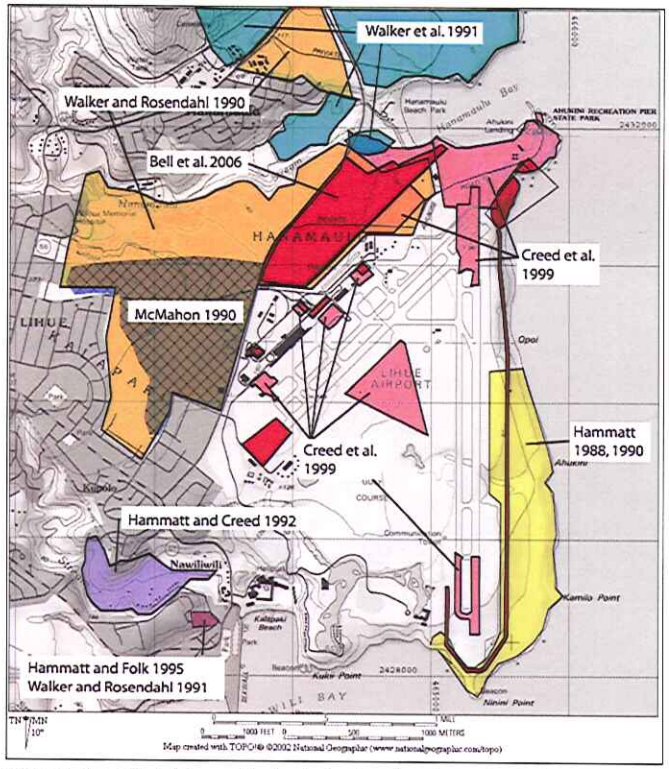

Figure 17. Map of the Līhu'e area showing the location of previous archaeological projects

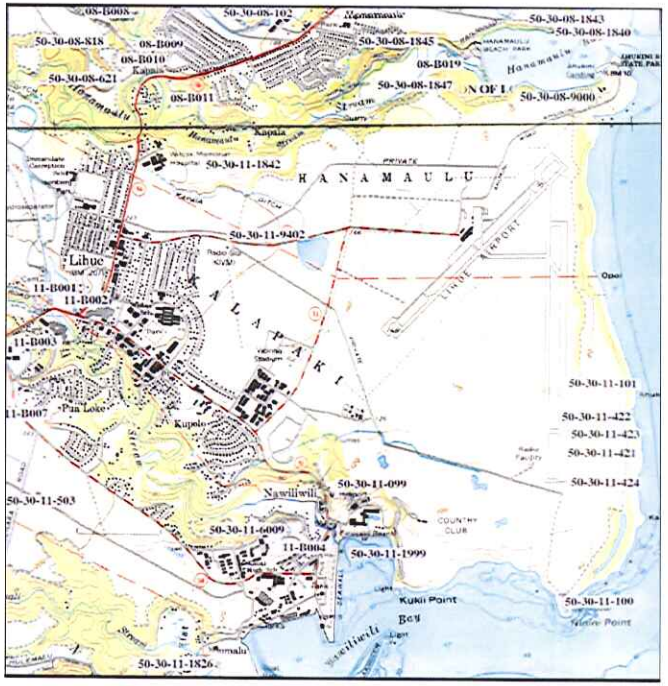

Figure 18. Historical and cultural sites of interest within and near the subject project area (projected on portions of Līhu'e and Kapa'a USGS 7.5-minute topographic quandrangle maps)

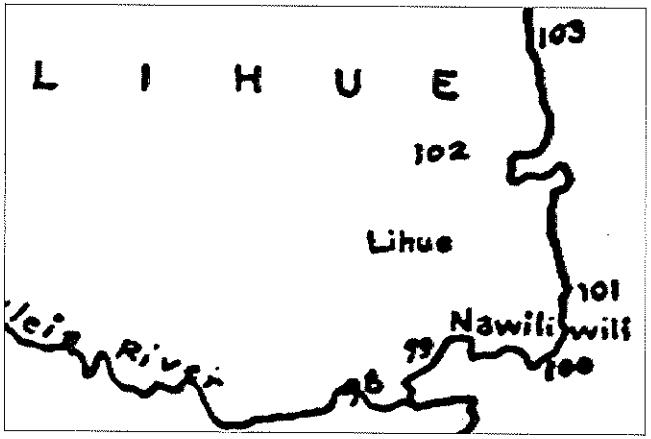

Figure 19. Detail of Bennett's (1931) map of Kaua'i showing location of archaeological sites

Table 1. Previous Archaeological Studies in and around the Project Area

Source	Location	Nature of Study	Findings
Thrum 1907	Island-wide	Almanac of Kaua'i	Listing of 5 *heiau* in the area
Bennett 1931	Island-wide	Archaeology of Kaua'i	Site 103. Dune burials. In the sand dunes that run along the shore halfway between Hanamā'ulu and Wailua River
Handy 1940	Island-wide	Reconnaissance of agricultural lands	Several sites identified
Hammatt 1988	Kalapakī	Archaeological Reconnaissance	Wall alignments, a terrace, and a midden scatter.
McMahon 1990	Līhu'e	Archaeological Fieldcheck	3 previously-identified historic residential sites (50-30-9390, -9401, -9402)
Rosendahl 1990	Kālepa Ridge	Archaeological Field Inspection	SIHP No. 50-30-11-1827, Burial platform (2+ individuals)
Walker & Rosendahl 1990	East of Kūhiō Hwy, NW of Hanamā'ulu Bay	Archaeological Inventory Survey	No significant findings
Folk & Hammatt 1991	Niumalu	Archaeological Survey and Subsurface Testing	2 previously recorded fishponds and 1 newly discovered *'auwai*
Walker et al. 1991	A study of 8 parcels most near Hanamā'ulu Bay	Archaeological Inventory Survey	Identifies 10 sites: 3 pre-Contact, 7 historic. A subsurface cultural layer was located adjacent to the project area (SIHP No. 50-30-08-1838)
Walker & Rosendahl 1990	Hanamā'ulu	Archaeological Inventory Survey	Isolated coral fragments
Walker & Rosendahl 1991	Nāwiliwili	Archaeological Inventory Survey	34 intact historic burials and several historic headstones at Nāwiliwili Cemetery (SIHP No. 50-30-11-6008)
Hammatt and Creed 1993	Nāwiliwili	Archaeological Inventory Survey	3 *'auwai* (SIHP No. 50-30-11-491; 492; 493) and a single rock (50-30-11-494) thought to mark a burial.
Franklin & Walker 1994	7 parcels in Hanamā'ulu	Archaeological Inventory Survey	Summary of Walker & Rosendahl 1990 and Walker et al. 1991(same project area)
Kaua'i Renovation & Development 1994 (Akana)	Kālepa Ridge	Monitoring Report	Revetment for Burial Site -746; additional bone fragments recovered
Hammatt et al. 1994	Hanamā'ulu	Archaeological Document Review	Various archaeological features of the area, emphasizing the Wailua Heiau Complex (SIHP No. 50-30-08-502)
Hammatt & Folk 1995	Kalapakī	Archaeological and Osteological Study	69 historic burials at Nāwiliwili Cemetary (SIHP No. 50-30-11-6008)
Creed et al. 1999	Hanamā'ulu and Kalapakī	Archaeological Assessment	Historic remnants of Ahukini Landing (SIHP No. 50-30-08-9000)
Hammatt et al. 2002	Kūhiō Highway	Archaeological Study	Various archaeological features of the area, emphasizing the Wailua Heiau Complex (SIHP No. 50-30-08-502)
Hammatt & Shideler 2003	Kūhiō Highway	Archaeological Assessment	Various archaeological features of the area, emphasizing the Wailua Heiau Complex (SIHP No. 50-30-08-502)

Table 2. Previously Recorded Sites in and around the Project Area

SIHP No.	Site Type	*Ahupua'a* Location and Reference
50-30-11-099	Kuhiau Heiau (A large paved *heiau*, whose enclosure covered an area of about four acres; long since destroyed)	Nāwiliwili; Thrum IN Bennett 1931:124
50-30-11-100	Ninini Heiau (near site of Ninini Point lighthouse, double paved wall remnant)	Kalapakī; Bennett 1931:124
50-30-11-101	Ahukini Heiau (A *heiau* of medium size; foundations only now remain)	Hanamā'ulu; Thrum IN Bennett 1931:125
50-30-11-102	Kalauokamanu Heiau (A large walled *heiau* that stood above the present mill; destroyed about 1855- of *pō'okanaka* [human sacrifice *heiau*] class.)	Hanamā'ulu Thrum IN Bennett 1931:125
50-30-11-421	Midden Scatter of marine shells	Hanamā'ulu on shoreline; Hammatt 1990
50-30-11-422	Remnant/probable cattle wall	Hanamā'ulu on shoreline; Hammatt 1990
50-30-11-423	Remnant/probable cattle wall	Hanamā'ulu on shoreline; Hammatt 1990
50-30-11-424	Oval Terrace Alignment	Hanamā'ulu on shoreline; Hammatt 1990
50-30-11-503	Halehaka Japanese Cemetery	Kikuchi & Remoaldo 1992
50-30-08-621	Kapaia Chinese Cemetery	Hanamā'ulu; NE of airport Kikuchi & Remoaldo 1992
50-30-08-746	Kālepa Road Burial	Hanamā'ulu, on Kālepa Hill; Rosendahl 1990
50-30-11-818	Plantation Wall	West of Kapaia in Hanamā'ulu; Kikuchi 1992
50-30-11-1826	Halemanu Graves	Hanamā'ulu; on Kālepa Hill; Pers. comm. N. McMahon 1999
50-80-08-1827	Kalepa Burial Platform	Hanamā'ulu, on Kālepa Ridge; Pers. comm. N. McMahon 1999
50-80-08-1838	Pre-contact habitation deposit	Hanamā'ulu coast, north of bay
50-80-08-1839	Pre-contact agricultural wall and terrace	Hanamā'ulu coast, north of bay
50-30-11-1840	Historic Retaining Wall	Hanamā'ulu; Walker et al. 1991
50-30-11-1840	Historic Retaining Wall	Hanamā'ulu; Walker et al. 1991
50-30-11-1841	Historic Road	Hanamā'ulu; Walker et al. 1991
50-30-11-1842	Boundary/Agricultural Wall	South side of Hanamā'ulu Valley; Franklin & Walker 1994
50-30-11-1843	Historic Concrete Foundation, Road and Concrete Wall	Hanamā'ulu; Walker et al. 1991
50-30-11-1844	Historic Cemetery	Hanamā'ulu; Walker et al. 1991
50-30-11-1845	Historic Railroad Bridge	Hanamā'ulu; Walker et al. 1991
50-30-11-1846	Two concrete bridges	Hanamā'ulu coast; Walker et al. 1991
50-30-11-1847	Hanamā'ulu Valley	Hanamā'ulu; Walker et al. 1991
50-30-11-1999	Paukini Rock (in the ocean)	Kalapakī or Nāwiliwili Bay; Pers. comm. N. McMahon 1999
50-30-11-6009	Nāwiliwili Cemetery	Kalapakī near high school; Hammatt & Folk 1995
50-30-08-9000	Ahukini Landing	Hanamā'ulu Bay; Pers. comm. N. McMahon 1999

SIHP No.	Site Type	*Ahupua'a* Location and Reference
50-30-08-9402	Historic Building Remnant at Site of Radio Station KIVM	Off Radio Road near Ahukini Hwy; McMahon 1990; Franklin & Walker 1994
08-B008	Kaua'i Memorial Gardens	Kikuchi & Remoaldo 1992
08-B009	Hanamā'ulu Immaculate Conception Church Cemetery II, Roman Catholic	Kikuchi & Remoaldo 1992
08-B011	Immaculate Conception Church Cemetery, Kapaia	Kikuchi & Remoaldo 1992
08-B019	Family cemetery, not located, possibly connected to LCA 3653:2	Kikuchi & Remoaldo 1992
11-B001	Līhu'e Lutheran Church Cemetery	Kikuchi & Remoaldo 1992
11-B002	Japanese Cemetery, purported to have been moved	Kikuchi & Remoaldo 1992
11-B003	Līhu'e Lutheran Church Cemetery /Līhu'e Public Cemetery	Kikuchi & Remoaldo 1992
11-B004	Historic Cemetery near Nāwiliwili Park	Kikuchi & Remoaldo 1992

Ethel Damon (1931) mentions Kuhiau Heiau in Nāwiliwili, placing it near the location of the Court House (see Figure 7). She mentions Pohako-ele'ele, location unknown, and Paukini Rock (SIHP No. 1999), located at Kalapakī Beach, Nāwiliwili Bay:

> An additional area of four acres was during this same year, 1851, sold to the government for harbor and road near Nawilwili Bay. The first sighting point in this deed was the north corner of Kuhiau heiau. (Damon 1931:415)
>
> From the deck of their rivercraft in 1854 Mrs. Rice and the children could plainly see above the rocky shore the ruins of Kuhiau, the old heiau, or temple, and nearby on the bluff the flaming blossoms of a great wili-wili tree among koa trees which then grew almost down to the water's edge. (Damon 1931:17)
>
> On the bluff overlooking the bay of Nawiliwili, where the public High School now stands, was once the large paved heiau called Kuhiau, extending over about four acres of ground. It was in its day the largest and most far-famed temple on the island. Below it, in the bay, is still the rock called Paukini, which was said to be its companion or sister heiau, and was probably also the home of the kahuna, or priest, of Kuhiau. In ancient times this rock was connected with the shore near the site of the former boat landing. All the dredging and filling in for the modern wharves have not yet touched this old rock of Paukini, the sole remnant of the famous heiaus of Nawiliwili Bay. For almost no traces, even of the great Kuhiau temple, are now [in 1931] to be found; and of the three small heiaus in the neighboring ahupuaa of Kalapaki, those of Ninini, Ahukini and Pohako-eleele, little more than the names survive. (Damon 1931:397-398)

In a collection of Kaua'i Place names (Kelsey n.d.), the *heiau* of Kuhiau is also mentioned:

> *Nawiliwili, oia ke awa kumoku. Aia ilaila ka heiau of Kuhiau. Kalapaki, aia oia makao o Nawiliwili.*
>
> Nawiliwili is the harbor. The temple of Kuhiau is there. Kalapaki is on the shoreline of Nawiliwili.

Thrum placed the location of Kuhiau Heiau near the "Court House," which is labeled on a 1881 Jackson map (see Figure 6) in an area called "Kuhiau." Jackson does not label any structure as the *heiau*, so it may have been destroyed sometime between 1854, when Mrs. Rice and her children saw it from the harbor, and 1881, when Jackson made his map. According to Dr. William Kikuchi (personal communication), the *heiau* was destroyed when people took the rocks to use for other purposes. Its general location was near the ironwood tree next to the Kaua'i High School flagpole (Kalima and Wong-Smith 1991:B-5). Nancy McMahon (SHPD Archaeologist for Kaua'i) indicated that the Paukini Rock location in Kalapakī Bay was shown to her by Cheryl Lovell-Obatake in 1999, and subsequently added to the State Inventory of Historic Properties (SIHP No. 1999).

5.3 More Recent Archaeological Projects

The following archaeological projects studied lands located within the general footprint area of the proposed project. Most of these investigations yielded no significant historic or cultural sites, or relatively minimal finds:

(1) McMahon (1990) conducted a brief walk-through field check of three parcels of land immediately west of the airport, and east of Līhu'e town center. Three previously identified historic residences (SIHP Nos. 50-30-9390, -9401 and -9402) were documented; no archaeological resources were identified.

(2) Hammatt and Creed (1993) conducted an archaeological survey of 61 acres of land in Nāwiliwili. Historical evidence suggested this land was intensively used for agriculture in both pre- and post-Contact times. They documented three *'auwai* (traditional irrigation ditches) (SIHP Nos. 50-30-11-491; -492 and -493); and a single rock (SIHP 50-30-11-494) interpreted as a burial marker.

(3) Franklin and Walker's (1994) archaeological inventory survey of 552.3 acres including portions of the airport showed that nearly the entire area was previously disturbed and most sites obliterated. Two sites were documented: a stone wall (SIHP No. -1842) interpreted as a historic boundary marker (possibly marking off an old agricultural field), along the south side of Hanamā'ulu Valley near Kapaia; and a historic structure (SIHP No. -9402) associated with Radio Station KIVM located in the Kalapakī portion of the airport.

(4) Hammatt and Folk (1995) conducted an archaeological and osteological study of Nāwiliwili Cemetery (SIHP No. 50-30-11-6009), located between Kauai High School and Kalapakī Bay. A total of 68 burials of historic age were documented, disinterred, and reburied nearby; the burials represent a wide variety of ethnicities and ages. Walker and Rosendahl (1991) surveyed this same general area and discovered 34 intact, historic burials with several associated headstones.

(5) Creed et al.'s (1999) archaeological inventory survey of several discontinuous parcels within the airport area documented no evidence of prehistoric or early historic sites. However, extensive remains of Ahukini Camp (part of Ahukini Landing, SIHP 50-30-08-9000) were documented at Hanamā'ulu Bay. The remains consisted of 15 concrete slabs believed to have been associated with residential structures, concrete drainage systems

remnants, piles of historic trash, railroad tracks, loading dock and camp-related infrastructure. Additionally, a large wooden house (the Bertrand House) with attached garage/living area and an associated rock wall lie within the project area, adjacent to and south of Ahukini Landing.

(6) Bell et al.'s (2006) archaeological inventory survey of approximately 175 acres of discontinuous lands in Hanamā'ulu and Kalapakī Ahupua'a associated with proposed improvements to Līhu'e Airport identified one historic property (SIHP 50-30-08-3958), a piggery dating from the plantation era. This site is located approximately 150 meters (490 feet) east of the proposed alignment (see Figure 18).

Just north of the subject project area, Walker and Rosendahl (1990) excavated nine backhoe trenches in association with the Hanamā'ulu Affordable Housing Project from which only "several small isolated coral fragments" were found. No further archaeological work was recommended at this location (TMK: (4) 3-7-003: portion 020), which was determined to have been entirely disturbed to a significant depth below surface by historic sugar cane operations. Walker et al.'s (1991) archaeological inventory survey near the mouth of the Hanamā'ulu Stream identified 10 sites; three of these date from pre-Contact times: a subsurface cultural deposit associated with a traditional living site area (SIHP No. 1838 A & B), an agricultural wall and terrace of unknown function (SIHP No. 1839 A & B), and a terraced river valley of some 50 acres (SIHP No. 1847). SIHP No. 1839 provided a radiocarbon date of 1170-1400 A.D. Other sites documented by Walker et al. (1991) north of the subject project area include plantation-era structures, and a historic cemetery (SIHP No. 1844 Japanese-Buddhist and Filipino-Catholic cemetery).

Just south of the subject project area, in Niumalu, Folk and Hammatt's (1991) archaeological inventory survey at the Kanoa Estate Lands documented two fishponds originally recorded by Ching et al. (1973). In addition, a previously unrecorded *'auwai* was found connected to one of these fishponds, known as Kanoa's fishpond, to Hūlei'a Stream.

Kikuchi and Remoaldo's *Cemeteries of Kauai* (1992) notes eight cemeteries in Hanamā'ulu and Kalapakī. Descriptions do not exist for two of them (B019, B004). A pre-Contact burial platform on Kālepa Ridge was found by Kaipo Akana in 1992 in an inspection of areas damaged by Hurricane 'Iniki. These burial sites are not located within the subject project area.

5.4 Coastal Portions of Hanamā'ulu and Kalapakī Ahupua'a

Four previous studies have looked at portions of the seashore at Kalapakī Ahupua'a and Hanamā'ulu Ahupua'a (south of the Hanamā'ulu Stream), which constitute the most sensitive archaeological portions of the general footprint area of the proposed project.

Hammatt's (1988, 1990) archaeological reconnaissance and survey of this coastal area documented five sites, including two dry-stacked stone walls (both incomplete remnants) dating from the historic era (SIHP Nos. 50-30-11-422 and 423, shown in Figure 20 as "Site 1" and "Site 2," respectively), a cultural layer (midden scatter) along the wave-cut shoreline (SIHP No. 50-30-11-424, shown in Figure 20 as "Site 3"), an oval-shaped dry-stacked stone alignment or terrace (SIHP No. 50-30-11-421, shown in Figure 20 as "Site 4"), and a 400-foot long stone wall considered to be a possible extension of Ninini Heiau (SIHP No. 50-30-11-100, shown in Figure

20 as "Site 5") (Figure 20). Hammatt noted that much of the area had been heavily disturbed by prior activities, and that no definitive traces of Ahukini Heiau (SIHP No. 101) could be found.

Creed et al.'s (1999) archaeological inventory survey of several discontinuous parcels within the airport area included portions of the coast at Hanamā'ulu (south of the stream, but documented no evidence of prehistoric or early historic sites, but did find extensive ruins of the early 20th century port of Ahukini (see Figure 18).

As stated above, Bell et al. (2006) documented one historic property (SIHP 50-30-08-3958), a piggery dating from the plantation era. This site is located approximately 150 meters (490 feet) east of the proposed alignment (see Figure 18).

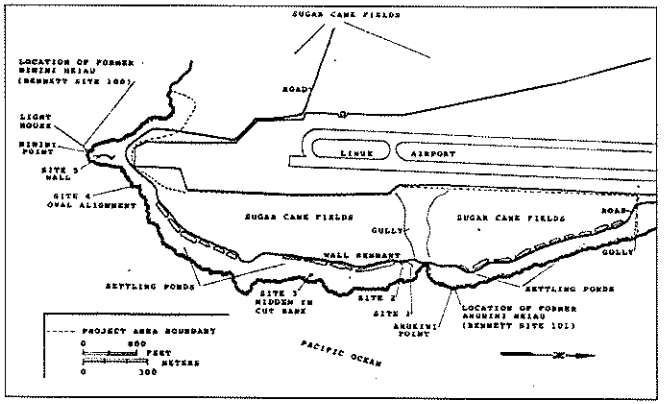

Figure 20. Archaeological sites along the coast at Kalapakī documented by Hammatt (1988, 1990)

Section 6 Results of Fieldwork

Fieldwork was conducted on May 15 and 16, 2008, by CSH archaeologists Gerald K. Ida, B.A., and Nancine "Missy" Kamai, and principal investigator Hallett H. Hammatt Ph.D. Specific methods and documentation details have been described in Section 2 (Methods).

The scope of work called for a field inspection of the project area to identify any surface archaeological features; to investigate and assess the potential for impact to such sites; and to identify any sensitive areas that may require further investigation or mitigation prior to proposed project.

6.1 Currently Undeveloped Portions of the Project Area

The field inspection showed that most of the proposed bike-path route segments follow paved or unimproved roads, or pedestrian paths (as when it passes through the Marriot Hotel property). Only in three places are there no pre-existing developed roads or paths (Figure 21). These are the only places in which surface archaeological sites or features may be present. See Section 7.2 (below) for specific mitigation recommendations for the following three areas:

1) Ka'ana Street is not a continuous through way. On the east side, heading west from Kapule Highway, the street ends next to the new Police Station. On the west side, it heads east from Hardy Street and ends at the edge of a residential subdivision. The area in between these two sections of Ka'ana Street is old, undeveloped cane land (see Figure 21). This area is heavily vegetated, and may contain sugar cane-era sites or features (e.g., flume sections, ditches).
2) There is a similar situation with Ho'olako Street. It is even more confusing because of a new road in the area of the new police station and judiciary building. The original Ho'olako Street started at Rice Street, headed generally north, then took a sharp right turn along the north side of Vidinha Stadium and ended at Kapule Highway. The current Ho'olako Street follows the same route from Rice Street, but continues a little past the stadium where it makes a sharp right turn to the east, then a sharp left turn to the north where it runs between the new Judiciary Building and Police Station, and ends at Ka'ana Street. The portion of the proposed bike-path route that extends to the north from Ho'olako until it hits Ahukini Road is not currently a road or path. It crosses old, unimproved cane land (see Figure 21). This area is heavily vegetated, and may contain sugar cane-era sites or features (e.g., flume sections, ditches). Current plans have eliminated this segment between Ho'olaka and Ahukini Road.
3) There is a small portion of the proposed bike-path route that leaves Nininii Point Road, just a little northwest of the lighthouse (see Figure 21). The route apparently conforms to future plans to extend the perimeter fence around the south end of a runway at Līhu'e Airport. The route cuts through the present golf course then crosses a shallow gulch. Portions of this area are heavily vegetated, and may not have been included in previous archaeological work in this area (cf. Hammatt 1988, 1990).

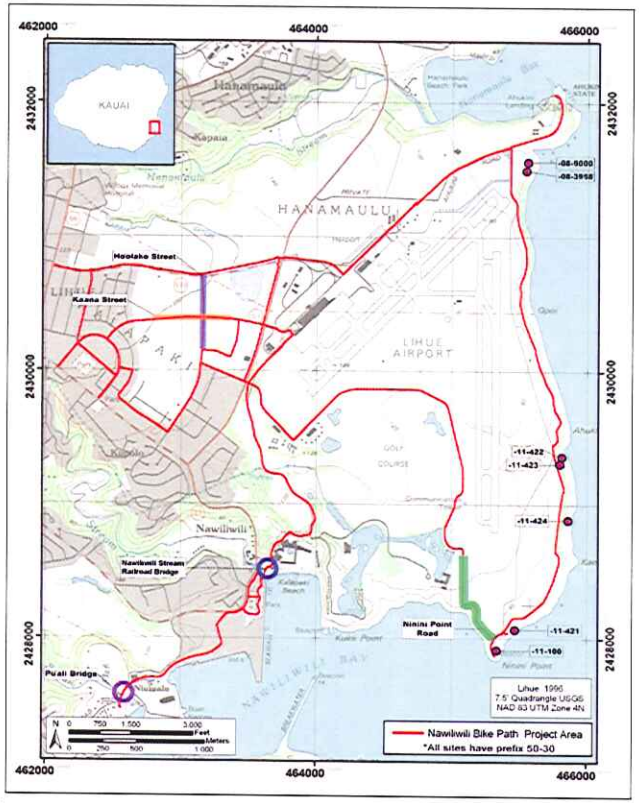

Figure 21. Project area map showing location of known historic properties, two historic bridges, and three areas in which surface sites may be present (see text for explanation)

6.2 Previously Developed Portions of the Project Area

Field inspection results from the rest of the project area, arranged by existing roads and rights-of-way, are listed below. See Section 7.2 for specific mitigation recommendations.

6.2.1 Niumalu Park to Nāwiliwili Park

Portions of Niumalu Park could be a concern with respect to subsurface archaeological deposits because it appears to consist of largely unmodified shoreline (Figure 22). There is also a one-lane bridge on the route in Niumalu that crosses Pū'ali Stream (Figure 23). This bridge appears to be over 50 years old, and could be a concern (historical-architectural impacts) if it needs to be modified.

6.2.2 Nāwiliwili Park to the Marriot Hotel

Historical background research suggests that Nāwiliwili Park proper was constructed more or less entirely of introduced fill sediments; thus, there are no specific concerns with respect to subsurface archaeological deposits. There is an old railroad bridge which crosses Nāwiliwili Stream that is currently used as a pedestrian walkway and access to two restaurants on the grounds of the Marriot Hotel (Duke's and Café Portofino) from a parking lot adjacent to the Anchor Cove mall (Figures 24 and 25). The bridge, which appears to be over 50 years old, has already been modified to make it narrow pedestrian pathway. Further modification could be a concern with respect to historical-architectural impacts.

6.2.3 Limo Road

Limo Road, which is paved, crosses the Kaua'i Lagoons golf course. Given prior subsurface disturbance from historic-era sugar cane operations and from the construction of the golf course, there are no historic-preservation concerns for this portion of the proposed bike-path route.

6.2.4 Road from Kapule Road to Ninini Point by way of Whaler's Brew Pub

Most of Ninini Point Road (i.e., the inland section) is already paved. The *makai* third of this road approaching the lighthouse is roughly paved or dirt. With one exception (see next paragraph), there are no historic-preservation concerns for subsurface archaeological deposits within this portion of the proposed bike-path route, given prior subsurface disturbance from historic-era sugar cane operations and from the construction of the golf course and the airport.

The single exception is a small portion of the bike-path route that leaves the road alignment, crossing part of the golf course which was former cane land, and crossing a small gulch (Figures 26 and 27). The gulch is unimproved, overgrown with *koa haole* and grasses, and likely never had sugar cane growing in it. The gulch may contain surface or subsurface archaeological sites.

6.2.5 Ninini Point to Ahukini Road

This portion of the proposed bike-path route is mostly a dirt road except near the north end of the airport runways (near Ahukini) where it is paved (Figures 28 and 29). CSH (Hammatt 1988, 1990) conducted an archaeological survey of Ninini Point and the coastline to the north (to Ahukini Landing) for a proposed golf course that failed to materialize following Hurricane 'Iniki in 1992. As described above, five sites were identified (see Figure 20).

Figure 22. Wa'apa Road fronting Niumalu Park, facing south

Figure 23. Old bridge spanning Pū'ali Stream, facing north

Figure 24. Old railroad bridge spanning Nāwiliwili Stream, facing north

Figure 25. Old railroad bridge spanning Nāwiliwili Stream, facing southeast

Figure 26. Southeast end of Ninini Road near lighthouse, facing northeast

Figure 27. Southeast end of Ninini Road near lighthouse, facing northwest

Figure 28. Coastal dirt road near Ninini Lighthouse, facing southwest

Figure 29. Coastal dirt road near Ahukini Landing, facing north

Two of these sites will not be affected: a cultural layer at the shoreline (SIHP No. 50-30-11-424), and an oval-shaped stone alignment or terrace (SIHP No. -421). Three sites identified by Hammatt (1988, 1990) *may* be affected: two historic-era stone wall remnants (SIHP Nos. -422 and 423), and a 400-foot long stone wall considered to be a possible extension of Ninini Heiau (SIHP No. -100). Portions of this coastal area may also contain as yet undiscovered subsurface archaeological deposits (see Section 7.2 for recommendations). Bell et al. (2006) also documented a plantation-era piggery (SIHP No. 50-30-08-3958) near the north end of this alignment, but the site is located approximately 150 meters (490 feet) east of the alignment.

6.2.6 Ahukini Road

A plantation camp once existed *makai* of Ahukini Road, just east of the intersection with Ninini Point Road. CSH (Creed et al. 1999) previously documented ruins of Ahukini Camp (part of Ahukini Landing, SIHP 50-30-08-9000), including concrete slabs, concrete drainage systems remnants, historic trash, railroad tracks, loading-dock and camp-related infrastructure; however, it appears none of these features will be affected by the proposed bike-path route (Figures 30 and 31). Given prior subsurface disturbances, there are no concerns for the rest of Ahukini Road.

6.2.7 Umi Street

There are no historic-preservation concerns for this portion of the proposed bike-path route, which passes through a previously-disturbed residential subdivision on old sugar cane lands.

6.2.8 Hardy Street

There are no historic-preservation concerns for this portion of the proposed bike-path route, which passes through a previously-disturbed commercial area on old sugar cane lands.

6.2.9 Ka'ana Street

As stated above, the only portion of Ka'ana Street of concern is the part where the road has not yet been constructed (Figure 32). This is old sugar cane land and may have some surface archaeological sites dating to the plantation era (e.g., ditches and other water control devices).

6.2.10 Mala'e Street and Pua`ole Street

There are no historic-preservation concerns for this portion of the proposed bike-path route, which passes through a previously-disturbed residential subdivision on old sugar cane lands.

6.2.11 Ho'olako Street

As stated above, the only portion of Ho'olako Street of concern is the part where the road has not yet been constructed (Figure 33). This is old sugar cane land and may have some surface archaeological sites dating to the plantation era (e.g., ditches and other water control devices).

6.2.12 Kapule Highway

There are no historic-preservation concerns for this portion of the proposed bike-path route, which passes through a previously-disturbed commercial area on old sugar cane lands.

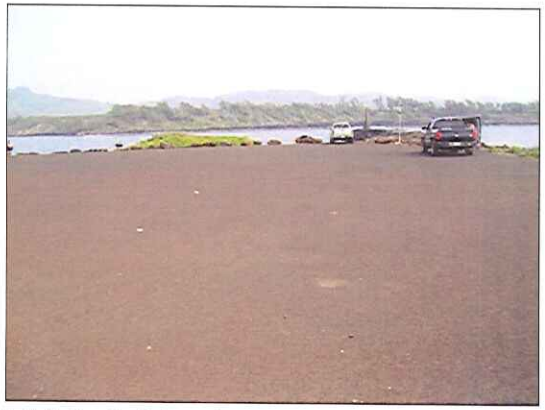

Figure 30. Ahukini Landing, facing north

Figure 31. Entrance to Ahukini Landing area, facing southeast

Figure 32. End of Ka'ana Street, next to Police Station, facing west

Figure 33. Ho'olako Street showing where route continues through brush, facing north

Section 7 Summary and Recommendations

At the request of R.M. Towill Corporation, Cultural Surveys Hawai'i, Inc. (CSH) prepared this Archaeological Literature Review and Field Inspection for the Nāwiliwili-Ahukini Bike Path Project, which is located in coastal and near-coastal portions of three *ahupua'a* in Līhu'e District, Kaua'i: Hanamā'ulu, Kalapakī and Nāwiliwili (see Figures 1 and 2).

The subject project is one phase of a larger project to connect Nāwiliwili with Anahola by a bike and pedestrian path, a distance of some 17 miles (27.4 km) of coastline along windward Kaua'i. The subject project (Phase VI of the overall project) links three main sub-areas at the southern end of the overall project corridor: Nāwiliwili, Ahukini Landing, and the Līhu'e Civic Center. Preliminary planning includes several main alignment options (see Figures 1 and 2), all of which were inspected for this study.

Approximately 8 miles (12.9 km) of bike- and pedestrian-path routes are included in the current alignment options for Phase VI. Design specifications and widths of the different alignment options vary. The Area of Potential Effect (APE) consists of the entire approximately 8 miles of alignment-option corridors between Nāwiliwili, Ahukini Landing and Līhu'e Civic Center, defined as the center line of the corridors and their immediately adjacent alignment shoulders.

This study was designed to identify known archaeological sites, and to provide recommendations relavent to the State of Hawai'i's historic-preservation review process.

7.1 Results

The following are the main results of this study:

a. A total of seven (7) historic properties have been previously identified in or immediately adjacent to the project area; all seven are located in the coastal portion of the project area (see Figures 18 and 20). At least three of these appear to be traditional pre-Contact Hawaiian sites: a cultural layer at the shoreline (SIHP No. 50-30-11-424), an oval-shaped stone alignment or terrace (SIHP No. 50-30-11-421), and a 400-foot long stone wall considered to be a possible extension of Ninini Heiau (SIHP No. 50-30-11-100). The latter stone wall may be impacted by the proposed project; the other two sites (SIHP Nos. -421 and -424) appear to be located well away from the proposed alignment along the shoreline. The other four sites date from historic (post-Contact) times: two stone wall remnants (SIHP Nos. 50-30-11-422 and 423), the ruins of a plantation camp that once existed *makai* of Ahukini Road, just east of the intersection with Ninini Point Road (part of Ahukini Landing, SIHP 50-30-08-9000), and a piggery (SIHP No. 50-30-08-3958). The plantation camp ruins and the piggery appear to be located well away from the proposed alignment near Ahukini Landing; the stone walls appear to be located within or very near the proposed alignment along the shoreline.

b. Kikuchi and Remoaldo's (1992) "Cemeteries of Kauai" identify a historic cemetery designated B004 (see Figure 18) located near the Nāwiliwili Park portion of the

proposed bike- and pedestrian-path alignment. Kikuchi and Remoaldo do not provide any additional specific information about this historic cemetery.

c. Two bridges are located within existing rights-of-way / proposed alignments (see Figure 21); an old railroad bridge previously modified as a pedestrian walkway spans the Nāwiliwili Stream, and an old one-lane bridge in disrepair spans the Pū'ali Stream in Niumalu. Both of these structures appear to be over 50 years old, and neither appears to have been formally assessed for historic significance.

d. There are three areas of dense vegetation that have not been developed with roads or trails; the two areas near the center of the project area may contain sugar cane-era sites on the ground surface. The other area, near Ninini Point Lighthouse, may contain older stone ruins and / or plantation-era sites or features.

e. Several areas along the coast may contain as yet undiscovered subsurface archaeological deposits dating to pre-Contact times, especially in the area from Ninini Point to the previous location of the long-destroyed Ahukini Heiau (located at Ahukini Point, about halfway up the coast from Ninini to Ahukini Landing). The old Hawaiian village of Kalapakī was once located in this area; and cultural deposits may be present. Likewise, the coastal area near Niumalu Park may also contain as yet undiscovered subsurface archaeological deposits dating to pre-Contact times.

f. The remaining portions of the project area have been previously under commercial sugar cane cultivation and / or have been modified by modern development; it is therefore unlikely that additional historic properties (either on the surface or in subsurface deposits) are present throughout most of the project area.

7.2 Recommendations

Given the preliminary stage of the proposed project, it is unclear at this point how much deep excavation, grading, grubbing and other major ground disturbance will be necessary to install the bike and pedestrian pathways. In some places, it would seem that existing rights-of-way can be used with little additional ground disturbances. In other places, for example along the coast from Ninini Point to Ahukini Landing, the bike- and pedestrian-path alignment will be constructed makai of the existing public access dirt road in predominately unmodified coastal lands.

CSH generally recommends the State Historic Preservation Division be afforded the opportunity to review any aspects of this project that involve significant ground disturbance. In addition to this general recommendation, CSH also offers the following specific recommendations based on the aforementioned results:

1. Archaeological Inventory Survey (AIS) satisfying the Hawai'i Administrative Rules (HAR) Chapter 13-276 is recommended for limited portions of the project area, including:

a. the three areas in which the proposed alignments traverse densely-vegetated lands without roads, trails or pathways (see Figure 21); of these three areas, it is likely that subsurface testing (excavation) may only be necessary in the segment near Ninini Point Lighthouse, the other two being located within previously-distrubed sugar cane lands;

b. the coastal alignment corridor between Ninini Point and Ahukini Landing, especially the southern half of this coast, from Ahukini *Point* to Ninini Point. For drainage improvements or other improvements involving significant ground disturbing activities, subsurface testing (excavation) within the foot-print of the proposed improvements is recommended, given the likelihood of encountering historically-significant cultural materials in this area.

2. An Archaeological Monitoriong program satisfying HAR Chapter 13-279 should be developed and implemented consisting of a combination of on-site and on-call monitoring. Specifications of the monitoring program (e.g., precisely where on-site monitoring is required) will depend upon the results of the AIS. Monitoring should probably also include the alignment in the vicinity of Niumalu Park. It seems unlikely that monitoring would be necessary in any of the *mauka* (inland) areas away from the coast, since these have all been severely modified by prior historic and modern disturbances.

3. The two bridges located within existing rights-of-way / proposed alignments (see Figure 21), including an old railroad bridge previously modified as a pedestrian walkway spanning Nāwiliwili Stream, and an old one-lane bridge in disrepair spanning the Pū'ali Stream in Niumalu, should be documented and formally assessed for historic significance by a qualified Architectural Historian.

4. The historic cemetery designated B004 by Kikuchi and Remoaldo (1992) located near the Nāwiliwili Park portion of the proposed bike- and pedestrian-path alignment (see Figure 18) appears to be situated mauka of the bikepath alignment. However, isolated finds of human remains and other cultural materials are possible anywhere in this area, given the clear evidence of considerable pre-contact and post-contact habitation. Archaeological Monitoring should be undertaken for any ground disturbance in the park area, given the common occurrence in Kaua'i and the State of Hawai'i of "extra" unmarked burials adjacent to historic-era cemeteries.

5. No further historic-preservation work is recommended for the majority of the project area (i.e., all those lands not specifically mentioned above, and not indicated in Figure 21).

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APPENDIX B

Cultural Impact Evaluation

Cultural Impact Evaluation for Nāwiliwili-Ahukuni Bike/Pedestrian Path Project Nāwiliwili, Kalapakī and Hanamā'ulu Ahupua'a Līhu'e District (Puna Moku), Island of Kaua'i

TMK: [4] 3-2-004; 3-5-001, 002 & 3-6-002, 019, 020, and various rights-of-way between various plats

Prepared for

R.M. Towill Corporation

Prepared by

Mishalla Spearing, B.A.,

Chris Monahan, Ph.D.,

and

Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai'i, Inc.

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(Job Code: NAWILIWILI 2)

July 2008

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Management Summary

Reference	Cultural Impact Evaluation (CIE) for Nāwiliwili-Ahukuni Bike/Pedestrian Path Project, Nāwiliwili, Kalapakī and Hanamā'ulu Ahupua'a, Līhu'e District (Puna Moku), Island of Kaua'i, TMK: (4) 3-2-004; 3-5-001, 002 & 3-6-002, 019, 020, and various rights-of-way between various plats (Spearing, Monahan and Hammatt 2008)
Date	July 2008
Project Number	Cultural Surveys Hawai'i (CSH) Job Code: NAWILIWILI 2
Project Location	The project area is located in coastal and near-coastal portions of three *ahupua'a* in Līhu'e District, Island of Kaua'i: Hanamā'ulu, Kalapakī and Nāwiliwili. The proposed bike- and pedestrian-path route alignments are located near and adjacent to the Ahukini Landing, Ninini Point Lighthouse, Līhu'e Airport, Kaua'i Lagoons and Marriot Resort, Līhu'e Civic Center and residential areas *makai* (seaward) of the civic center, Nāwiliwili Park and Harbor, and Niumalu Park. This area is depicted on portions of the 1996 Līhu'e and 1996 Kapa'a USGS 7.5-minute topographic quandrangle maps (see Figure 1)
Land Jurisdiction	Public and private land
Agencies	State Historic Preservation Division (SHPD)
Project Description	The subject project is one phase of a larger project to connect Nāwiliwili with Anahola by a bike and pedestrian path. The subject project links Nāwiliwili, Ahukini Landing, and the Līhu'e Civic Center (see Figures 1 and 2).
Project Acreage	Approximately 8 miles (12.9 km) of bike- and pedestrian-path routes are included in the current alignment options for the subject phase of the project; design and widths of the various alignment options vary.
Area of Potential Effect (APE) and Results of Prior Surveys	The Area of Potential Effect (APE) consists of all the alignment-option corridors between Nāwiliwili, Ahukini Landing and Līhu'e Civic Center, defined as the center line of the corridors and their immediately adjacent alignment shoulders. While this investigation focused on the project APE, for the purposes of this CIE, the study area considered the *ahupua'a* of Hanamā'ulu, Kalapakī and Nāwiliwili.
Document Purpose	At the request of R.M. Towill, Corp., CSH undertook this Cultural Impact Evaluation (CIE) to assist in determining if there is a need for a more comprehensive Cultural Impact Assessment (CIA) satisfying Hawai'i Revised Statutes (HRS) Chapter 343, Act 50, which mandates assessment of potential impacts to cultural practices and resources by proposed projects undergoing an environmental review. The subject CIE provides *preliminary* information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's *Guidelines for Assessing Cultural Impacts*), but does not fully meet the guidelines provided by the OEQC.
Consultation Effort	Hawaiian organizations, agencies and community members were

	contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and vicinity. The organizations consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), and Kaua'i Island agencies pertinent to the proposed project area such as the Kaua'i Island Burial Council (KIBC), Kaua'i Historical Preservation Review Commission (KHPRC), DLNR-L Kaua'i Land Division, Kaua'i Paths, Royal Order of Kamehameha, Kaumali'i Chapter no. 3 and Kaleo O Kaua'i and more.
Results of Background Research and Community Consultation	Thirty-two agencies/organizations or individuals were contacted for this CIE. Seventeen community agencies/organizations or individuals participated in brief informal interviews or provided referrals. Response is still pending from a key cultural consultant, Cheryl Lovell-Obatake. In lieu of Ms. Lovell-Obatake's participation in this CIE, a letter regarding the project sent to R.M. Towill has been included for reference in Appendix A. Ms. Lovell-Obatake indicated in her letter to R.M. Towill that a Cultural Impact Assesment is needed. Ms. Lovell-Obatake states, "Section 106- ACHP and SHPD review, when Federal Highway Funds are contributed to the bikeway project. A cultural impact assessment under the EIS should be conducted." The findings of this CIE suggest that there are four major areas of cultural interest and concern regarding the proposed Nāwiliwili-Ahukini Bike/Pedestrian Path Project: (1) The Nāwiliwili-Ahukini Bike/Pedestrian Path may impede access to fishing grounds, in particular, vehicular access for residential fishermen, especially along the shoreline. Additionally, as the Bike/Pedestrian Path could draw more non-residents who engage in fishing, there is concern that there will be increased fishing by non-residents which may lead to overfishing. (2) There may be Native Hawaiian burials (*iwi kūpuna*) in the Nāwiliwili Valley (Kahumoku Road) and other areas outside of the project area, and generally, a likelihood that *iwi* (bones) may be discovered in the project area. (3) Many historic and cultural properties and places exist along the pathway, especially in Nāwiliwili Valley. The Office of Hawaiian Affairs wrote, "OHA seeks assurances that should cultural sites be identified within the project area, every effort should be made to route the final path alignment away from these locations to avoid adverse impacts to the sites." (4) This project is only a segment in a larger project. Although not a part of the current segment, the future Anahola section of the Bike/Pedestrian Path could infringe on Hawaiian Homelands. In particular, there is concern that Native Hawaiians may be

	displaced from Hawaiian Homelands as result of the expanded Bike/Pedestrian Path.
Recommendations	The results of this CIE present a few possible mitigation measures for the planner/developer's consideration. The following recommendations are offered as a way to address some of the concerns expressed by study participants in the statements presented in Sections 6 and 7: (1) Should this study be expanded to a CIA, it is recommended that referrals provided by current CIE study participants be contacted for further comment or possibly more in-depth interviews, in particular, Cheryl Lovell-Obatake. (2) In light of statements made by a few of the participants in this study that there may be burial sites (*iwi kūpuna*, ancestral remains) in the project area, it is recommended that: a. Cultural monitoring be conducted in the immediate vicinity of previously identified archaeological sites and along the coast. Personnel involved in development activities in the project area be informed of the possibility of inadvertent cultural finds, including human remains in culturally sensitive areas. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease, and the appropriate agencies notified pursuant to applicable law. (3) As there are Kānaka Maoli (native born, Native Hawaiians), as well as other *kama'āina* groups who are culturally active in the area, it is recommended that ongoing cultural practices of (possible) plant gathering, fishing, surfing and other reasons (e.g., ceremonial) for visits to the project area and vicinity be recognized, protected and accommodated. In particular, it is recommended that fisher's concerns regarding access to fishing sites be recognized and accommodated. (4) Generally, it is recommended that community members be consulted regarding the preservation, restoration, and interpretation of cultural resources and/or properties — including archaeological sites, possible burials and other features, that proactively includes the community and descendents of those with connections to the subject parcel (e.g., past residency) throughout the development of the Ahukini Bike/Pedestrian Path Project (5) It is hoped that seasonal fishing restrictions will be monitored and enforced due to the potential for increased

	fishing activity along the shoreline.

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Section 1 Introduction

1.1 Project Background

At the request of R.M. Towill Corporation, Cultural Surveys Hawai'i, Inc. (CSH) prepared this Cultural Impact Evaluation (CIE) for the Nāwiliwili-Ahukini Bike/Pedestrian Path Project, which is located in coastal and near-coastal portions of three *ahupua'a* in Līhu'e District, Kaua'i: Hanamā'ulu, Kalapakī and Nāwiliwili. The proposed alignments are located adjacent to Ahukini Landing, Ninini Point Lighthouse, Līhu'e Airport, Kaua'i Lagoons, Marriot Resort, Līhu'e Civic Center and residential areas *makai* (seaward) of the civic center, Nāwiliwili Park and Harbor, and Niumalu Park. This area is depicted on portions of the 1996 Līhu'e and 1996 Kapa'a USGS 7.5-minute topographic quandrangle map (Figures 1 and 2).

The subject project is one phase of a larger project to connect Nāwiliwili with Anahola by a bike and pedestrian path, a distance of some 17 miles (27.4 km) of coastline along windward Kaua'i. The subject project (Phase VI of the overall project) links three main sub-areas at the southern end of the overall project corridor: Nāwiliwili, Ahukini Landing, and the Līhu'e Civic Center. Preliminary planning includes several main alignment options (see Figures 1 and 2), all of which were inspected for this study.

Approximately 8 miles (12.9 km) of bike- and pedestrian-path routes are included in the current alignment options for Phase VI. Design specifications and widths of the different alignment options vary. The Area of Potential Effect (APE) consists of the entire approximately 8 miles of alignment-option corridors between Nāwiliwili, Ahukini Landing and Līhu'e Civic Center, defined as the center line of the corridors and their immediately adjacent alignment shoulders.

This Cultural Impact Evaluation study was completed as a component of an Environmental Assessment for the proposed Nāwiliwili-Ahukini Bike/Pedestrian Path Project. The study was conducted in order to identify any sensitive areas and potential impacts to cultural practices that may require further investigation or mitigation before the project proceeds. This document is intended to facilitate the project's planning and support the project's historic preservation review compliance. Based on the findings of this study, recommendations are presented.

1.2 Document Purpose

The proposed project may (now or in the future) require compliance with the State of Hawai'i environmental review process [Hawai'i Revised Statutes (HRS) Chapter 343, Act 50 law enacted in 2000], which mandates inclusion of an assessment of impacts to local cultural practices and resources by proposed projects undergoing an environmental review. At the request of R.M. Towill, Corp., CSH is undertaking this Cultual Impact Evaluation to assist the landowner / developer in determining if there is a need for a more comprehensive Cultural Impact Assessment (CIA) satisfying Hawai'i Revised Statutes (HRS) Chapter 343, Act 50, which mandates assessment of potential impacts to cultural practices and resources by proposed projects undergoing an environmental review. The subject CIE provides preliminary information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's *Guidelines for Assessing Cultural Impacts*), but does not fully meet the requirements of

the OEQC guidelines. This document is intended to support the project's environmental review and may also serve to support the project's historic preservation review under HRS Chapter 6E-42 and Hawai'i Administrative Rules Chapter 13-284.

1.3 Scope of Work

The scope of work for this CIE includes:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.
3. Limited consultation with knowledgeable parties regarding past and present cultural resources and practices at or near the parcel; present uses of the parcel; and/or other (non-Hawaiian) practices, uses, or traditions associated with the parcel.
4. Preparation of a report summarizing the results of these research activities.

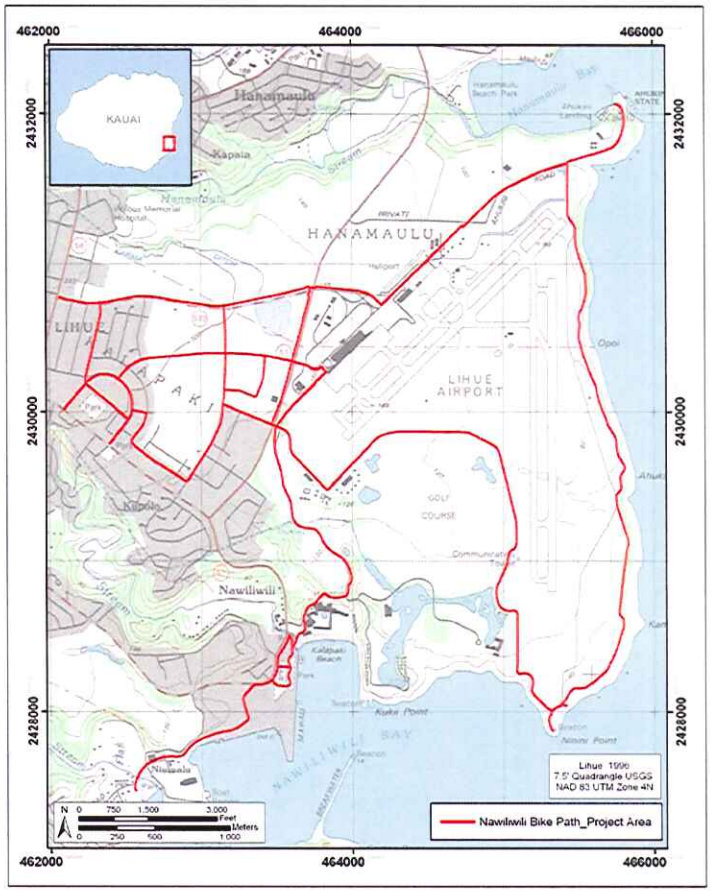

Figure 1. Project area location show on portions of the USGS 1996 Lihu'e and 1996 Kapa'a quadrangles 7.5 minute topographic map, red line depicts all proposed alignments.

Figure 2. Project area location show on aerial image (source: Orthoimagery 2005); red line depicts all proposed alignment.

1.4 Environmental Setting

1.4.1 Natural Environment

The project area extends from the coastline, between Ahukini Landing in the north to Ninini Point in the south, inland approximately 2.7 kilometers (1.7 miles), rising from sea level to approximately 220 feet above mean annual sea level in Līhu'e Town. The area's topography is gently sloping up to the west; there are several shallow intermittent, unnamed drainages between Līhu'e Town and the coast (Juvik and Juvik 1998).

Located on the southeast coast of Kaua'i, the project area is exposed to the prevailing northeast trade winds, and receives 40 to 50 inches of rainfall annually along the coast and up to 100 inches annually inland (western portion of the project area). The annual average temperature ranges form 75-80° F at the airport (Giambelluca et al. 1986; Juvik and Juvik 1998).

Soils in and around project area consist primarily of Līhu'e silty clay (LhB and LhC) and Līhu'e gravelly silty clay (LlB) (Foote et al. 1972) (Figure 3). Līhu'e soils have a surface layer of dusky-red to dark reddish-brown firm silty clay. The substratum is soft, weathered basic igneous rock. Sugar cane has been the main commercial crop in this area in historic times.

Given the relatively large area covered by the proposed bike and pedestrian-path route alignments, and given the presence of developed areas, road ways, resorts and other facilities (e.g., parks, harbors and the airport), vegetation in and around the project area is quite variable. Areas around the airport, for example, consist of landscaped lawns and introduced ornamental and exotic plants. Tall invasive grasses cover much of the project area that was once utilized for commercial sugar cane. The coastal strip is covered in dense vegetation with both native and introduced species, including *Naupaka* (*Scaevola sericea*), *'Ilima* (*Sida* spp.), *Koa haole* (*Leucaena leucocephala*), Christmasberry (*Schinus terebinthifolius*), Ironwood (*Casuarina* spp.) and tall grasses.

1.4.2 Built Environment

Background research indicates that nearly the entire project area was, prior to the construction of the Līhu'e Airport, under commerical sugar cane agriculture. This agricultural use of most of the project area resulted in the grading and repeated plowing of the project area. With the construction of the airport, residential areas to the west in Līhu'e Town, the resorts between Ninini Point Lighthouse and Nāwiliwili, and other facilties and infrastructure (e.g., roadways and utilities), most of the project area was further modified by modern land uses. The coastal strip area has been less affected by modern land use, but still shows clear evidence of modifications, such as dirt trails and tracks and illegal dumping of refuse materials.

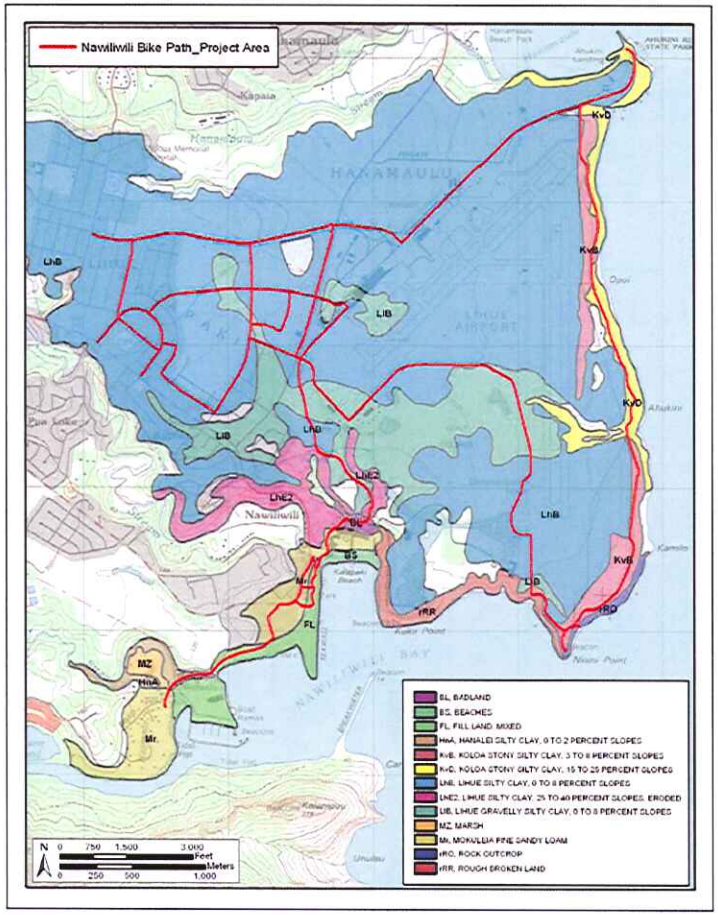

Figure 3. Soil types in and around the project area (data from Foote et al. 1972)

Section 2 Methods

Historical documents, maps and existing archaeological information pertaining to the sites in the vicinity of this project were researched at the Cultural Surveys Hawai'i library. Information on Land Commission Awards was accessed through Waihona Aina Corporation's Māhele Data Base (www.waihona.com). The State Historic Preservation Division, Office of Hawaiian Affairs, Kaua'i Island Burial Council, Kaua'i Historical Preservation Review Commission and community and cultural organizations in Hanamā'ulu, Kalapakī and Nāwiliwili, etc. were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and the surrounding vicinity. The names for potential community contacts were also provided by colleagues at CSH and from the authors' familiarity with people who live in or around the project area. The cultural specialist conducting research on this evaluation employed snowball and judgment sampling methods, an informed consent process and semi-structured interviews according to standard ethnographic methods (as suggested by Bernard 2005). Some of the prospective community contacts were not available to be interviewed as part of this project. A discussion of the consultation process can be found in Section 6 on Community Consultations. Please refer to Table 1, Section 6 for a complete list of individuals and organizations contacted.

Section 3 Traditional Background

This section focuses on the traditional background of coastal and near-coastal portions of three *ahupua'a* in the *moku* (traditional district) of Puna: Hanamā'ulu, Kalapakī and Nāwiliwili (Figure 1). The subject project area is located between the two main bays and streams of Nāwiliwili (to the south) and Hanamā'ulu (to the north). These two meandering streams, which drain the slopes of Kilohana Crater (1143 feet elevation), were once home to thousands of Native Hawaiians living a traditional subsistence lifestyle.

Handy (1940:67) describes these two valleys in his chapter on the main *kalo* (taro) growing locations in Puna Moku:

> [Nāwiliwili] For 3 miles inland from the sea the Nawiliwili River twists (*wiliwili*) through a flat valley bottom which was formerly all in terraces. Inland, just above the bay, three Hawaiian taro planters cultivate wet taro in a few small terraces. Most of the land is [now] in pasture.
>
> Hanamaulu River, rising below Kilohana Crater, winds its zigzag way to the sea through a relatively broad gulch, which had many small terraces commencing at a point about 2.5 miles up from the sea and continuing down to the delta of the river which begins about a mile inland. The small terraces inland from the highway are unused. The delta region is a continuous area of flatland now mostly under sugar cane and house sites. Formerly this [delta] must have been planted in taro.

A fishing village called Kalapakī was located between these two major stream valleys, near the seashore, before the historic period. This general area between the streams and *makai* of the present town of Līhu'e, *mauka* of the village house sites, had several fishponds and small drainages. The village was located east and north (around and up the coast) from Kalapakī Beach. There are some unique aspects of local land use and settlement in the subject project area, as discussed below (Section 2.3 Subsistence and Settlement).

Kalapakī, famous for its wind, appears to have had closer ties with Nāwiliwili than with Hanamā'ulu. Kalapakī is well-known in a traditional sense for its several *heiau*. Hanamā'ulu is probably best known as the birth place of Kawelo, the famous hero and *Mō'ī* (king) of Kaua'i in the late 17th to early 18th century. Nāwiliwili is well-known for its *heiau* at Kuhiau, reportedly at least four acres in size, and its associated *pōhaku* (rock) called Paukini located in the bay.

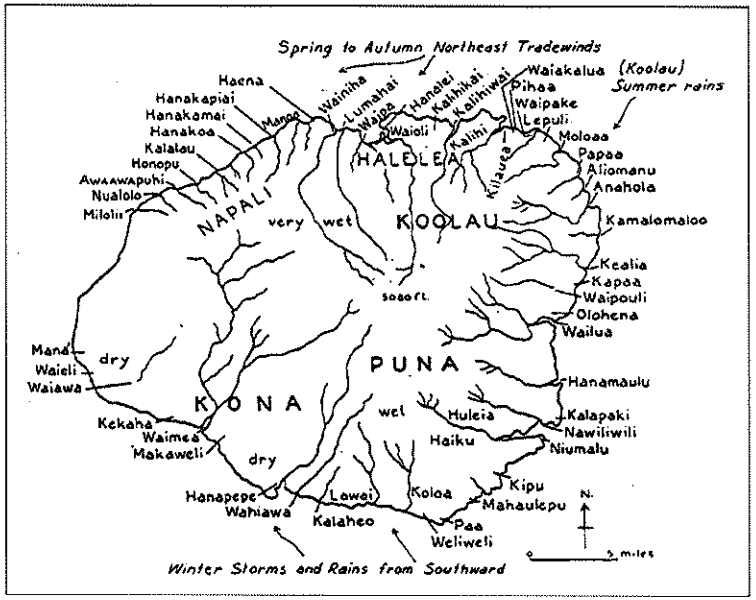

Figure 4. *Moku* (traditional districts) and *ahupua'a* of Kaua'i; note the location of "Hanamaulu," "Kalapaki," and "Nawiliwili" (Handy 1940)

3.1 Place Names

Translations presented without attribution in this subsection are from Pukui et al. (1974), unless indicated otherwise.

Pukui et al. (1974) list but do not translate **Kalapakī**, defined simply as a "beach" in Līhu'e district. Pukui and Elbert (1986) define the word kalapakī (with a small "k") as "double-yolked egg, *Kaua'i*." Aside from its beach and landing, Kalapakī is probably best known in a traditional sense for its *heiau* of **Ahukini** and **Ninini** (and possibly another at Kūki'i). Ahukini has been translated as "altar [for] many [blessings]" (brackets inserted by Pukui et al. 1974), and this was also the name for a *heiau* in Kāne'ohe. Ninini has been translated as "pour," as in *ninini wai* (to pour water).

Most sources suggest **Nāwiliwili** takes its name from the *wiliwili* tree (*nā* is the plural article, as in "the *wiliwili* trees" or "place of the *wiliwili* trees"). According to Pukui and Elbert (1986), the *wiliwili* (*Erythrina sandwicensis*) is a native leguminous tree whose flowers and pods are used for *lei*, and whose light wood was once used for surfboards, outriggers, and net floats. Handy (1940:67) suggests a *kaona* (hidden meaning) for the name Nāwiliwili based on a reduplication of the word *wili*, which means "twisted," as in the meandering Nāwiliwili Stream.

Hanamā'ulu has been translated as "tired (as from walking) bay," which may be related to *mo'olelo* (oral history) and *'ōlelo no'eau* (poetical sayings) about the stingy people of this place (see below).

Līhu'e (literally translated as "cold chill") became the modern political name for the traditional *moku* (district) of Puna. It is clear that Līhu'e is a traditional place name, but less certain that the subject project area was specifically called this name prior to the historic era. Historical documents suggest the name Līhu'e was first applied to this area by Kaikioewai (Governor of Kaua'i) in the 1830s, perhaps after Kaiwioewai's upcountry residence on the island. On the other hand, Nathaniel Emerson's translation of the famous *oli* (chant) cycle of Hi'iaka and Pele (see below) mentions Līhu'e with the other main places names of this area.

It is also well known that Līhu'e was a traditional settlement area near the current Schofield Barracks on O'ahu.

Kilohana, the source of the water of the Nāwiliwili and Hanamā'ulu Streams, is associated with *mo'olelo* of a boy named Lahi and his uncle (see below); there are multiple possible meanings of the name Kilohana (Pukui et al. 1974 list three: "lookout point," "outer tapa," or "best, superior."

3.2 Mo'olelo Associated with Specific Place Names

There are many *mo'olelo* associated with the project area environs. One of the oldest and most famous legendary accounts in Hawaiian oral tradition describes the travels and exploits of Pele, the Hawaiian volcano goddess, and one of her sisters, Hi'iakaikapoliopele (more commonly known simply as Hi'iaka). Pele, in her lengthy *oli* (chant) of literally hundreds of named winds of Kaua'i, lists those of Nāwiliwili, Kalapakī, Ahukini, Līhu'e, Kapaia, and Hanamā'ulu (Nogelmeier 2006):

He he'one ka makani o Nāwiliwili	The wind of Nāwiliwili is a Hu'eone
He Wāmua ka makani o Kalapakī	The wind of Kalapakī is a Wāmua
He 'Ehukai ka makani o Ahukini	The wind of Ahukini is an 'Ehukai
He Pāhola ke kiu ho o kii makani lele kula o Līhu'e	A Pāhola wind is the scout that fetches the winds sweeping the Līhu'e plains
He Kuli'āhiu ka makani o Kapaia	The wind of Kapaia is a Kuli'āhiu
He Ho'oluakainehe ka makani o Hanamā'ulu	The wind of Hanamā'ulu is a Ho'oluako'inehe

3.2.1 Kalapakī

According to a collection of Kaua'i place names by Kelsey (n.d.), Kalapakī has also been known in traditional times as "Ahukini," as in the following *'ōlelo no'eau*:

> Ahukini, oia ka inoa nui o ka' aina a hiki Hanama'ulu.
>
> Ahukini is the overall name of the land next to Hanama'ulu.

3.2.2 Ahukini and Ninini

According to Wichman (1998), Ahukini Heiau was named for Ahukini-a-la'a (who lived about 1250 A.D.), one of three sons of La'a-mai-kahiki, an ancestor of the Kaua'i chiefly lines; Ahukini was also *ali'i nui* (supreme chief) of the Puna district (Wichman 2003).

In the 1920s, the Hawaiian legend chronicler Rice (1974), a life-long resident of Kaua'i, published this *mo'olelo* about Ahukini in the story of "The Goddess Pele":

> Two brothers of Pele, who had come from foreign lands, saw Lohiau's body lying as a stone where the lava flow had overtaken him. Pity welled up in their heart and they brought Lohiau to life again. One of these brothers made his own body into a canoe and carried the unfortunate Lohiau to Kauai, where he was put ashore at Ahukini. (Rice 1974: 14)

3.2.3 Nāwiliwili

The *menehune* (mythical race of little people famous for building great structures of old) were known to live in the Nāwiliwili area:

> It was one of the favorite playgrounds of the tribe of Menehune, the little brown work-people who played as hard as they worked. And again it is William Hyde Rice, who, more than any other teller of stories, has kept for us old tales of this happy playground...(Damon 1931:395-396)

3.2.4 Kuhiau and Paukini

Several historic documents talk about the close connection between Kuhiau Heiau and the *pōhaku* known as Paukini. Damon (1931:393) writes:

> [Kuhiau Heiau] ... was in its day the largest and most far-famed temple on the island. Below it, in the bay, is still the rock called Paukini, which was said to be

its companion or sister heiau, and was probably also the home of the kahuna, or priest, of Kuhiau. In ancient times this rock was connected with the shore near the site of the former boat landing.

Paukini is located at the *ahupua'a* boundary between Nāwiliwili and Kalapakī, and it is likely that this function was an important part of its traditional importance.

3.2.5 Hanamā'ulu

Many references to Hanamā'ulu are made in the "Legend of Kawelo". Kawelo-lei-makua, called Kawelo, was born at Hanamā'ulu. After having become the paramount chief of Kaua'i, he returned to Hanamā'ulu, where he lived with his parents and his wife, Kanewahineikiaoha (Fornander 1918, Rice 1974). The hero of this legend lived in the last half of the seventeenth and early decades of the eighteenth century (Hommon 1976:135).

Rice (1974) recorded this *mo'olelo* about Hanamā'ulu:

> Coming to Hanamā'ulu, Lohiau found all the houses but one closed. In that one were two old men, one of whom recognized him and asked him to enter. The men were making tapa, which they expected to carry soon to Kapa'a, where games were being held in honor of Kaleiapaoa and his bride, Hi'iaka. (Rice 1974:14)

The suggestion of inhospitality at Hanamā'ulu recorded by Rice ("Lohiau found all the houses but one closed") is reminiscent of the Hawaiian proverb *No Hanamā'ulu ka ipu puehu*, or "the quickly emptied container belongs to Hanamā'ulu" (Pukui 1983:252), that implies the food containers of Hanamā'ulu were often bare – a plausible reason for the local residents to be stingy.

Another *heiau* mentioned in legend is Kalauokamanu, which means the "tip of the endpiece of the canoe." It was located in Hanamā'ulu near the mill. According to Wichman (1998), human sacrifice was conducted at this *heiau*, and travelers would pass by the temple quickly, holding their noses to avoid the great stench coming from the dead bodies.

According to a study by Lahainaluna School students:

> Kalauokamani [*sic*] was another heiau. It was named for a real woman and this is a little story pertaining to it:
>
> Two men came from Kauai, Uukanipo and Kaipoleimanu. While they lived at Kahikimaiaea, they heard of the beauty of Kalauokamani and went in search of her until they arrived in the upland of Wailua. Kalauokamani was dead but her spirit saw the men, followed after them and asked, "Where are you going?' they answered, "To see Kalauokamani to be our wife." The spirit said, "There is no woman, for she is dead." The spirit again warned them, "Do not go up this way but go down below. There is the woman for you, Moeapakii. Do not go up this way lest you smell the stench of the body of the woman [you seek] for she lies unburied.

> The men insisted on going up on the upper side of Wailua and they did smell the stench of the woman and both died. They stand at Kaohokaualu to this day. Both had turned to stone. (Lahainaluna Students 1885, HEN I:218)

3.2.6 Kilohana

Damon (1931) described Kilohana as a famous nesting place of *'uwa'u* (*Pterodroma phaeopygia sandwicensis*), the dark-rumped petrel, a chiefly delicacy. The top of Mauna Kahili, the peak to the west of Kilohana, was a sacred burial place of Hawaiian chiefs. Kilohana is also associated with the *menehune*:

> One of their favorite play places was the little hill of Po-po-pii, Rounded-for climbing-up. This they had themselves built on the top of Kilohana and never were they more delighted than when they could climb it over and over again for the sheer fun of rolling down its sides, frolicking and laughing as they rolled. It was such a sport that their gleeful shouts carried clear across the Kauai channel to the southeast and startled birds at Kahuku on the island of Oahu. (Damon 1931:395-396)
>
> Once, a Menehune called Ka-uki-uki, The-man-of-wrath, boasted that he could climb to the top of this hill at Kilohana and snare the legs of the moon. Ridiculed by his fellow tribesmen, he valiantly attempted to make good his boast, and was turned into a stone when he failed of achievement. For many years this stone was recognized by Hawaiians as a kupua, or demigod, and offerings of lehua-blossoms and fragrant maile leaves were laid upon it in passing, that rain and fog might not hinder the errand which carried the people into the mountains. (Damon 1931:395-396)

3.3 Subsistence and Settlement

The *ahupua'a* of Hanamā'ulu, Kalapakī and Nāwiliwili were permanently inhabited and intensively used in pre-Contact times, based on a large amount of archaeological, historical, and oral-historical documentation. The coastal areas were the locus of permanent house sites and temporary shelters, *heiau*, including *ko'a* and *kū'ula* (both types of relatively small shrines dedicated to fishing gods), and numerous trails. There were fishponds at Kalapakī and Nāwiliwili. Further from the current project area, there were numerous house sites and intensive cultivation areas within the valley bottoms of Nāwiliwili and Hanamā'ulu Streams.

Before the historic era, there was a village at Kalapakī (probably between Kalapakī Beach and Ahukini), and another, likely larger, at Nāwiliwili to the southwest. Another village was located near the mouth of the Hanamā'ulu Stream.

The dryland areas (*kula*) of these *ahupua'a* contained native forests and were cultivated with crops of *wauke* (paper mulberry, *Broussonetia papyrifera*), *'uala* (sweet potatoes, *Ipomoea batatas*), and *ipu* (bottle gourd). Legends and historic documentation (especially Land Commission records) elaborate on many of these important natural resources.

The archaeological record of early Hawaiian occupation in the Līhu'e District indicates a date range of c. A.D. 1100 to 1650 for pre-Contact Hawaiian habitations (Walker et al. 1991). A radiocarbon date of A.D. 1170-1400 was obtained from excavated sediments near the mouth of Hanamā'ulu Stream.

Land Commission documents indicate a land use pattern that may be unique to this part of the island, or to Kaua'i, in general, in which *lo'i* (irrigated terraced gardens) and *kula* lands in same *'āpana* (portion of land), with houselots in a separate portion. In most places, *kula* lands are defined as drier landscapes and they do not typically occur next to, and among, wetter *lo'i* lands.

3.4 Streams

Nāwiliwili and Hanamā'ulu Streams have their *maka* (source) on the upper slopes of Kilohana Crater, located four-and-one-half miles to the west. As described above, Kilohana is associated with *mo'olelo* about a giant, bird hunters who lure him to his death, and *koa* (warriors) that come to avenge the giant's murder only to be thrown to their deaths by the young bird hunter Lahi. It is important to point out that the water in these two streams running by the subject project area, literally defining its northern and southern margins, would have been closely associated with Kilohana in the parlance and expressions of Native Hawaiians living a traditional lifestyle.

Two smaller streams, Koena'awa nui and Koena'awa iki, are identified in Land Commission documents, although neither of these is named on any extant maps. Given the gently-sloping character of the natural lay of the land from Līhu'e to the coast, it is possible that there were once a few other smaller drainages traversing what is now the airport, resort and golf course area; and, that Native Hawaiian planters made use of this water (Figure 2).

Figure 5. Kalapakī Bay, showing location of two streams and their outlets (red Xs) to Kalapakī Bay; Koena'awa stream is on the left (undated photograph in Kaua'i Museum files, see http:www.hawaii.edu/environment.ainakumuwai.htm)

3.5 Heiau

There are several historic map sources showing multiple *heiau* along the seashore and stream mouths in and around the general footprint area of the proposed project (Figures 3 and 4). For the most part, all physical evidence of these *heiau* has been obliterated by historic activities and more recent development. Despite this, however, many people still appreciate the sacred nature of the landscape areas in and around these *heiau* (e.g., the rocky points at Ninini, Ahukini, and Kūki'i). These differences between western and indigenous ideas about value and significance are rarely mentioned in cultural impact studies, but they are fundamental to understanding traditional resources.

Lt. George G. Jackson's 1881 map of Nāwiliwili Harbor shows there were major *heiau* on both sides of the mouth of Nāwiliwili Stream (see Figure 3). On the east side, in Kalapakī Ahupua'a, Jackson's map depicts "remnants of ancient heiau" near Kūki'i Point. On the west side of the bay, in Nāwiliwili Ahupua'a, there is an area labeled "Kuhiau" near the court house; this was the previous location of Kuhiau Heiau.

In addition to the *heiau* at Kūki'i and Kuhiau, Damon's (1931) map shows two additional sites located in coastal Kalapakī Ahupua'a: Ninini Heiau at the point of the same name, located east of Kūki'i, and Ahukini Heiau, located about halfway to Hanamā'ulu Ahupua'a (see Figure 4).

Bennett's (1931) archaeological survey of the late 1920s documented three *heiau* within the general footprint area of the proposed project (see Section 4 Archaeological Research for Bennett's map). Kuhiau Heiau, State Inventory of Historic Properties (SIHP) No. 99, was located at Nāwiliwili near the site of the old courthouse. By Thrum's time, approximately two decades before Bennett's work, this *heiau* was already described as "long since destroyed" (Bennett 1931:124). Thrum described it as,

> [a] large paved heiau, whose enclosure covered an area of about four acres...The rock Paukini, now separated from but formerly connected with the shore, was where the kahuna lived. This is said to have been the largest and most famous on Kauai in its day. (Bennett 1931:124)

Ninini Heiau (SIHP No. 100) and Ahukini Heiau (SIHP No. 101) were both described by Bennett as totally destroyed. According to Thrum (Bennett 1931:125), Ahukini was "[a] heiau of medium size; foundations only now remain." Thrum's (1907) island-wide listing of *heiau* on Kaua'i includes another "destroyed" *heiau* called Pohakoelele.

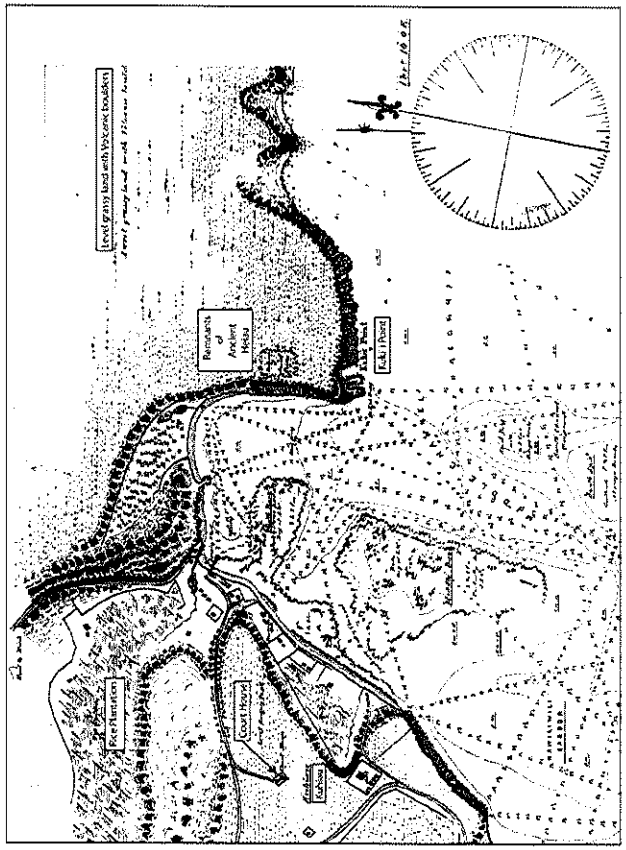

Figure 6. Detail of 1881 map of Nāwiliwili Harbor by Lt. George G. Jackson, showing remnant of ancient heiau near Kūki'i Point; also note the area called "Kuhiau" near the court house (left-hand side), previous location of Kuhiau Heiau

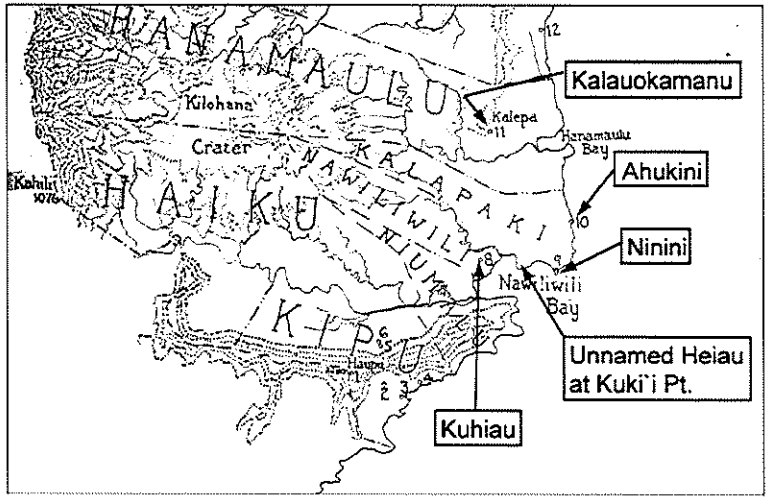

Figure 7. Damon's (1931) map showing *heiau* along the coast sections of Hanamā'ulu, Kalapakī, and Nāwiliwili Ahupua'a

3.6 Menehune Fishpond

Niumalu Loko (fishpond), also known as Alakoko in Land Commission documents [alternatively, Alekoko or 'Alekoko in other sources (e.g., Kikuchi 1987, and the Hawai'i State Historic Preservation Division website, respectively), was first described and mapped scientifically by Bennett in the late 1920s. It is located along the Hulē'ia Stream near its mouth to Nāwiliwili Bay, just outside the project area to the west-southwest (Figure 5). Kikuchi (1973, 1987) considered it a Loko Wai class fishpond because of its inland location along a meander of the Hulē'ia Stream; other sources (inaccurately) consider it a Loko Kuapā (a seawall pond, fronting the ocean). The overall size (area) of the pond has apparently varied through time from as small as 32 acres to as large as 39 acres. The site (designated State Inventory of Historic Properties No. 50-30-11-501) was placed on the National Register of Historic Places in 1973.

Early observations by Severin, who photographed the fishpond in the early 1890s, and by John Coney, who eventually assumed its management sometime after 1918, indicate the pond had been neglected and was in a state of disrepair. In the late 1920s, Bennett (1931:124) described the dimensions and construction features of Niumalu Fishpond (SIHP No. 98, labeled "Menehune Fishpond" on the 1996 USGS 7.5-minute Lihue quadrangle map, see Figure 1):

> The Niamalu [sic] fish pond consists principally of a stone-faced, dirt wall that runs for over 900 yards and cuts off a large bend in the river for use as a fish pond. It is today [in the early 1930s] used both for fish and ducks. Cement walls and iron gates have obscured any old method of controlling the water or the fish.

This fishpond is associated with the *mo'olelo* of the brother and sister shark guardian spirits named Alekoko and Kahalalehue, who were said to have given the task of construction to the mythical little people of old, the *menehune* (Kaiwi 1921). According to Rice (1974), it is said the *menehune* failed to completely finish their task, thus leaving a small opening (gap) that was later finished by people who did an inferior job of it; this inferior stone-work being still visible in historic times.

It is worth mentioning that the *menehune* concept has long been considered by many researchers (e.g., Pila Kikuchi) as an old Hawaiian metaphor for Ka Po'e Kahiko (the people of old) who were also the *maka'āinana* (commoners); as in, "it was built by the little people," rather than the elites. Whatever the exact meanings of the term, it is clear that Hawaiians in early historic times commonly referred to sites that had been around since before anyone could remember as *menehune* constructions.

3.7 Kilohana Crater and Pu'u Hā'upu

Hā'upu *pu'u* (mountain), located approximately five miles southwest of the project area, is the highest nearby landscape feature (2297 feet elevation), it has important associations with Puna Moku, in general, and with Nāwiliwili, in particular (see examples of Hawaiian song, below). Because it is a local topographic high point on the Puna coast, Hā'upu is also specifically linked with *'ōlelo no'eau* (proverbs or poetical sayings) about observing the behavior and quality of the clouds around it, as an indicator of rain. Pukui offers these two (among several others) entries for Hā'upu: (1) *Ka'i ka pua'a i luna o Hā'upu, e ua ana* ("When the pigs [puffy clouds] moved around the summit of Hā'upu, it is going to rain"), and (2) *Ka 'ohu wāuwau ua o Hā'upu* ("When clouds circle the peak of Hā'upu, it is sure to rain") (Pukui 1983:151, 163). Although this *pu'u* is located five miles away from Nāwiliwili, it is closely associated with the subject project area in a traditional Native Hawaiian sense.

Kilohana Crater, located approximately four-and-one-half miles west of the project area, is the *maka* of the two main streams that frame the subject project area. As the *maka* of the Wai o Ke Kāne (fresh water), Kilohana is probably even more sacred than Hā'upu. Depending upon the strength and quality of the *makani*, the *ua* (rain) that falls on eastern slopes of Kilohana may flow into either Nāwiliwili or Hanamā'ulu.

Damon (1931) described Kilohana as a famous nesting place of *'iwa'u* (*Pterodroma phaeopygia sandwichensis*), the dark-rumped petrel, a chiefly delicacy.

3.8 *Mele* (Hawaiian Song)

Bowers (1984) compiled the lyrics (in Hawaiian and English) to over two dozen *mele* (songs) about Kaua'i, several of which mention Nāwiliwili and nearby Līhu'e, Niumalu, and Hā'upu. These *mele* are attributed to a variety of composers (sometimes there is no specific person listed); most of these songs were probably written in the 20th century, based on their style [e.g., the second song below uses the term "uapo," also spelled in some sources as "uwapo," defined by Pukui and Elbert 1986 as a historically-introduced (i.e., "pidgin") term for "wharf"]. Regardless of their age—whether they are decades or centuries old—these songs are cherished by many people, and speak to a great love for the beauty of Nāwiliwili, in particular.

The following song (Bowers 1984:3), attributed to "Haunani Kahalewai's Trio with the Waikiki Serenaders" (Kamehameha School Hawaiian Music Collection Record No. 574), associates Nāwiliwili with the nearby Hā'upu and the *mokihana* flower:

Kaulana mai nei a'o Nāwiliwili — Renowned is Nāwiliwili
He nani nō nimini — Attractive even to Ninini
He nani maoli nō — A beauty unsurpassed.

Kuahiwi nani 'ae a'o hā'upu — Splendid ridge of Hā'upu
Ka pua mokihana 'ea — The mokihana flower
Ka pua nani o Kaua'i — The beautiful flower of Kaua'i.

Ho'ohihi ka mana'o iā Kaua'i — The mind is entranced with Kaua'i
Eō mai k'oleo aloha — Let your beloved voice respond

Figure 8. Alekoko (Nimalu) Fishpond facing southwest (undated but relatively recent photograph); note Hule'ia Stream on the mauka side of the fishpond wall (source: CSH files)

Ke kani a'o pi'ilani	The sound of Pi'ilani.
Ha'ina 'ia mai ana ka puana *He nani maoli nō* *Kaulana mai nei Nāwiliwili*	The refrain has been told Renowned is Nāwiliwili A beauty unsurpassed.

Another *mele* entitled "Kaulana ka inoa a'o Kaua'i" (Bowers 1984:2), attributed to a recording (*Music of Old Hawaii*) by the famous Sons of Hawai'i, again mentions the *mokihana*:

Kaulana ka inoa a'o Kaua'i *Ku'u lei mokihana poina 'ole.*	Famous is the name of Kaua'i My unforgettable mokihana lei.
Ku kilakila 'oe Wai'ale'ale *Me ka nani kaulana 'o Nawiliwili.*	Wai'ale'ale you stand majestic With the famous beauty of Nawiliwili.
Lauā'e o makana ka'u aloha *Me ka uapo nani a'o Niumalu*	I love the fragrant fern of Makana With the fine wharf of Niumalu.
E pi'ina I ke 'ike a'o Kipū *Me ka wai 'anapanapa e kaulana nei*	Ascending to see Kipu With the famous glittering waterfall.
I aloha ia noa'o Waimea *Me ke one kani la a'o Nohili*	Beloved is Waimea With the barking sands of Nohili.
Pu'ili kou aloha ma ku'u poli *Honehone kou leo me he ipo ala*	Your love is held fast in my heart Sweet your voice like a sweetheart.
Hea aku no au, e o mai 'oe *Lei ana Kaua'i ka mokihana*	I call, you answer Kaua'i, decked in mokihana.

The *mokihana* (*Melicope anisata*) is a native (endemic) tree, found only on Kaua'i, considered traditionally to be a variety of *'alani* (a general term for citrus tree). The *lei* made of *mokihana* is a traditional symbol of the island of Kaua'i. According to Abbott (1992), the *mokihana* were used to make the most treasured and rare seed *lei* in the Hawaiian Islands.

There are other *mele* about these and other nearby places that could be included in a more comprehensive document, such as a CIA, should one be warranted.

Section 4 Historical Background

This section is based on prior works by Damon (1931), Hammatt and Creed (1993), and Creed et al. (1999). Damon's *Koamalu* (a history of the Rice Family) contains excerpts from a large number of 19th century primary sources, including first-hand observations of life and times in and around Līhu'e / Nāwiliwili. Creed's work, in particular, contains extensive documentation and interpretation of Land Commission documents. Dorrance and Morgan (2000), Donohugh (2001), Wilcox (1996) and Condé and Best (1973) all document historical aspects of commercial sugar cane, railroads, irrigation, plantations, and other 19th and 20th century changes.

4.1 Early Historic Period

The first written accounts of Kaua'i are from travelers, missionaries, and surveying expeditions. Missionary accounts of first half of the nineteenth century provide the majority of the early written records for this particular part of Kaua'i (Figure 6).

Damon (1931:401) wrote about Hiram Bingham's 1824 observations from his memoir, *A Residence of Twenty-One Years in the Sandwich Islands*, published in 1847:

> In 1824, when walking around the island from Waimea to counsel the people after the wreck of *The Cleopatra's Barge*, Rev. Hiram Bingham crossed from Hanapepe, as has been seen, over the old upland trail back of Kilohana, and wrote of it as 'a country of good land, mostly open, unoccupied and covered with grass, sprinkled with trees, and watered with lively streams that descend from the forest-covered mountains and wind their way along ravines to the sea, - a much finer country than the western part of the island.'

In the 1830s, another missionary, Rev. Peter Gulick, was living on Kaua'i at Waimea and Kōloa. He made the following observation about the kind of provisions one could find in Hanamā'ulu at the time:

> ...The governor [Kaikioewai] reached Hanamaulu in his canoe just as we entered on horse back... This is the governor's custom, when he travels. A man is sent before to give notice that provision may be made, at the different stopping places, for him and his train: which frequently amounts to two hundred [people]... I with a few natives had a comfortable house at Hanamaulu. The inhabitants brought us fish fresh from the ocean, fowls, taro, potatoes, and a pig, all except the fish roasted or baked in the ground... A youth who went with me for the purpose prepared my food. My bed, which was made with mats, was covered with ten tapas; these were the bed clothes which according to custom were presented to the guest for whom they were spread. (Damon 1931:360)

At this same time, in the 1830s, the Governor (Kaikioewa) founded a village at Nāwiliwili that eventually developed into Līhu'e. According to Hammatt and Creed (1993), the name Līhu'e was not consistently used until the establishment of commercial sugar cane agriculture in the middle 19th century'; and from the 1830s to the Māhele, the names Nāwiliwili and Līhu'e were used interchangeably to some extent to refer to a settlement along Nāwiliwili Bay. Some

sources attribute the decision to call this area Līhu'e (literally translated as "cold chill") to Kaikioewa, who apparently named it after his nearby upcountry home. Waimea and Kōloa were preferred anchorages compared with Nāwiliwili, which opens directly east to the trade winds. Gales were known to blow ships onto the rocks. During the whaling era, Kōloa, which was home to the earliest major commercial operations in the Hawaiian Islands, was the preferred anchorage because of the ready supply of nearby food stuffs for resupply of the ships.

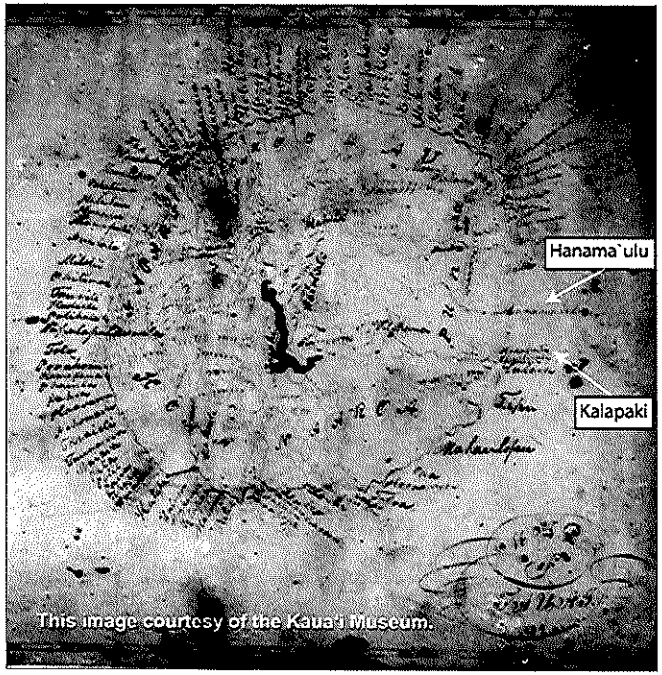

Figure 9. 1824 map of Kaua'i showing Hanamā'ulu and Kalapakī (source: Kaua'i Museum)

By 1830, the sandalwood trade had waned and the whaling industry was just beginning. At the same time, commercial agriculture was being established on Kaua'i. When the first crop of sugar cane was harvested at Kōloa, the king himself commanded that portions of his private land

be planted in cane. The Governor of Kaua'i Kaikioewa in 1839 began farming the slopes of Nāwiliwili Bay where there was more rain than at Kōloa (Dorrance and Morgan 2000). He also built a house and church in Nāwiliwili Ahupua'a.

Donohugh (2001:94) describes Governor Kaikioewa's attempt to establish the first commercial sugar mill and plantation in Līhu'e in 1839:

> During the early decades of Kōloa Plantation, other sugar plantations had started up on the island. One was to result in the ascendancy of Līhu'e to the principal town and seat of government on Kaua'i, replacing Wailua. When Kaikio'ewa was appointed governor, he located his home in what is now the Līhu'e District. He planned to grow sugar cane but died in 1839 before his plans could be realized. Kaikio'ewa was responsible for the name [Līhu'e], which means "cold chill," the name of his previous home at a higher and chillier altitude on O'ahu.

Donohugh (2001:94) describes observations by James Jarves, who passed through Līhu'e in 1838:

> ... [He] found only a church built by Kaikio'ewa and a few grass houses. He commented the governor had selected Hanamā'ulu Bay as the harbor, "entirely overlooking the fact that it opened directly to the windward."

Kaikioewa died in 1839 soon after the start of the sugar plantation, which lasted only one year and closed down in 1840 (Dorrance and Morgan 2000).

Around this time, perhaps as late as 1842, the first missionaries settled in the Līhu'e area led by Dr. and Mrs. Thomas Lafon, and assisted by Rev. and Mrs. Peter Gulick from Kōloa. Schools were opened, and some missionaries attempted to grow cotton as the first intensive cash crop, but were unsuccessful (Damon 1931).

An account of the United States Exploring Expedition, which passed through Līhu'e in 1840, talks about the area, but also mentions the forced removal of *kama'āina* from the coastal areas:

> At noon they reached Lihui, a settlement lately undertaken by the Rev. Mr. Lafon, for the purpose of inducing the natives to remove from the sea-coast, thus abandoning their poor lands to cultivate the rich plains above. Mr. Lafon has the charge of the mission district lying between those of Koloa and Waioli. This district [Līhu'e] was a short time ago formed out of the other two.
>
> The principal village is Nawiliwili, ten miles east of Koloa. This district contains about forty square miles, being twenty miles long by two broad. The soil is rich: it produces sugar-cane, taro, sweet-potatoes, beans, etc. The only market is that of Koloa. The cane suffers somewhat from the high winds on the plains.
>
> The temperature of Lihui has much the same range as that of Koloa, and the climate is pleasant: the trade-winds sweep over it uninterruptedly, and sufficient rain falls to keep the vegetation green throughout the year. No cattle are to be seen, although the pasturage is good. (Wilkes 1845:67-68)

With the death of Kaikioewa, governorship of Kaua'i was transferred for a brief period to his widow Keaweamahi. Then followed the brief tenure of Chiefess Kekauonohi and her husband Kealiiahonui (son of King Kaumuali'i) after which the governorship passed to Paulo Kanoa in 1848. Kanoa had two houses overlooking Nāwiliwili Bay: one on the bluff south of Nāwiliwili Stream (the present site of Kaua'i High School) and another at Papalinahoa, north of the bay (Damon 1931).

William DeWitt Alexander, son of Waioli missionary William P. Alexander, traveling from Kōloa to the north shore of Kaua'i in 1849 recorded some descriptive notes of Hanamā'ulu :

> A few miles further on we crossed the picturesque valley of Hanamaulu. This valley is prettily bordered by groves of Kukui, koa, & hala trees, and is well cultivated with taro. A fine stream flows through the midst of it, which makes a remarkable bend at this place like a horse shoe. We then traveled along the seashore at the foot of a range of hills through groves of hau, & among hills of sand. It was now after dark, but the moon shone brightly, and there was no difficulty in finding our way. About eight o-clock we arrived at the banks of the Wailua river. (Kauai Historical Society 1991:121)

One of the last vestiges of the pre-cash crop landscape is depicted in the diary entry for the Rice family's arrival on Kaua'i in 1854. During the second half of the nineteenth century, western settlers and entrepreneurs set their sights on southeast Kaua'i. Damon describes the Līhu'e landscape at the time of the family's arrival at Nāwiliwili Bay:

> From the deck of their river craft in 1854 Mrs. Rice and the children could plainly see above the rocky shore and ruins of Kuhiau, the old heiau, or temple, and nearby on the bluff the flaming blossoms of a great wili-wili tree among koa trees which ten grew almost down to the water's edge. (Damon 1931:17-18)

4.2 Middle to Late 19th Century

The middle 19th century brought great changes to Līhu'e, including private and public land ownership laws known as the *Māhele* (literally, 'to divide' or 'to section'), and commercial sugar cane agriculture, which firmly established Līhu'e's place in state and global economic markets. Coulter's (1931) population density estimates for 1853 (Figure 7) show a relatively large settlement around Nāwiliwili Bay.

4.2.1 The *Māhele*

In the middle 19th century, during the time of Kamehameha III, a series of legal and legislative changes were brought about in the name of 'land reform' (see the works of Jon Chinen 1958, 1971 for a thorough and well-written explanation). Previous to the *Māhele* (, all land belonged to the *akua* (gods), held in trust for them by the paramount chief, and managed by subordinate chiefs. Following the enactment of a series of new laws from the middle 1840s to middle 1850s, all land in the Hawaiian Kingdom was divided into three main types: government (or Crown) land; *ali'i* (chiefly) lands; and commoner lands, which *maka'āinana* could in principle obtain in fee simple, following passage of the Kuleana Act in 1850. This act allowed *maka'āinana* (in principle) to own land parcels at which they were currently and actively

cultivating and/or residing. In theory, this 'set aside' of hundreds of thousands of acres as potential *kuleana* parcels ultimately led to about 10,000 claimants obtaining approximately 30,000 acres, while 252 chiefs, for example, divided up about a million acres. Many or most Hawaiians were simply disenfranchised by these acts.

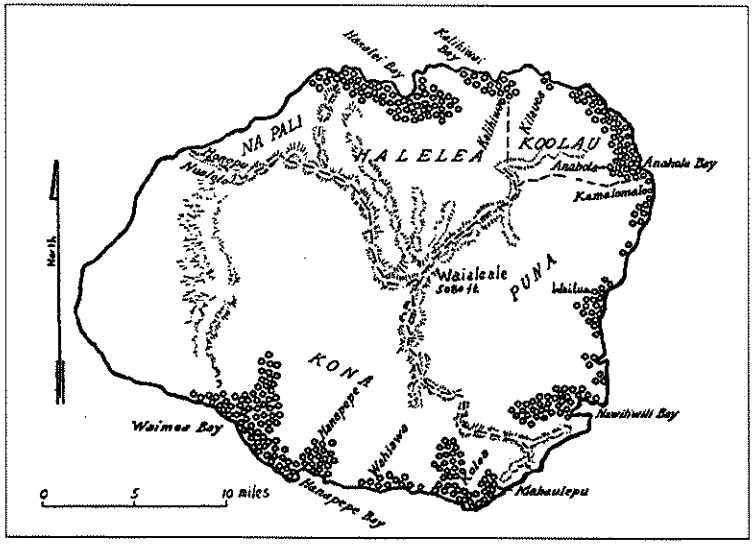

Figure 10. Population estimates forc2 Kaua'i generated by Coulter (1931), each symbol represents 50 people; note densely settled area at Nāwiliwili Bay, with a modest population (150 people) are the coastal boundary between Hanamā'ulu and Kalapakī

4.2.1.1 Hanamā'ulu

Land Commission documents for Hanamā'ulu describe *lo'i*, *kula*, and house sites along both sides of the Hanamā'ulu River, extending from the shore up to the village of Kapaia. *Kula* and *lo'i* lands are often included together in one *'āpana* (portion of a claim), with house sites belonging to separate *'āpana*, slightly removed from the floodplain. There are four claims in the back bay area of Hanamā'ulu and two claims for house lots (LCA 3650 and 3653) near the beach, south of Kapule Highway. Most of the *kuleana* claims for Hanamā'ulu are located in lands that have been under sugar cane cultivation for much of the 20th century; occasionally, traditional artifacts can still be found in the cane fields.

4.2.1.2 Kalapakī

In Kalapakī Ahupua'a, *kalo* (taro) *lo'i* claims were on the north side of Nāwiliwili River (the *wauke* land in Claim 3907 on the south side of the river being the sole exception) and along the smaller drainages of Kalapakī and Koena'awa, where there were also reportedly springs. Two streams, Koena'awa-nui and Koena'awa-iki, were also identified in the claims, but neither is

named on current maps. These two streams, however, can be seen an undated photograph on file at the Kaua'i Museum (see Figure 2, above).

Most Kalapakī claimants lived at the shore in the *kulana kauhale*, or, village of Kalapakī, located on Nāwiliwili Bay. Several claimants describe their village house lots in relation to the fishponds of Koena'awa (Koena'awai-nui & Koena'awa-iki). There is also a description of the *muliwai*, or estuary, of Koena'awa-nui.

Claim 3640 mentions a footpath for the *'ili* of Limawela near the shore at the boundary between Hanamā'ulu and Kalapakī. These documents therefore indicate a north/south path along the shoreline, and other paths going inland from the shore, which is a traditional transit pattern for Kaua'i *ahupua'a*.

Paulo Kanoa, Governor of Kaua'i at the time of the Māhele, claimed both the *ahupua'a* of Hanamā'ulu and Kalapakī but was awarded neither. Instead, Victoria Kamāmalu was awarded both *ahupua'a* under LCA (Land Commission Award) No. 7713:2. A portion of this award (7713:2 part 7) includes land within the present project area. Following the death of Victoria Kamāmalu in 1866, Princess Ruth Ke'elikōlani inherited her lands. In 1870, Ke'elikōlani sold large portions of her Kalapakī and Līhu'e lands to William Hyde Rice of Līhu'e Plantation. In addition, in 1870, Paul Isenberg purchased the *ahupua'a* of Hanamā'ulu from J.O. Dominis, which includes the land of the present airport area. William Hyde Rice made subsequent land purchases from Princess Ruth in 1879:

> William Hyde Rice, who already had his own home on the hill east of the mill, bought a large makai section of the ahupuaa of Kalapaki from Princess Ruth in 1879 and there conducted the Lihue Ranch. In later years he sold most of this land to the plantation. (Damon 1931:747)

The large tracts of inland areas (*kula*), not in the river valleys or at the shore, are not described in the claims but were probably in use. This *kula* land at the time of the Māhele belonged to Victoria Kamāmalu. Land use is not elaborated in her claims for Hanamā'ulu or Kalapakī. Traditional *kula* resources for all claimants would have been medicines, herbs, construction materials such as *pili* grass and trees for building houses, canoes, and perhaps lithic materials for tools. Sweet potatoes and other dryland crops, such as *wauke*, probably were cultivated in patches throughout the area at one time or another.

4.2.1.3 Nāwiliwili

Victoria Kamāmalu was awarded over two thousand acres of Nāwiliwili Ahupua'a (LCA 7713), along with much of Niumalu, Haiku and Kipu, as well as Kalapakī and Hanamā'ulu. In addition to Kamamalu's large award at Nāwiliwili, there were many smaller *kuleana* awards. According to Hammatt and Creed (1993):

> Within the valley floor and adjacent to the alluvial plain [in Nāwiliwili] ... are 14 land Commission Awards for which there are testimonies available in the Land Commission records ... The awards vary in size between one to two acres and are generally around one acre. The majority of land recorded is for *lo'i* (wetland agriculture) but *kula* (dryland plots) are present as are a few houselots.

> In all there are 54 *lo'i* recorded. Each award is generally two to three *lo'i* plots. The largest award comprised eight *lo'i*; a single award consisted of one *lo'i*. All awards contained *lo'i* and nine of the fifteen total awards had *kula* lots. Without exception, the nine awards containing *kula* mention only one *kula* per award. This is of interest because it shows that the alluvial plain was not entirely dedicated to wetland planting and that a small *kula* lot was essential for subsistence agriculture.

Some awards at Nāwiliwili mention houselots along the shoreline.

4.2.2 Commercial Sugar Cane Agriculture

As a direct result of the availability of large tracts of land for sale during the *Māhele*, in 1849, Līhu'e Plantation "was established on the site Kaikio'ewa had chosen, and the cluster of homes and stores around it was the start of the town of Līhu'e." (Donohugh 2001:94). The plantation was started by Henry A. Pierce, Judge Wm. Little Lee, chairman of the Land Commission, and Charles Reed Bishop, doing business as Henry A Pierce and Company (Damon 1931). The first 3,000 acres were purchased in Nāwiliwili and an additional 300 acres were purchased in Ahukini in 1866. The Līhu'e Plantation became the most modern plantation at that time in all Hawai'i. It featured a steam-powered mill built in 1853, the first use of steam power on a Hawaiian sugar plantation, and the ten-mile-long Hanamā'ulu Ditch built in 1856 by plantation manager William H. Rice, the first large-scale irrigation project for any of the sugar plantations (Moffatt and Fitzpatrick 1995:103). Dorrance and Morgan (2000:28) provide a slightly different list of achievements for Līhu'e Plantation: "The first irrigation ditch in Hawai'i was dug in 1857 [at Līhu'e], and in 1859 the first steam engine in a Hawai'i mill was installed at Lihue Plantation."

The residential and administrative heart of Līhu'e Plantation was located in the western portion of the subject project area, now downtown Līhu'e, Kaua'i's political center and most developed area. There are many documentary resources about the history of commercial sugar cane in Līhu'e (see, e.g., the Kaua'i Museum's website, http://www.kauaimuseum.org). Dorrance and Morgan (2000) have summarize highlights of the history of both the Līhu'e and Hanamā'ulu Plantations (see pp. 28-29), and there are other, more detailed histories of these operations (e.g., Condé and Best 1973; Wilcox 1996; Donohugh 2001).

The success of the Līhu'e Plantation allowed it to continue to expand. When the owner of Hanama'ulu Ahupua'a, Victoria Kamāmalu, died in 1870, all 9,177 acres in the *ahupua'a* were purchased by Paul Isenberg, the manager of Līhu'e Plantation from 1862-1878 (Damon 1931:742-747). By 1870, the plantation owned 17,000 acres in Hanamā'ulu. A total of 30,000 leased acres in Wailua were later added in 1878. Līhu'e Plantation built a second mill in 1877, north and west of the present airport, recorded in an 1885 map of Hanamā'ulu Bay by Lt. George G. Jackson. This mill operated until 1920, when it was converted into housing for laborers.

4.2.3 Changing District Names

The traditional districts, or *moku*, of Kaua'i were replaced in the middle to latter part of the 19th century by modern political-district names (Figure 8). Given its economic importance to the island, Līhu'e became the modern district name, as described by Rice:

> The name, Lihue, applied in a larger sense, included the districts of what are now Kawaihau and Lihue, reaching from Anahola to the Gap, being made so by law in about the year 1861, according to early court records, but some years later divided into the present two districts. The large district was also known as the Puna district, and is found on early maps as such. It was August thirteenth, 1880, that the district was divided into two, by act of Legislature with King Kalākaua's signature. . . . Lihue, in a local sense, and from which the name of the district was derived meant only that little portion of land upon which the present village, as consisting of bank, post office and store, now stands (Rice 1914:46).

4.2.4 Later 19th century

Māhele records indicate that taro continued to be cultivated in Nāwiliwili Valley through the middle 19th century. However, later in that century, much of the taro lands in Nāwiliwili, as in other wetland regions of the Hawaiian Islands, were converted to rice cultivation. This shift was, dictated by changes in the ethnic make-up of the islands' population and economic demands. Little is known of the rice industry in Nāwiliwili; however, an 1881 map of Nāwiliwili Bay shows the entire *makai* portion of Nāwiliwili Valley under rice cultivation. Early 20th century photographs in the Bishop Museum Archives show large rice terraces within the valley. Rice was also grown in the flatlands *makai* of the *pali* of Kuhiau.

According to Dorrance and Morgan (2000:24-25), there were at least four different major sugar cane operations (i.e., mills and/or plantations) in the near vicinity of the subject project area during the later 19th century, including the Līhu'e and Hanamā'ulu Plantations (founded 1870, closed 1898) as well as the Hanamaulu Mill Company (founded 1870, closed 1880) and Charles L. L'Orange (founded 1882, closed 1888).

In 1870, the Lihue Plantation Company bought up approximately 17,000 acres of undeveloped land in Hanamā'ulu, which were then used to grow sugar cane and to capture and deliver water to both plantations. Later, in 1870, George N. Wilcox started the first sugar cane plantation in Hanamā'ulu, the Hanamā'ulu Plantation (Dorrance and Morgan 2000).In 1898, Hanamaulu Plantation was merged into Lihue Plantation.

> Historic maps show most of the subject project area, especially the current airport, was not yet in commercial sugar cane agriculture by the late 19th century (Figure 9), but this would change by the early 20th century when nearly the entire subject project area was plowed under for cane.

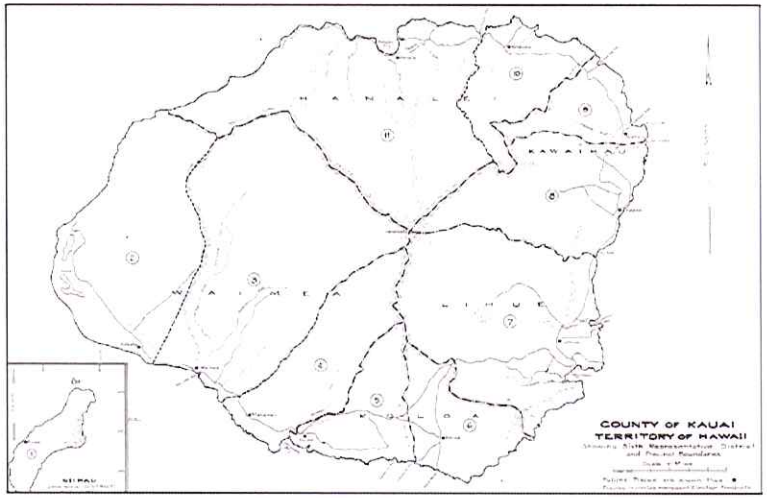

Figure 11. 1936 map of the political districts of the County of Kaua'i, Territory of Hawai'i

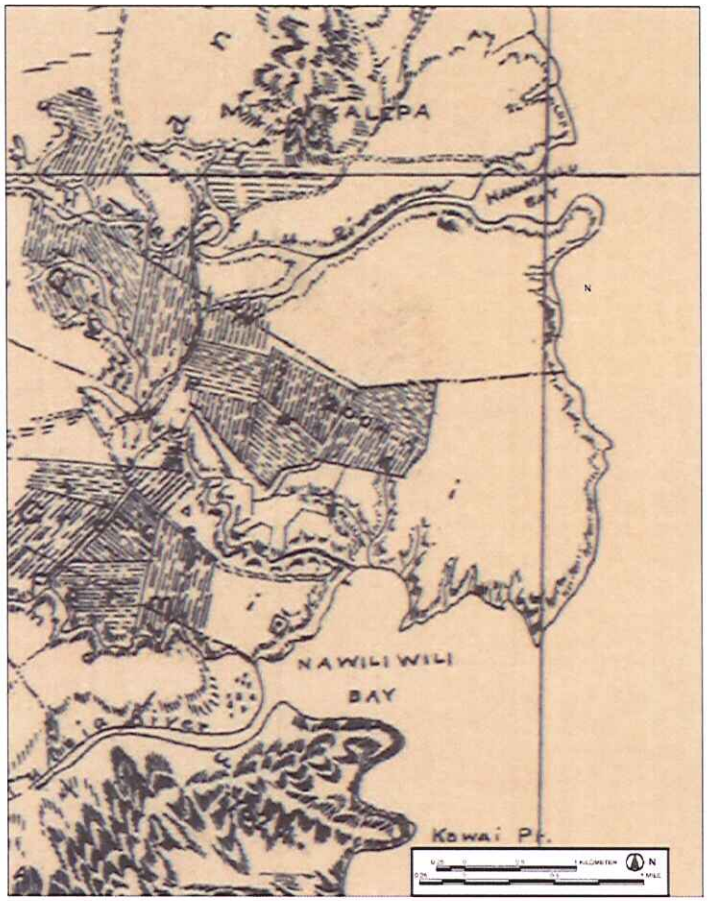

Figure 12. Detail of late 19th century Hawaiian Government Survey map clearly showing the general footprint area of the proposed project not yet under cultivation of sugar cane

4.3 Twentieth Century

This subsection documents important aspects of the 20th century history of the subject project area; this includes previously gathered interviews with *kama'āina* and other residents of Kaua'i, and ongoing practices and uses of the landscape. The emphasis in this subsection is on personal histories and remembrances of *kūpuna* (elders), rather than reiteration of other widely available information.

4.3.1 Līhu'e Plantation

Commercial sugar cane agriculture continued in Līhu'e until 2000, when it and the Kekaha Sugar Co. finally shut down and terminated approximately 400 workers. The nearby Kipu Plantation, founded in 1907, operated until 1942 (Dorrance and Morgan 2000).

Līhu'e Plantation remained a vibrant and successful commercial operation throughout most of the 20th century, in part, because of a continued interest in technological innovation (Figure 10). For example, in 1912, Līhu'e Plantation installed two 240-kilowatt generators above the cane fields on the slopes of Kilohana Crater, becoming one of the first hydroelectric power producers (along with Kekaha, Kaua'i) in the Hawaiian Islands (Dorrance and Morgan 2000).

There are many first-hand recollections about life in the early 20th century plantation days of Līhu'e, including extensive documentary archives maintained by the historical museum at Grove Farm Homestead.

The following example, which appeared in the *Honolulu Advertiser* (24 April 2000), and was written by Jan TenBruggencate, describes the struggles of 78-year-old Tadeo Suemori to keep his house at the so-called Rice Camp. Suemori was born and lived his whole life at this house, which was previously one of a total of 18 plantation cottages on a 14-acre parcel owned by Wm. Hyde Rice, Ltd. When the landowner began moving people out in 1989 to sell the property to the museum, Suemori refused to vacate: "They never evicted me. I said, "I ain't moving out.'" (TenBruggencate 2000:B-1). He was eventually allowed to rent the place for the remainder of his life, but had wished to restore and rehabilitate the old Rice Camp. The article continues:

> He is concerned about the environment, and particularly about pollution in Nawiliwili Stream, which runs below his house. It was clean when he and his childhood friends skinnydipped there while the U.S. stock market was crashing in 1929. It was the place where they caught prawns and *'o'opu* and frogs...Today the streams runs brown and smells bad. Only a few frogs and mosquito fish live there. That angers Suemori. He wants someone to clean it up. (TenBruggencate 2000:B-2)

According to the article, the Grove Farm Homestead Museum director hoped to document Suemori's oral history, which includes knowledge of many Hawaiian-Portuguese, Chinese-Hawaiian, Japanese, and Spanish-Filipino families that used to live nearby.

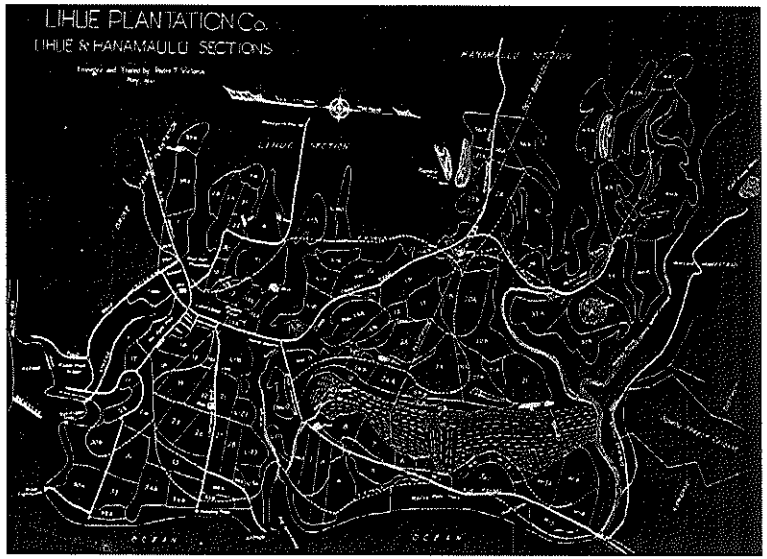

Figure 13. Lihue Plantation Co. in 1941 with subject project area in lower left-hand portion of the image (source: Condé and Best 1973:168)

4.3.2 Ahukini Port and Village

There are many remembrances about the nearly-forgotten port village of Ahukini, located at the northern end of the proposed Bike/Pedestrian Path, but also referring more generally to the coastal area of Hanamā'ulu (Figure 11). According to Donohugh (2001), a dock for large ships was initially built at Ahukini in 1921 because Hanamā'ulu Bay, totally exposed to the trade winds, was so treacherous. In 1950, Ahukini was abandoned as a commercial dock in favor of Nāwiliwili Bay.

An excellent series of newspaper articles by Lucinda Baptiste in *The Garden Island* (appearing in November of 1993) documented important aspects of Ahukini's 20th century history, including numerous *kama'āina* recollections about the place. According to Baptiste (1993a:1), until the tidal wave of 1946, Ahukini was Kaua'i's "most modern first-class wharf," supplying fuel (Standard Oil Company) and other materials to the east side of the island while Port Allen ('Ele'ele) supplied the west side.

Baptiste interviewed Sanji Fujii, one of Ahukini's oldest survivors, who talked about the origins of the little port, which was the first on Kaua'i where large passenger ships could dock:

> In 1919, Lihu'e Plantation wanted to start shipping raw sugar in bags to the mainland, so they started building the breakwater in Ahukini ... There was a channel that (allowed) the ships to come in here and turn around and then go over to the pier. (Baptiste 1993a:1)

Before this, passenger ships had to drop anchor in Nāwiliwili Bay and send passengers to shore at Ahukini in small launches. Fujii talks about meeting his parents upon their return from Honolulu:

> They didn't have the Nawiliwili breakwater at that time, and the water was rough. Then with the waves, the launch would go up and down. When the waves go up, then the big Hawaiian sailors would catch these Japanese and swush, throw them up on the pier. (Baptiste 1993a:1)

Baptiste also interviewed Masao Yotsuda, whose father (Masakichi Yotsuda) moved the family to Ahukini in 1920. The younger Yotsuda became a stevedore at the Ahukini docks, eventually joining a dockworkers' strike that also included the Port Allen workers. During interviews with several members of the Yotsuda family, Baptiste documented the impact of these events on the families of Ahukini:

> Striking workers were no longer welcome in company housing. According to Masao's sister, Flora Shota, "That is when we all moved out of Ahukini." Roughly 100 people moved to the old skating rink in Nawiliwili, which sat where Hale Kaua'i is located today..."The whole town of Ahukini stayed in one building," says Robert Yotsuda. "If the community wasn't tight-knit, we'd never have been able to live in one building for 10 months. Nobody had sever quarrels or fights." ...The historical root of Kaua'i is in Ahukini and Port Allen. You talk about political revolution, that's where it started," said Robert. "That's the beginning of the Democratic Party on Kaua'i." (Baptiste 1993a:5)

Baptiste's series also documented the impacts of the 1946 tidal wave on Ahukini, which had been transformed by the 1930s and 1940s into a relatively prosperous little port village. Robert Yotsuda talked fondly about those days, and the effects of the big wave:

> ...Coconut groves, fish. We used to fish all the time. We caught little fish with our little bamboo poles. We'd stand around and crabs crawling on our feet ... Since the tidal wave in 1946, the path of the Hanamaulu river has changed. It changed the bottom of the ocean, too ... Fish were in the trees all over. (Baptiste 1993b:1)

Baptiste's series ends with several people talking about the present and future importance of the Ahukini pier for subsistence and recreational fishing. One man suggested that the loss of shade trees in and around the fishing area has been a detriment to good fishing, since "[f]ish don't like to stay in the open." (Baptiste 1993b:2)

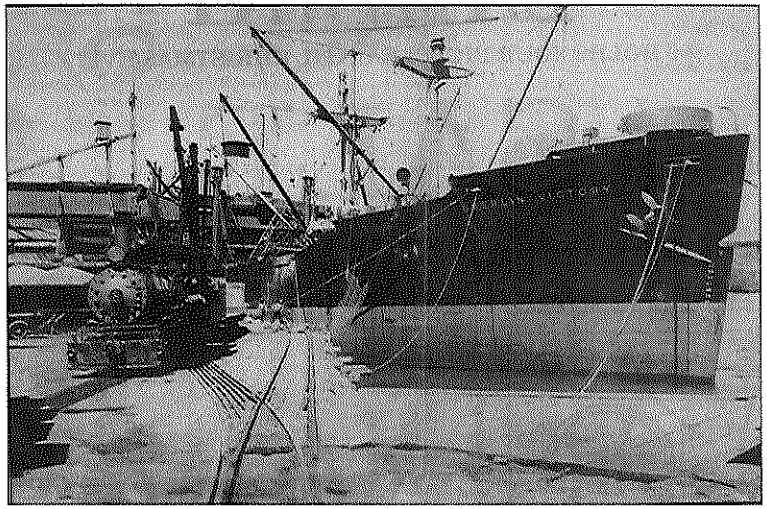

Figure 14. Ahukini port in 1946 (from Baptiste 1993a)

4.3.3 The Development of Nāwiliwili Harbor

The federal River and Harbor Act of March 2, 1919 authorized the construction of a modern harbor at Nāwiliwili. Some aspects of the construction phases of this bay can be gleaned from historic maps and aerial photographs (Figures 12–14).

The selection of Nāwiliwili as the harbor of the future on Kaua'i was preceded by a year's worth of debate between advocates of Hanapēpē and Nāwiliwili. The specifications for the harbor included support from local government and business interests:

> Upon completion of a rubble-mound breakwater 2,450 feet long along the reef dividing the inner and outer harbors, the entrance channel would be dredged to a depth of 35 feet, a minimum width of 400 feet, and a length of 2,400 feet. Also included in the estimated cost of $1,086,000 was a harbor basin 35 feet deep, 1,025 feet wide, and averaging 2,000 feet in length. The same act provided an initial appropriation of $250,000 for construction of the harbor. Local interests were to assure eventual railroad connections between Nawiliwili and the southern part of the island 'in reasonable time,' while the Territory of Hawaii or the

> County of Kauai was to give the Secretary of War $200,000 toward the project. (van Hoften 1970: 12)

The dredged material would be used as fill for the proposed wharf areas.

Construction of the breakwater, the initial phase of the harbor project, began in October 1921. By 1924, a total of 1,454 feet of breakwater had been set in place. However, dredging within the now semi-protected bay could not begin until the Territorial Legislature appropriated the $200,000 promised to the project. Action by the legislature was delayed when the sugar companies on west Kaua'i – continuing to press for Port Allen at Hanapēpē as the island's major harbor facility – threatened to boycott the Nāwiliwili harbor after its completion. The Legislature finally approved its share of the funding in 1925, and the breakwater was completed in March 1926. Development of the harbor continued apace as:

> ...the Territory took over the Federal camp and equipment and began construction of a concrete wharf. As soon as the Government dredge A. Mackenzie finished [dredge work] at Hilo she began work at Nawiliwili in fiscal year 1929, and dredging was completed in July 1930. The official opening of the $1.3 million harbor on 12 July inaugurated an entrance channel 600 feet wide, 2,400 feet long, and 35 feet deep, a harbor basin 1,100 feet wide, 2,000 feet long, and 35 feet deep; and a rubblemound breakwater 2,150 feet long. (van Hoften 1970:18–19)

Construction of the wharf facilities continued throughout the 1930s.

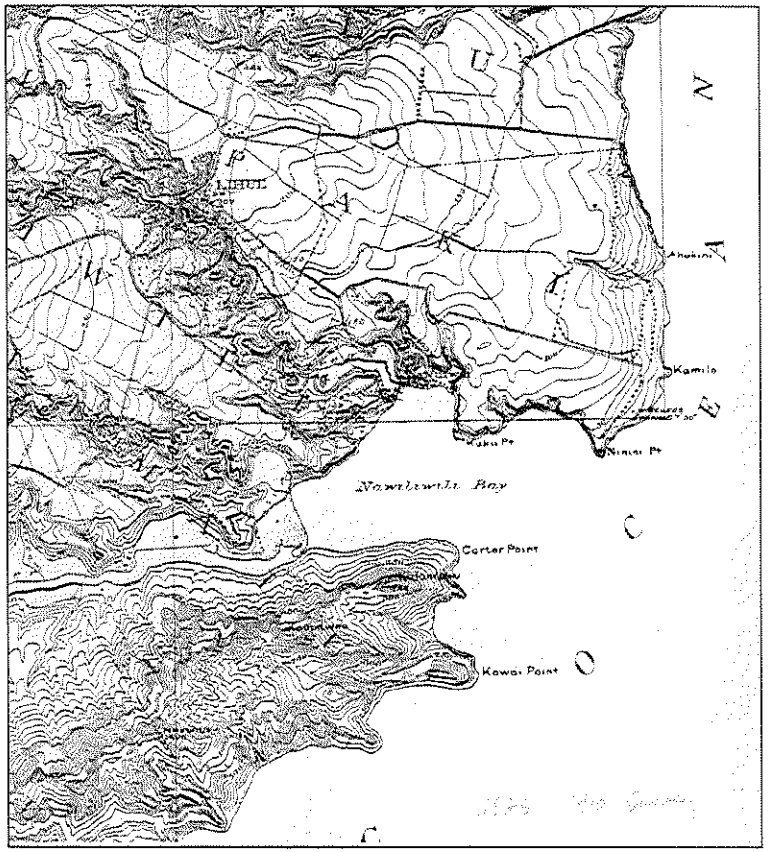

Figure 15. Portion of 1910 US Geological Survey map of Nāwiliwili and the subject parcel to its immediate north

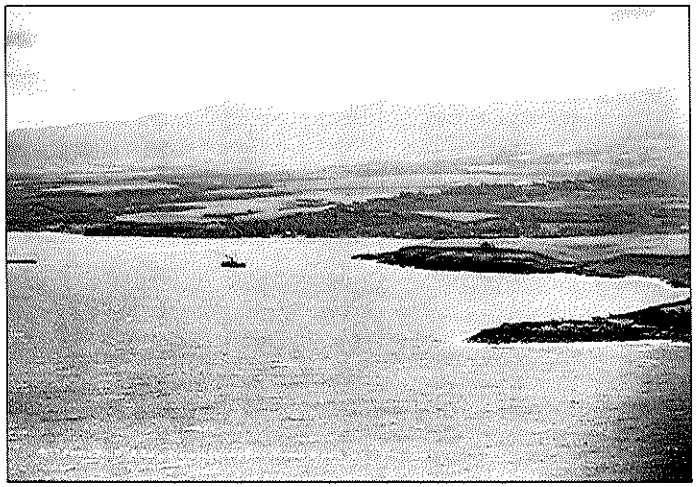

Figure 16. 1924 photograph showing Nāwiliwili Bay before construction of the harbor facility on the north side of the bay (Bishop Museum Archives)

Figure 17. Circa 1930 photograph showing Nāwiliwili Harbor under construction (Bishop Museum Archives)

Historic maps and photographs document Nāwiliwili Bay before and after the construction of the harbor. A USGS map of 1910 shows the original configuration of the shoreline at Nāwiliwili Bay before the construction of the harbor (see Figure 12). The early stages of the breakwater construction are evident in an aerial photograph taken on July 4, 1924 (see Figure 13), in which the end of the newly constructed breakwater is visible in the left-central portion of the photograph. Construction of the harbor facility on the north side of the bay had not yet begun by this time.

Another aerial photograph from c. 1930 shows the continued development of the harbor (see Figure 14). By this time, the filling-in for the harbor had not been completed; the area of the current pier facility is still open water; the land behind the constructed jetty was built up by imported fill. More recent maps of the harbor, compared with the 1910 map, reveal that the modern pier area is located entirely upon a 20th century landfill.

4.3.4 Consultation for Nāwiliwili Harbor Improvement Project

Cultural Surveys Hawai'i, Inc. (CSH) conducted interviews and extended email exchanges with several local residents and *kama'āina* in conjunction with a historical and cultural assessment of a proposed improvement project at Nāwiliwili Harbor (Chiogioji et al. 2004). Four of these interviews are reproduced here, followed by some synthesizing comments. The interviewees were asked about their knowledge and/or concerns about traditional cultural resources, practices, and beliefs specifically related to the Nāwiliwili Harbor project area.

4.3.4.1 James Burgess

Mr. James Burgess was born in Niumalu in 1924. He is a life-long Kaua'i resident and is a respected elder in the Royal Order of Kamehameha, Kaumuali'i Chapter. He spent his childhood in Niumalu / Nāwiliwili and has continued to visit and participate in activities in the area up to the present. Mr. Burgess (JB) was interviewed by CSH at the Niumalu Pavilion on October 11, 2001.

Mr. Burgess was shown some historic photos of the Nāwiliwili bay and harbor:

JB: When they were building this breakwater, they had a bridge going across here. This was the Niumalu River, the stream. We call it Niumalu River but it's actually a stream. Like I said they had a bridge going across here for transporting men and everything else to build this breakwater. I was born in June of 1924. We left here when I was about six years old. When we left Niumalu here and went to the west side. My dad got a job as a judge on the west side.

CSH: Where in Niumalu did you live?

JB: This road here. Maybe about a hundred yards in, there's a big green house over there. That's where us children were born in that house. Like I said, when I was five or six years old we moved to the west side. My dad got a job as a judge in Waimea. Then we came back here in 1938.

CSH: So you were about fourteen at the time you came back.

JB: Yeah. 1938 we came back here and at that time of course all of this was wide open ocean. Ocean all the way out to the piers now. But like I said I was very familiar with this area. And then we left here in 1942. I graduated from Kaua'i High School, which is right up here. This place is all different [now].

CSH: Maybe you can describe what it was like when you were growing up here. What did the people who were living here do in the bay? What kind of activities?

JB: Everybody fished. Hawaiians did a lot of fishing. I did a lot of throw net, trolling, and stuff like that. Like I said this was all open – just like paradise. And the development that has happened, in my growing up even, was fantastic. They had homes over here for the people that were working on the breakwater. Bungalows. They had quite a number of bungalows over here. Like I said, all this was wide open. Crabbing – Samoan crab, white *kūhonu* crab. We did just about everything. And then of course there was the river. And the river: mullet was *konohiki*; they had *konohiki* on mullet. Life has changed drastically, in my mind – doesn't make it comfortable. You see so much progress, so many people coming in. They don't know what they're doing anyway. And of course governmental agencies attempt to make things better. But better or not – hard to say.

CSH: So when you noticed people using the bay, it was mostly for subsistence, to eat? Not for sport?

JB: Very little sport. Lot of it was for subsistence. Like we used to have – Mike Coney, who had the *konohiki* for the mullet. In fact he had *konohiki* in this area.

They had *hukilau* nets. They used to *hukilau* here for *akule*. Make a surround and then put the nets on the boat, bring 'em down here. And then the people take out the fish from the nets. And then everybody gets share. Everybody that works gets share. Used to have turtles in the bay. We used to go out and harpoon turtle. You go out and catch one turtle. That's enough for the family. And share with the guys on the boat. So like I said my recollection of this area is all dreams now. [Laughs.]

CSH: In the 1930s, could you guess how big the population was down here? How many families?

JB: Well, there were quite a number of families because in this area you would be considering going toward the hill, in the valley. And then going up this side. Families, I would say a hundred, maybe little over a hundred families. And then you had families on this side too. And on this side maybe you had six or eight homes, on the right side, going down. Of course, now I don't know how many there are. But I would say better than a hundred, between a hundred and two hundred families in this particular area.

CSH: All Hawaiian?

JB: No. Chinese, Japanese, Filipino, Hawaiians. So not all Hawaiians.

CSH: When you were growing up in the '30s, there was just the original harbor construction? With the breakwater here, the jetty on this side, the pier over here?

JB: They even had a factory, a fish factory. Right around the bend where the end of the – Commercial fishermen used to bring in fish and they would process it at that factory over there. Right at the bend over here. Shannon, the guy's name was Shannon, if I remember correctly. Right close to the bank there was a fish factory. So commercial fishermen who had fished out in the ocean would bring in marlin and big fish would process it at that factory.

CSH: But in this area where you folks lived, it was all open? There was no development of the harbor?

JB: Oh, yeah. Nothing, no development. Like I say, only the bridge that came across here. Other than that, the fish factory was only in this area, and this is Kalapakī side.

CSH: Would other people from outside Niumalu come down here to go fishing –

JB: Oh, yeah. Like I said, this was a place that everybody came. From Kapa'a, from the west side. We had friends that used to come down here. And of course this was the pavilion all the time. This area. This pavilion – I think this concrete is the original. Of course with [Hurricane] Iniki and everything else, they've expanded. But people used to come down. In fact, we had built us an eighteen-foot long flat bottom boat. So people used to come down, camp. I had a motor that I used to take kids out, lay crab nets, go up the river.

CSH: Did many people have boats?

JB: Oh, yeah. You would find maybe about. – anchored out in this ocean – because from these trees out was wide open – you would find maybe like about nine, ten boats anchored out here. People would anchor their boat rather than take 'em home. I used to take my motor, carry 'em on my back, go back to the house. So that buggah no disappear.

CSH: So you folks came back to the same house?

JB: Yeah, we were born there. Then we left. Then we were fortunate enough to get the same house back again. So I used to walk up here to go to Kaua'i High School.

CSH: Is the house still there?

JB: The house is still there. Every so often I come down and take a ride, go up to the Menehune Fishpond. Even that Menehune Fishpond – I don't know if you've been up to see it yet. It takes this road and goes up on the hill. Not too far. And my recollection of those days, they had nothing on the wall. Now it's all mangrove and that's a project I think the state or somebody should try to look at and restore. Not necessarily all the rocks, but at least to clean it up to see what the value is. Beautify the place so people can understand what it's all about.

CSH: So we're up to the '40s.

JB: The war broke out in '41, December '41. In fact, that morning I was on my way out to go fishing.

CSH: You folks were living here then.

JB: Yeah, we were still living here. And then we left in 1942, after the war started. We had property up in Wailua Houselots where I live now. It was sad because the war broke out but it's one of the things that happens.

CSH: So that's when you moved away again, in '42?

JB: Yeah, in '42 we left here to go on our own property. Up to that point my parents were renting this house here. For four years we lived here. I went to Kaua'i High School. And then we left in '42. At that time I was working in the U.S. Army Engineers in Mānā.

CSH: In the '40s, you still came back here occasionally?

JB: Oh, yes. In the '40s, yes.

CSH: Maybe we can take it by decades, the changes you've seen. In the '40s, say after '42, when you'd come down here was it still pretty much the same? Just the harbor out here [as shown in the ca. 1930 photograph]?

JB: Yeah, the harbor and then the pier. Yeah. Of course, the jetty in the '40s was built. The jetty was built. And they even had a nightclub over here on the jetty. They used to call it the "Jetty Club". The Ouye's put up a nightclub over here. Of course [the jetty] is all developed now. Had nothing over here except for the Jetty Club. And of course the pier. The pier was over here.

CSH: In the '40s you were still fishing and –

JB: Oh, yeah. I used to come down here, go throw net, go across the breakwater. You could walk across on a sandbar with your throw net. And of course we had a boat that we could bring down but – I live in Wailua, see. It was no sense to bring it from Wailua, to come down here. So I used to take my throw net and my fish bag and walk across. I got to learn all the spots where the fish used to come.

CSH: Were there still a lot of regular people fishing? The same people you'd see every time you'd come down.

JB: Yeah, because the local people that still lived here – There was a Chinese family, the Chows. One of the boys just passed away recently. But they lived up in the valley. Like I said, for food. A big family – the Chows must have had about eight or nine children. And of course offspring after that comes.

CSH: So we're still talking about people coming for subsistence fishing, netting?

JB: Yes. Those days, whatever fish we could catch, you didn't have to go buy.

CSH: So basically in the '40s it was still pretty much like what you remember from the '30s. Let's try to figure out when you started feeling something was different. Were the fish still plentiful?

JB: Plenty. And this big open space. Now not too much space because everything is all built in: the boat harbor, the development over there. I guess the development was necessary due to the transporting or bringing in of equipment and material.

CSH: You're talking about the development of the harbor?

JB: Yeah. But this used to be like paradise. There were times in the late '40s, early '50s that I used to transport my boat down here and then go out and cast, go trolling. All the way to Kalapakī, around this bend. Times that I'll never forget and I only can dream about here now.

CSH: What about in the '50s, '60s? Any changes?

JB: Yeah, it started to develop. They added a pier. Used to be only one pier – to take inter-island barges that came in. And the boats: the Hualalai, the Wai'ale'ale, inter-island boats.

CSH: That was the original use of the harbor, for the inter-island –

JB: Yeah, the inter-island barges and the inter-island transportation.

CSH: So back in the '50s, '60s, fishing was still okay?

JB: Oh, yeah. As I can recollect up to the '60s the fishing in this area was still good. I still used to go, like I say, surround net for akule in the harbor, in the harbor. In this area over here. In fact, sometimes in this area down here. There used to be a guy that used to go up on that mountain. He went daily. In the '30s, the '40s. This old man that lived down here, George Kanehiwa. He used to climb this mountain daily to go spot fish. I'd be in school and when he spotted fish I used to run home, come down home, take off. [Laughs.] In the '40s. Because I graduated high

school in 1942. The war came in '41 and I graduated in '42. He'd climb up the mountain and when he spotted the fish and if they were in the right area, then he would – He had one red flag that he would raise up. The guys on the boat they would watch him and he'd direct them with the flag. Just like paradise. Then later on they started to use the planes. Progress.

CSH: At that time, there was no canoeing yet?

JB: Canoeing started in the early '50s. In fact, I belong to an organization, the Royal Order of Kamehameha – Up to that point I don't recollect any local canoes, Hawaiian canoes. You're talking about the Hawaiian canoe, right? I don't remember any of those till – Our organization, we were fortunate enough to get two canoes from O'ahu. I can't recollect who it was from, right now. But we brought in these two canoes and we had to refurbish them. Because they all were in a state of disrepair.

CSH: Those were koa canoes? Not fiberglass?

JB: No, not fiberglass. That was the original koa, six-man canoes. So we brought 'em over here.

CSH: Do you remember what year that was?

JB: That was in 1952 or '53. After we brought these canoes in, we used to train from over here. After we refurbished them we used to train over here. That's how started the Kaua'i Canoe Club. At that time, I don't recollect anybody else that had canoes. So we used to share with people that were interested in canoeing. And that was a process to get members into our organization, too.

CSH: On all the island this was the only place –

JB: That I know of on Kaua'i. I don't know about the other islands but on Kaua'i that was the beginning of the Kaua'i Canoe Association. And then the other groups started to develop, start making their own canoes.

CSH: Did you work on the canoes or did you paddle?

JB: I paddled. I refurbished. I paddled, trained. In this area, Niumalu-Nāwiliwili. And then, from my recollection, there were other canoes that were located and brought in to the island by different organizations.

CSH: But you folks were the first –

JB: The first, as far as I can recollect.

CSH: What was it like, paddling out here?

JB: Hard work. [Laughs]

CSH: We're getting closer to present time – the '70s, '80s, and '90s. Can you summarize your feelings about how the harbor has changed the way people do things like fishing.

JB: I believe that the build-up in Nāwiliwili, Niumalu has gone to more commercial than anything else. We never had people living on the boats. If they came in with a boat, they would park their boat and come on land with their tents. So the whole life system is different. In my personal opinion, it's a big waste.

CSH: How about the people living here? Has that changed?

JB: I don't know. All I can tell you is that those people that knew each other a long time ago, they don't forget. But the opportunity, I guess, to go out and see old friends – And with the amount of traffic that we have on the island today – The traffic on the island is terrible. There's so much roadwork, construction that's going on. Everything that is being done today [at Nāwiliwili/Niumalu], it looks like its for people to associate in some kind sport or picnicking.

CSH: Based on what I've described of the pier project, any final thoughts on the project's impact to cultural practices in the harbor area?

JB: Well, my personal comment would be that I don't think that it would have any kind of cultural impact. It's the same like extending this industrial development that they have done here, expanding the area for commercial activity. So I cannot definitely say that I would consider what is being planned here to [accommodate] another boat there other than that you're just going to get more people coming, more often. But what do you do? What industry do we have that can sustain the economy of the island? I hate to see it develop any more than we can handle but how do you stop it? You cannot even stop immigrants from coming into the islands. Or into the United States. Live and let live. [Laughs.] So I cannot say any adverse conditions on extending the pier so they can put in another boat. Maybe one of these days they gonna line up four or five, you know.

CSH: Do you think it's already been changed so much that you cannot go back –

JB: You cannot go back. Yeah. They cannot – It never happen that they could restore the area to a comfortable situation. Because I'm sure like – even in the sailboats here – people are are living there. Why? Because they have their boat. They got free sewage system. Like us we build house, we gotta put sewage, yeah. [Laughs.] Sometimes, I used to go up this road here to see the fishpond. And there's one spot up there that can overlook this area. Sometimes I cry. But it's for people that need subsistence to work. More people that means – supposed to be more people spend money.

4.3.4.2 Robert Crowell

Mr. Robert Crowell has been the harbormaster at Nāwiliwili Harbor since 1994. Mr. Crowell (identified as RC in the transcript below) was interviewed by CSH at Nāwiliwili Harbor on October 11, 2001. Mr. Crowell began by discussing fishing practices inside at harbor and the impact of the terrorist attacks of September 11, 2001 on harbor security procedures.

RC: Basically, my take on this, when I first came up here, being from Honolulu, there's very limited fishing off of piers in Honolulu because of commercial

activity. Here [at Nāwiliwili Harbor] because it was a lot slower we continued to let people fish on the piers. And that's the biggest thing I think.

CSH: So there's never been any restrictions until now [before the emergency measures put into place following the terrorist bombings of September 11, 2001]?

RC: No. The only restrictions we have is because, in the early '90s, we fenced off the whole compound, the whole harbors division area of the property. So, basically, people can only come in through walk-through gates. There's no vehicular traffic allowed on the piers after hours. So there are a number of fishermen that were still doing that, prior to September 11th. They would come, bring their baskets, roll them on in, and then go fishing. For *halalū*, menpachi or whatever they had. Like I said, when I came on board I continued the practice. I didn't have any objections to that practice. And we still allow people to fish off of the jetty road, our interior seawall out here which is on harbors division property. They still go fishing there. We also still allow commercial net fishing within the harbor. We never did have a ban on that. And in recent days, recent years I should say, there has been a conflict between recreational and commercial fishermen. The *akule* fishermen, especially. I think the Department of Land and Natural Resources, the Aquatics Division, is taking an active step towards trying to resolve the conflict there. Other than that, we still allow canoe races to happen within the harbor. There again they enter the harbor through the area at the end of our jetty here. They jump in their canoes there and use the harbor as their racing grounds. I think they have a six-lane quarter-mile course that they use.

CSH: Are they allowed also to practice inside of the harbor.

RC: They would be allowed to practice. However we don't have that many that do. Our only rule is to stay out of commercial traffic. And that also goes for commercial, recreational fishing. Commercial fishermen, canoeing, kayaking, sailing. If you're going to do it in the harbor, just stay out of the commercial traffic way. Because they'll lose that battle every time. And it's basically for their safety so it would behoove them to stand clear of the commercial traffic. And I must say, on this island, I don't have any complaints with anyone. For the most part, they have stayed out of the way. I think at any time that we had a problem, if we had a problem, it was probably not a local. It was probably a stray from the hotel. That was in a kayak that was in the way of a ship. She gotta blow her horns and – But I don't recall but one complaint in the time I've been here, since '94, of any traffic crossing commercial traffic.

CSH: So, as far as something that we'd identify as traditional Hawaiian activity, besides canoeing and fishing, have you noticed anything else going on in the harbor that might relate to that kind of traditional practice?

RC: Not really. That's about it. As I say, we have fenced off the area where we work containers, where we have developed container yards, where we've developed a cruise terminal. So people don't have that kind of ready access to the area. Whether they would want [access] to this huge – acre of concrete – I'm not sure. But they don't have readily available access to our pier areas.

CSH: So the fishing: is it restricted to shoreline fishing or are people allowed to fish from small boats in the harbor?

RC: People can fish from boats. It's not restricted to the shoreline.

CSH: Would you guess at the number of fishing people who might be considered regulars.

RC: I understand there are [regulars]. Who they are I'm not sure. My guy who does know who they are isn't here today. He's on vacation. I know he has a contact – or someone contacts him all of the time to ask about the fishing. And once he gives the word to this one individual, usually everybody who's out there knows. I think it has impacted them since we have locked the pedestrian gates because of September 11th. But, this island being the way they are, they're very understanding as to what the reasons were and the reasons why we have restricted the access. We have opened up the jetty road, where at one point in time we had it locked down. So I think they're grateful for that, that they're able to go down there. Still can fish down there.

CSH: Without estimating the number of people, since '94, you do see certain regulars [fishing in the harbor]?

RC: Right. I couldn't give you a number off-hand.

CSH: Now, you know the extent of this [renovation] project. Do you have any thoughts on the impact that project might have on any of these activities – canoeing, fishing. Do you see any direct or indirect impact on either of those?

RC: The canoeing side, no. I don't see that being impacted because, basically, they stay water-borne. They don't come from land side. And the area that we're looking at as expanding doesn't really get into their lanes or the area that they have used in the past. Fishing, I'm not sure. If ever lift the security threat that we're in and allow fishing once again, I'm not sure how many people would be impacted. Because along that area where we're looking at expanding, we do have some people, a handful of regulars, that do out to the dock in the corner. That like to just do some pole fishing. Some recreational stuff. But the majority of the people fish off of Pier 2 presently where it doesn't look like we'll be touching, as far as this project. We do have some guys that do whip along that area of the proposed expansion but how it will affect them, I'm not really sure. I don't know how it would affect the fishing grounds. But I think if we still do allow them back in and fish, I'm not sure if they will be impacted because the areas will still be there. Where they can still whip off of, after the project is completed. I don't think it impacts that many people.

CSH: Just as a side note, because of this emergency, a lot of things are up in the air in terms of future decisions about public access to the harbor area?

RC: That's correct. The Coast Guard tells us that the threat level that we're in will be around for a while. And a lot of these changes may be permanent. It won't go back.

CSH: So, irrespective of this project, there might be changes anyway [regarding public access and activities within the harbor]?

RC: Correct.

CSH: To summarize, you've been here since '94?

RC: Yes.

CSH: Has it been basically a good relationship between the local community and the harbors division?

RC: I think so. I think this community is very understanding. They've understood reasons why we've had to close down areas. They understand why we've had to expand.

CSH: Have you had any complaints expressed to you? Or concerns expressed to you by any of the local folks?

RC: Very minor-type complaints. Like: "Can you open the bathrooms at night because we fish at night?" And: "Us men don't need it but we're thinking about the women out there." And stuff like that. And we accommodate. Like I said, the people here are very understanding. They're very concerned about areas. And the fishermen in general, the regulars as we would call them, are very conscientious. I don't have people trashing our place. They use the facility. We leave the bathrooms open for them. They treat it with respect and don't abuse. I don't have any problems with them on the pier. And I don't think they have – Other than because we locked it – they don't like that idea, I'm sure. But they understand. I don't get a call everyday, kind of thing.

CSH: Would you discuss the conflict between the commercial and recreational akule fishermen?

RC: It has to do with commercial akule fishermen who are netters, who net the schools of akule versus the recreational akule fishermen off of boats that basically hand-line or pole fish for the akule. And the conflict is that on occasion the commercial fishermen would come in to a harbor area, a calm area, where there may be a school of akule and the recreational guys who are in smaller boats would be over there fishing the akule. And then once they depart, the school is still there but the commercial guys will come in and surround, net up all of that akule and now the recreational guys no longer have that school to work off of. So I think [the aquatics division] is in the process, like I said, of trying to resolve that conflict. And drawing areas or boundaries where, limits where commercial can come only so far and surround only so much in, I guess, a calm area. Versus where the recreational guys can fish within that boundary for the school. I don't know how often it happens because the complaints don't come to me. Very rarely the complaints were coming to me. There would be a couple of complaints about the commercial guys coming in and wiping out a school. But I had no jurisdiction over that because they weren't really abusing or disobeying our laws, our rules.

The commercial guys, if they came in, if they did surround akule schools it would be on the off-hours, anyway, and didn't impede commercial traffic.

CSH: Do you know how long this conflict has been going on?

RC: I imagine it was going on probably even before I came.

CSH: So all the time you've been here it's been a problem?

RC: Yes. But you see even that hasn't been that great where anybody has really done anything about it. I guess there is this abundance of akule on this island so I guess everybody felt that there was enough. It's not only within Nāwiliwili Harbor either. The problem lies at Hanamā'ulu Bay, Port Allen, Hanapēpē Bay. I think even in Hanalei there's the same problem. So I think it's come to a head in recent years because some guys have taken it to their legislators.

CSH: Do you think this harbor project will have any impact on that situation?

RC: No. As a matter of fact, I don't know how aquatics has drawn their line but I think the harbor expansion is out of the area that they're concerned about.

[Mr. Crowell was asked to comment on previous harbor expansion projects during his tenure as harbormaster.]

RC: Actually, Pier 3 opened in late '94. And that sits on the far end. And that's where Young Brothers operates off of now. And then what we did – There wasn't really any more expansion. What we did was demolish Pier 1 and cut down our pier shed that was on Pier 1 that was formerly Young Brothers. And we rebuilt that pier. So, basically, Nāwiliwili is pretty much ahead of its time right now. We have two brand-new piers, as far as pier strength. We have a lot of working area, working cargo area. Expanding Pier 2 would enable us to use the area – more of an area for passenger ships. So, like I said, '94 was the opening of the Pier 3 area where Young Brothers is. And then it took us a couple of years and Pier 1 was redeveloped.

CSH: And, as best you remember, at those times were there any concerns raised about the impact on traditional practices?

RC: As far as I can remember, no. None at all.

4.3.4.3 Cheryl Lovell-Obatake

Ms. Cheryl Lovell-Obatake is a Hawaiian cultural specialist and community activist. CSH prepared a list of questions for Ms. Lovell-Obatake and she kindly responded by email on October 14, 2001.

Ms. Lovell-Obatake was asked to describe her background in Nāwiliwili and Niumalu:

> I was born in the Kona District, Waimea, Kaua'i, which is where my mother is from. I was raised in Kalapaki, Nawiliwili and Niumalu, which is where my father is from. My paternal grandfather (Lovell) was born 1893 and raised in Nawiliwili

his entire life. His father was also born (1861) and raised in Nawiliwili. My 3rd great-grandparents were also raised in Nawiliwili.

My ohana are one of the few Hawaiians that still retain possession of kuleana lands (L.C.A.) in Nawiliwili, Niumalu & Kalapaki. My ohana were known fishermen and surfers.

I was the community monitor for Nawiliwili Cemetery (presently known as Kalapaki Memorial Gardens which Cultural Survey of Hawaii was hired for archaeological testing and disinterment and re-interment of na iwi kupuna around 1989, 1990s or so...

Who am I? What am I? I am the hawk in the community...How old am I? Only 47.

I did a lot of fishing in my younger days until I left to college in 1972. My father, my mother, my uncle taught me how to fish.

My uncle & I often visited the pohaku site which Papalinahoa Stream discharges under pier 2 at the harbor. There is a pohaku which the moi would rub their belly or feed on certain nutrients during certain seasons. Besides moi, ahole hole, palani, papio, oama, weke, menpachi, aweo weo, akule, halalu were caught by pole fishing under and off the pier.

Although there exists the name of a fish (mo'i), a fish eaten by royalty, there is another Mo'i (kahuna), name of a kahuna and yet a ranking individual (mo'i) that had certain responsibilities to fulfill in the area, such for the villagers and royalties of ancient times. This pohaku could well be a selected place where rituals took place (Makahiki) as I was told. There are twin reefs that extend from the County park at Nawiliwili to Union 76. That was all filled in. The reef was a natural habitat area for marine life, such as fish, shellfish, octopus, sharks, turtles etc. 1860-1890's, I was told that a woman from the area fed the sharks along the shorelines going to Niumalu. There also was an ancient heiau site near by the sugar bulk, above or below? Although destroyed, or leveled, the site is considered sacred. The sacredness [of the] spot was determined by elements in the sky. (stars, moon, etc.)

Kuhiau heiau the largest on the island is about four acres [and] is located at Kauai High School (puuhonua type). Paukini is located on the reef at Kalapaki by the seawall. She is the sister rock of Kuhiau heiau. Another rock located in the middle of Kalapaki Beach is Mokuweo. This is another ancient site which there existed another kahuna that fed the fish and the sharks. There were plenty fish in the area. My grandmother (born 4/12/1892) told me of her experiences catching a fish with her holumu (long dress). The story is written in Ainakumuwai "You Like Fish?"

Ms. Lovell-Obatake was as asked to describe Hawaiian cultural practices that she had observed taking place in Nāwiliwili Bay over the years:

Fishing still exists in Nawiliwili. Shoreline fishing (on the pier) by the jetty, across the breakwater, Niumalu (small boat harbor), etc. Also net fishing (surround). DLNR, State politicians are presently reviewing a HB restricting certain areas for (surround) net fishing. There has been no resolution thus far and no bill was passed.

As I recall the County (Keith Nitta) who attended the 2025 Harbor Master Plan informational meetings indicated that the County along with the State are considering closing the bottom road (near pier 2) which may also eliminate fishing access to the pier and along that area where people fish.

I am concerned about Native Hawaiian Fishing Rights. PASH Kohanaiki Supreme Court Ruling. Check with Davinnia McGregor, Jon Matsuoka, Luciano Minerbi who were assigned by State Office of Planning to implement the law.

Ms. Lovell-Obatake was asked to comment on the impact of the pier project on Hawaiian cultural practices:

The State system has in the past inadvertently over expanded on the submerged lands that exist. Proper control was overlooked, therefore cultural practitioners and other ethnic origins have a small wiggle area to fish at Nawiliwili. Many of us have our own favorite spots to fish. Pier 2 is one shared by many for fishing.

I have witnessed (observed) more modern commercial economic practices encroaching on cultural practices. Politics!

Ms. Lovell-Obatake was asked if she knew of any important cultural sites in the harbor that would be affected by the pier project. She was also asked if there were other cultural concerns she had in regard to the project. Ms. Lovell-Obatake declined to respond to these questions. She explained:

Within the perimeters of the project? Its tax map key and boundaries? I have a hard time staying within boundaries. Cultural sites (wahi pana) have connections. If I were to comment on another cultural site nearby, not within the boundaries of this project I would be irrelevant in the eyes and ears of the accepting authority. You have not provided me with a map TMK of where you are specifically covering.

4.3.4.4 William Kikuchi

The late Dr. William Pila Kikuchi was for many years a professor of archaeology at Kaua'i Community College until his retirement in 2000. He was a leading expert on Hawaiian fishponds. William Kikuchi (WK) was interviewed by CSH by telephone on December 11, 2001.

CSH: Would you discuss where information on traditional Hawaiian culture and cultural practices in the Nāwiliwili/Niumalu area can be found?

WK: Material that was published, especially the Kaua'i Historical Society material about the stories of Niumalu and all that. Another place you can get some stuff on

that is the environmental impact statement about the Nāwiliwili Community Association or the Niumalu Community Association, when they were working on trying to evict those people... [the current Nāwiliwili pier] ...was [once] all swamp. And the most interesting site, I thought was Niumalu, that area, because of these stories. And if you go west, there are a whole bunch of fishponds, and they're still there, I think. But that's out of your area.

CSH: Our research indicates that the pier area is landfill created in the 1920s and 1930s.

WK: That's right. I wasn't too concerned because it was all filled up. And they had to tear down that side of the mountain. That's where they had that interesting rock formation and fill that for the harbor. And the only other one that I was concerned for was Papalinahoa. So, everything else I know of that area was simply – not through archaeological stuff – because when we came it was fill so all we did was cursory historical, cultural things like that.

CSH: When you say "when we came" what year was that?

WK: 1972. We kind of got involved with the Nāwiliwili Community Association or the Niumalu one. And if you take material from that – I don't think it was published in any kind of form. But that was interesting because they would bring out roughly the same kinds of concerns I think you're going to receive up there [for the pier renovation project]. But your area may be easier because it's all filled in.

CSH: What Hawaiian cultural practices have you observed taking place in Nāwiliwili Harbor over the years?

WK: Just fishing and the canoes. Canoe landing. That's about all I've ever observed.

CSH: What impact do you think the ... project will have on these practices?

WK: Well, I think most of it has gone into the river now. It looks like it went into Hūlei'ia River. So I don't think the expansion will have too much of an impact.

CSH: Are there any important cultural sites that you know of in the harbor that would be affected by the project?

WK: No. I wish I did. I wish I had information but, like I said, all the stuff I saw was actually in Kalapakī Bay. And the rest of the stuff was on land.

CSH: Are there any other cultural concerns that you would have about the pier project?

WK: I think just that it be sensitive to the people involved. Access, improve the water quality. Fishing off the pier.

CSH: Thank you.

4.3.5 Consultation for Proposed Development of Kaua'i Lagoons Resort Property

CSH conducted a phone interview and an email exchange with two *kama'āina* in conjunction with a historical and cultural assessment of the proposed development of the Kaua'i Lagoons Resort Property, which is located in prior sugar cane fields immediately south of the Līhu'e airport (and within the general, footprint area of the proposed project) (Mitchell et al. 2005). The interviewees

were asked about their knowledge and/or concerns about traditional cultural resources, practices, and beliefs specifically related to the Kaua'i Lagoons project area.

4.3.5.1 Ms. Sabra Kauka

Ms. Kauka, a Kanaka Maoli Cultural Practitioner/Hawaiian Studies Kumu, commented in an e-mail on Monday, October 24, 2005:

> I live in the Kalapaki ahupua'a of the Lihu'e district of Kaua'i. As a cultural practitioner I frequently visit Ninini Point for many reasons.
>
> The first reason I go to Ninini is because it is a very beautiful place to practice my 'oli and hula. There is nobody there to bother with my chanting and I can practice in relative privacy.
>
> A second reason is because I bring kanaka malihini to Ninini to welcome them to Kaua'i. From this point you can see all of the Ha'upu Range, Nawiliwili, Kilohana, Wai'ale'ale, and the back side of Halele'a. So we go there for welcoming protocol.
>
> Thirdly, I go to pick 'ilima papa and kaunaoa to make lei for hula. As more and more development occurs along the coastline of Kaua'i there are fewer and fewer places to pick these beautiful native species. The name of the halau that I belong to is Pua Ali'i 'Ilima, so the 'ilima flower is very important to us and we wear it whenever we can, if there's enough to pick and make lei. My kumu hula is Victoria Holt Takamine. Our Kaua'i branch of Pua Ali'i 'Ilima is called Papa Laua'e o Makana. That tells you that we are also connected to Makana in Ha'ena.
>
> Fourthly, I go to malama the rare Shearwater birds that lay their eggs in the rock walls, boulders and bushes along the coast. I have been taking my 3rd and 4th grade students from Island School to count, capture, weigh, measure, and return the chicks to their nesting sites for the past two years. We have a special permit from the Department of Land & Natural Resources, State Forestry Division, to do this work. Last year we counted 38 chicks there. This year, unfortunately, a predator has eliminated them. We don't know what predator it is but we couldn't find any chinks. This bird is very important to me and my students because it teaches them the connection between the kai and the 'aina. It teaches them that what humans do at sea and on the land affect other life on earth. If the birds have nowhere to nest, their species will die. If they have not fish and squid to eat, if man overharvests the ocean, the birds will have nothing to eat. They are an indicator that there is still fish in the sea for them and for us. There is still land for them and for us.
>
> While we are at Ninini, and this is the fifth reason, we malama the 'aina by picking up 'opala. There is a heiau at Ninini. Unfortunately, it's overgrown with weeds and I have not yet cleared it because I already have two other large areas of

kuleana at Wailua and Nu'alolo Kai. I malama one place in the winter and one in the summer.

This past week my friends and I went out to watch the sunset over the Ha'upu range and moon rise at Ninini. The moon was soon followed by Mars, just a few degrees further north. Ninini is a great place to star watch, to teach people about the night sky, and to feel the pulse of nature.

There are many fishermen and surfers who also use this area. I would like to make sure that we all continue to have access to this beautiful and special area.

4.3.5.2 Ms. Cheryl Lovell-Obatake

Ms. Lovell-Obatake participated in a telephone interview with CSH on October 20, 2005:

I remember that Hal [Hammatt of Cultural Surveys Hawai'i] did work there along the coast and Kalapakī Point. I am sure you will find cultural sites in his report.

Independently we still access the place today. Not many people go in – only certain ones because the area is the last remnant of open space with no buildings. I never heard of any burials in the area of study and Nancy McMahon would verify that. It is important that we still have access rights to this land that will be developed. I remember some native plants in the area we used for medicine, such as the *'ilima*.

I am very active in the fishing rights along the coastal regions of Kalapakī. My Uncle Enoka Lovell III, known as "Buddy", was a traditional practitioner when it came to fishing. He is also the one who salvaged the boat when it sank in Wailua. There are sacred trails that run from Nāwiliwili side coming from Kalapakī Point along the coast.

4.3.6 Other Recollections and Remembrances

There are many other examples of diverse documents that attest to the historical and cultural importance of resources located in and around the subject project area. The following example could be augmented and expanded many times over should the need for additional data gathering arise in the future of the subject project.

4.3.6.1 Fishing the Hulē'ia at Night

In the 8 March 1997 Honolulu Advertiser, James Itamura, a Kaua'i-based attorney with family ties to the Garden Isle, contributed a remembrance entitled "Family life made rich by fishing" (in a special section "Reader's Journal"). Itamura talked about going to visit his *'ohana* in the late 1950s and early 1960s. They lived "near the [lower] end of Huleia River, up a ways from the Menehune [Alekoko / Niumalu] Fishpond" (Figure x):

My uncles fished the river with a net Uncle Joe knit by hand that seemed like it was hundreds of feet long. They laid the net off the back of a flat-bottom tow boat traversing the river in a zigzag manner. Much to my horror, they would only go in the black of the night and liked taking me.

Huleia River at night is the scariest experience a person can have. The shadows of gnarly mangroves were everywhere, and I felt like we were being watched by something. Being frightened, wet and cold was more than a city kid could take. My granduncles, on the other hand, did not seem to be scared by anything.

We never failed to catch washtub-loads of *papio*, barracuda, mullet and Samoan crabs ... The Huleia house has since been blown away by Hurricane Iwa and my family's land is now a federal bird sanctuary [Huleia National Wildlife Area]. I can still go there because of our family gravesites, but it's not the same without the laughter of the *kupuna*. God bless their souls.

Section 5 Archaeological Research

This section focuses on the most relevant archaeological research in and directly around the general footprint area of the proposed project. Results from previous studies of coastal and near-coastal areas of Hanamā'ulu, Kalapakī, and Nāwiliwili are briefly summarized. This is followed by a detailed treatment of prior research and results from the shoreline at Kalapakī and Hanamā'ulu (south of the Hanamā'ulu Stream), immediately east (*makai*) of the airport. Collectively, these observations provide some expectations regarding the types of cultural and historic resources that may be located in the subject project area.

The shoreline at Kalapakī and Hanamā'ulu is the most sensitive archaeological area; most of the rest of the general footprint area has been substantially modified by commercial sugar cane operations, the development of Līhu'e Town, Nāwiliwili Harbor, Ahukini port, and the airport, the Marriot resort and golf course, and other development. Except for its shoreline segment—which runs from Ahukini Landing (i.e., south-side of Hanamā'ulu Bay) to Ninini Point (north side of Nāwiliwili Bay), the proposed Bike/Pedestrian Path mostly travels along existing rights-of-way whose subsurface sediments have already been substantially disturbed. There are no extant *heiau* or reconstructions of *heiau* in the general footprint area of the proposed footprint, despite the fact that at least three large shrines were once located along the coast from Ahukini to Kūki'i.

This archaeological review is based on a prior CSH report documenting the results of an archaeological inventory survey of the proposed impacts of improvements to Līhu'e Airport (Bell et al. 2006); and other original source materials from archaeological studies of the specific coastal area of concern (Hammatt 1988, 1990; Creed et al. 1999).

Figure 15 shows prior archaeological investigations in the general footprint area of the proposed project. Figure 16 shows historic properties that have been documented in this area as a result of these studies. These data show there are at least 33 known cultural and historic sites of interest in this area; 26 of these are historic properties listed on the State Inventory of Historic Properties (SIHP); the other seven sites of interest are cemeteries not listed on the SIHP.

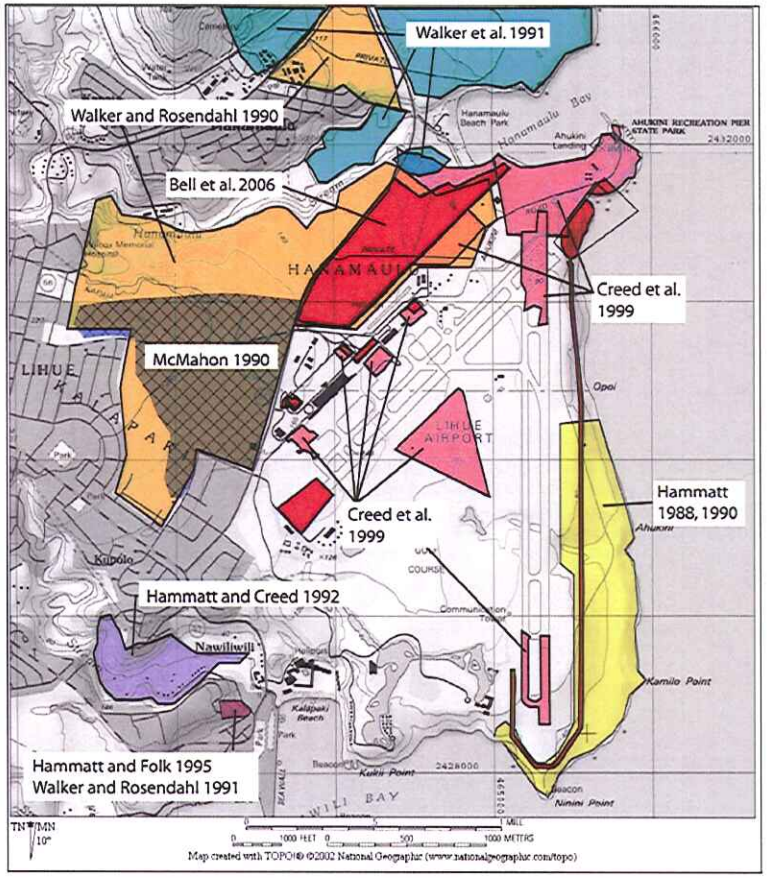

Figure 18. Map of the Līhu'e area showing the location of previous archaeological projects

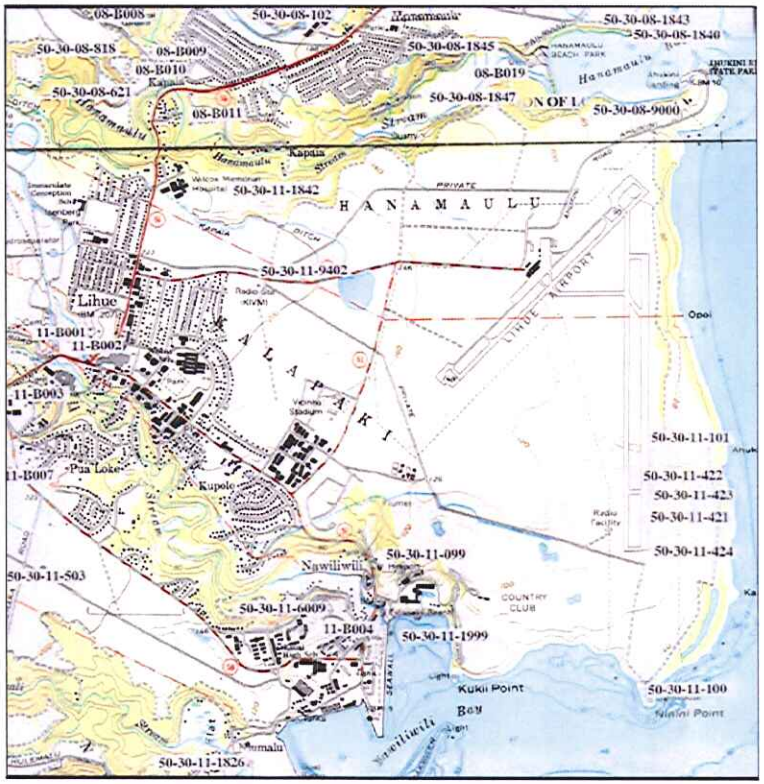

Figure 19. Historical and cultural sites of interest within and near the subject project area (projected on portions of Līhu'e and Kapa'a USGS 7.5-minute topographic quandrangle maps)

5.1 Early Documentation of *Heiau*

Thomas G. Thrum (1907), publisher of the *Hawaiian Almanac*, gathered lists of *heiau* on all the islands, and reported five from the *ahupua'a* of Hanamā'ulu, Kalapakī and Nāwiliwili:

1. Ninini, Kalapakī, near site of Nāwiliwili light house; described as destroyed (SIHP No. 100)
2. Ahukini, Kalapakī; described as a *heiau* of medium size, with some foundation stones in evidence at the time of Thrum's work (SIHP No. 101)
3. Pohakoelele, Kalapakī; described as a medium-sized *heiau*; destroyed by the time of Thrum's survey (no site number)
4. Kalauokamanu, Hanamā'ulu; described as a large walled *heiau* that stood above the present mill; destroyed around 1855- of *po'okanaka* (sacrificial) class (SIHP No. 102)
5. Kuhiau, Nāwiliwili, near site of court house - a large paved *heiau*, whose enclosure covered an area of about four acres: long since destroyed (SIHP No. 99). The rock Paukini, now separate from but formerly connected with the shore, was where the *kahuna* (priest) lived

The first comprehensive archaeological survey of Kaua'i was undertaken by Wendell Bennett in the late 1920s and published by the Bishop Museum in 1931. Bennett used Thrum's list for reference and documented many additional (mostly non-*heiau*) sites. Bennett listed two *heiau* for Hanamā'ulu Ahupua'a and one for Kalapakī (both described as "destroyed"). He also noted sand-dune burials (SIHP No. 103) towards the Wailua River (Figure 17).

Bennett repeats the descriptions provided by Thrum for the "destroyed" Sites 100–102, and adds the following:

> Site 103. Dune burials. In the sand dunes that run along the shore halfway between Hanamā'ulu and Wailua River are many burials. (Bennett 1931:125)
>
> Paukini Rock, a heiau or priest's house now under water in Nawiliwili harbor [this site is now designated SIHP No. 50-30-11-1999] (Bennett 1931:48)

In addition to SIHP No. 103, which is located outside (north) of the general footprint area of the proposed project, several other sand-dune burials or grave sites have been noted in Hanamā'ulu; for example, at Kālepa (SIHP Nos. 50-30-08-746 and -1827), documented by Rosendahl (1990) and CSH archaeologist Kaipo Akana during a field survey of damage after Hurricane 'Iniki by the Kaua'i Island Burial Council in 1992.

In an archaeological reconnaissance survey for the Kaua'i Lagoons Resort, a wall, possibly related to Ninini Heiau was noted by Hammatt (1990:11): "A high well-constructed wall running 400' north of Ninini Lighthouse [is a] possible prehistoric wall and [it is] possibly related to the former Ninini Heiau (SIHP No. 100)." A dune midden scatter (SIHP No. 421), two probable cattle walls (SIHP Nos. 422 and 423), and an oval terrace alignment (SIHP No. 424) were also recorded in this area.

Bennett places Ahukini heiau (SIHP No. 101) "in Kalapaki, near Ahukini Point on the bluff overlooking the sea. This is now entirely destroyed." (Bennett 1931:125)

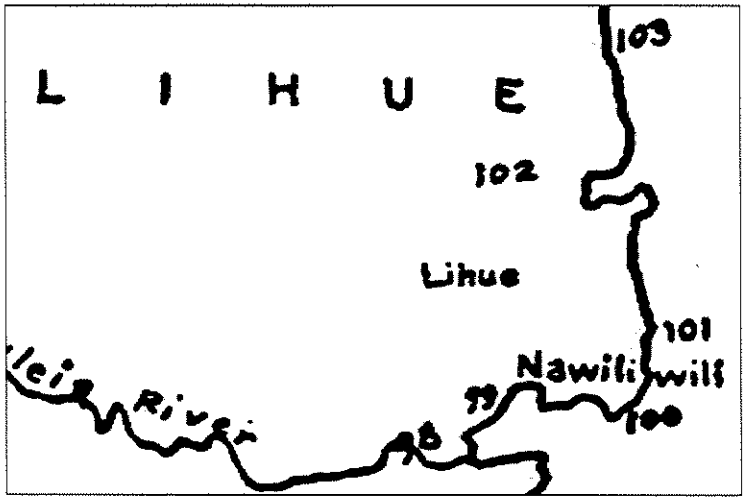

Figure 20. Detail of Bennett's (1931) map of Kaua'i showing location of archaeological sites

Bennett (1931:152) lists Pohakoele'ele Heiau in Kalapakī under "Kauai sites not located." Damon probably would have mentioned its location if she had known about it. There do not seem to be other references to Pohakoele'ele Heiau in Kalapakī, and it is unknown if Damon used Thrum for her source, or if she knew the information from persons on Kaua'i. Although Bennett could not verify its existence, and its location is speculative, it is included as a non-located site of pre-Contact Kalapakī, passed down in local memory. There was a *heiau* in the neighboring (north) *ahupua'a* of Wailua called Pōhaku'ele'ele, said to have been located just *mauka* of the junction of 'Ōpaeka'a Stream and the Wailua River (Dickey 1917:29). It is possible that these two *heiau* are the same, and Thrum was confused on the location. It is also possible that this was the name of an unnamed *heiau* on Kūki'i Point. Neither Thrum nor Bennett mention a *heiau* noted by Lt. George G. Jackson, Navy surveyor for the Hawaii Government Survey Office in 1881 (see Figure x) at Kūki'i Point. The Kaua'i Community College newsletter, *Archaeology on Kaua'i* (1973:4), notes that the "remains of ancient heiau" noted by Jackson are "where the cottages of the Kauai Surf now stand."

Ethel Damon (1931) mentions Kuhiau Heiau in Nāwiliwili, placing it near the location of the Court House (see Figure x). She mentions Pohako-ele'ele, location unknown, and Paukini Rock (SIHP No. 1999), located at Kalapakī Beach, Nāwiliwili Bay:

> An additional area of four acres was during this same year, 1851, sold to the government for harbor and road near Nawilwili Bay. The first sighting point in this deed was the north corner of Kuhiau heiau. (Damon 1931:415)
>
> From the deck of their rivercraft in 1854 Mrs. Rice and the children could plainly see above the rocky shore the ruins of Kuhiau, the old heiau, or temple, and nearby on the bluff the flaming blossoms of a great wili-wili tree among koa trees which then grew almost down to the water's edge. (Damon 1931:17)
>
> On the bluff overlooking the bay of Nawiliwili, where the public High School now stands, was once the large paved heiau called Kuhiau, extending over about four acres of ground. It was in its day the largest and most far-famed temple on the island. Below it, in the bay, is still the rock called Paukini, which was said to be its companion or sister heiau, and was probably also the home of the kahuna, or priest, of Kuhiau. In ancient times this rock was connected with the shore near the site of the former boat landing. All the dredging and filling in for the modern wharves have not yet touched this old rock of Paukini, the sole remnant of the famous heiaus of Nawiliwili Bay. For almost no traces, even of the great Kuhiau temple, are now [in 1931] to be found; and of the three small heiaus in the neighboring ahupuaa of Kalapaki, those of Ninini, Ahukini and Pohako-eleele, little more than the names survive. (Damon 1931:397-398)
>
> In a collection of Kaua'i Place names (Kelsey n.d.), the *heiau* of Kuhiau is also mentioned:
>
> Nawiliwili, oia ke awa kumoku. Aia ilaila ka heiau of Kuhiau. Kalapaki, aia oia makao o Nawiliwili.
>
> Nawiliwili is the harbor. The temple of Kuhiau is there. Kalapaki is on the shoreline of Nawiliwili.
>
> Thrum placed the location of Kuhiau Heiau near the "Court House," which is labeled on a 1881 Jackson map (see Figure 3) in an area called "Kuhiau." Jackson does not label any structure as the *heiau*, so it may have been destroyed sometime between 1854, when Mrs. Rice and her children saw it from the harbor, and 1881, when Jackson made his map. According to Dr. William Kikuchi (personal communication), the *heiau* was destroyed when people took the rocks to use for other purposes. Its general location was near the ironwood tree next to the Kaua'i High School flagpole (Kalima and Smith 1991:B-5). Nancy McMahon (SHPD Archaeologist for Kaua'i) indicated that the Paukini Rock location in Kalapakī Bay was shown to her by Cheryl Lovell-Obatake in 1999, and subsequently added to the State Inventory of Historic Properties (SIHP No. 1999).

Thrum gives the location of Kaluaokamanu Heiau as "above the mill." A 1934 *Garden Island Press* newspaper account and Ethel Damon give additional information on the location of this *heiau*:

> Another *heiau* located in Hanamā'ulu is Kalauokamanu. This was situated just west of the Līhu'e Plantation Yard and adjacent to a cane haul road. It is said to be of the *pookanaka* [sacrificial] class and was destroyed in 1855. (*Garden Island Press* 1934)
>
> Within the ahupua'a of Hanamaulu was a large walled heiau called Ka-lau-o-ka-manu of the poo-kanaka type, or one in which human sacrifices were offered; but in the almost unconscious days of transition, when popular interest in such thing was still asleep, most of the stones from this enclosure were taken to make firm the foundation of the Hanamaulu sugar mill. (Damon 1931:397)

There were also two stones associated with this temple, which guarded the pathway to the *heiau*. Mary Rice, in her "History of Līhu'e" stated that there were "two large rocks formerly in the field opposite Mr. Wolter's residence, of which it is said they were chiefs on their way to this heiau but stricken dead by the stench from the human sacrifices" (Rice 1914: 48). Carl Wolters was the manager of Līhu'e Plantation from 1893 to 1900. Kalauokamanu Heiau was said to have been located "above the mill" at the base of Kālepa Ridge (Wichman 1998:61). The *heiau*, therefore, may once have been located in the area now occupied by Kālepa Village and Hanamā'ulu Plaza (Lo 2005).

5.2 More Recent Archaeological Projects

The following archaeological projects studied lands located within the general footprint area of the proposed project. Most of these investigations yielded no significant historic or cultural sites, or relatively minimal finds:

(1) McMahon (1990) conducted a brief walk-through field check of three parcels of land immediately west of the airport, and east of Līhu'e town center. Three previously identified historic residences (SIHP Nos. 50-30-9390, -9401 and -9402) were documented; no archaeological resources were identified.

(2) Hammatt and Creed (1993) conducted an archaeological survey of 61 acres of land in Nāwiliwili. Historical evidence suggested this land was intensively used for agriculture in both pre- and post-Contact times. They documented three *'auwai* (traditional irrigation ditches) (SIHP Nos. 50-30-11-491; -492 & -493); and a single rock (SIHP 50-30-11-494) interpreted as a burial marker.

(3) Franklin and Walker's (1994) archaeological inventory survey of 552.3 acres including portions of the airport showed that nearly the entire area was previously disturbed and most sites obliterated. Two sites were documented: a stone wall (SIHP No. 1842) interpreted as a historic boundary marker (possibly marking off an old agricultural field), along the south side of Hanamā'ulu Valley near Kapaia; and a historic structure (SIHP No. 9402) associated with Radio Station KIVM located in the Kalapakī portion of the airport.

(4) Hammatt and Folk (1995) conducted an archaeological and osteological study of Nāwiliwili Cemetery (SIHP No. 50-30-11-6009), located between Kauai High School and Kalapakī Bay. A total of 68 burials of historic age were documented, disinterred, and reburied nearby; the burials represent a wide variety of ethnicities and ages. Walker and

Rosendahl (1991) surveyed this same general area and discovered 34 intact, historic burials with several associated headstones.

(5) Creed et al.'s (1999) archaeological inventory survey of several discontinuous parcels within the airport area documented no evidence of prehistoric or early historic sites. However, extensive remains of Ahukini Camp (part of Ahukini Landing, SIHP 50-30-08-9000) were documented at Hanamā'ulu Bay. The remains consisted of 15 concrete slabs believed to have been associated with residential structures, concrete drainage systems remnants, piles of historic trash, railroad tracks, loading dock and camp-related infrastructure. Additionally, a large wooden house (the Bertrand House) with attached garage/living area and an associated rock wall lie within the project area, adjacent to and south of Ahukini Landing.

(6) Bell et al.'s (2006) archaeological inventory survey of approximately 175 acres of discontinuous lands in Hanamā'ulu and Kalapakī Ahupua'a associated with proposed improvements to Līhu'e Airport identified one historic property (SIHP 50-30-08-3958), a piggery dating from the plantation era.

Just north of the subject project area, Walker and Rosendahl (1990) excavated nine backhoe trenches in association with the Hanamā'ulu Affordable Housing Project from which only "several small isolated coral fragments" were found. No further archaeological work was recommended at this location [TMK: (4) 3-7-003: portion 020], which was determined to have been entirely disturbed to a significant depth below surface by historic sugar cane operations. Walker et al.'s (1991) archaeological inventory survey near the mouth of the Hanamā'ulu Stream identified 10 sites; three of these date from pre-Contact times: a subsurface cultural deposit associated with a traditional living site area (SIHP No. 1838 A & B), an agricultural wall and terrace of unknown function (SIHP No. 1839 A & B), and a terraced river valley of some 50 acres (SIHP No. 1847). SIHP No. 1839 provided a radiocarbon date of 1170-1400 A.D. Other sites documented by Walker et al. (1991) north of the subject project area include plantation-era structures, and a historic cemetery (SIHP No. 1844 Japanese-Buddhist and Filipino-Catholic cemetery).

Just south of the subject project area, in Niumalu, Folk and Hammatt's (1991) archaeological inventory survey at the Kanoa Estate Lands documented two fishponds originally recorded by Ching et al. (1973). In addition, a previously unrecorded *'auwai* was found connected to one of these fishponds, known as Kanoa's fishpond, to Hūlē'ia Stream.

Kikuchi and Remoaldo's *Cemeteries of Kauai* (1992) notes eight cemeteries in Hanamā'ulu and Kalapakī. Descriptions do not exist for two of them (B019, B004). A pre-Contact burial platform on Kālepa Ridge was found by Kaipo Akana in 1992 in an inspection of areas damaged by Hurricane 'Iniki. These burial sites are not located within the subject project area.

5.3 Coastal Portions of Hanamā'ulu and Kalapakī Ahupua'a

Three previous studies have focused on the seashore at Kalapakī Ahupua'a and Hanamā'ulu Ahupua'a (south of the Hanamā'ulu Stream), which constitute the most sensitive archaeological portions of the general footprint area of the proposed project (Figure 18).

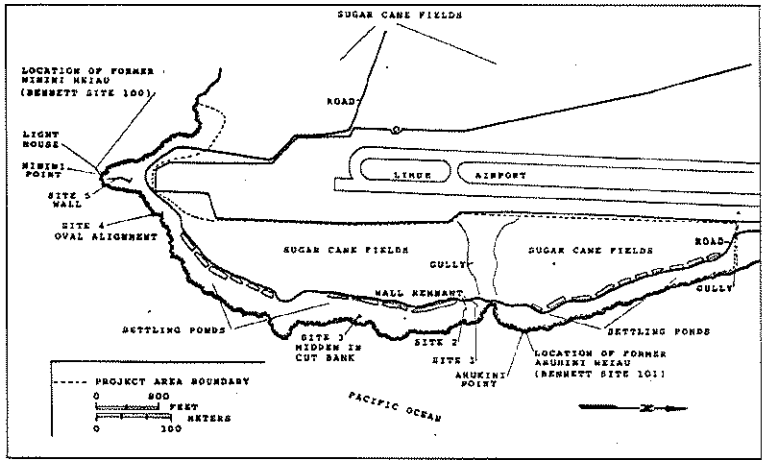

Figure 21. Archaeological sites along the coast at Kalapakī documented by Hammatt (1988, 1990)

Hammatt's (1988, 1990) archaeological reconnaissance and survey of this coastal area documented five sites, including two dry-stacked stone walls (both incomplete remnants) dating from the historic era (SIHP Nos. 50-30-11-422 & 423), a cultural layer (midden scatter) along the wave-cut shoreline (SIHP No. 50-30-11-424), an oval-shaped dry-stacked stone alignment or terrace (SIHP No. 50-30-11-421), and a 400-foot long stone wall considered to be a possible extension of Ninini Heiau (SIHP No. 50-30-11-100). Hammatt noted that much of the area had been heavily disturbed by prior activities, and that no definitive traces of Ahukini Heiau (SIHP No. 101) could be found.

Creed et al.'s (1999) archaeological inventory survey of several discontinuous parcels within the airport area included portions of the coast at Hanamā'ulu (south of the stream, but documented no evidence of prehistoric or early historic sites, but did find extensive ruins of the early 20th century port of Ahukini (see details above).

Section 6 Community Consultations

Throughout the course of this evaluation, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about cultural resources and practices specifically related to the project area. This Cultural Impact Evaluation (CIE) includes some consultation but no formal interviews, which would be recommended if it were determined that a full-blown Cultural Impact Assesment (CIA) is warranted.

A number of attempts (1-7) were made to contact individuals, organizations, and agencies apposite to the Cultural Impact Evaluation for Hanamā'ulu, Kalapakī and Nāwiliwili Ahupua'a. Table 1 summarizes the community consultation process. All letters and emails were sent along with a map and aerial photograph of the project area with the following text:

> At the request of R.M. Towill Corp., Cultural Surveys Hawai'i Inc. (CSH) is conducting a Cultural Impact Evaluation (CIE) for the County of Kauai's proposed Nāwiliwili – Līhu'e Civic Center – Ahukini Bike/Pedestrian Path Project. The proposed project is located in Nāwiliwili, Kalapakī and Hanama'ulu Ahupua'a, Līhu'e District, Kaua'i Island, Multiple TMK's. A Cultural Impact Evaluation (CIE) is not a full-blown, in-depth study. *A CIE is a small-scale study conducted to help the landowner/developer to determine if there is a need for a more comprehensive cultural impact assessment (CIA).* For this CIE, CSH will be contacting a few key agencies and organizations for commentary (e.g., SHPD, OHA, Island Burial Council), as well as a few community cultural consultants for brief phone interviews regarding the proposed project. The project is the sixth and final segment of the 16-mile Nāwiliwili to Anahola Bike and Pedestrian Path Project, which was proposed in the 1994 State of Hawai'i, Master Plan – Bike Plan Hawai'i. The Nāwiliwili – Civic Center – Ahukini segment will connect four key destination points with a network of on- and off-street path improvements. Connections between these points are identified within four primary corridors:
>
> I Ahukini Landing to Nāwiliwili Beach Park (approximately 6 miles)
>
> II Ahukini Landing to Līhu'e Civic Center (approximately 2.5 miles)
>
> III Nāwiliwili Beach Park to Līhu'e Civic Center (approximately 2.5 miles)
>
> IV Nāwiliwili Beach Park to Niumalu Beach Park (approximately 1 mile)
>
> The proposed improvements include:
>
> 10'-wide shared-use coastal path between Ahukini and Ninini Point,
>
> 10'-wide shared-use path connection into Līhu'e Civic Center,
>
> Bike lane and sidewalk improvements to existing and planned street corridors.

End-of-ride facilities at Nāwiliwili Beach Park, Niumalu Beach Park, and Līhu'e Airport.

The purpose of this cultural study is to assess potential impacts to cultural practices as a result of proposed development in the Nāwiliwili, Kalapakī and Hanama'ulu Ahupua'a. We are seeking your *kōkua* and guidance regarding the following aspects of our study:

- **General history and present and past land use of the project area.**
- **Knowledge of cultural sites which may be impacted by future development of the project area - for example, historic sites, archaeological sites, and burials.**
- **Knowledge of traditional gathering practices in the project area, both past and ongoing.**
- **Cultural associations of the project area, such as legends and traditional uses.**
- **Referrals of *kūpuna* or elders and *kama'āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.**
- **Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.**

Table 1. Community Consultation

Name	Background, Affiliation	Comments
Achi, June and Karen	Nāwiliwili residents	CSH called on April 29 and June 5, 2008. Karen Achi said she was not familiar with the project and has no comment.
Aipoalani, C. Kunane	Kaua'i Island Burial Council Member	CSH emailed him on April 29, 2008. Mr. Aipoalani referred CSH to Cheryl Lovell-Obatake.
Asing, Kaipo	Kaua'i County Council member and Niumalu resident	CSH emailed and sent letter on April 29, 2008.
Ayau, Halealoha	Hui Mālama O Nā Kūpuna O Hawai'i Nei	CSH sent email March 31, 2008 and a follow-up email onApril 22, 2008.
Carvalho, Aaron	Kaua'i Resident	CSH called on June 5, 2008, number has been disconnected.
Chun, Dennis	Kaua'i Community College Professor	CSH called and sent an email with letter on June 5, 2008.
Cockett, Pat	Nāwiliwili resident	CSH called on April 29, 2008 and on June 3, 2008. No answer.

Name	Background, Affiliation	Comments
Craft, Gary	Niumalu resident	See below table for phone interview response.
Daubert, Warren	Former Nāwiliwili resident	CSH sent email June 4, 2008.
Grace, Mike and Sondra	Anahola Residents	See response below table.
Hubbard, Mark	Kaua'i Island Burial Council Chair	CSH sent letter on March 31, 2008 and a follow up email email on April 22, 2008. Mr. Hubbard referred the letter to Nancy McMahon of SHPD.
Ikeda, Malcolm	Nāwiliwili fisherman and resident	CSH called on 06/05/08. Mr. Ikeda was unavailable.
Kagawa, Kanani	Kaua'i Office OHA Community Resource Coordinator	See Figure 21 below for the OHA response.
Kekua, Kehaulani	Director of Kaua'i Culture & Heritage Center/Kumu Hula	CSH sent an email on March 31, 2008 and a follow-up email April 22, 2008.
Kinimaka, Percy	Head of Security at Kauai Lagoons	CSH called on 06/05/08, no answer.
Kruse, John	Kaua'i Island Burial Council Kawaihau Regional Rep.	CSH sent letter on March 28, 2008 and emailed him on April 22, 2008. Mr. Kruse referred CSH to Cheryl Lovell-Obatake.
Lovell-Obatake, Cheryl	Nāwiliwili Resident	CSH sent the letter on March 31, 2008. Follow-up phone calls were made April 15th and 29th as well as May 7th and 23rd. A follow-up letter was sent May 14, 2008. It is CSH's understanding that Ms. Lovell-Obatake is interested in sharing her *mana'o* on this project but that she is currently out of town. CSH hopes to be able to include Ms. Lovell-Obatake's perspectives on the current project in the final draft of this report. See comments below table and letter in Appendix A.

Name	Background, Affiliation	Comments
Manea, Jo	Nāwiliwili Resident	CSH received an email on April 12, 2008 referring CSH to Cheryl Lovell-Obatake, Kaipo Asing, Niumalu resident and Kauai County Council member, Bob Schleck of Grove Farm Museum, and residents Pat Cockett, June Achi and daughter Karen.
Masumura, Wesley	Nāwiliwili fisherman and Kaua'i Planning Committee Council member	CSH called on June 5, 2008 and left a message.
McMahon, Nancy	State Historic Preservation Department (SHPD) Kaua'i Archaeologist	CSH sent letter on March 28, 2008 and follow-up email on April 22, 2008. She forwarded the email to Mark Hubbard and referred Cheryl Lovell-Obatake.
Nāmu'o, Clyde	Administrator, Office of Hawaiian Affairs	See Figure 21 below table.
Noyes, Thomas	Kaua'i Paths	CSH sent letter March 31, 2008. He referred Jo Manea.
Oi, Tommy	DLNR-L Kaua'i Land Division	CSH sent letter on March 28, 2008 and a follow-up email April 23, 2008. Mr. Oi has no comment on the project, but referred Cheryl Lovell-Obatake.
Paik, Linda Kaleo	State Historic Preservation Division (O'ahu Office)	See below table for response.
Perry, Warren	Royal Order of Kamehameha, Kaumali'i Chapter Number 3	CSH sent letter on March 28, 2008 and emailed on April 22, 2008.
Pomroy, Sharon	Anahola Resident	See below table for response.
Rogers, Nani	Ho'okipa Network member, Kapa'a Resident	See below table for response.
Schleck, Bob	Grove Farm Museum	CSH spoke to him on April 22, 2008 and emailed letter. On May 6, 2008, CSH sent follow-up email CSH re-sent letter on May 14, 2008.
Trugillo, William	Ka Leo O Kaua'i	CSH sent an email on March 31, 2008 and a follow-up email April 22, 2008. Mr. Trugillo called CSH

Name	Background, Affiliation	Comments
		on April 23, 2008 saying he would forward new contacts. *Response pending.*
Tsuchiya, Rick	Kaua'i Historic Preservation Review Commission (KHPRC)	CSH sent letter March 28, 2008. Letters were dispersed amongst members at the June 5, 2008 meeting.
White, Chris	Kaua'i Resident	See response below table.
White, Robert	Niumalu Resident	See response below table.

PHONE (808) 594-1888 FAX (808) 594-1865

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

HRD08/3623

May 15, 2008

Krista Sherer
Cultural Impact Assessment Coordinator
Cultural Surveys Hawai'i
P.O. Box 1114
Kailua, Hawai'i 96734

RE: **Cultural Impact Evaluation**
Nawiliwili-Lihue Civic Center-Ahukini Bike/Pedestrian Path Project
Nawiliwili, Kalapaki and Hanama'ulu Ahupua'a, Lihue District, Kaua'i

Aloha e Krista Sherer,

The Office of Hawaiian Affairs (OHA) is in receipt of your letter initiating consultation ahead of a cultural impact evaluation for the County of Kaua'i's proposed Nāwiliwili-Lihue Civic Center-Ahukini Bike/Pedestrian Path Project (project). Based on the information contained within your letter, the project is the sixth and final segment of the 16-mile Nāwiliwili to Anahola Bike and Pedestrian Path Project. It is our understanding that the project will include establishment of a shared coastal path and path connection, improvements to existing and planned street corridors and end-of-ride facilities at three locations.

While OHA has no specific comments at this time, OHA does seek assurances that should cultural sites be identified within the project area, every effort should be made to route the final path alignment away from those locations to avoid adverse impacts to the sites.

Thank you for initiating consultation and this early stage and we look forward to reviewing the completed cultural impact evaluation. Should you have any questions, please contact Keola Lindsey, Lead Advocate-Culture at (808)594-1904 or keolal@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Administrator

C: OHA Kaua'i CRC Office

Figure 22. Office of Hawaiian Affairs Response Letter, May 15, 2008

6.1 Summaries of Community Consultations

6.1.1 State Historic Preservation Department (SHPD)

CSH contacted Linda Kaleo Paik on March 28, 2008. In an email response sent to CSH on April 16, 2008, Linda Kaleo Paik, Cultural Specialist for the History and Culture division of the State Historic Preservation Department (SHPD) provided the following:

> It is a hard call as I see benefits to having this recreational land use for the community but I also see the determent of Hawaiian traditional use for the area, such as fishing and gathering. Saying that, I can offer no added information or history at this time. Mahalo for offering me the opportunity to comment on this project.

6.1.2 Cheryl Lovell-Obatake

Ms. Cheryl Lovell-Obatake is a Hawaiian cultural specialist and community activist. She was referred to CSH by C. Kunane Apiolani and John Kruse, both Kaua'i Burial Council Members, Nancy McMahon of the State Historic Preservation Department, Tommy Oi of DLNR-L Kaua'i Land Division and resident Jo Manea. CSH has made several attempts to contact Ms. Lovell-Obatake. It is our understanding that Ms. Lovell-Obatake is interested in sharing her *mana'o* regarding the proposed project but has been out of town. In lieu of a formal statement for this CIE from Ms. Lovell-Obatake, a letter sent to R.M. Towill Corp. (dated November 3, 2007) has been included in the report (see Appendix A). In addition to a number of other concerns (e.g., traffic, policing, beach setbacks, maintenance), Cheryl Lovell-Obatake (writing on behalf of herself and her daughter and son, Maureen and Leslie Lovell-Obatake) expressed the following key cultural concerns regarding the proposed bike/pedestrian path:

Nawiliwili Valley (Kahumoku Rd.)

- Historical properties exist in the valley. Ancient burials, auwai(s) (ditches), L.C.Awards (kuleana 'āina, ancient habitation, etc.. I refer to Cultural Surveys of Hawaii cultural assessment in the 80's of Nawiliwili Valley....
- Section 106 – ACHP and SHPD review, when Federal highway funds are contributed to the bikeway project. A cultural impact assessment under the EIS should be conducted.
- Many historical sites that have been consecrated by people of the old, specifically kanaka maoli (Native Hawaiians) are located in the proposed path areas.
- A cultural impact assessment was completed for the DOT Airport's Division. Refer to Kehau Kekua and Pua Kanahele – cultural practitioners of Hawaii.
- Kehau Kekua – Heritage Center CIA for Kauai Lagoons

- Fishermen's concerns of the bikeway and bikers impeding on existing fishing accesses. The rough dirt road have long been used by fishermen. The proposed bikeway should not interfere with fishermen's access to the coastal shoreline. Vehicular access is preferable to reach fishing destinations.

- Is DOCARE aware of the bikeway and their responsibilities to police and regulate fishing methods and seasonal (kapu system) fishing when non-residents from other islands enter these fishing grounds, via Hawaii Super Ferry?

- Native Hawaiians Access Rights Project – Kauai Pilot Project

- Therefore, *it is* our opinion that the proposed route into Nawiliwili Valley be rejected.

6.1.3 Robert White

Mr. Robert White, a resident of Niumalu, submitted his statement to CSH in an email sent on June 4, 2008. During his childhood Mr. White would spend summers in Nāwiliwili. In the 1970's he moved to the island of Kaua'i and twelve years ago moved into Niumalu. Following are Mr. White's comments about the proposed project:

> I would like to say that the proposed end of the path in Niumalu would allow the Niumalu residents a great opportunity to start their bike ride in a safe manner. The road along Nawiliwili pier is well used and for an alternate route through Lihue.
>
> The added safety of having a Bike/Pedestrian Path designation along the road to the Kauai Marriott property makes a lot of sense. After entering the Marriott property, this area also is already improved with roads, so I cannot see any cultural changes except adding to the safety and enjoyment of the local community. The entire route up to where the Marriott golf course is adjacent to the airport security fences is already developed for the most part with the existing network of roads and golf cart paths. As you leave the Marriott property, there is a well-used dirt road that has been the access to Ninini Point for as long I can remember. It may be a remnant road from the pineapple and sugar that was grown near the airport in the early 1960's. And of course, it serves as a service road to the lighthouse beacon. Even though it is hard to determine from the maps provided, it appears that the section from Ninini Point to Ahukini also exists roads used by local fishermen and people riding their bikes.
>
> I believe this road is a remnant from the plantation days where their service roads often ran along the perimeters of their fields. Since the area has already undergone extensive use for the past 48 years that I know of, I believe that the road that is close or parallels the existing dirt road along the airport would be relatively non-invasive. I can speak of my experience past this point, as we never played past Ahukini.

> I believe that adding to the outdoor recreational experience in a safe way would be a great legacy for this generation to pass on.
>
> Most of the people I know do not ride their bikes along the roads due to the narrow road conditions and lack of safe shoulder space for bikes to traverse.
>
> I never heard of cultural sites along this area but I am sure if there is testimony to this fact, that there will be an archaeological survey done.

6.1.4 Chris White

Mr. Chris White, a resident of Niumalu, and brother to Mr. Robert White, submitted his statement to CSH in an email sent on June 4, 2008. During his childhood, Mr. White would spend summers in Nāwiliwili. Mr. White provided the following thoughts regarding the proposed project:

> I am aware of development and use by the plantations, fishermen and beach goers but do not know of any archaeological sites. I support the path is a great way of increasing community cohesiveness and health by providing a safe and beautiful path where neighbors can meet, get exercise, provide an important recreation amenity, and offer an alternate way of getting between Lihue and the beach/coast without cars.

6.1.5 Gary Craft

In a telephone interview conducted by CSH on June 4, 2008, Gary Craft shared his thoughts about the proposed project. A resident of Niumalu for nineteen years, Mr. Craft is an avid bike rider, riding his bike everyday to work and on the weekend for exercise. He has traveled extensively across the United States, Japan, New Zealand and northern Europe on bike.

He says that once the final part of the path is connected (the Anahola section), it will be a great boost for tourism. The 100-mile Bike/Pedestrian Path would be a great tourist attraction, one of the best in the world. Yearly bike riding events could take place and boost tourism. He believes that the Bike/Pedestrian Path is a great way to enhance tourism without detracting from the island.

He does object to the high cost of the bike route. He refers to other trails in the U.S. that the Nāwiliwili-Ahukini Bike/Pedestrian Path could be modeled after; One is the "Rails to Trails" program in Minneapolis, which converts old railways into bike routes. He suggests instead of using concrete to pave the path, a pea gravel path should be instated, like those in Minneapolis. This would cut down on costs and inhibit bikers from speeding and hurting pedestrians.

When asked about cultural infringement, Mr. Craft says that he doesn't see the Bike/Pedestrian Path detrimental to anyone.

When asked about fishing in the area, he reported that he occasionally sees a few fishermen along the coast and even if it's only one person, they should have access. The Bike/Pedestrian Path is not directly on the coast, so it won't affect fishermen. However, there may be some trouble with four-wheelers used for beach access that may ride over the Bike/Pedestrian Path.

Access for fishermen should be a part of the plan. He believes that the plan should be inclusive of both fishermen and bike riders. The biker's path and the cars could be parallel at times, and a policeman could monitor the cars not driving on the Bike/Pedestrian Path.

When asked about security, Mr. Craft suggests having proper signage with rules plainly stated. He recalls biking in Mount Tam [Mt.Tamalpais], California and seeing policemen on bicycles enforcing the rules by giving tickets to violators. He also recalls seeing "biker etiquette" such as bikers ringing their bells well in advance before driving past a pedestrian. If bikers could follow the same etiquette in the Nawiliwili-Ahukini Bike/Pedestrian Path, it would be ideal for both pedestrians and bikers. He recalls there being some homeless people illegally squatting in the area three or four years ago, but they have since moved.

Another suggestion Mr. Craft shared was to have the trail go closer to the Nāwiliwili Lighthouse. He believes it is an important cultural place that should be highlighted to tourists.

He believes that the Bike/Pedestrian Path will pay off in the long run. He uses his car an average of 1,000miles/year as he rides his bike to work and also rides for fun on the weekends.

6.1.6 Sharon Pomroy

Ms. Pomroy has been a resident of Anahola for thirty years and is a recipient of a Hawaiian Homelands agricultural/residential parcel. CSH interviewed her at her home on June 6, 2008.

Ms. Pomroy is concerned about the upkeep and care of the Bike/Pedestrian Path. She also expressed concern about a part of the Bike/Pedestrian Path that will have to cross with a street. The area is one-lane traffic only and may affect drivers. Although not part of the current Nāwiliwili-Ahukini Bike/Pedestrian Path project, Ms. Pomroy shared that she is concerned with the Bike/Pedestrian Path's connection in Anahola. There is Hawaiian Homelands in the area and she does not want Hawaiians to be displaced from their homes because of the Bike/Pedestrian Path.

6.1.7 Mike and Sondra Grace

Mike and Sondra Grace, *kama'āina* of Anahola, were interviewed via telephone by CSH on June 6, 2008. They have been the owners of the Anahola Beachfront Bed and Breakfast for thirty years. Mr. and Mrs. Grace support the Bike/Pedestrian Path, saying that it is very popular for the public. Everyday they drive near the Path and always see people on it. They, like Ms. Pomroy, express concern over the connection in Anahola and do not want to see Native Hawaiians displaced from Hawaiian Homelands.

6.1.8 Aunty Nani Rogers

Auny Nani Rogers was interviewed by CSH via telephone on June 9, 2008. She is a Native Hawaiian, born and raised in Kapa'a. She is a member of the Ho'okipa Network, which strives to preserve Kaua'i.

When asked if there were any culturally significant sites in the project area, Aunty Nani states that there is the possible presence of burials in the Wailua Golf Course. She also mentioned the very real possibility that *iwi* (bones) may be discovered, and if so, they should be treated respectfully and appropriately.

She also mentions recent public discussions about allowing dogs on the Bike/Pedestrian Path. She says that dogs were originally allowed on the Bike/Pedestrian Path, but were banned after irresponsible pet ownership (e.g. leaving dog excrement on the path). She believes that the dogs should be allowed back on the path, but the community needs to police themselves.

Another concern is how close the Bike/Pedestrian Path is to the Līhu'e Airport. Airport security as well as safety for bike riders is an issue.

She also would like the Anahola Hawaiian Homelands to be left alone by the Bike/Pedestrian Path. She states that the public is not allowed access to that area.

Generally, she says that the public enjoys the Bike/Pedestrian Path and is in support of the project.

Section 7 Cultural Landscape of the Project Area

Discussions of specific aspects of traditional Hawaiian culture as they may relate to the project area in the broader context of the encompassing Hanamā'ulu, Kalapakī and Nāwiliwili *ahupua'a* landscapes are presented below. Excerpts from the aforementioned Community Consultations (Section 6) and past CSH interviews (Section 4) are incorporated throughout this section where applicable.

7.1.1 Agriculture and Gathering of Plant Resources

The project area is located between the two main bays and streams of Nāwiliwili (to the south) and Hanamā'ulu (to the north). These two meandering streams were once home to thousands of Native Hawaiians living a traditional subsistence lifestyle. As noted by Handy (1940), these two valleys were primary *kalo* (taro) growing locations in Puna Moku. The dryland areas (*kula*) of these *ahupua'a* contained native forests and were cultivated with crops of *wauke* (paper mulberry, *Broussonetia papyrifera*), *'uala* (sweet potatoes, *Ipomoea batatas*), and *ipu* (bottle gourd). Legends and historic documentation (especially Land Commission records) elaborate on many of these important natural resources. Land Commission documents indicate a land use pattern that may be unique to this part of the island, or to Kaua'i, in general, in which *lo'i* (irrigated terraced gardens) and *kula* lands in same *'āpana* (portion of land), with houselots in a separate portion. In most places, *kula* lands are defined as drier landscapes and they do not typically occur next to, and among, wetter *lo'i* lands. Upland forest regions once provided various woods needed for canoes, tools and more, as well as cordage, food and herbs (Abbott 1992).

The area is associated with *mokihana* (*Melicope anisata*), an endemic tree, found only on Kaua'i. The *lei* made of *mokihana* is a traditional symbol of the island of Kaua'i and the *mokihana* were used to make the most treasured and rare seed *lei* in the Hawaiian Islands (Abbott 1992). In Hawaiian song, Nāwiliwili and the nearby ridge, Hā'upu, are associated with the *mokihana* flower:

As mentioned in Section 1.4.1, given the relatively large area covered by the proposed bike and pedestrian path route alignments, and given the presence of developed areas, road ways, resorts and other facilities, vegetation in and around the project area is quite variable. A number of the plants in and near the project area have past and present ethnobotanical uses as medicinal, building, weaving and hula plants).

None of the study participants for this current CIE mentioned past or ongoing plant gathering activities. In a 2005 email to CSH from Sabra Kauka for the Kaua'i Lagoons Resort Property, located immediately south of the Līhu'e airport (and within the general, footprint area of the proposed project), Ms. Kauka describes going to Ninini Point to pick *'ilima papa* (also known as *'ilima kū kula*, a wild form of *'ilima*) and *kauna'oa*, a native dodder (*Cuscuta sandwichiana*) the stems of which are used for orange *lei* for *hula*. Linda Kaleo Paik also indicated that there could be gathering activities in the project area.

7.1.2 Aquaculture, Marine and Freshwater Resources

A fishing village called Kalapakī was located between these two major stream valleys, near the seashore, before the historic period. This general area between the streams and *makai* of the present town of Līhu'e, *mauka* of the village house sites, had several fishponds and small drainages. The village was located east and north (around and up the coast) from Kalapakī Beach.

Fishing is still a significant activity in the project area. Past CSH interviews with Cheryl Lovell-Obatake, James Burgess, Robert Crowell and Dr. William Kikuchi for a 2004 CSH study on Nāwiliwili Harbor Improvements, include several stories about fishing in the Nāwiliwili Harbor. Cheryl Lovell-Obatake recalled fishing with her uncle at the *pōhaku* site which Papalinahoa Stream discharges under at Pier 2 at the harbor. *Moi, aholehole, palani, pāpio, weke, menpachi, 'āweo weo, akule, halalū* were caught by pole fishing under and off the pier. She also stated that, "Fishing still exists in Nāwiliwili. Shoreline fishing (on the pier) by the jetty, across the breakwater, Niumalu (small boat harbor). James Burgess recalls fishing, crabbing for Samoan crab, white *kūhonu* (*Portunus sanguinolentus*) crab, doing *hukilau* (to fish with the seine) for *akule* and harpooning turtles in 1930's through the 1960's in the Nāwiliwili Harbor. Robert Crowell speaks about fishermen in the Nāwiliwili Harbor that were fishing for *halalū* and menpachi pre-September 11, 2001. He also mentions canoe racing occuring within the harbor.The late Dr. William Kikuchi also remembers seeing fishing and canoe landing in the Nāwiliwili Harbor area. In reference to the Ninini area, Sabra Kauka in her 2005 email, reports there are many fishermen and surfers who also use this area. Worth noting in the experiences provided by the above cultural consultants, particularly the testimony of James Burgess, is their discussion of subsistence fishing as opposed to sport fishing. Subsitence fishing was ongoing practice in Nāwiliwili Harbor.

Five of the participants/respondents in the current CIE study (Cheryl Lovell-Obatake, SHPD Administrator Linda Kaleo Paik, Gary Craft, Robert and Chris White) also state in their testimony that the Bike/Pedestrian Path from Ninini Point to Ahukini is frequented by local fishermen.

7.1.3 Cultural and Historic Properties

As described in Section 3, there are several historic map sources showing multiple *heiau* along the seashore and stream mouths in and around the general footprint area of the proposed project (Figures 3 and 4). For the most part, all physical evidence of these *heiau* has been obliterated by historic activities and more recent development. Despite this, however, many people still appreciate the sacred nature of the landscape areas in and around these *heiau* (e.g., the rocky points at Ninini, Ahukini, and Kūki'i). In a 2005 email, Sabra Kauka states that she goes to Ninini Point to practice *oli* and *hula*.

The coastal areas were the locus of permanent house sites and temporary shelters, *heiau*, including *ko'a* and *kū'ula* (both types of relatively small shrines dedicated to fishing gods), and numerous trails. The area is also the site of several fishponds. Niumalu Loko is located along the Hulē'ia Stream near its mouth to Nāwiliwili Bay, just outside the project area to the west-southwest (Figure 5). Kikuchi (1973, 1987) considered it a Loko Wai class fishpond because of its inland location along a meander of the Hulē'ia Stream; other sources (inaccuratcly) consider it

a Loko Kuapā (a seawall pond, fronting the ocean). The site (designated State Inventory of Historic Properties No. 50-30-11-501) was placed on the National Register of Historic Places in 1973.

Hammatt and Creed (1993) found historical evidence that Nāwiliwili was intensively used for agriculture in both pre- and post-Contact times. They documented three *'auwai* (traditional irrigation ditches) (SIHP Nos. 50-30-11-491; -492 & -493); and a single rock (SIHP 50-30-11-494) interpreted as a burial marker.

Participants in this CIE, for the most part, did not mention specific Hawaiian cultural and/or historic properties. However, a few contributors to this study stressed that, generally, there are cultural and historic sites in and near the project area. Ms. Lovell-Obatake mentioned the presence of *'auwai* (irrigation ditchs), habitation and historic sites on or near the proposed pathway. Robert White commented that he believes that an existing dirt road between Ninini Point and Ahukini is a remnant from the plantation days. Chris White wrote he is aware of development and use by the plantations, but does not know of any archaeological sites. Gary Craft spoke of the historic significance of the Nāwiliwili Lighthouse located on Ninini Point.

7.1.4 Burials

As mentioned in Section 5, the first comprehensive archaeological survey of Kaua'i was undertaken by Wendell Bennett in the late 1920s and published by the Bishop Museum in 1931 in which he also noted sand-dune burials (SIHP No. 103) towards the Wailua River (Figure 17). He also refers to Site 103. Dune burials. In the sand dunes that run along the shore halfway between Hanamā'ulu and Wailua River are many burials. (Bennett 1931:125)

Nani Rogers states that there is a real possibility that *iwi* (bones) may be discovered, particularly in the Wailua Golf Course. Cheryl Lovell-Obatake states in her letter that ancient burials exist in the Nāwiliwili Valley (Kahumoku Road) (Appendix A).

7.1.5 Trails

As the coastal portion of the project area was once the site of dense habitation, it is to be expected that the area had numerous foot trails. In Damon's account of Hiram Bingham's 1824 observations from his memoir, *A Residence of Twenty-One Years in the Sandwich Islands*, published in 1847: he wrote of "Hiram Bingham crossing from Hanapēpē...over the old upland trail back of Kilohana" (1931:401).

In a 2005 email sent to CSH, Cheryl Lovell Obatake refers to sacred trails that run from Nāwiliwili side coming from Kalapakī Point along the coast. No other mention was made of trails in prior, or the current, cultural impact studies.

7.1.6 Wahi Pana (Storied Places)

As detailed in Section 3, there are many *mo'olelo* associated with the project area environs. One of the oldest and most famous legendary accounts in Hawaiian oral tradition describes the travels and exploits of Pele, the Hawaiian volcano goddess, and one of her sisters, Hi'iakaikapoliopele (more commonly known simply as Hi'iaka). Pele, in her lengthy *oli* (chant) of literally hundreds of named winds of Kaua'i, lists those of Nāwiliwili, Kalapakī, Ahukini, Līhu'e, Kapaia, and Hanamā'ulu. Ahukini once housed a heiau and is referenced in a *mo'olelo* in

the story of "The Goddess Pele. Nāwiliwili is known for a *mo'olelo* involving *menehune* (mythical race of little people famous for building great structures of old). Several historic documents talk about the close connection between Kuhiau Heiau and the *pōhaku* known as Paukini. Many references to Hanamā'ulu are made in the "Legend of Kawelo". Damon (1931) described Kilohana as a famous nesting place of *'uwa'u* (*Pterodroma phaeopygia sandwicensis*), the dark-rumped petrel, a chiefly delicacy. The top of Mauna Kahili, the peak to the west of Kilohana, was a sacred burial place of Hawaiian chiefs. Kilohana is also associated with the *menehune*.

For the most part, participants in the current CIE study did not mention legends or stories about places and/or features of the landscape associated with the project area and environs. However, Ms. Lovell-Obatake spoke to the cultural significance of many of the sites in the project area and surrounding *ahupua'a*.

Section 8 Summary and Recommendations

At the request of R.M. Towill Corp., Cultural Surveys Hawai'i Inc. (CSH) conducted a Cultural Impact Evaluation (CIE) for the County of Kauai's proposed Nāwiliwili – Līhu'e Civic Center – Ahukini Bike/Pedestrian Path Project. The proposed project is located in Nāwiliwili, Kalapakī and Hanama'ulu Ahupua'a, Līhu'e District, Kaua'i Island, Multiple TMK's. This Cultural Impact Evaluation (CIE) was conducted in order to assist the planner and developer in determining if there is a need for a more comprehensive Cultural Impact Assessment (CIA) satisfying Hawai'i Revised Statutes (HRS) Chapter 343, Act 50, which mandates assessment of potential impacts to cultural practices and resources by proposed projects undergoing an environmental review. The subject CIE provides preliminary information pertinent to the assessment of the proposed project's impacts to cultural practices (per the OEQC's *Guidelines for Assessing Cultural Impacts*), but does not fully meet the guidelines provided by the OEQC.

Thirty-two agencies/organizations or individuals were contacted for this CIE. Seventeen community agencies/organizations or individuals participated in brief informal interviews or provided referrals. Notably, response is still pending from a key cultural consultant, Cheryl Lovell-Obatake. In lieu of Ms. Lovell-Obatake's participation in this CIE, a letter regarding the project sent to R.M. Towill has been included for reference in Appendix A. It is worth noting that Ms. Lovell-Obatake indicated in her letter to R.M. Towill that a Cultural Impact Assesment is needed. Ms. Lovell-Obatake states, "Section 106- ACHP and SHPD review, when Federal Highway Funds are contributed to the bikeway project. A cultural impact assessment under the EIS should be conducted."

Generally, participants in this CIE (an abbreviated CIA) support the proposed Ahukini Bike/Pedestrian Path Project with a few caveats pertaining to cultural resources and properties as well as associated community concerns. The findings suggest that there are four major areas of cultural interest and concern regarding the proposed Nāwiliwili-Ahukini Bike/Pedestrian Path Project:

(1) The Nāwiliwili-Ahukini Bike/Pedestrian Path may impede access to fishing grounds, in particular, vehicular access for residential fishermen, especially along the shoreline. Additionally, as the Bike/Pedestrian Path could draw more non-residents to the area who engage in fishing, there is concern that there will be increased fishing by non-residents which may lead to overfishing.

(2) There may be Native Hawaiian burials (*iwi kūpuna*) in the Nāwiliwili Valley (Kahumoku Road) and other areas outside of the project area, and generally, a likelihood that *iwi* may be discovered in the project area.

(3) Many historic and cultural properties and places exist along the pathway, especially in Nāwiliwili Valley. The Office of Hawaiian Affairs wrote, "OHA seeks assurances that should cultural sites be identified within the project area, every effort should be made to route the final path alignment away from these locations to avoid adverse impacts to the sites".

(4) This project is only a segment in a larger project. Although not a part of the current segment, the future Anahola section of the Bike/Pedestrian Path could infringe on

Hawaiian Homelands. In particular, there is concern that Native Hawaiians may be displaced from Hawaiian Homelands as result of the expanded Bike/Pedestrian Path.

The results of this initial study present a few possible mitigation measures for the planner/developer's consideration. The following recommendations are offered as a way to address some of the concerns expressed by study participants in the statements presented in Sections 6 and 7:

(1) Should this study be expanded to a CIA, it is recommended that referrals provided by current CIE study participants be contacted for further comment or possibly more in-depth interviews, in particular, Cheryl Lovell-Obatake.

(2) In light of statements made by a few of the participants in this study that there may be burial sites (*iwi kūpuna*, ancestral remains) in the project area, it is recommended that:

   a. Cultural monitoring be conducted in the immediate vicinity of previously identified archaeological sites and along the coast. Personnel involved in development activities in the project area be informed of the possibility of inadvertent cultural finds, including human remains in culturally sensitive areas. Should cultural or burial sites be identified during ground disturbance, all work should immediately cease, and the appropriate agencies notified pursuant to applicable law.

(3) As there are Kānaka Maoli (native born, Native Hawaiians), as well as other *kama'āina* groups who are culturally active in the area, it is recommended that ongoing cultural practices of (possible) plant gathering, fishing, surfing and other reasons (e.g., ceremonial) for visits to the project area and vicinity be recognized, protected and accommodated. In particular, it is recommended that fishers concerns regarding access to fishing sites be recognized and accommodated.

(4) Generally, it is recommended that community members be consulted regarding the preservation, restoration, and interpretation of cultural resources and/or properties — including archaeological sites, possible burials and other features, that proactively includes the community and descendents of those with connections to the subject parcel (e.g., past residency) throughout the development of the Ahukini Bike/Pedestrian Path Project.

(5) It is hoped that seasonal fishing restrictions will be monitored and enforced due to the potential for increased fishing activity along the shoreline.

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Appendix A Cheryl Lovell-Obatake Letter

Cheryl Lovell-Obatake
P.O. Box 366
Lihue, Hawaii 96766

Phone: 346-1544

November 3, 2007

R.M. Towill Corporation
420 Waiakamilo Rd. Suite 411
Honolulu, Hawaii 96817-4950

Phone: (808) 842-1133
FAX: (808) 842-1937
Attention: Jim Niermann - R.M. Towill Lead Consultant

Subject: Ahukini phase of Nawiliwili to Anahola Bike & Pedestrian Path project.

Aloha e Mr. Niermann,

As you may recall we spoke over the phone in the beginning of the year 2007, regarding the above subject matter. There were some concerns that I mentioned have been mentioned by others at the October 23, 2007 meeting at the War Memorial Convention Hall, and at the Kauai County Council meeting.

The following are my comments and I represent my daughter Maureen Lovell-Obatake and my son Leslie Lovell-Obatake, owners of TMK 3-2-06: 19; who received your meeting notice. I also received meeting notice for the Lovell's kuleana aina at Kalapaki and in Nawiliwili valley.

- Nawiliwili Valley (Kahumoku Rd.) -

1. It is obviously that the County do not own properties in the valley. Land acquisition will be costly. Slopes and floodways can be challenging to maintain the path.
2. The bikeway will impede private landowners privacy and possible off the path intruders trespassing and /or theft.
3. Emergency access for fire, police and ambulance.
4. ADA compliances etc..
5. Historical properties exist in the valley. Ancient burials, auwai(s) (ditches), L.C.Awards (kuleanu aina), ancient habitation etc.. I refer to Cultural Surveys of Hawaii cultural assessment in the 80's of Nawiliwili Valley.

Therefore, it is our opinion that the proposed route into Nawiliwili Valley be rejected.

- Real property taxes -

1. Will this project increase or decrease property value and taxes?

- DOT/Traffic etc. - I am confused with DOT highways and Federal Highways criterion and financial grant qualifications.

1. Is this a recreational path?
2. Is this a transportation path?
3. What is the purpose of the path?

- DOT/Airport Division -

1. What are their comments?
2. Security concerns?

- Kauai Police Department - enforcement to serve and protect.

1. Comments from the Kauai Police Commission and the Kauai Police Department should be strongly considered.

- Commercial operations on the bike path -

1. Already advertisement for commercial bike tours or bike rentals have been sought by some individuals already. Administrative rules are not in place and there has been no public hearings regarding commercial operations. This should stop immediately and a resolution with the County Council should be seriously considered. "After the fact" permits can be conflicting later.
2. Commercial bike and horseback operations should not be allowed.

- Section 106 - ACHP and SHPD review, when Federal highway funds are contributed to the bikeway project. A cultural impact assessment under the EIS should be conducted.

1. Many historical sites that have been consecrated by people of the old, specifically kanaka maoli (Native Hawaiians) are located in the proposed path areas.
2. A cultural impact assessment was completed for the DOT Airport's Division. Refer to Kehau Kekua and Pua Kanahele - cultural practitioners of Hawaii.
3. Kehau Kekua - Heritage Center CIA for Kauai Lagoons.

- Fishermen's concerns of the bikeway and bikers impeding on existing fishing accesses. The rough dirt road have long been used by fishermen. The proposed bikeway should not interfere with fishermen's access to the coastal shoreline. Vehicular access is preferable to reach fishing destinations.

- DLNR - DOCARE State responsibilities = Fisheries

1. Is DOCARE aware of the bikeway and their responsibilities to police and regulate fishing methods and seasonal (kapu system) fishing when non-residents from other islands enter these fishing grounds, via Hawaii Super Ferry?
2. Comments from DOCARE and BLNR Laura Thielen should be considered.

- Native Hawaiian Access Rights Project - Kauai Pilot Project

1. "The Office of Planning, Department of Business, Economic Development and Tourism received a three-year grant from the National Oceanic and Atmospheric Administration (NOAA Award No. NA77OZ0185 and Award No. NA87OZ233 to develop a process for the Hawaii Costal Management Program to comply with the Supreme Court ruling in the PASH/Pilago decision."

- Maintenance, trash, and restroom facilities -

1. The proposed bikeway will increase human traffic traversing in and out, and more to come when the Hawaii Super Ferry begins its operations.
2. Is the County going to maintain the area?

- The Ritz-Carlton Residence/Kauai Lagoons -

1. What are their comments? Liabilities?
2. Gated community concerns?

- Marriott Hotel/Time shares -

1. What are their comments? Liabilities?

- County of Kauai - Liabilities

1. Does the County have a cost estimate regarding liabilities?
2. How can the County avoid suits on the bike/pedestrian path?

- Certified shoreline setbacks -

1. What areas have been certified recently?

This concludes my comments for now.

Cheryl Lovell-Obatake

Cheryl Lovell-Obatake
Nawiliwili, Kalapaki, Puna, Kauai

CC: County of Kauai - Kauai Planning Department/Planning Commission

APPENDIX C

Phase 1 Environmental Site Assessment

February 2008

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

Proposed Alignment of the Nawiliwili/Civic Center/Ahukini Bicycle and Pedestrian Path Project, Nawiliwili Bay to Ahukini Point

Lihue, Kauai

Prepared For:

R. M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, HI 96819

Prepared by:

Kauai Environmental, Inc.
P.O. Box 1280
Kilauea, Hawaii 96754

ENVIRONMENTAL SITE ASSESSMENT

Proposed Alignment of the Nawiliwili/Civic Center/Ahukini Bicycle and Pedestrian Path Project, Nawiliwili Bay to Ahukini Point

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ENVIRONMENTAL SITE ASSESSMENT

Proposed Alignment of the Nawiliwili/Civic Center/
Ahukini Bicycle and Pedestrian Path Project
Nawiliwili Bay to Ahukini Point

EXECUTIVE SUMMARY

Kauai Environmental Inc. performed a Phase I Environmental Site Assessment (ESA) for the properties along the proposed route for a section of the Nawiliwili-Civic Center-Ahukini Bicycle and Pedestrian Path (Lihue Bike Path). This study looks at the section from Nawiliwili Bay to the Ahukini Landing. The exact route for this section of the Lihue Bike Path has not yet been determined, however the proposed alignment will traverse portions of several properties including: TMK Nos. (4) 3-5-001: Parcels 005, 008, 102, 128 and 160. This ESA covers those sections of these properties which encompass the proposed alignment, as shown in Figure 1 (Appendix A). Portions of (4) 3-5-002: Parcel 002 were also inspected for the presence of any potential environmental concerns. While the bike path alignment will only be constructed on a small portion of the referenced parcels, the entire area defined in Figure 1 was evaluated in order to allow planners to assess the impact of the different possible routes for the project.

This assessment was conducted in conformance with the 2000 ASTM Standard for Phase 1 Environmental Site Assessments to determine whether conditions or situations on the properties in question might result in real or potential hazards, or environmental liabilities, that might impact or complicate construction of the bike path. Specific items investigated included: present and historical uses of the subject properties and adjacent properties; signs of gross surface contamination; the presence of hazardous materials and wastes; above ground and underground storage tanks (ASTs and USTs), and other indications of the presence of chemical contamination.

A review of State and Federal environmental regulatory databases indicated the following:

- No sites listed by the U.S. EPA on the NPL (Superfund) or delisted NPL databases were identified within the recommended search distances from properties which include the proposed bike path corridor.
- No CERCLIS (or CERC-NFRAP) sites were identified within the recommended search distance from properties which include the proposed bike path corridor.
- No RCRA corrective action sites or treatment, storage, and disposal facilities were identified within the recommended search distances from properties which include the proposed bike path corridor.
- Two (2) RCRA hazardous waste generators were identified within the recommended search distance from properties which include the proposed bike path corridor. No impacts to the bike path corridor are anticipated due to the locations of these sites relative to the bike path route, and the fact that no violations have been reported at either site.

- Six (6) state-recognized hazardous waste sites were identified within one mile of the properties which include the proposed bike path corridor. No impacts to the bike path project are anticipated due to the fact that site cleanups have been completed at all of the sites that are in close proximity to the proposed bike path corridor.
- Eighteen (18) registered underground storage tank (UST) sites were identified within the recommended search distance from properties which include the proposed bike path corridor. No impacts to the bike path project are anticipated as none of these sites are in close proximity to the proposed bike path corridor.
- Nine (9) leaking underground storage tank (LUST) sites were identified within the recommended search distance from properties which include the proposed bike path corridor. No impacts to the bike path project are anticipated as none of these sites are in close proximity to the proposed bike path corridor.
- No active landfills were identified within the recommended search distance from properties which include the proposed bike path corridor.
- There have been no spill incidents connected with the subject properties that were reported to the HEER office or entered on the ERNS database.
- No Brownsfields sites, or sites with institutional or engineering controls, were identified within the recommended search distances from properties which include the proposed bike path corridor.

A review of relevant State and Federal databases did not identify any institutional controls, engineering controls, or activity and use limitations associated with the subject properties or adjacent properties.

A site reconnaissance at the subject properties was performed during November and December, 2007. The environmental issues identified during this inspection are listed below.

- A large, historic dump site was identified along the shoreline to the east of the Lihue Airport. This dump site covers an estimated 5-10 acres and contains an estimated 50,000-100,000 cubic yards of solid waste. The exposed face of the dump eroding into the ocean.
- A second historic dump site was also noted further south, where debris had apparently been used as fill material. This site contains an estimated 200 cubic yards of solid waste.
- Numerous abandoned vehicles and other miscellaneous debris were identified at various smaller sites along the shoreline between Ninini Point and Ahukini Point. The total quantity of debris at these additional sites (listed in Table 8) is estimated to be between 350 and 400 cubic yards of material.

A review of historical land use information including aerial photographs, fire insurance maps, historical topographic maps, previous environmental reports, and interviews with persons familiar with the history of the property has indicated the following:

- Much of the subject property was historically used for sugar cane production.

- Prior to the 1950's, a permanent workers' colony known as Ahukini Camp was located on Parcel 160, southeast of Ahukini Road. This camp was associated with Ahukini Landing, which was a port facility used by the local sugar mills. Ahukini Landing was also used for military purposes during World War II.

- The large, abandoned dump site along the shoreline was the original Lihue municipal dump, and is known as the Lihue Open Dump or Ahukini Landfill. The site originally predates World War Two and was closed in 1975. The State Department of Health issued a temporary permit for the site prior ro its closure in1975, and currently classifies the site as an "Inactive Landfill." DOH is not currently pursuing actions to characterize or stabilize the site.

- Past construction efforts in the vicinity of the Lihue Airport have been complicated by unexpected encounters with unregistered USTs, abandoned cesspools and undocumented wells filled with petroleum product. None of these sites are located within the proposed alignment of the bike path.

In summary, the following environmental conditions have been identified in association with the subject properties:

- A historic municipal dump site was identified along the shoreline to the east of the Lihue Airport. This dump site covers an estimated 5-10 acres and contains an estimated 50,000 to 100,000 CY of solid waste. DOH records do not indicate that a characterization of this site has ever been performed. The existence of this unregulated dump site is considered a recognized environmental condition.

- A second historic dump site containing an estimated 200 cubic yards of solid waste was also noted further south. The existence of this site is also considered a recognized environmental condition since the source or nature of the dumped material has not been determined.

- Numerous abandoned vehicles and other miscellaneous debris were identified along the shoreline between Ninini Point and Ahukini Point. The total quantity of debris at these sites is estimated to be between 350 and 400 cubic yards. The presence of this debris is considered a recognized environmental condition.

- The historical presence of a permanent laborer's camp on Parcel 160 is considered a historic recognized environmental condition.

No other recognized environmental conditions or historical recognized environmental conditions have been identified in association with the subject properties during the process of completing this Phase I Environmental Site Assessment.

ENVIRONMENTAL SITE ASSESSMENT

PROPOSED ALIGNMENT OF THE NAWILIWILI/CIVIC CENTER/AHUKINI BICYCLE AND PEDESTRIAN PATH PROJECT, NAWILIWILI BAY TO AHUKINI POINT

1.0 INTRODUCTION

Kauai Environmental Inc. (KEI) performed a Phase 1 Environmental Site Assessment (ESA) for property along the proposed route for a section of the Nawiliwili - Civic Center - Ahukini Bicycle and Pedestrian Path (Lihue Bike Path) between Nawiliwili Bay and Ahukini Point. The exact route for this section of the Lihue Bike Path has not yet been determined, however the proposed alignment will likely traverse portions of several properties including: TMK Nos. (4) 3-5-001: Parcels 005, 008, 102, 128 and 160 and (4) 3-5-002: Parcel 002. This ESA has been conducted for portions of the above-referenced properties, including all areas that may be traversed by the alignment as currently proposed. The locations of the properties included in this assessment are shown in Figure 1 (Appendix A). Throughout this report, the properties included in this assessment, as shown in Figure 1, will be referred to collectively as *the subject properties* or *the properties*.

This assessment was performed in accordance with the guidelines established in the American Society for Testing and Materials (ASTM) 2000 Standard: E 1527-00, "Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process."

1.1 *Purpose*

This investigation has been performed for R. M. Towill Corporation, on behalf of The County of Kauai, to identify any potential environmental hazards or liabilities that might be encountered during the construction of this section of the Lihue Bike Path. As such, the purpose of this assessment was to investigate past and present land uses of the subject properties and surrounding areas to determine if the potential exists for hazardous materials contamination or other significant, adverse environmental liabilities associated with the properties. These conditions may affect the selection of the best route for the bike path and may affect the cost or construction methods required to complete the path in some areas.

As defined by the 2000 ASTM Standard, the objective of the Phase 1 ESA process is to identify any "recognized environmental conditions" associated with a Parcel of commercial real estate. A "recognized environmental condition" is defined as: "*the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property.*" The term may include hazardous substances or petroleum products even when stored under conditions in compliance with applicable laws and regulations, but is not intended to include *de minimis* conditions that would not require enforcement action if brought to the attention of the appropriate government agencies.

1.2 *Scope of Work*

The exact route for this section of the Lihue Bike Path has not yet been determined; therefore, a corridor encompassing the areas where the path may be built was defined in consultation with R.M. Towill Corporation, the prime contractor for this project. This Phase 1 ESA is limited to this corridor, the full extent of which is shown in Figure 1.

The 2000 ASTM Standard defines the four components of the Phase 1 ESA process as follows:

- Records Review
- Site Reconnaissance
- Interviews
- Report

These ASTM Standard states that these four components are to be used in concert, with each component providing information that may be used to inform the other components.

In the process of completing this Phase 1 ESA, KEI has performed the following tasks:

- Conducted a review of available environmental records including State and Federal regulatory databases, and contacted local and State agencies to determine the regulatory history associated with the properties, as well as other properties in the vicinity where current or historical commercial or industrial activities might impact the subject properties;
- Reviewed available sources of historical information for the subject properties and surrounding areas, including historical fire insurance maps, topographic maps, aerial photographs to assess past land use in the vicinity of the subject properties;
- Conducted a thorough site reconnaissance to assess current uses and condition of the subject properties and adjacent properties;
- Interviewed persons familiar with the properties and the history of the area for information on current and past uses of the subject properties and other properties in the surrounding areas;
- Reviewed information on site geology, soils, and hydrogeology of the area; and
- Prepared this Environmental Site Assessment Report which documents the findings of this evaluation.

A review of historical and environmental records pertaining to the subject properties and surrounding properties is documented in Section 4.0. Site reconnaissance, performed by a qualified environmental professional, is documented in Section 5.0. Interviews, also conducted by a qualified environmental professional, are documented in Section 6.0.

1.3 *Limitations and Exceptions*

KEI has completed this Phase 1 ESA for portions of the properties identified by the TMK Nos. (4) 3-5-001: Parcels 005, 008, 102, 128 and 160, and (4) 3-5-002: Parcel 002 as delineated in Figure 1 (the "Subject Property"). KEI's findings and conclusions in this Phase 1 ESA are professional opinions based solely upon visual observations and interviews conducted by KEI, KEI's interpretation of the available environmental records and historical information, information provided by the Designated Users of this report, and KEI's interpretation of other documents reviewed during this Phase 1 ESA process. Requests for information resources are made by KEI to collect relevant data on current and past practices at the Subject Property. KEI may not receive all information requested or be able to verify or confirm received information during the Phase 1 ESA process. Therefore, KEI shall not be held responsible for errors, omissions, or misrepresentations resulting from missing documentation or from inaccurate information provided by such sources.

Limitations encountered during the physical inspection of the subject properties included: many areas within the subject properties are overgrown or inaccessible, and physical access for visual inspection was limited. Limitations to physical inspection included tall, thick grasses in the inland portions of Parcels 005 and 102, thick trees and shrubbery in some areas along the coast (Parcels 008, 102 and 160), and a thick layer of pine needles and branches that covers the ground in much of the accessible area along the shoreline. The presence of thick fill materials was also a limitation in some areas of the site.

KEI has performed its services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No warranty or representation, either expressed or implied, is included or intended in KEI's proposals, contracts, or reports.

Opinions stated in this report do not apply to changes that may have occurred after services were performed. Opinions and recommendations presented herein apply to site conditions existing at the time of our investigation. They do not apply to site changes of which KEI is not aware and has not had the opportunity to evaluate.

This Phase 1 ESA is limited to the scope of ASTM Standard E 1527-00. No additional services were contracted in conjunction with this Phase 1 ESA.

Designated Users of this Phase 1 ESA include: R.M. Towill Corporation and The County of Kauai. This report is intended for the sole use of these Users on this Project. This report shall not be reused and is not intended or represented to be suitable for reuse by any other person or entity, whether on this project or any other project, or by the Designated Users on any other project. Any reuse of this document or the findings, conclusions, or recommendations presented herein will be at the user's sole risk and without liability or legal exposure to KEI.

2.0 SITE DESCRIPTION

2.1 *Location and Legal Description*

This assessment was performed for a corridor that includes the proposed alignment of the Lihue Bike Path, from Nawiliwili Harbor to Ahukini Point, as shown in Figure 1. Included are portions of the following properties: TMK Parcels (4) 3-5-001: 005, 008, 102, 128 and 160. Also inspected for the presence of any potential environmental concerns were portions of TMK Parcel (4) 3-5-002: 002, the Kauai Marriott resort hotel. A list of the Parcels included in this assessment is included below in Table 1. This assessment is limited to the proposed bike path corridor and does not include the entire extent of the Parcels listed above.

Table 1: Properties Included in this Phase 1 ESA

Parcel (TMK No.)	Area (acres)	Location / Property Description	Owner
(4) 3-5-001: 005	20	Strip between Lihue Airport and Parcel 102 (Kauai Lagoons property on coast)	State of Hawaii
(4) 3-5-001: 008	720	Lihue Airport property (note: only coastal areas outside perimeter fence included)	State of Hawaii
(4) 3-5-001: 102	116	Coastal property between airport and ocean, north of lighthouse at Ninini Point.	Kauai Lagoons Resort Co. Ltd.
(4) 3-5-001: 128	3.1	Parcel surrounding lighthouse (located on Parcel 004)	State of Hawaii
(4) 3-5-001: 160	7.5	Coastal property at end of the Lihue Airport landing strip, between Ahukini Road and the coast, to the east of the coastal access road.	State of Hawaii
(4) 3-5-002: 002	32.8	Kauai Marriott Resort	Kauai Marriott Resort

2.2 *Site and Vicinity Characteristics*

2.2.1 Geologic Setting and Soils

The subject properties are located on the southeast corner of the Island of Kauai between the Nawiliwili Harbor and Hanamaulu Bay. The island was formed by volcanic activity over several million years. The subject properties are located along a strip of land along the ocean east of the Lihue Airport. This area of the island was formed from the erosion of the large shield volcano to the west and the deposition of the soils over the coastal areas. The site is subject to erosion from the ocean waves and from rainfall carrying water from upland areas through the properties.

The general soils located in the study area are of the Lihue-Puhi Association. This soil association refers to deep, nearly level to steep well drained soils that have a fine textured or

moderately fine textured subsoil. The specific soil types found on the subject properties include rRo (stony rocky lands on the coastline), KvD and B (Koloa stony silty clays on the exposed hillsides), and LhB and C (Lihue silty clays on the flat uplands along the airport property and the Ahukini Landing sites). These soils are suitable for building foundation, however the erosion potential on steeper hillsides is extreme.

2.2.2 Groundwater

The subject property is located makai or toward the ocean of the Hawaii Department of Health Underground Injection Control line. The groundwater at the site is considered to be brackish and not of any useful drinking water or irrigation uses. DOH groundwater protection regulations are less stringent for sites below the UIC line since the resource is not usable. The depth to ground water is expected to be approximately 10 - 12 feet below ground level.

Based on the history of the site as a long standing agricultural field, it is possible that activities on the property have impacted the ground water quality, however this impact is expected to be minimal since the water is not usable. Any development of the property will likely use county supplied drinking water, therefore the impacts to groundwater will not affect the use or value of the property.

2.2.3 Surface Waters

There are no pools or ponds of standing water on the subject property. There are a few permanent streams or washes that carry surface waters from the west across the property. The nearest body of water is the Pacific Ocean, which is located on the eastern edge of the subject properties. On the southern portion of the properties, near the southeast corner of the airport property, a wetland identified in the National Wetland Inventory is located.

2.2.4 Site Flood Boundaries

According to the Flood Insurance Rate Map (FIRM) #150002-0202C, the coastal areas of subject properties from Nawiliwili to Ahukini are considered to be within the 500 year flood plain. At the Kauai Marriott, a small area along the Nawiliwili Stream is also considered within the 500 year flood plain. All other areas are considered to be outside of the 100 year flood plains.

2.3 *General Site Setting*

This section summarizes general information about the subject properties as derived from various sources including information from review of historical use and environmental records (Section 3.0), observations made during site reconnaissance (Section 4.0), and information obtained during interviews (Section 5.0).

2.3.1 Current Uses of Subject Properties

The subject properties (other than the Kauai Marriott on Parcel (4) 3-5-002: 002) are largely open, undeveloped areas which are not currently in use for any active purpose. With the exception of the lighthouse on Parcel 128 and the radar station on Parcel 102, the only current use for any of the subject properties are several staging areas for short-term storage of materials from ongoing Airport construction projects. Materials at these sites include boulders, soil and asphalt. Staging areas for these materials are located on Parcels 008 and 160.

Several areas along the coastline between Ninini Point and Ahukini Point are in use or have recently been used as camp sites or semi-permanent encampments. These areas typically include some or all of the following features: fire rings, abandoned vehicles, tents, trash, and debris. Other areas are commonly used for illegally dumping household trash by local residents.

2.3.2 Past Uses of Subject Properties

Historically, the subject properties were largely used for agricultural sugar cane production. Prior to the expansion of the runways at the Lihue Airport in the early 1980s, Parcels 005, 008 and 102 were in agricultural use nearly up to the coastline. Only the coastal areas and drainages were not cultivated.

Historical aerial photographs (described in Section 3.2.1) show a large camp on Parcel 160 which was present until at least the 1950s. This camp was presumably associated with Ahukini Landing, which was originally used as a port for the nearby Lihue Plantation Co., servicing the sugar mills in Lihue and Hanamaulu. Ahukini Landing may also have been used for military purposes during World War 2 (see below, Section 2.3.4). When this camp was originally built is not known, nor is the final closing or the method of disposition of the construction materials. Several concrete foundations and drain structures remain on the property at this time.

Physical inspection of the subject properties identified a large dump site on Parcel 008 (see Section 4.2). Dept. of Health records indicate that this site is a historic landfill which pre-dated State regulations for solid waste management and disposal. The full extent of the fill materials at the site are unknown, as are the types of material that the dump contains. DOH records do not indicate that any characterization of this site has ever ben performed. The dump site is currently eroding into the ocean, with trash, metal, concrete and glass exposed along the ocean. Additional information regarding this site can be found in Section 4.2.2.

2.3.3 Current Uses of Adjacent Properties

Properties adjacent to the subject properties include the Kauai Marriott Resort, Kauai Lagoons (a residential, commercial and resort subdivision currently under development), the Lihue Airport run by the Hawaii Department of Transportation, and the abandoned Ahukini Landing facility.

2.3.4 Past Uses of Adjacent Properties

The Kauai Marriott has been a resort development dating back to the 1960s. The properties now under development as Kauai Lagoons were originally agricultural lands, later developed into a golf course. Much of the property occupied by the Lihue Airport was also used for agricultural production of sugar cane.

At the Ahukini Road terminus of the corridor, the adjacent properties have a long history of agricultural, military, residential and industrial use. Ahukini Landing was once a major port facility associated with the Lihue Plantation Co. sugar mills at Lihue and Hanamaulu. The site was also a major military port for troops and supplies arriving and departing from Kauai during World War 2. Several large buildings were located in the area, including a warehouse used to store fertilizer and pesticides and a locomotive maintenance shop. In addition, a large housing camp was located in the area as described in Section 2.3.2.

In later years, the northwestern portion of Ahukini Landing was the site of the Masterworks facility, an auto salvage and wrecking yard. This site may also have been used as an open dump. The site has undergone extensive remediation including the removal of several unregistered USTs, the closure of several contaminated cesspools, and the removal of large quantities of petroleum contaminated soils.

3.0 REVIEW OF ENVIRONMENTAL AND HISTORICAL RECORDS

In order to identify the presence of recognized environmental conditions at the subject properties, several published sources of environmental records were searched, including databases maintained for this purpose by state and federal regulatory agencies. This section lists the environmental databases that were searched, and describes the results of each search.

3.1 *Standard Environmental Record Sources*

The 2000 ASTM Standard for the Practice of Conducting Phase 1 ESAs (ASTM E 1527-00) defines a list of Federal and State regulatory databases as "Standard Environmental Record Sources" to be searched for relevant information as part of the Phase 1 ESA process. These databases record reported environmental incidents, conditions, and permitted or regulated operations that have the potential to impact the subject properties.

A summary of standard environmental database records was provided to KEI by Environmental Data Resources, Inc on December 20, 2007 (EDR, 2007a). This summary included the most recent versions available at that time for all required database records, as described below. Federal environmental databases reviewed for this report are detailed in Section 3.1.1. State environmental databases are detailed in Section 3.1.2. Tribal databases were also reported in EDR's summary, however these results are not included here since, at this time, there are no tribal lands in the State of Hawaii.

3.1.1 Federal Database Search Results

Table 2 lists the major Federal database records that were searched for this report. The ASTM methodology (ASTM Standard: E 1527-00) specifies a minimum search distance for each database, and also mandates that each database record used must have been updated by the source within 90 days of the search. The dates of the most recent update for each Federal database source are also listed in Table 2, along with the ASTM-mandated search distance for each database and the number of hits, or listed sites identified from each database within the recommended search distance. Results from each database search are described individually below.

Table 2: Federal Environmental Databases Reviewed

Database	Source Category (Gov't Agency)	Updated by Source	Search Distance	Hits
NPL	National Priority List (Superfund) Sites (USEPA)	8/29/07	1 mile	0
DELISTED NPL	National Priority List Deletions	8/29/07	0.5 mile	0
CERCLIS	CERCLIS Site Event List (USEPA)	12/06/07	0.5 mile	0
CERC-NFRAP	CERCLIS -No Further Remedial Action Planned	12/06/07	0.5 mile	0
CORRACTS	RCRA Corrective Action List (USEPA)	12/03/07	1 mile	0
RCRA	TSD Facility List (USEPA)	10/16/07	0.5 mile	0
RCRA	Generators Facility List (USEPA)	10/16/07	0.25 miles	2
US ENG CONTROLS	Engineering Controls Sites List	11/16/07	0.5 mile	0
US INST CONTROL	Sites with Institutional Controls	11/16/07	0.5 mile	0
ERNS	Emergency Response Notification System (USEPA)	10/19/07	Site only	0

NPL = National Priority List
CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS = Corrective Action Report
RCRA = Resource Conservation and Recovery Act
RCRIS = Resource Conservation and Recovery Information System
TSD = Transport, Storage and Disposal

USEPA National Priorities List (NPL)
The National Priorities List compiled by the U.S. Environmental Protection Agency lists the Superfund Hazardous Waste Sites as required by federal law. The identification of the hazardous waste sites presenting the greatest risk to human health and the environment is mandated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) passed in

1980. This list is prioritized according to the severity of the risk to public health and the environment. **No NPL sites were identified within one mile of the properties which include the proposed bike path corridor.**

USEPA National Priorities List Deletions (DELISTED NPL)
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CRF 300.425.(e) sites may be deleted from the NPL when no further response is appropriate. **No De-listed NPL sites were identified within one half mile of the properties which include the proposed bike path corridor.**

USEPA CERCLIS List (CERCLIS)
The CERCLIS List, or Comprehensive Environmental Response, Compensation, and Liability Information System database, contains data on potentially hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and private persons. These sites are considered for possible clean up activities or inclusion onto the NPL. **No CERCLIS sites were identified within one half mile of the properties which include the proposed bike path corridor.**

USEPA CERCLIS List-No Further Remedial Action Planned (CERC-NFRAP)
The CERC-NFRAP List contains sites that have been removed from the CERCLIS list and archived. Archived status indicates that, to the best of the EPA's knowledge, assessment at a site has been completed and the EPA has determined that no further steps will be taken to list the site on the NPL at this time. This decision does not necessarily mean that there is no hazard associated with a given site, it only means that, based upon available information, the location is not judged to be a potential NPL site. **No CERC-NFRAP sites were identified within one half mile of the properties which include the proposed bike path corridor.**

USEPA RCRA CORRACTS List (CORRACTS)
The RCRA CORRACTS or Corrective Action Report database lists those facilities that generate, treat, store, or dispose of hazardous wastes that have undergone remediation activity. These sites have experienced spills or releases of hazardous chemicals prompting the need for clean up action. The extent and type of contamination is listed in this report as well as the status of the corrective actions. **No hazardous waste facilities that have undergone corrective action were identified within one mile of the properties which include the proposed bike path corridor.**

USEPA RCRA TSD Facilities List (RCRA)
The EPA maintains a list of Treatment, Storage, and Disposal (TSD) Facilities that either handle or dispose of hazardous waste as defined by the hazardous waste regulations published by the EPA according to the Resource Conservation and Recovery Act (RCRA). This information is contained in the Resource Conservation and Recovery Information System (RCRIS). **No TSD facilities were identified within one half mile of the properties which include the proposed bike path corridor.**

USEPA RCRA Generators List (RCRA)
The EPA tracks all facilities that generate hazardous wastes in excess of threshold quantities set in the RCRA regulations. RCRA large quantity generators (LQG) are those that produce in excess of 1000 kilograms of hazardous waste per month, and small quantity generators (SQG) are those that produce greater than 100 kg per month but less than 1000 kg per month. This information is also contained in the Resource Conservation and Recovery Information System (RCRIS). **Two hazardous waste generators were identified within one quarter mile of the properties which include the proposed bike path corridor. These properties are identified below in Table 3.** No impacts to the bike path corridor are anticipated due to the locations of these sites relative to the bike path route, and the fact that no violations have been reported at either site.

Table 3: RCRA Generator Sites within One Quarter Mile

Facility	Location	Regulatory Status
Century Aviation	Old Terminal (Ahukini Road)	LQG - No violations reported.
TSA at Lihue Airport	3901 Mokulele Loop	SQG - No violations reported.

USEPA Engineering Controls Sites List (US ENG CONTROLS)
The EPA maintains this list of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to prevent regulated or hazardous substances from entering environmental media or effecting human health. **No sites with engineering controls were identified within one half mile of the properties which include the proposed bike path corridor.**

USEPA Institutional Controls Sites List (US INST CONTROL)
The EPA maintains this list of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of institutional controls. **No sites with institutional controls were identified within one half mile of the properties which include the proposed bike path corridor.**

USEPA ERNS List (ERNS)
The Emergency Release Notification System list, compiled by the US EPA, lists the locations and other data on reported releases of oil and hazardous substances. All releases in excess of threshold quantities are required to be reported and included in this list. **No entries on the ERNS database were identified for the subject properties.**

3.1.2 State and Local Database Search Results

Table 4 lists the major State database records that were searched for this report. These records are maintained by the State Department of Health. The ASTM methodology (ASTM: E 1527-00) specifies a minimum search distance for each database, and also mandates that each database

record used must have been updated by the source within 90 days of the search. Table 4 lists the dates of the most recent update for each State database source, along with the ASTM-mandated search distance for each database and the number of hits, or listed sites identified from each database within the recommended search distance. Results from each database search are described individually below.

Table 4: State Environmental Databases Reviewed

Database	Source Category	Updated by Source	Search Distance	Hits
SHWS	State-recognized Hazardous Waste Sites (Hawaii DOH)	10/05/07	1 mile	6
SWF/LF	Permitted Solid Waste Facilities and Landfills (Hawaii DOH)	10/23/07	0.5 mile	0
UST	Registered Underground Storage Tank sites (Hawaii DOH)	9/26/07	0.25 mile	9
LUST	Leaking UST sites (Hawaii DOH)	9/26/07	0.5 mile	18
SPILLS	HEER Release Notifications (Hawaii DOH)	10/05/07	site only	0
INST CONTROLS	Sites with Institutional Controls	10/05/07	site only	0
VCP	Voluntary Response Program Sites	10/05/07	0.5 mile	0
DRYCLEANERS	Permitted Dry Cleaning Facilities	10/26/07	0.5 mile (not required)	0
BROWNSFIELDS	Brownsfields Sites	10/05/07	0.5 mile	0

DOH = Hawaii State Department of Health
HEER = Hazard Evaluation and Emergency Response

State of Hawaii Hazardous Waste Sites (SHWS)
This list includes all facilities, sites, or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated, or may investigate under Hawaii Revised Statutes. **Six (6) state-recognized hazardous waste sites were identified within one mile of the properties which include the proposed bike path corridor. These sites are identified below in Table 5.** No impacts to the bike path project are anticipated due to the fact that site cleanups have been completed at all of the sites that are in close proximity to the proposed bike path corridor.

Table 5: SHWS Sites within One Mile

Facility	Location	Regulatory Status
Lihue Airport AvGas	3901 Mokulele Loop	No further action required.
Kauai Marriott	3610 Rice Street	No further action required.

Facility	Location	Regulatory Status
Kauai Marriott	3500 Rice Street	No further action required.
Masterworks	3130 Ahukini Road	No further action required.
Honsador Lumber	3371 Wilcox Road	Voluntary Response Program; cleanup ongoing
Nawiliwili Fuel Distributors	3145 Waapa Road	site cleanup ongoing

State of Hawaii Landfill Sites (SWF/LF)
The state list of Solid Waste Facilities and Landfill Sites contains an inventory of solid waste disposal facilities or landfills in the state. These facilities may be active or inactive or open dumps that failed to meet RCRA criteria for proper solid waste landfills. **No state recognized landfills or disposal sites were identified within a half mile of the properties which include the proposed bike path corridor.**

State of Hawaii UST List (UST)
This list of registered underground storage tanks is administered by the State of Hawaii Underground Storage Tank (UST) division. All tanks that are registered as required by the federal RCRA regulations are contained on this list. The database also includes the number and types of tanks registered, the regulatory status of the tanks, and whether they have been removed and closed according to state law. **A total of eighteen (18) registered underground storage tank sites were identified within a quarter mile of the properties which include the proposed bike path corridor. These sites are identified below in Table 6.** No impacts to the bike path project are anticipated as none of the sites identified in the database report are in close proximity to the proposed bike path corridor.

Table 6:
List of UST Sites Located Within a Quarter-Mile of the Subject Properties

Facility	Location	Regulatory Status
State of Hawaii PMID 51401	Lihue Airport	Tank permanently out of use No problems identified
Kauai Island Tours, Inc.	Ahukini Rd. Lihue Airport	Tanks closed in1996 No problems identified
Gray Line Hawaii Ltd.	Ahukini Rd. Lihue Airport	Tank permanently out of use No problems identified
Lihue Airport Renovation	Lihue Airport	Tanks closed in 1991 No problems identified
Kenai Air Hawaii	Lihue Airport	Tanks closed in 1990 No problems identified
DOT - Airports Division Budget Rent-A-Car	Ahukini Rd. Lihue Airport	Tanks closed in 1996 No problems identified

Table 7:
List of Leaking UST Sites Located Within a Half-mile of the Subject Properties

Facility	Location	Regulatory Status
Lihue Airport	3901 Mokulele Loop	Site Cleanup Completed, No further action required
DOT - Airport Division Avis Rental Car	3629 Ahukini St.	Site Cleanup Completed, No further action required
Budget Rent A Car Lihue Airport	3285 Hoolimalima Pl. Lihue Airport	Site Cleanup Completed, No further action required
Alamo Rent-A-Car, Inc	3272 Hoolimalima Pl. Lihue Airport	Site Cleanup Completed, No further action required
Avis Rent-A-Car	3259 Hoolimalima Pl. Lihue Airport	Site Cleanup Completed, No further action required
Kauai Marriott Resort and Beach Hotel	Kalapaki Beach 3610 Rice Street	Site Cleanup Completed, No further action required
Westin Kauai Sewage Pump Station	Kalapaki Beach 3610 Rice Street	Site Cleanup Completed, No further action required
JJR Inc. (AKA: The Little Gas Station)	3416 Rice St. Lihue, Hawaii	Site Cleanup Completed, No further action required

State of Hawaii Hazard Evaluation and Emergency Response Spills List (SPILLS)
The Department of Health HEER office maintains a record of all spills and releases of chemicals and petroleum products above the regulatory threshold quantity that have been reported to the HEER office since 1988. These records are used to track all incidents to ensure that they are properly cleaned up. **No record of any spills on the subject properties that have been reported to the HEER office was identified in the database report.**

State of Hawaii Institutional Controls Sites List (INST CONTROLS)
The Department of Health maintains this list of Voluntary Response Program and Brownsfields sites with institutional controls in place. **The subject properties were not identified as sites with institutional controls in place.**

State of Hawaii Voluntary Response Program Sites List (VCP)
The Department of Health maintains this list of Voluntary Response Program sites, which are sites where voluntary clean-up projects are underway or have been completed by current or former owners. **No Voluntary Response Program sites were identified within a half mile of the properties which include the proposed bike path corridor.**

State of Hawaii Drycleaners Sites List (DRYCLEANERS)
The Department of Health maintains this list of permitted dry cleaning facilities in the state, which are common sources of groundwater contamination. This search is not required by the ASTM standard but is included due to the prevalence of contamination associated with dry cleaning

facilities. **No dry cleaners were identified within a half mile of the properties which include the proposed bike path corridor.**

State of Hawaii Brownsfields Sites List (BROWNSFIELDS)
The Department of Health maintains this list of Brownsfields sites.
No Brownsfields sites were identified within a half mile of the properties which include the proposed bike path corridor.

3.2 *Standard Historical Use Information Sources*

The following information was reviewed pertaining to the historical uses of the subject properties and the surrounding area.

3.2.1 Aerial Photographs

Aerial photographs of the subject properties and the surrounding area were obtained from the Photogrammetry Department at R. M. Towill Corporation in Honolulu, HI. Aerial photographs covering the subject properties were available from the years 1967, 1970, 1974, 1978, 1984, 1991 and 1995. These photographs were examined for evidence of previous site usage. The following discussion describes the apparent uses of the subject properties and the adjacent areas noted in each of the photos reviewed.

1953 Photo: In this black and white photo taken from an altitude of 20,000 feet, the shoreline from Ninini Point to Ahukini Landing appears as a heavily vegetated area along the shore with agricultural lands covering all of the inland level areas. The only development visible along the shoreline is the lighthouse tower at Ninini Pont and the worker's camp near Ahukini Point. There are also some larger buildings associated with Ahukini Landing. The airport is visible to the SW of Ahukini Point. Also visible in the photo are several access roads connecting the camp at Ahukini to Lihue, the airport, and Hanamaulu. The historic dump site along the shoreline behind the airport is also visible as a clearing in the otherwise heavily vegetated shoreline.

1960 Photo: In this black and white photo taken from an altitude of 20,000 feet, there is very little change from the 1953 photo.

1969 Photo: In this black and white photo taken from an altitude of 12,000 feet, the camp Ahukini appears to be gone, and the airport appears to be undergoing an expansion. The dump site is still visible as a clearing along the otherwise forested shoreline.

1974 Photo: In this black and white photo taken from an altitude of 12,000 feet, the airport expansion has been completed and the former camp area at Ahukini Point has been re-forested. The Kauai Lagoons golf course above Kalapaki Beach is now in place. Most of the land currently occupied by the airport remains in agricultural use. The

dump site along the shoreline is still visible but does not appear to be as open or free of vegetation as was the case in previous photos.

1982 Photo: In this black and white photo taken from an altitude of 7,300 feet, only the southern portion of the subject properties is visible. The Lihue airport is again under expansion, with grading underway for additional runways running north to south. No additional development along the shoreline is visible.

1992 Photos: In this series of color photos taken from an altitude of 5,400 feet, the shoreline appears in much greater detail than in previous photos. Various access roads are also visible. The current airport runway configuration has been completed, and the Kauai Lagoons golf course has expanded between the runways. The masterworks facility at Ahukini Point is visible in the area formerly occupied by several large structures associated with the landing and the workers' camp. There is no longer any sign of the camp. The dump site along the shoreline remains the only large stretch visible along the coast where trees are not growing.

2003 Photos: In this series of color photos taken from an altitude of 5,400 feet, the only additional development visible along the shoreline is a new radar tower that has been constructed approximately halfway between Ninini Point and Ahukini Point..

3.2.2 Sanborn Fire Insurance Maps

The Sanborn Library includes a large collection of historical fire insurance maps dating back to the late 1800's. These maps show all insurable structures in a given area at a specific point in time, and are thus useful indicators of historical land use and changes in land use over time.

A Sanborn Map Report, including copies of all Sanborn Fire Insurance Maps available from the Sanborn Library for the vicinity of the subject properties, was provided to KEI by Environmental Data Resources, Inc on December 20, 2007 (EDR, 2007b). No fire insurance maps were available for the vicinity of the subject properties. A copy of EDR's Sanborn Map Report is included here as Appendix C.

3.2.3 Historical Topographic Maps

A Historical Topographic Map Report, including copies of all historical USGS topographic maps available for the site and vicinity of the subject properties, was provided to KEI by Environmental Data Resources, Inc on December 20, 2007 (EDR, 2007c). Historical topographic maps of the Lihue Quadrangle, which include the subject properties and the surrounding area, were available from the years 1963, 1983 and 1996. These maps were examined for evidence of historic land use patterns. The following discussion describes the apparent uses of the subject properties and the adjacent areas noted in each of the maps provided by EDR. A copy of EDR's Historical Topographic Map Report is included here as Appendix D.

1963 Topo Map: The USGS Topographic Map of the Lihue Quadrangle from 1963 shows the Lihue Airport in its original configuration. At the end of Ahukini Road

is the Ahukini Camp, presumably associated with Ahukini Landing and the Lihue Plantation Co. Sugar Mill in Hanama'ulu. This camp is the only development between Ahukini Point and Ninini Point. The lighthouse at Ninini Point is visible, and is labeled on the map as the Nawiliwili Light Station. There is no development between Ninini Point and Kukii Point, at the entrance to Nawiliwili Bay.

1983 Topo Map: The USGS Topographic Map of the Lihue Quadrangle from 1983 shows an expanded Lihue Airport, in which the runways have been extended but the modern terminal buildings have not yet been constructed. The Ahukini Camp is no longer present, and there has been no additional development between Ahukini Point and Ninini Point. There has been additional development at Kalapaki Beach and along the edges of Nawiliwili Bay. A "Country Club" is noted between Kukii Point and Ninini Point, but there is no sign of the modern-day Kauai Lagoons and the associated golf course.

1996 Topo Map: The USGS Topographic Map of the Lihue Quadrangle from 1996 shows the current layout of the Lihue Airport, including the modern terminal buildings. The Kauai Lagoons and the associated golf course are also present. For the first time, the access road below the airport from Ahukini Road to the lighthouse at Ninini Point is visible. There are no other signs of development along the proposed route of the Lihue bike path.

3.3 *Additional Environmental Record Sources*

This section documents information obtained from additional sources of environmental records not required by the ASTM E 1527-00 standard.

3.3.1 Previous Environmental Reports

Draft EIS for Lihue Airport Improvements (January, 2007)
The Draft Environmental Impact Statement for Lihue Airport Master Plan Improvements (prepared in January 2007 for DOT-A by Wilson Okamoto Corporation) was reviewed for information related to potential environmental issues on DOT-A property that might impact the subject properties along the proposed alignment for the Lihue Bike Path. The Draft EIS itself does not contain any relevant environmental information, however included as an appendix to the Draft EIS is a Hazardous Materials Survey prepared for DOT-A by Masa Fujioka & Associates in September 2006. This document was also reviewed.

Hazardous Materials Survey, Lihue Airport Master Plan Improvements (September, 2006)
A Hazardous Materials Survey (HMS) was performed for DOT-A covering areas to be affected by improvements included in the Lihue Airport Master Plan. Although the bike path corridor is not within those areas, a portion of the proposed alignment is in close proximity to the Perimeter Access Road, which was one of the planned improvements included in the Master Plan for the airport. Also, the HMS includes general information which may be relevant to the subject properties and the Bike Path project. Relevant findings from this report are listed below.

SHWB issued a temporary permit for the county to operate the previously un-permitted site for 6 months, pending the availability of the newly permitted sanitary landfill site.

The Ahukini Open Dump was closed by grading the area and capping the site with 2 feet of topsoil. Correspondence from DOH, the County of Kauai, US EPA and the Army Corps of Engineers indicates that these agencies were aware of the landfill's existence and the State requirements for closure of the site, which consisted of covering the site with two feet of clean material. DOH also recommended grading these sites with a 2:1 grade to minimize erosion. The Ahukini site was one of two coastal landfill sites where the County was not able to meet this grading recommendation,

The SHWB lists the site as "Ahukini Landfill" in its database of Hawaii Inactive Landfills, and has classified the site as one of low potential impact.

Masterworks Site
The SHWB maintains extensive files related to the closure of the former Masterworks (aka Towmaster) site, which was located on Parcel 159, adjacent to Ahukini Road, just north of the subject properties. This site, which is currently a grassy meadow, was formerly a salvage yard for abandoned vehicles. Photographs taken during closure activities show dozens of wrecked cars and hundreds (if not thousands) of abandoned used tires. The site has been extensively remediated, with the closure of contaminated cesspools and removal of a large quantity of petroleum contaminated soils. The excavated area was partially backfilled with used tires that were compacted and bundled, and then buried in layers on the site.

4.0 SITE RECONNAISSANCE

A visual inspection of the subject properties and surrounding areas was performed by Benjamin Owen and Dave Gerow of KEI. Photographs of the property taken at the time of the inspection are included in Appendix B.

4.1 *Methodology and Limiting Conditions*

Inspection of the subject properties was performed during November and December, 2007. Methodology for these inspection consisted of walking all accessible areas of the subject properties and noting all observable features. A handheld GPS unit was used to mark the locations of debris and other physical features as noted in this section.

Some areas of the site are open and level; however many areas are overgrown or inaccessible, and physical access for visual inspection was limited. Limitations to physical inspection included tall, thick grasses in the inland portions of Parcels 005 and 102, thick trees and shrubbery in some areas along the coast (Parcels 008, 102 and 160), and a thick layer of pine needles and branches that covers the ground in much of the accessible area along the shoreline. The presence of thick fill materials was also a limitation in some areas of the site.

4.2 *Observations*

This section documents observations recorded at the time of the physical inspection of the subject properties and the adjacent properties. An inventory of all trash and debris identified on the subject properties is provided in Table 8. This inventory includes GPS locations of all materials identified, as well as estimated quantities of the debris to be removed from each site, should this debris require removal.

4.2.1 TMK Parcel (4)-3-5-001: 005

Parcel 005 is a long, thin strip of property between Parcel 008 and Parcel 102. This area was inaccessible for inspection due to cattle fencing and tall grasses and shrubs throughout most of the area. The area appears to have been used for cattle ranching at one time but does not appear to be currently in use.

4.2.2 TMK Parcel (4)-3-5-001: 008

Parcel 008 is a large Parcel which includes the Lihue Airport. This assessment included only the portion of Parcel 008 to the east of the perimeter fence, between the airport and the Pacific Ocean. As seen in Figure 1, Parcel 008 includes several coastline sections: one near the lighthouse at Ninini Point, the other near Ahukini Point. In between these sections, Parcel 008 is separated from the coastline by Parcel 005 and Parcel 102.

The inland section of Parcel 008 (to the west of Parcels 005 and 102) is largely inaccessible due to fencing and tall grasses and brush. The accessible paths and roads in this area were inspected. No signs of any debris or other potential sources of contamination was observed in the accessible portions of the inland areas.

Numerous abandoned vehicles, debris piles and small dump sites were observes along the coastal sections of Parcels 008, 120 and 160. On Parcel 008, most of these sites were located along the coast on the southern portion of the property. An inventory of the various sites noted along the coast is provided in Table 8. A handheld GPS device was used to record the locations of these sites, which are shown in Figure 2.

Also noted on Parcel 008 was a large historic dump site or landfill. This dump site appears to cover an area of approximately 5-10 acres along the shoreline. Though not visible from the airport perimeter road, visual inspection of the coastal bluffs reveals a mass of fill materials (dirt and debris) including metal, concrete, plastic and glass. The debris field is over 40 feet deep in some areas and extends along the shoreline for a distance of at least one quarter mile. The dump is gradually eroding into the ocean as evidenced by the beach below, which is littered with a significant amount of glass, plastic, and metal debris from the landfill. The location and extent of this historic landfill site are shown in Figure 3.

4.2.3 TMK Parcel (4)-3-5-001: 102

Parcel 102 includes a large portion of the coastline between Ninini Point and Ahukini Point, and is traversed by several unpaved access roads. The coastal areas were largely accessible for inspection, however large portions of the inland area was fenced off and overgrown.

Table 8: Inventory of Sites Along Shoreline

Site ID	Site Description	Latitude (°N)	Longitude (°W)	Estimated Quantity of Debris
A	South end: near lighthouse, rusted car by camp site	21° 57.407'	159° 20.089'	4 CY
B	Camp site with small amount of trash	21° 57.443'	159° 20.066'	1 CY
C	Large piece of fiberglass from boat	21° 57.488'	159° 19.953'	1 CY
D	Concrete pad near ocean with some trash	21° 57.491'	159° 19.924'	10 CY
E	Camp site with 3 cars and other trash, washing machine and car batteries	21° 57.537'	159° 19.915'	20 CY
F	Campsite with 2 large tires, glass pile, boat parts	21° 57.583'	159° 19.882'	5 CY
G	Large camp, fairly recent with small amount of trash	21° 57.689'	159° 19.820'	5 CY
H	8' x 20' concrete foundation	21° 57.727'	159° 19.877'	20 CY
I	Pit with concrete slab and debris	21° 57.764'	159° 19.873'	12 CY
J	Remnants of large metal tank (8' high 12' long)	21° 57.770'	159° 19.840'	10 CY
K	2 large concrete chunks (each 2 CY)	21° 57.831'	159° 19.861'	4 CY
L	Large campsite, debris pile, car	21° 57.900'	159° 19.852'	10 CY
M	30 scattered wooden pallets	21° 58.015'	159° 19.856'	10 CY
N	2 - Rusted cars	21° 58.021'	159° 19.864'	10 CY
O	Debris pile	21° 58.075'	159° 19.880'	5 CY
P	Dump, campsite, cars, debris, misc trash (large area)	21° 58.233' - 21° 58.165'	159° 19.858' - 159° 19.865'	30 CY
Q	Old antenna site: concrete slabs falling into the ocean, fill dirt, rock, trash	21° 58.479'	159° 19.935'	100 CY
R	Dump site - miscellaneous trash, cars, debris	21° 58.933'	159° 20.032'	40 CY
S	Concrete pad, lots of trash and debris	21° 59.252'	159° 20.013'	10 CY
T	Ahukini Camp area, appliances, cars, fill dirt, trash, concrete (large area)	21° 59.237' - 21° 59.278'	159° 20.013' - 159° 19.994'	30 CY
U	Concrete slabs, trash and debris	21° 59.481'	159° 19.857'	20 CY
V	Three concrete drains running from old Ahukini Camp site toward ocean	21° 59.497'	159° 19.854'	5 CY
1	Radar site - 500 gal AST	21° 58.482'	159° 20.021'	N/A
2	DOT-A Staging area (on top of historic landfill site)	21° 58.966'	159° 20.075'	N/A
3	Large area of fill over historic dump site. Green waste, appliances, glass, metal, construction debris, etc. The site appears to have been burned and occasionally covered. Dump site is eroding with debris falling into the ocean.	21° 58.724' - 21° 58.972'	159° 20.014' - 159° 20.071'	50,000 to 100,000 CY

5.0 INTERVIEWS

This section documents interviews conducted in the process of conducting this Phase 1 ESA. All interviews conducted for this assessment were conducted by Benjamin Owen of KEI.

Chris Laletin, Director of Operations, Kauai Marriott Hotel
Mr. Laletin was interviewed regarding any potential environmental concerns that might impact the construction of the Lihue Bike Path as it passes through the Kauai Marriott property. Mr. Laletin indicated that, due to the constraints of hotel operations and guest traffic, the bike path would have to pass through a relatively undeveloped area where there is little infrastructure and no environmental concerns.

Kevin Showe
Kevin Showe is a part owner of the Kauai Lagoons development, which owns parcel 102, and a former partner in the Kauai Marriott. Repeated attempts were made to interview Mr. Showe by telephone. Several voicemail messages were left for him, with no response.

Michael Goshima, DOT-A Environmental Manager for Kauai District
Mr. Goshima was contacted regarding environmental conditions along the shoreline boundary of the Lihue Airport, including the historic dump site which was identified during the sight inspection. Mr. Goshima was aware of the site, but referred all questions to Joe Balignasay, who he said was much more familiar with DOT-A's plans to stabilize the landfill and clean up the area.

Joe Balignasay, Environmental Health Specialist, DOT-A
Mr. Balignasay was interviewed regarding the historic dump site identified along the shoreline to the east of the Lihue Airport. Mr. Balignasay was aware of and familiar with the site. He indicated that the dump site was the original Lihue Dump, and that the site pre-dates World War Two. According to Mr. Balignasay, DOT-A has a plan to stabilize the dump site and stop it from eroding into the ocean. Mr. Balignasay explained that during the process of developing this plan, he consulted with the State Department of Health, and was told that the site is not regulated by State landfill regulations since the site pre-dates statehood.

Todd Nichols. DOH-SHWB
A request was made to review any records on file at the State Department of Health's Solid and Hazardous Waste Branch in Honolulu regarding the historic dump site identified on Parcel 008. Todd Nichols of DOH-SHWB, was contacted regarding this request. Mr. Nichols indicated that he had heard rumors of this site, but that the SHWB office has no record or it. Mr. Nichols further indicated that the SHWB may not have any jurisdiction over this site due to its age, but deferred to the Branch Director for clarification on that issue.

In response to a request for documents filed by KEI with the SHWB office, Mr. Nichols eventually produced a file identifying the site as the Ahukini Landfill, a former County landfill that was issued a temporary DOH permit in 1975. The site is listed by DOH on the Hawaii

Inactive Landfills database. Mr. Nichols had not been previously aware of the existence of this database.

Mr, Nichols was also interviewed regarding the presence of numerous abandoned vehicles along the coastline. He indicated that SHWB would require that these abandoned vehicles be removed.

Lynn Bailey DOH-HEER
A request was also made to review any records on file at the State Department of Health's Hazard Evaluation and Emergency Response Office in Honolulu regarding the historic dump site identified on Parcel 008. Lynn Bailey, a contractor assisting DOH-HEER, was contacted regarding this request. Ms. Bailey indicated that the HEER office has no record of this site.

6.0 FINDINGS AND OPINION

This section lists findings of fact, which may include known or suspected recognized environmental conditions, historical recognized environmental conditions, and *de minimis* conditions associated with the subject properties that have been identified during the course of this Phase I ESA, as well as KEI's assessment of the potential impact on the subject properties from the conditions identified here.

FINDING: A historic landfill is located along the shoreline to the east of the Lihue Airport. This dump site, known as the Lihue Open Dump or Ahukini Landfill, covers an estimated 5-10 acres and contains an estimated 50,000 to 100,000 CY of solid waste, which is gradually eroding into the ocean.

OPINION: The existence of this unregulated dump site is considered a recognized environmental condition. However, the site may be exempt from State environmental regulations, and may not violate any federal regulations. Whether or not the site contains any hazardous materials is unknown.

FINDING: A second historic dump site was also noted further south, where debris had apparently been used as fill material. This site contains an estimated 200 cubic yards of solid waste.

OPINION: The existence of this smaller dump site is also considered a recognized environmental condition. Again, the site may be exempt from State environmental regulations, and may not violate any federal regulations. Whether or not the site contains any hazardous materials is unknown.

FINDING: Numerous abandoned vehicles and other miscellaneous debris were identified along the shoreline between Ninini Point and Ahukini Point. The total quantity of debris at these sites (listed in Table 8) is estimated to be between 350 and 400 cubic yards of material.

OPINION: The presence of this debris is considered a recognized environmental condition. Although the presence of abandoned vehicles and other trash does not necessarily

which was a port facility used by the local sugar mills. Ahukini Landing was also by the military during World War Two.

- The historic landfill site along the shoreline is the original Lihue Dump, also known as Ahukini Landfill. The landfill was officially closed in 1975, however the use of this site as an open dump likely predates World War Two. Due to its historic nature, this site may be exempt from State environmental regulation.

- Past construction efforts in the vicinity of the Lihue Airport have been complicated by unexpected encounters with unregistered USTs, abandoned cesspools and undocumented wells filled with petroleum product.

In summary, the following environmental conditions have been identified in association with the subject properties:

- A historic landfill was identified along the shoreline to the east of the Lihue Airport. This dump site covers an estimated 5-10 acres and contains an estimated 50,000 to 100,000 CY of solid waste, which has never been characterized. The existence of this unregulated dump site is considered a recognized environmental condition.

- A second historic dump site containing an estimated 200 cubic yards of solid waste was also noted further south. The existence of this site is also considered a recognized environmental condition.

- Numerous abandoned vehicles and other miscellaneous debris were identified along the shoreline between Ninini Point and Ahukini Point. The total quantity of debris at these sites is estimated to be between 350 and 400 cubic yards. The presence of this debris is considered a recognized environmental condition.

- The historical presence of a permanent laborer's camp on Parcel 160 is considered a historic recognized environmental condition.

No other recognized environmental conditions or historical recognized environmental conditions have been identified in association with the subject properties during the process of completing this Phase 1 Environmental Site Assessment.

8.0 SIGNATURE

This Phase I Environmental Site Assessment was performed by Benjamin Owen of Kauai Environmental, Inc., a Registered Environmental Assessor (CA Certification # 08030). A copy of Mr. Owen's qualifications is included in Appendix E. Mr. Owen performed the site reconnaissance and interviews personally and performed or supervised and reviewed all remaining elements of this Phase 1 ESA.

Benjamin Owen, MS, REA — Date 2/4/08

9.0 REFERENCES

American Society for Testing and Materials (ASTM); *"Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process,"* ASTM 2005 Standard: E 1527-05

Environmental Data Resources, Inc. (EDR); *Environmental Database Search Results for Lihue Bike Path Properties, Aukele St., Lihue, HI* (December 20, 2007).

EDR; *Historical Topographic Map Report for Lihue Bike Path Properties, Aukele St., Lihue, HI* (December 20, 2007).

EDR; *Sanborn Map Report for Lihue Bike Path Properties, Aukele St., Lihue, HI* (December 20, 2007).

Masa Fujioka & Associates; *Hazardous Materials Survey, Lihue Airport Master Plan Improvements* (September. 2006).

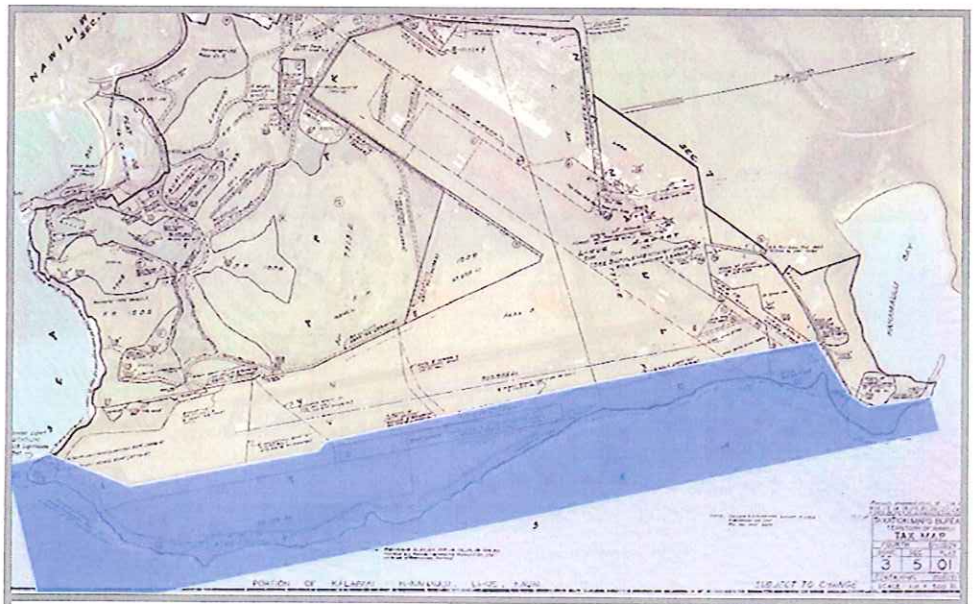
Sato, Ikeda, Paeth, Smythe, and Takehiro; *Soil Survey of the Island of Hawaii, State of Hawaii* (December, 1973).

U.S. Environmental Protection Agency; *All Appropriate Inquiries Final Rule* (40 CFR part 312).

Wilson Okamoto Corporation; *Draft Environmental Impact Statement for Lihue Airport Improvements* (January, 2007).

APPENDIX A:

FIGURES



Environmental Site Assessment
Proposed Alignment of Likue Bike Path,
Nawiliwili Bay to Ahukini Point
February 2008

Figure 1: Properties Included in This Assessment
Source: Hawaii State Tax Key Map,
Hanamaulu, Lihue, Kauai

e Path,

Figure 2: GPS Locat

Environmental Site Assessment
Proposed Alignment of Lihue Bike Path,
Nawiliwili Bay to Ahukini Point
February 2008

Figure 3: Location of Historic Landfill Site
Photo Source: GoogleEarth

APPENDIX B:

PHOTOGRAPHS

Photo 1: Perimeter road and security fence along eastern edge of Lihue Airport.

Photo 2: View of Lihue Airport drainage culvert as seen from perimeter road.

Photo 3: Topsoil stored in DOT-A staging area on top of historic landfill site.

Photo 4: Asphalt and rock stored in DOT-A staging area.

Photo 5: Typical campsite area amongst trees along coastline with debris, abandoned vehicles, etc.

Photo 7: Remnants of vehicle abandoned along coastline.

Photo 6: Remains of abandoned vehicles that have been burned in place along coastline.

Photo 8: Green waste debris and thick blanket of pine needles limits visual inspection of many coastal areas .

Photo 9: Historic landfill site along coastal bluff is eroding into the ocean.

Photo 10: Buried debris at historic landfill site is up to 40 feet thick along coastline.

Photo 11: Beach at base of historic landfill site is littered with eroding debris.

Photo 12: Eroding face of historic landfill extends for more than one quarter mile along shoreline of Pacific Ocean..

APPENDIX C:

SANBORN FIRE INSURANCE MAP REPORT

Certified Sanborn® Map Report

Sanborn® Library search results
Certification # 06C9-4BE6-9EF2

Lihue Bikepath
Aukele St.
Lihue, HI 96766

Inquiry Number 2105496.3

December 20, 2007

EDR® Environmental
Data Resources Inc

The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Certified Sanborn® Map Report

12/20/07

Site Name:	**Client Name:**
Lihue Bikepath	Kauai Environmental
Aukele St.	P.O. Box 1280
Lihue, HI 96766	Kilauea, HI 96754
EDR Inquiry # 2105496.3	Contact: David Gerow

EDR® Environmental
Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Kauai Environmental were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name:	Lihue Bikepath
Address:	Aukele St.
City, State, Zip:	Lihue, HI 96766
Cross Street:	
P.O. #	NA
Project:	Lihue Bikepath
Certification #	06C9-4BE6-9EF2

Sanborn® Library search results
Certification # 06C9-4BE6-9EF2

UNMAPPED PROPERTY

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APPENDIX D:

HISTORIC TOPOGRAPHIC MAP REPORT

EDR Historical Topographic Map Report

Lihue Bikepath
Aukele St.
Lihue, HI 96766

Inquiry Number: 2105496.4

December 20, 2007

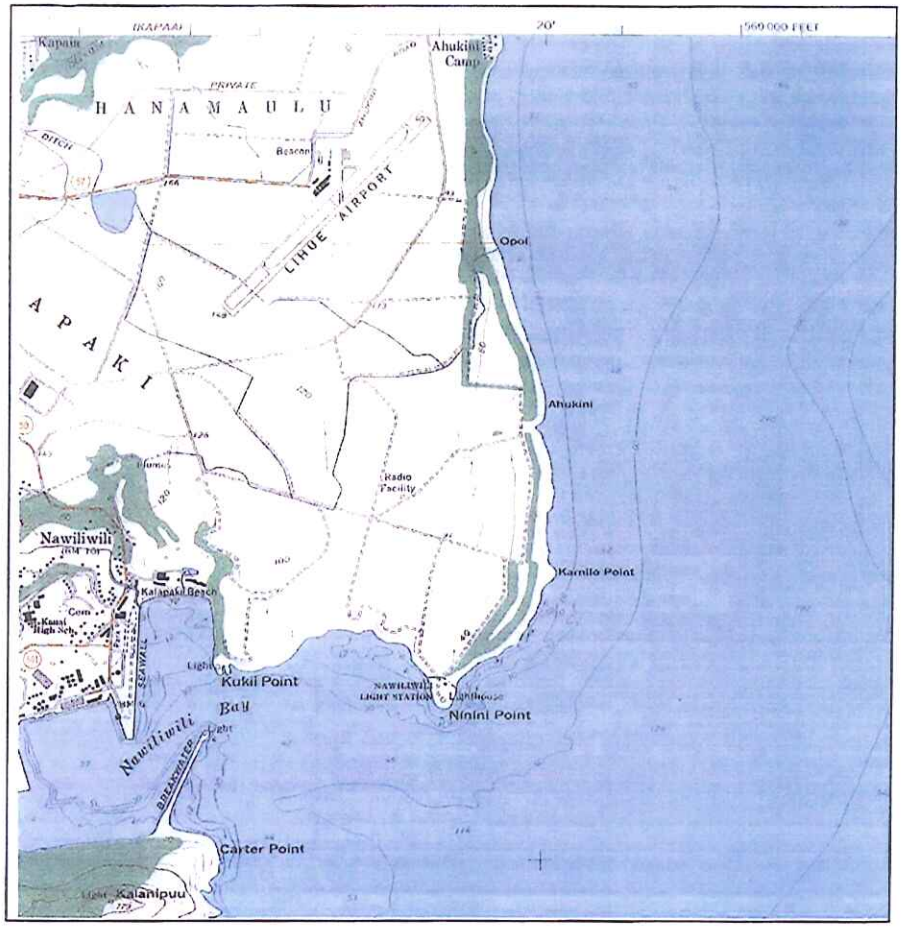
The Standard in Environmental Risk Information

440 Wheelers Farms Rd
Milford, Connecticut 06461

Nationwide Customer Service

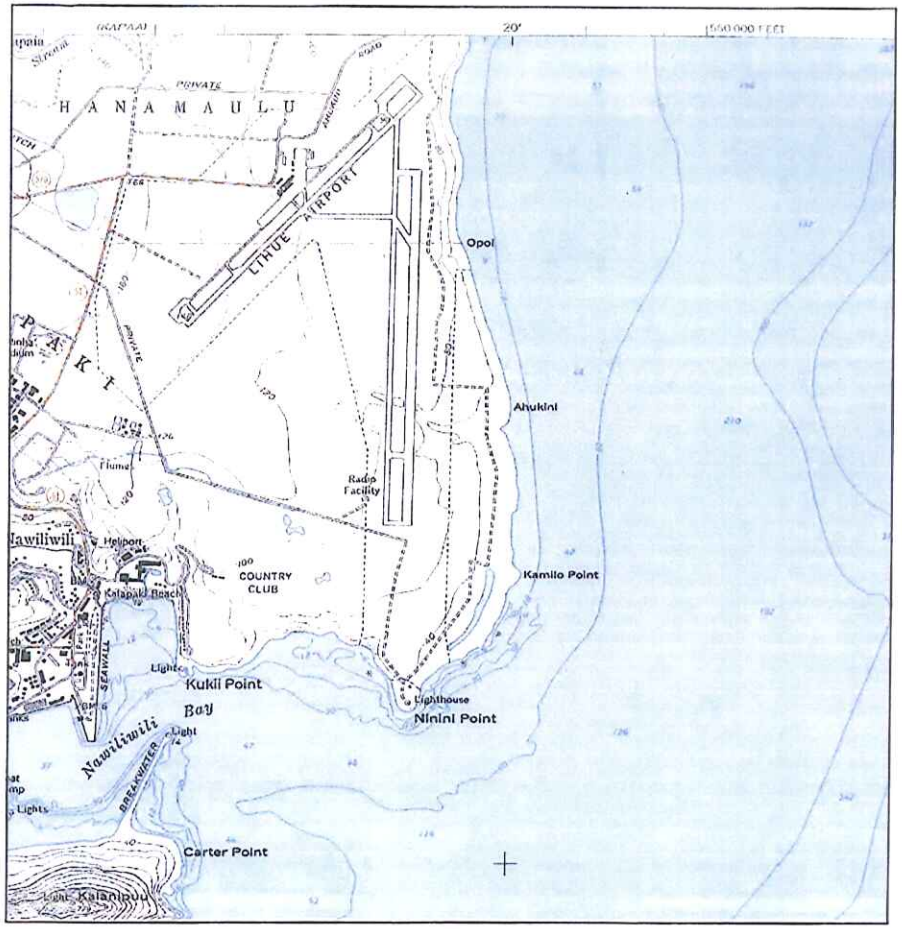
Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Historical Topographic Map



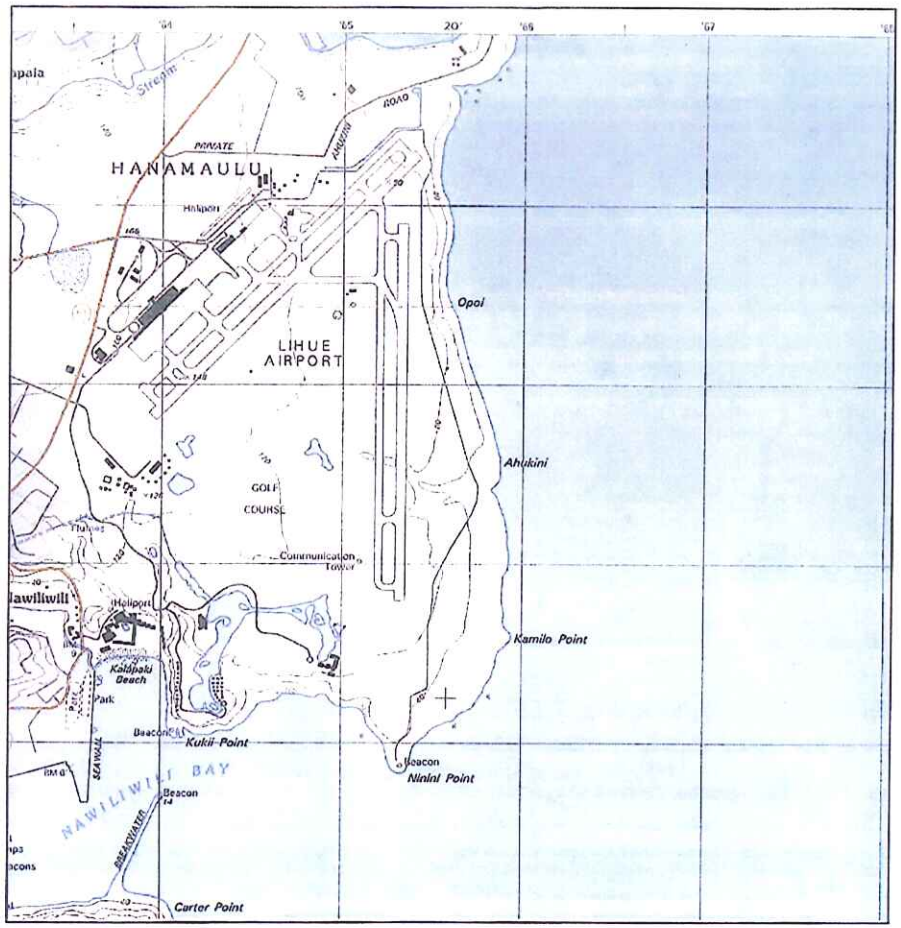
N	TARGET QUAD		SITE NAME:	Lihue Bikepath	CLIENT:	Kauai Environmental
	NAME:	LIHUE, HI	ADDRESS:	Aukele St.	CONTACT:	David Gerow
	MAP YEAR:	1963		Lihue, HI 96766	INQUIRY#:	2105496.4
	SERIES:	7.5	LAT/LONG:	21.9715 / 159.332	RESEARCH DATE:	12/20/2007
	SCALE:	1:24,000				

Historical Topographic Map



N	TARGET QUAD		SITE NAME:	Lihue Bikepath	CLIENT:	Kauai Environmental
	NAME:	LIHUE, HI	ADDRESS:	Aukele St.	CONTACT:	David Gerow
	MAP YEAR:	1983		Lihue, HI 96766	INQUIRY#:	2105496.4
	SERIES:	7.5	LAT/LONG:	21.9715 / 159.332	RESEARCH DATE:	12/20/2007
	SCALE:	1:24,000				

Historical Topographic Map



N	TARGET QUAD	SITE NAME: Lihue Bikepath	CLIENT: Kauai Environmental
	NAME: LIHUE, HI	ADDRESS: Aukele St.	CONTACT: David Gerow
	MAP YEAR: 1996	Lihue, HI 96766	INQUIRY#: 2105496.4
		LAT/LONG: 21.9715 / 159.332	RESEARCH DATE: 12/20/2007
	SERIES: 7.5		
	SCALE: 1:24,000		

APPENDIX E:

QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL

BENJAMIN OWEN, MS, REA

Project Manager

EDUCATION

- M.S. Marine Science, University of California at Santa Cruz, 1996
- B.A. Anthropology, The University of Chicago, 1992

ACTIVE REGISTRATIONS

- AHERA Asbestos Inspector
- AHERA Asbestos Project Designer
- Registered Environmental Assessor

PROFESSIONAL EXPERIENCE

Mr. Owen has over 10 years experience in chemistry, toxicology, environmental science and industrial hygiene. His background includes trace metal and trace organic sampling and analysis, sediment toxicology, project management, hazardous materials assessments and occupational health and safety.

Since joining Kauai Environmental in 2002, Mr. Owen has gained considerable experience in the field of industrial hygiene, performing numerous asbestos inspections and hazardous materials surveys throughout the state; conducting environmental site assessments in residential, commercial, and industrial settings; designing, managing and monitoring asbestos abatement projects, and writing emergency response, environmental protection, and health and safety plans for various construction, demolition, and remediation projects.

PROJECT EXPERIENCE

Statewide Airports Asbestos Inventory for DOT-Airports, with R.M. Towill Corporation. Mr. Owen is the assistant project manager and for this effort to identify and inventory all asbestos containing materials in all DOT-Airports buildings. Under this ongoing project KEI has reviewed and verified historical inspection data, surveyed DOT-A facilities statewide, created a GIS database to be linked to DOT-A's GIS system, and assisted with abatements, management and planning, and operations and maintenance as related to asbestos containing materials. Mr. Owen is responsible for coordinating and performing all inspections and maintaining the GIS database.

Risk Assessment and Emergency Response, International Arrivals Building, Honolulu International Airport. When asbestos-containing materials were released in the IAB due to heavy rains in the winter of 2003-'04, Kauai Environmental was called upon to manage the situation under the DOT contract listed above. Kauai Environmental coordinated emergency abatements of the damaged materials, performed a human health risk assessment for the entire building and designed an emergency response program to minimize any future releases of asbestos fibers.

Sand Island WWTP Site Investigation, City and County of Honolulu. Mr. Owen coordinated this extensive site investigation to identify subsurface contamination of soils to be disturbed during the Primary Treatment Expansion Project. The project required sampling soils and groundwater at 150 locations with analysis for a wide variety of potential contaminants.

Ewa Mill Environmental Site Remediation, City and County of Honolulu. Mr. Owen supervised remediation field work at this historic sugar mill and mixed use industrial site. The project included removal and disposal of lead and PCB contaminated soils, air monitoring, subsurface investigations, excavation of buried waste drums, closure and removal of sumps, ASTs and USTs. Mr. Owen helped develop and implement a health and safety program for the project, and compiled an extensive report documenting all environmental work and results of all sampling for submission to DOH.

Hazardous Materials Surveys Mr. Owen has performed or assisted with many comprehensive hazardous materials surveys for facilities undergoing demolition and/or renovation, including: Guam Naval Hospital, Guam; Pier 1 Cargo Facility, Honolulu, HI; Frear Hall Dormitory, UH Manoa, Honolulu, HI; Bank of Hawaii, Lihue, Kauai.

Environmental Site Assessments. Mr. Owen is a Registered Environmental Assessor (REA) and has performed over 40 Phase I and Phase II site assessments over the past 5 years.

APPENDIX D

Nāwiliwili Waterfront Park Master Plan

CHERYL LOVELL-OBATAKE
P.O. BOX 366
LIHUE, HAWAII 96766

Nawiliwili Park Master Plan

Community Design Workshop

April 29, 1995

Sponsored by the
Hawaii Chapter of the American Society of Landscape Architects
and the
County of Kauai

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
Division of Parks & Recreation
(808) 241-6668
Fax (808) 241-6409

To: Nawiliwili Park Master Plan Participant
Date: April 18, 1995
From: Carl T. Emura, Park Planner
Subject: Community Design Workshop

First, thank you for your interest in attending this workshop. Members of the Hawaii Chapter of the American Society of Landscape Architects will be assisting us throughout the day. Seven Landscape Architects from Honolulu and five from Kauai have volunteered their services. The Landscape Architects will be divided into four teams. You will be assigned to one of these teams during the workshop.

The focus of the Workshop will be to establish a framework for the park. To do this we will be focusing on developing **Conceptual Bubble Diagrams.** These Conceptual Bubble Diagrams show the relationship between **activity areas and pedestrian and vehicular circulation.** These elements form the basic framework for the park.

The morning session we will focus on generating as many different Conceptual Bubble Diagrams in the time alotted. In the afternoon session we will refine and narrow down to one or two preferred Conceptual Bubble Diagrams. At the end of the day each team will present their preferred Conceptual Bubble Diagrams. As a group we will be selecting two of these preferred Conceptual Bubble Diagrams further development.

Enclosed are the Workshop Schedule, Summary of Community Input, Goals & Objectives and examples of Conceptual Bubble Diagrams from the Poipu Beach Park Master Plan Process. Please review these material prior to attending the workshop.

The workshop will be held at the War Memorial Convention Hall. We will start promptly at 9 am so please come early to sign in. Lunch and refreshment will be provided. Again thank you for your interest in this workshop and I look forward to see you there.

Schedule

8:45 - 9:00	Sign In
9:00 - 9:15	Introductions
√ 9:15 - 9:40	Cheryl Obatake-Lovell
9:40 - 10:00	Carl - Site Analysis Overview
10:00-10:15	Group Introduction/Instructions
10:15-10:45	Work Session I (Community Members Generate as many Bubble Diagrams as they can)
10:45-11:00	Break - Post Schemes
11:00-12:00	Work Session II (Landscape Architects/Community Generate as many Bubble Diagrams)
12:00-12:45	Lunch/Display of Bubble Diagrams
12:45-2:00	Work Session 3 (Landscape Architect/Community narrow down and refine preferred Bubble Diagram)
2:00-2:45	Wrap up period (Time permitting and if bubble diagram is completed, the team may add more details to the plan such trees,
2:45-3:00	Break - Display of Preferred Bubble Diagrams and more Detailed Plans
3:00-4:30	Presentations - (20 mins per group) Open to general public.

Nawiliwili Park Master Plan

Goals & Objectives

4/17/95

1. **The park plan shall reflect the unique character of it's waterfront setting.**
   a. Maintain the park's unique identity to the waterfront, the neighborhood and Kauai.
   b. Enhance views of the park, the surrounding mountains, peninsula and Kalapaki Bay.
   c. Reinforce the waterfront component of the park by using building and plant material appropriate to the site.

2. **Expand recreational opportunities for both residents and visitors of all ages and abilities.**
   a. Provide a range of multi-purpose passive and active water related activities along the waterfront.
   b. Provide multi-use spaces that can accommodate a number of recreational activities.
   c. Provide non-water related recreational activities for the surrounding neighborhood.
   d. Provide park facilities and site furnishing that will complement expanded recreational opportunities.

3. **Preserve, protect and enhance the cultural and environmental aspects of the site.**
   a. Make use of native plants wherever possible.
   b. Promote an understanding of the cultural significance of the site by providing interpretive signage and artwork throughout the site.
   c. Provide a venue for cultural activities such as canoe regattas, Tahiti Fete, and arts and craft fairs.
   d. Protect the beauty and integrity of Nawiliwili Stream.

4. **The park shall be safe and accessible for all people.**
   a. Meet Federal American Disabilities Act (ADA) requirements.
   b. Provide lighting along major vehicular and pedestrian circulations.
   c. Provide access to the stream, ocean and waterfront.
   d. Provide deterrents to reduce car speed within the park.

5. **Provide a setting for a diverse group of people to make use of the park.**
   a. Provide opportunities for visitors to interact with local residents.
   b. Provide a setting that minimizes conflicts between park users and commercial developments.

6. **Improve parking and, pedestrian and vehicular circulation within the park.**
   a. Provide adequate access for public and emergency vehicles.
   b. Encourage integration of park vehicular and pedestrian circulation with the Marriot Hotel, adjacent businesses, the harbor and the surrounding neighborhood.
   c. Provide parking that is easily accessible to the public.

Nawiliwili Park Master Plan
Summary of Community Input
4/17/95

1. **Entry Road Area**
   a. Park Signage
   b. Place Sculpture, Statue or Artwork

2. **Former BMX Track/Newly grassed area and Light Industrial Bldg.**
   a. Locate Playground
   b. Keep open field
   c. Kite Flying area
   d. Provide parking along entry road
   e. Provide a jogging track around the perimeter of park
   f. Locate a Parcourse
   g. Provide a pathway for roller skates
   h. Pursue acquiring adjacent Light Industrial Bldg. property.
   i. Providing mounds along perimeter of park.
   j. Add picnic tables, barbecues
   k. Keep view corridors to ocean open
   l. Add Basketball court
   m. Maintain open grass field for activities such as soccer, football, kite flying, baseball.
   n. Provide pavilions only in areas not blocking ocean view.
   o. Create an amphitheater or outdoor stage with seating on lawn area.

3. **Grass Area nearest to and parallel to seawall**
   a. Add Bathroom and shower facilities.
   b. Create a picnic area.
   c. Add more picnic tables and barbecue pits.
   d. Add lights.
   e. Improve road.
   f. Add horseshoe pits.
   g. Locate parcourse here.
   h. Control and define traffic patterns, deter from driving on grass areas.
   i.

4. **Seawall and unpaved road/parking area**
   a. People fish and dive along seawall.
   b. Paukiki - sister heiau to Kuhoau located near seawall.
   c. Provide access for surfers.
   d. Preserve views.
   e. Provide a stairway at seawall for safe access to water.
   f. Pave road and parking.
   g. Improve entrance road, but maintain a surface which will keep the traffic speed down.
   h. Grade road and place gravel. Don't pave.
   i. Add pedestrian walkway.
   j. Add tables along sea wall to watch surfers.

5. **Area fronting Anchor Cove**
   a. Add Benches.
   b. Add Barbecues.
   c. Bathroom - add lights and connect to sewer line or install septic system.
   d. Provide a staging area for recreation events.
   e. Improve drainage.
   f. It's a good picnic area.
   g. Westin employees often park in parking area.
   h. Preserve Pine Tree Inn.
   i. Prune and maintain Ironwood trees.
   h. Clean up Pine Tree Inn. Maybe replace with something more aesthetic.
   j. Expand parking.

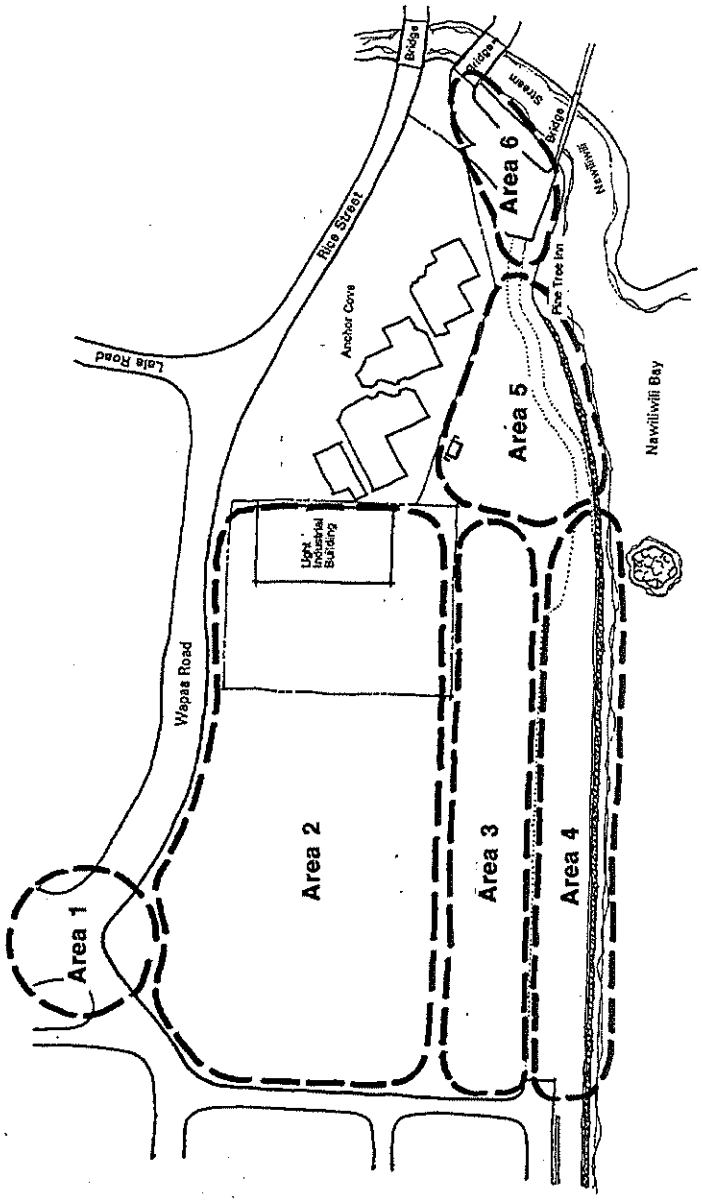
6. **Nawiliwili Stream Area**
   a. Provide stairs down to stream.
   b. Provide a walkway to Marriot.
   c. Stop stream erosion.
   d. Remove buffalo grass.
   e. Stream needs maintenance.
   f. Kids like to body surf at mouth of stream.
   g. Kids like to swim in stream.
   h. Connect park to walkway across bridge with a foot path.

7. **General Comments**
   a. Use native plants including edible plants.
   b. Make it look like it's a cared place.
   c. Create a vision out of what it is now.
   d. Look at the aesthetic of Pine Tree Inn.
   e. Look at what's there and how you can include other people.
   f. Plant Wiliwili Trees. Area named after Wiliwili Trees that use to inhabit area.
   g. Tradewinds blow in direction of seawall.
   h. History and culture of the area should be brought out.
   i. Incorporate opportunities to express the culture.
   j. Queen Liliuokalani landed in Nawiliwili in [illegible]. Incorporate cultural landmarks.
   k. Acquire State land adjacent to park
   l. Provide activities for children, play structures etc.
   m. Add more trash cans and recycling bins
   n. Provide historical and cultural information (flora, fauna)
   o. Add parking pockets throughout the park. Maintain parking by water.
   p. Add minimal lighting.
   q. Obscure view of car/container yard by planting strands of trees.
   r. Improve overall park maintenance.
   s. Do not allow parking next to stream, limit parking to area behind commercial buildings.
   t. Keep park open with no pavilions
   u. Keep existing shoreline as is.
   v. Encourage water related activities.
   w. Keep appearance using local materials.
   x. Provide a waterfront promenade.
   z. Develop park as an amenity for Kauai residents
      1. Nawiliwili needs this park so that it's residents don't have to go to Lihue.
      2. This park is a rich and wonderful cultural and recreational opportunity.
      3. Most people want a venue for community and cultural activities: annual fund raisers, canoe regattas, triathlons, Tahiti Fete, bikini

contests and arts and craft fairs, fishing contest, and surfing and boogie board contest.

4. People what the park to be a live vital place for use by as many people as possible, young and old, locals and tourists alike, with functions for cultural and physical well being.
5. People want to emphasize Hawaiian culture and history within the park. Users also recognize that this approach is a tourist draw.

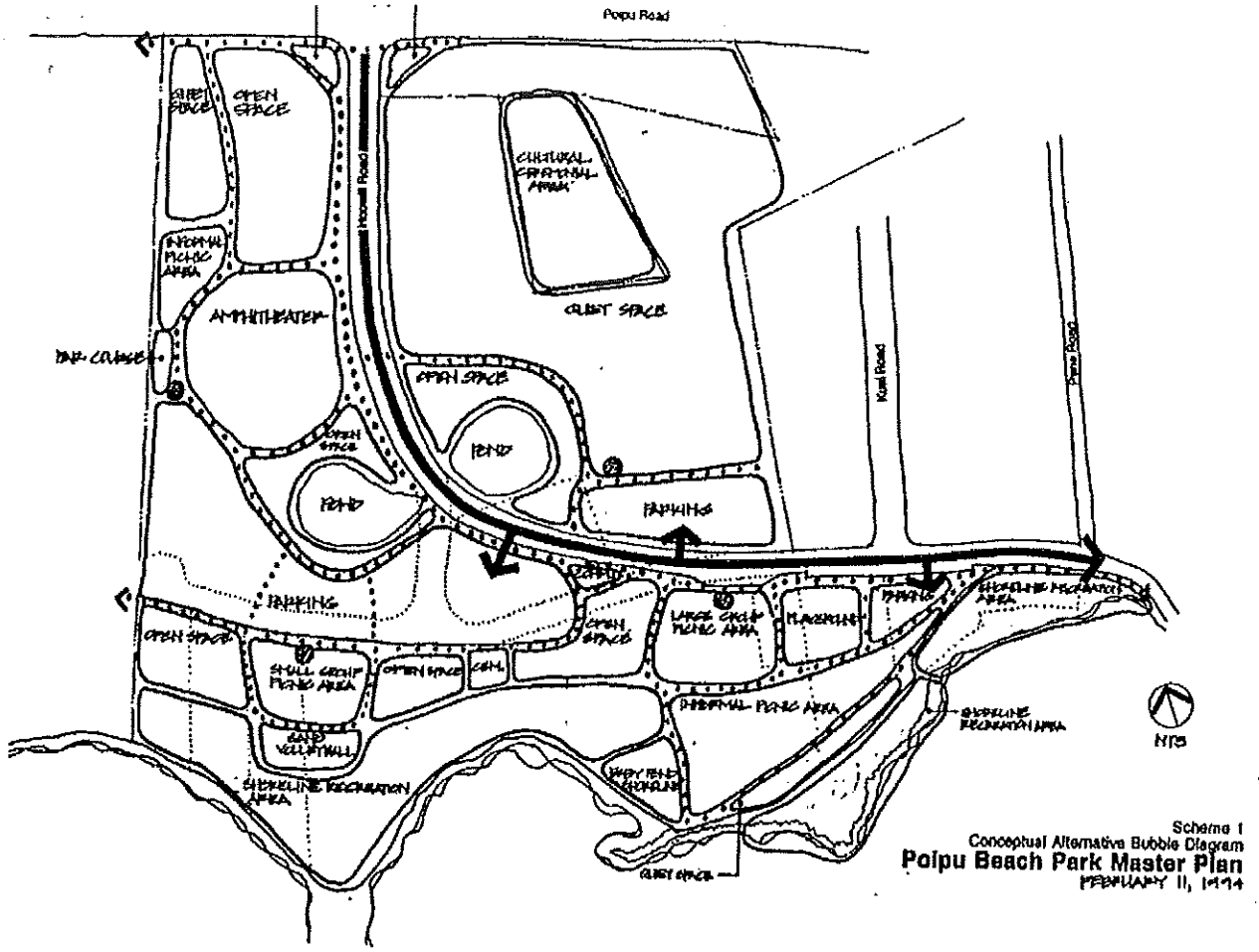
aa. Add bathroom with changing area.
bb. Add automatic irrigation system.
cc. Connect a jogging/bike path that connects up with the Marriot.
dd. Provide a walkway all around the park and over the bridge.



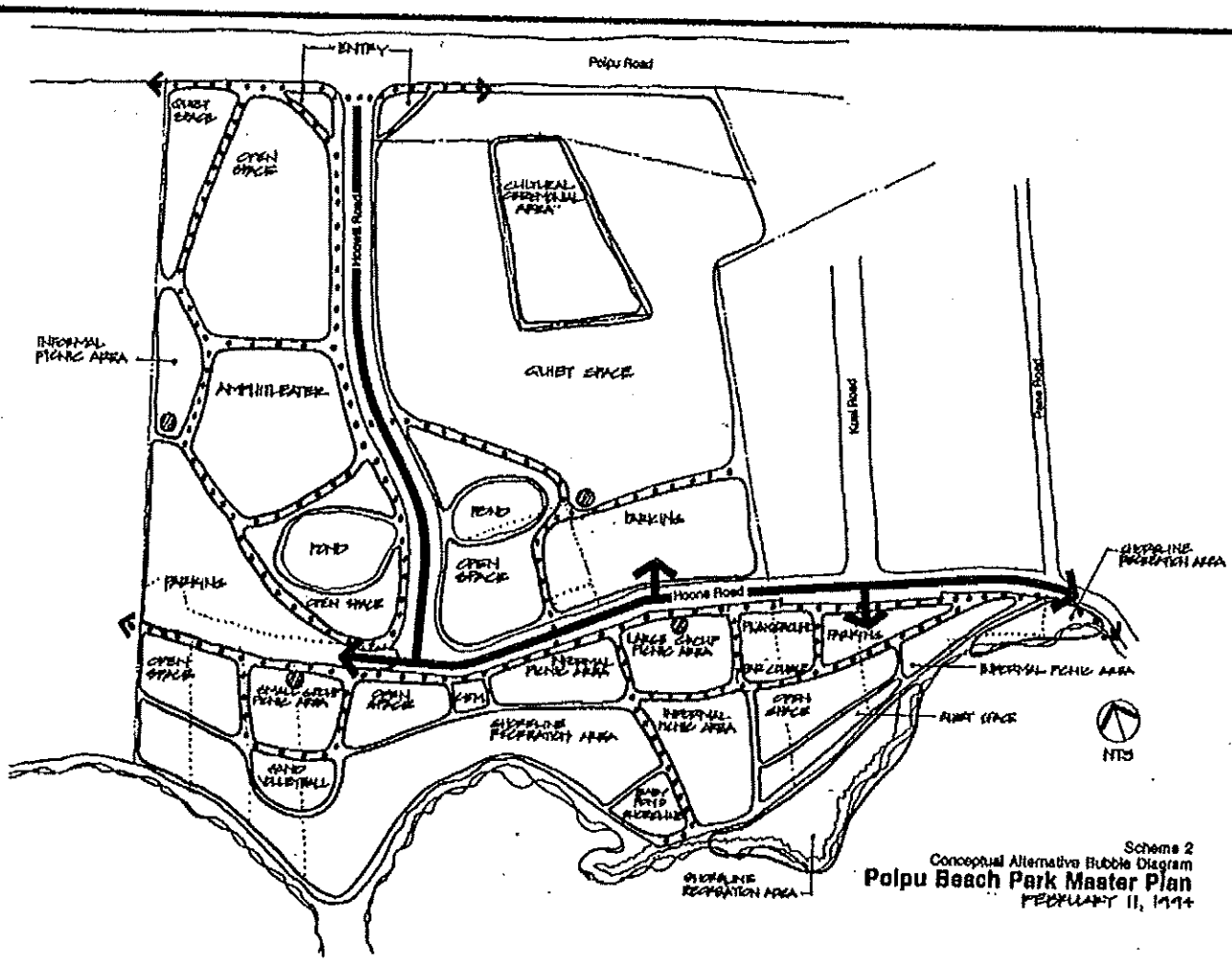
NAWILIWILI WATERFRONT PARK

Nawiliwili Park Master Plan

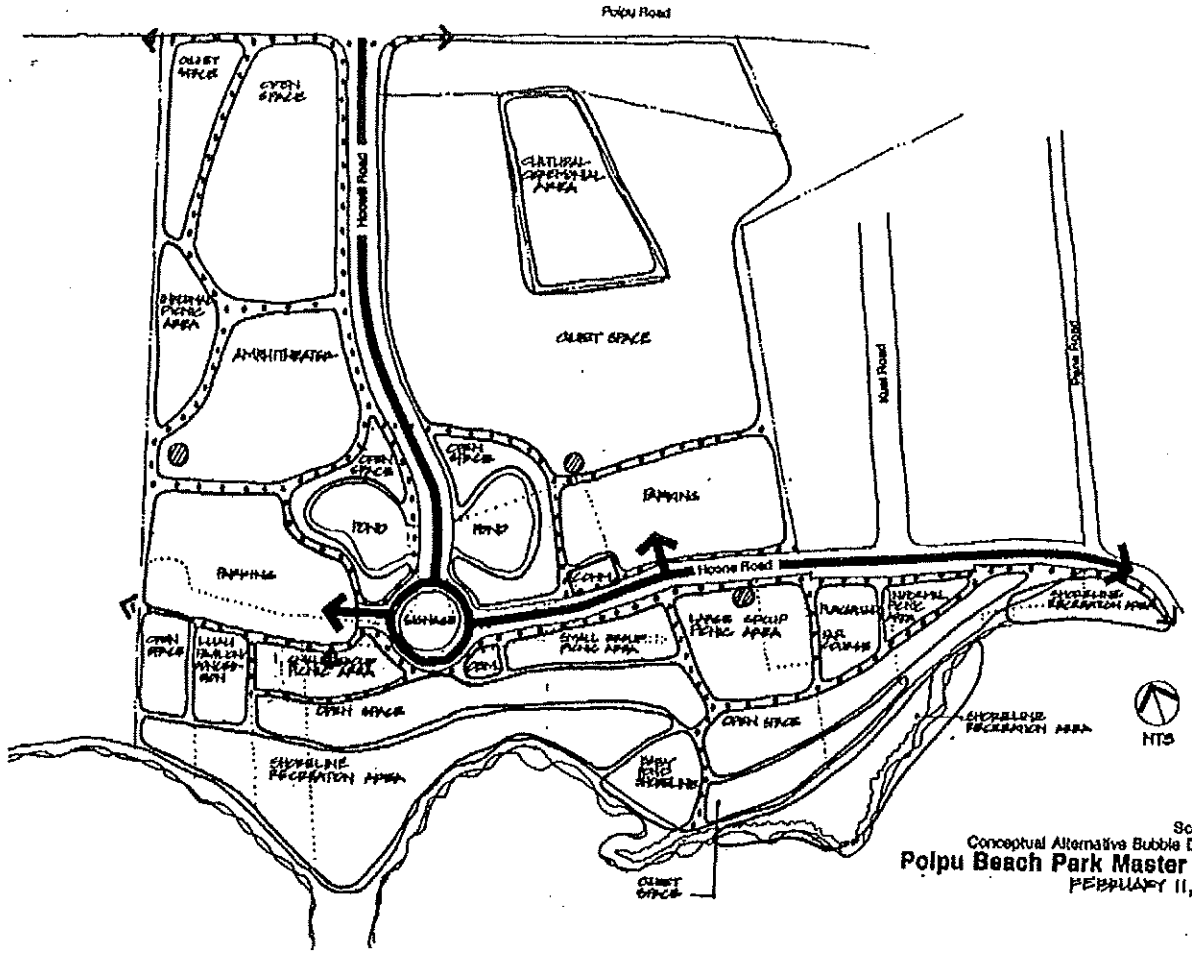
Examples of
Conceptual Diagrams
developed
for
Poipu Beach Park



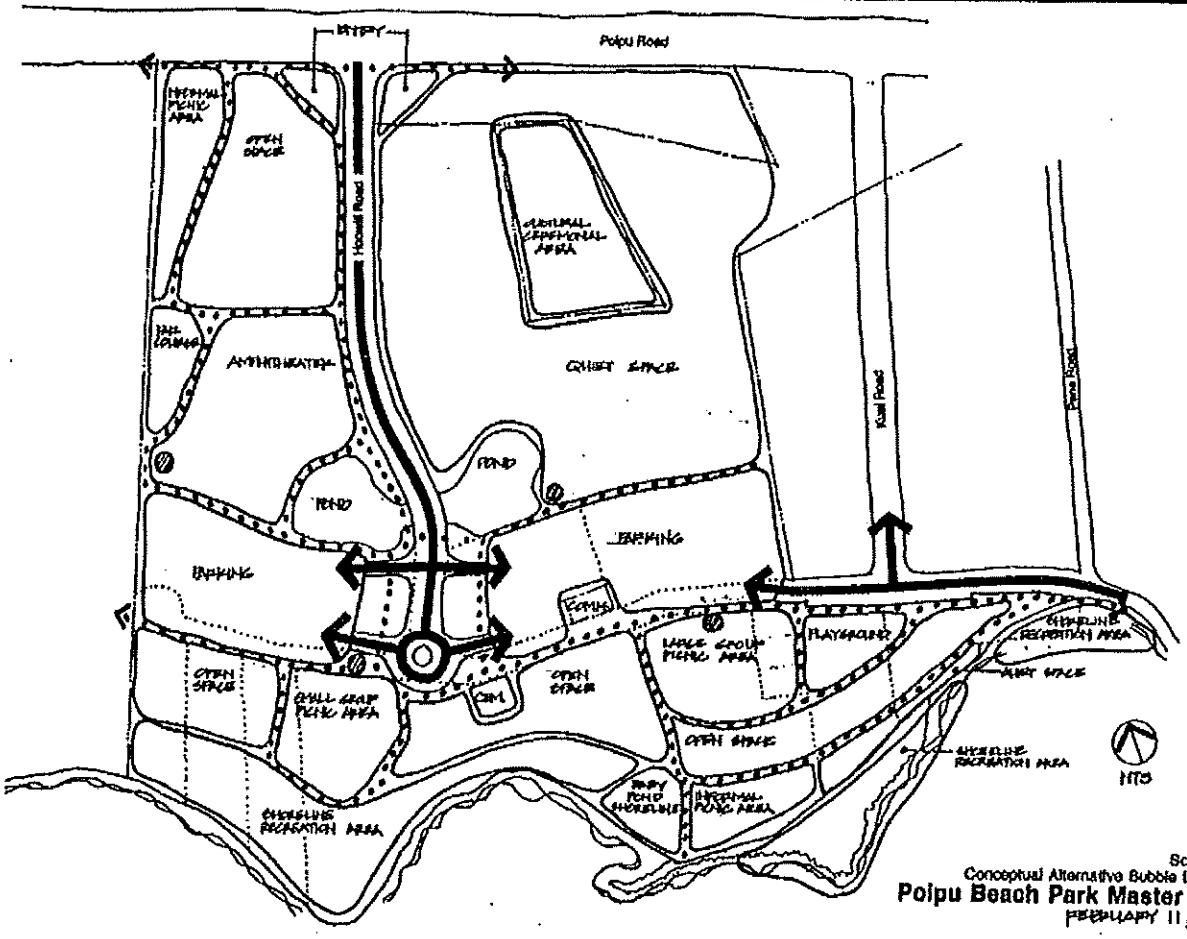
Scheme 1
Conceptual Alternative Bubble Diagram
Poipu Beach Park Master Plan
FEBRUARY 11, 1994



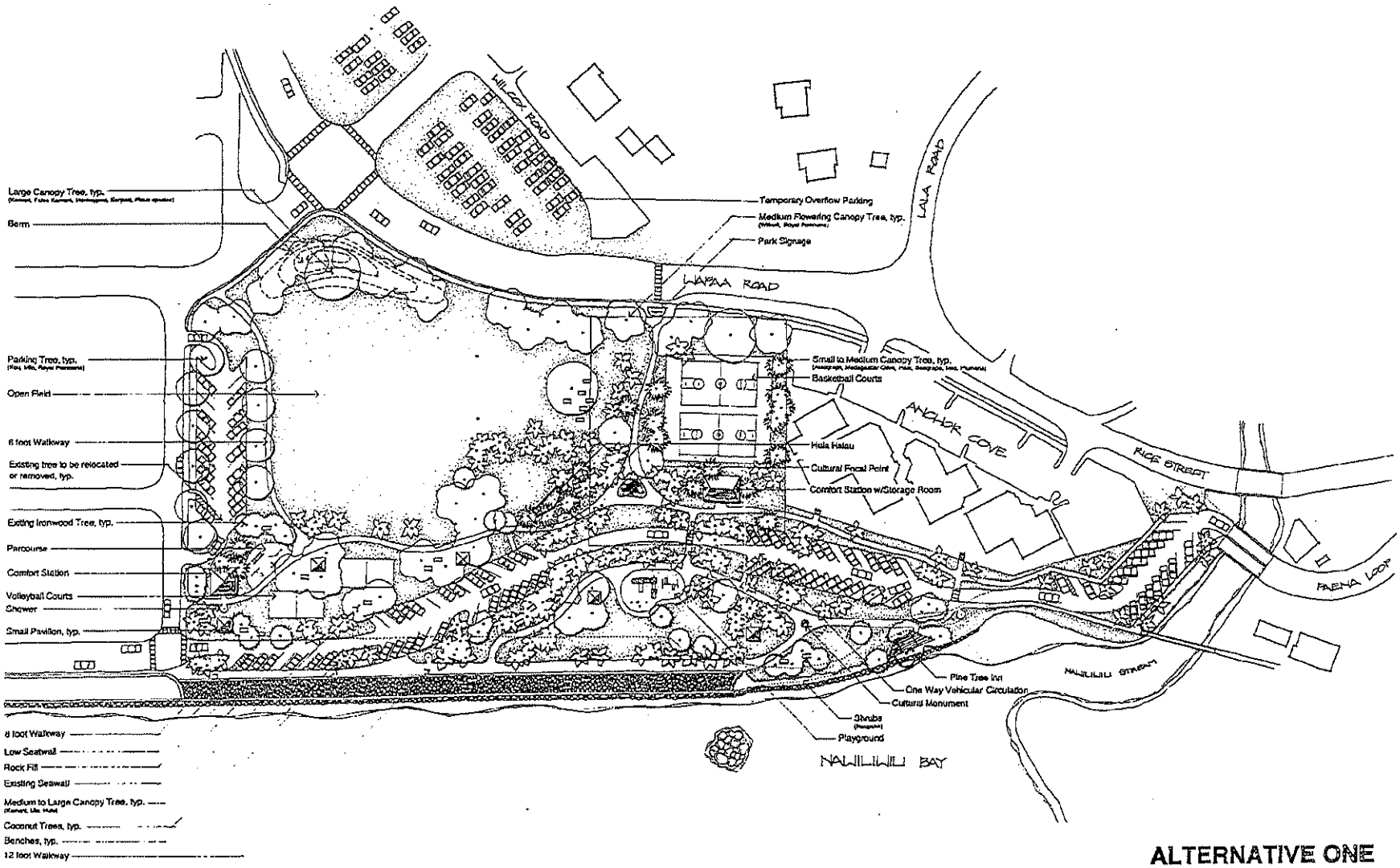
Scheme 2
Conceptual Alternative Bubble Diagram
Poipu Beach Park Master Plan
FEBRUARY 11, 1994



Scheme 3
Conceptual Alternative Bubble Diagram
Poipu Beach Park Master Plan
FEBRUARY 11, 1994



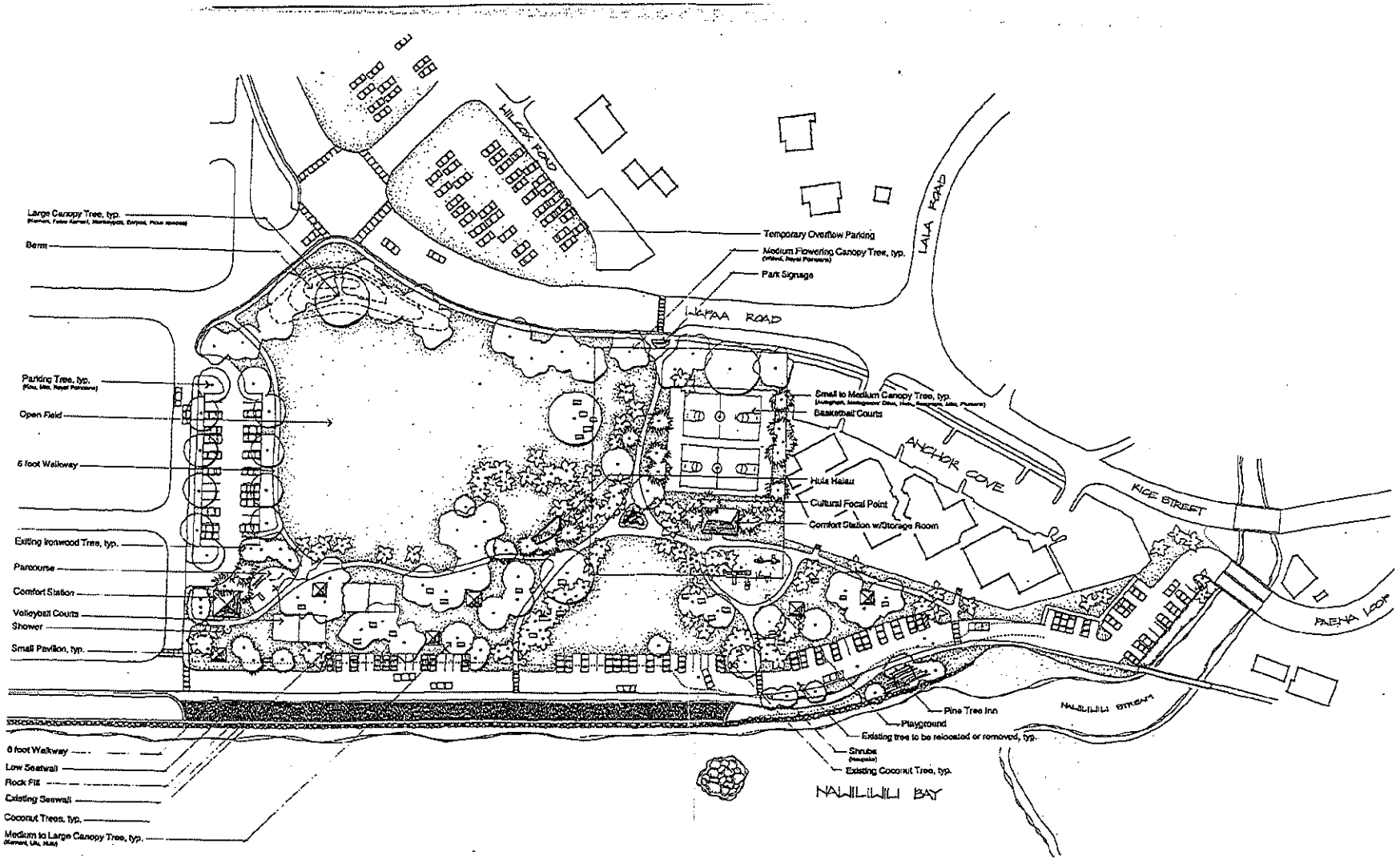
Scheme 4
Conceptual Alternative Bubble Diagram
Poipu Beach Park Master Plan
FEBRUARY 11, 1994



ALTERNATIVE ONE

NAWILIWILI WATERFRONT PARK MASTER PLAN

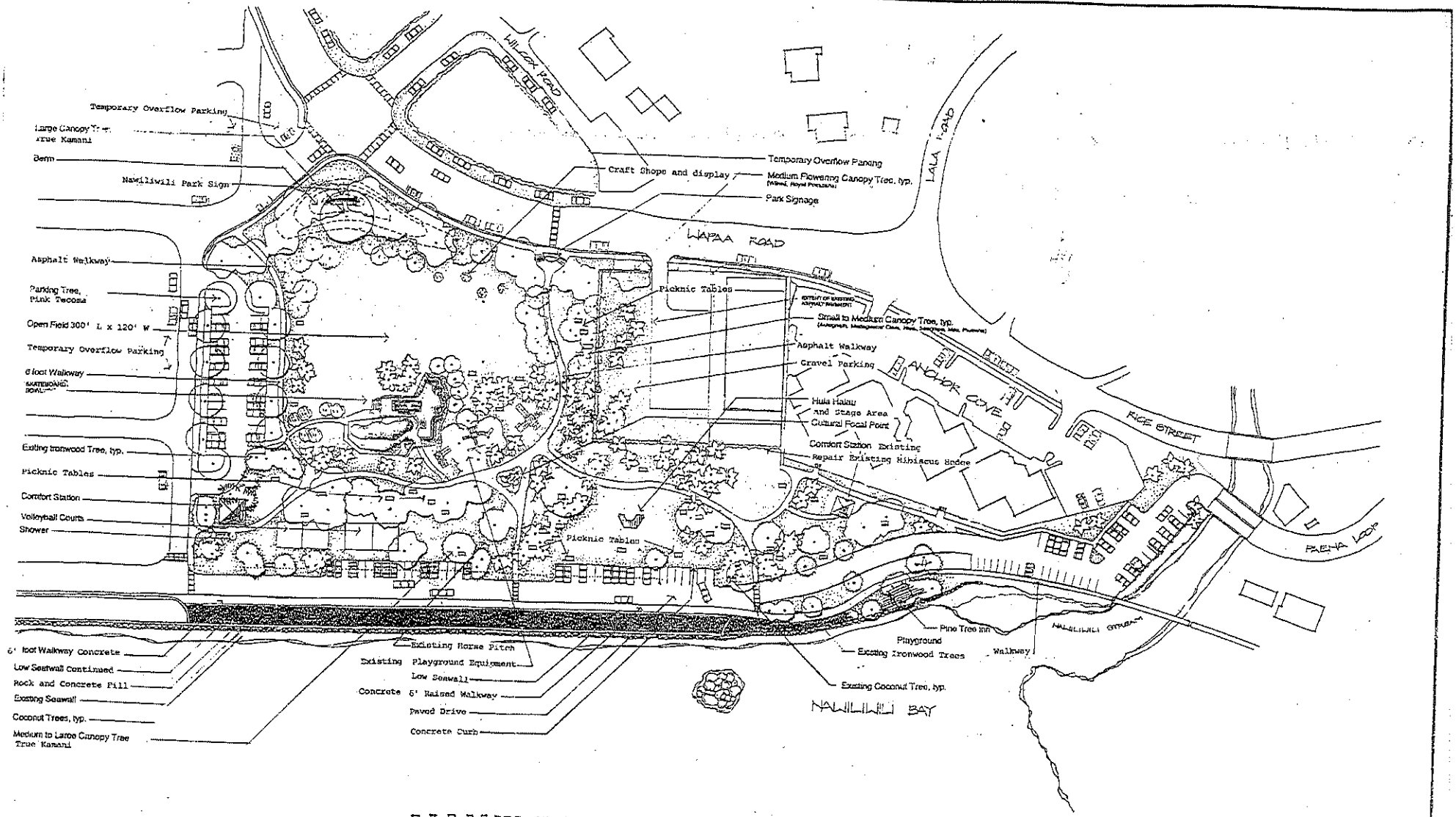
HAWAII CHAPTER OF AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS/COUNTY OF KAUAI



ALTERNATIVE TWO

NAWILIWILI WATERFRONT PARK MASTER PLAN

HAWAII CHAPTER OF AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS/COUNTY OF KAUAI



NAWILIWILI WATERFRONT PARK MASTER PLAN

HAWAII CHAPTER OF AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS/COUNTY OF KAUAI

REVISED 3-1699

APPENDIX E

Coastal Path Historical and Cultural Committee Draft Report

DRAFT

Imagine...eighteen miles of pristine COASTLINE retained in perpetuity for the people of Kaua'i.

Imagine...families leisurely bicycling, walking, jogging, and rollerblading in a safe, peaceful environment.

Imagine...the physically challenged enjoying an experience of a lifetime on a safe, accessible, and nurturing adventure down a tropical coastline.

Imagine...world class events such as triathlons and marathons helping to stimulate Kaua'i's economy through health tourism opportunities.

Imagine...experiencing a journey through the past both culturally and historically that offers true insight into Kaua'i, its heritage, and its people. Imagine all this and more. You have just set the foundation for Ke Ala Hele Makāʻlae, Kaua'i's Health and Heritage Corridor.

With seeds planted some twenty years ago, the concept of a bikeway/walkway along portions of the eastern coastline of Kaua'i has led to this community effort. Recently, with the purchase of approximately 6,000 acres in the Kealia Ahupua'a, the Kealia Plantation Company has offered to donate approximately 70 acres along the coastline to the County of Kaua'i. This opportunity has created a span of miles that is now in public ownership.

The community has engaged in an effort to formalize a proposal for funding and a plan for incremental implementation of this project. Four committees have been established to deal with the various facets of this project.

The first committee is the Development Committee that set guidelines for the surface and construction standards to be used and the alignment and width of the path. This committee also formulated recommendations for access points and increments of implementation.

The second committee is the Usage Committee that pinpointed available use(s) for this type of project and defined sections where multiple use(s) would be feasible. The committee also defined rules regarding use of the pathway, which excludes commercial activity. Instructional and logistical signage issues, traffic flow, and special considerations were also tasked to this committee.

The third committee is the Historical and Cultural Committee. The task of this committee was to define the historical and cultural areas along the path. After identification, each area was designated as either appropriate or not appropriate depending on the sacred nature of the site and its need to remain a

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private site for Native Hawaiian people. The committee determined the types and categories of signage for locations that were deemed to be appropriate and identified logistical needs.

The last committee is the Finance Committee that is the committee that will continue through the implementation of the project. Through feedback cost assessment done by the other three committees, an overall cost was established. Sources for funding were identified and categorized into various areas based on grant application requirements. Chronological funding needs and costs of incremental implementation were determined.

The following sections will elaborate the work product formulated by a highly energized community effort. Each committee's work will give broader insight into the overall project. E komo mai, please come and join us on our journey to Ke Ala Hele Makāʻlae, the Kaua'i Health and Heritage Corridor.

DRAFT

DEVELOPMENT COMMITTEE

PARTNERSHIP LISTING:

The Development Committee consists of the following participants:

Organization:	Name:
Aston Kauai Beach Villas	Sandi Kato-Klutke
Burial Council	Cheryl Lovell-Obatake
Esprit de Corps Riding Academy	Dale Rosenfeld
Ho'okipa Network	Puanani Rogers
Kauai Association of Architects	Colleen Romano
Kauai County Parks and Rec.	Bernard Carvalho
Kauai County Planning Dept.	Bryan Mamaclay
Kauai County Public Works Dept.	Ian Costa
Kauai County Public Works Dept.	Ken Kitabayashi
Kauai Lagoons Resort Co.	Walter Agena
Kealia Plantation Co.	Michele and Justin Hughes
Lihue Airport	Stan Sekimoto
Malama O Ho'opili	Stanley Oana, Jr.
Niu Pia Farms	David Pratt
Kapaa Business Association	Ann Leighton
Onipa'a Kealia	Kane Pa
Outrigger Kauai Beach Hotel	Geoffrey Graf
Outrigger Kauai Beach Hotel	Jaye Gayagas Youn
State of Hawaii	Senator Jonathan Chun
State Dept. of Hawaiian Home Lands	Tom Contrades
State Dept. of Land and Natural Resources	Mike Laureta
State Dept. of Transportation	Steve Kyono
	Linda Hunt
	Robert Measel, Jr.

SURFACE:

Various surfacing materials such as concrete, glassphalt, Dinoflex, and asphalt were researched, and asphalt was found to be the most cost-effective material.

The planned bikeway/walkway will be a 10-foot path offering enough room

DRAFT

for its proposed uses (excluding bridle paths). Bridle paths, where applicable or viable, would exist next to or be adjacent to Ke Ala Hele Makāalae, the Kaua'i Health and Heritage tourism corridor.

Information regarding the design and cost per mile of asphalt for various widths of the path are shown in Exhibit A and Exhibit B. In the event that funding becomes available for recycling alternatives, we would like to see certain sections of Ke Ala Hele Makāalae surfaced with Dinoflex which is made from recycled tires or base coursed with glassphalt which is a mixture of pulverized glass and asphalt.

ALIGNMENT:

The alignment of the path along the eastern coastline of Kauai from Nawiliwili to Anahola can be seen in Exhibit C.

Ke Ala Hele Makāalae starts at Nawiliwili Park, continues along Rice Street, and turns right onto Kapule Highway. The path continues three hundred yards on Kapule Highway and turns right at the entrance to Kauai Lagoons which is located across from Vidinha Stadium. From here until Ninini Point, there is an existing bike and pedestrian facility.

At Ninini Point, the path begins its coastal trek, utilizing areas next to old plantation roadway alignments until it intersects with Ahukini Road and its adjacent harbor.

The path continues through the old Bertrand Estate along a short section of plantation road and turns right following the old railroad alignment that descends along the mountainside until it reaches the Hanamaulu River estuary. At this point, the path would cross the railroad bridge and begin its ascent up the hillside on the northern end of Hanamaulu Park.

The path continues along the old plantation roadway in a northerly direction until it connects with the old railroad alignment which crosses a marshy area engulfing a portion of Nukoli'i. The path connects with the existing roadway through Nukoli'i until the Wailua Golf Course.

The path extends along the entire shoreline of the Wailua Golf Course and connects with the 1.83-mile long Lydgate Park bike and pedestrian path that encircles Lydgate Park. The path continues across the Wailua River via the cane haul bridge which runs parallel to Kuhio Highway and turns right onto Papaloa Road.

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The path weaves through the Coconut Plantation Marketplace on Aleka Drive until its intersection with Kuhio Highway. The path then continues on Keaka Road, onto Moanakai Road, and then over the Waikaea Canal utilizing the pedestrian bridge structure and continues on to Kapaa Beach Park.

The path continues along the coastline all the way to Anahola Beach Park.

ANTICIPATED REGULATORY REQUIREMENTS:

It must be emphasized that certain regulatory requirements are involved in the planning process and will influence the timing and development of the bikeway/walkway. These requirements include but are not limited to Federal, State, and County review of:

1. an environmental impact assessment or statement; and

2. land use permits relative to the specific zoning or land use district in which the alignment of the bikeway/walkway is located.

ACCESS POINTS:

The various access points can be seen on the map in Exhibit D:

1. Nawiliwili Park
2. Vidinha Stadium
3. Hanamaulu Park
4. Lydgate Park
5. Kapaa Beach Park
6. Kealia Beach
7. Anahola Beach Park

The decision was made to utilize existing areas, most of which already contain restroom facilities and rest area amenities.

INCREMENTS:

The path will be constructed in the following increments:

1. Waikaea Canal to Kealia Pedestrian Access

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(County of Kaua'i/Private Owners)

2. Kealia Pedestrian Access to Anahola Beach Park
(Private Owners/Department of Hawaiian Home Lands)

   A. Kealia Pedestrian Access to Crack 14

   B. Crack 14 to Anahola Beach Park

3. Nawiliwili Park to Hanamaulu
(Private Owners/County of Kaua'i)

4. Hanamaulu to Wailua River
(Private Owners/County of Kaua'i)

5. Wailua River to Waikaea Canal
(Private Owners/State of Hawai'i)

Increments are shown in Exhibit L.

Landowners are defined and identified in Exhibit M.

LIABILITY:

The Office of the County Attorney will address the issue of indemnification of landowners.

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USAGE COMMITTEE

PARTNERSHIP LISTING:

The Usage Committee consists of the following participants:

Organization:	Name:
Anahola Hawaiian Homestead Assn.	Winifred Cummings
Bicycle John	John Tanner
Burial Council	Cheryl Lovell-Obatake
Disability and Community Access Board	Stan Yates
Esprit de Corps Riding Academy	Dale Rosenfeld
Friends of Kamalani	Tim Bynum
Garden Island Fitness Taskforce	Lori Krouse
Kauai County Council	Daryl Kaneshiro
Kapaa Business Association	Ann Leighton
Onipa'a Kealia	Kane Pa
	Marge Freeman
	James Hackett
	Robert Measel, Jr.
	Judy Naumu-Stewart
	Linda Pudwill
	Laurie Yoshida
	JoAnn Yukimura

ALLOWED USES:

The following is a list of proposed users, excluding commercial activities:

1. Pedestrians (walking and jogging)
2. Bicycles
3. Rollerblades
4. Skateboards
5. Emergency vehicles

The term "commercial activity" implies using the path directly to obtain income. A guided tour is an example of a commercial activity.

The issues of multiple use areas and parking for trucks and horse trailers

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in designated equestrian areas have been considered.

Limited area uses include:

1. ADA (see Exhibit P)
2. Equestrian (see Exhibit N)

Suggested areas for wheelchair access include Hanamaulu and Kealia that have railroad grades, gentle continuous slopes, and no step-ups. Areas with streambeds, such as Nonini Point and Anahola, would not be as easily accessed.

The following areas would be appropriate for horses:

1. Kauai Lagoons guard house to end of running path
2. End of running path to Nonini Point
3. Nonini Point to Ahukini Road
4. Ahukini Road to Masterworks site
5. Ahukini to Hanamaulu
6. Hanamaulu to Lihue end of Nukolii Beach
7. Cane haul road (near Otsuka's) to end of Kealia Beach
8. Kealia Beach to Anahola

The following areas would be inappropriate for horses:

1. Kapaa Town
2. Wailua Golf Course
3. Hotel Properties
4. Lydgate Park
5. High congestion areas

See Exhibit O for the detailed equestrian path proposal.

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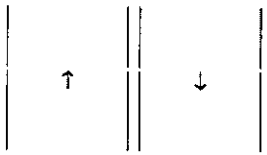
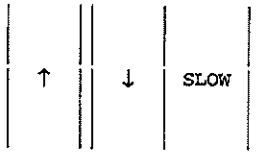
TRAFFIC FLOW POSSIBILITIES:

When considering possibilities for traffic flow, it should be noted that wheelchairs require at least three (3) feet of space. The defined uses have led to traffic flow patterns such as the following:

1. A divided path with two-way traffic or



2. A divided path with two-way traffic plus an additional "SLOW" lane.



ADA CONSIDERATIONS:

It is important that rest areas be provided at various points along the path. Proposed rest areas, which would provide shade, benches, and bike racks, will be located approximately (signage) in one mile increments.

The following proposed rest areas can be seen on the map in Exhibit E:

1. Nawiliwili Park
2. Nininí Point
3. An area between Nininí and Ahukini
4. Ahukini Landing
5. Old Ahukini Landing (across the bay from Ahukini Landing)
6. Nukoli'i (restrooms near Outrigger)
7. Wailua Golf Course (near 3rd hole tee)
8. Lydgate Park
9. Waikaea Canal

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10. Kapaa Beach Park
11. An area near Otsuka's
12. Kealia Lookout
13. Kealia Beach
14. Kealia near first washout
15. Donkey Beach or Crack 14
16. An area near Hawaiian Homes
17. Anahola Beach

NATIVE HAWAIIAN ACCESS RIGHTS:

Signs that provide an explanation of the PASH/Kohanaiki Supreme Court ruling recognizing Native Hawaiian access rights will be posted at all access points.

The following is wording that could be placed on the signs:

> "The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of **THE HAWAIIAN HOMES ACT, 1920.**"

SIGNAGE:

Instructional signs will be designed in four languages: Hawaiian, English, Japanese, and Spanish. Symbols such as directional arrows and yield reminders as well as speed limits will be painted on the path. Regulatory signs such as "STOP" and "YIELD", instructional signs, and "EMERGENCY PHONE" signs will be on posts. Some examples of signage can be seen in Exhibit F.

Signs with rules for bikeway/walkway use will be posted at each access point.

Mile markers will also be posted along the path.

SAFETY:

Posted speed limits and/or "peer pressure" will be used to control speeding.

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A helmet requirement has been considered for both safety and as a liability mitigation measure.

Additional lifeguards, warning signs, and jet skis would need to be provided at beaches along the path. Included among beach signage should be a sign stating the following:

> "Never swim and/or surf when the ocean is muddy (after a flood). Sharks come in for the muddy water. Hawaiians say hohono ka wai."

The buddy system is recommended for users of the path.

MAINTENANCE:

Maintenance can be handled in various ways. County personnel could do daily trash pickups. Sections could be adopted, paid for, and cared for by individual families or the private sector. This may help to cut down on the incidence of vandalism because of the personal community attachment with each section. Another option would be to develop an endowment that would hopefully generate enough money to handle maintenance of the path on a continual basis. In any case, trash receptacles should be located at each rest stop.

SECURITY:

Installation of this eighteen-mile path would make it necessary to expand the Kaua'i Police Department's bike patrol. Volunteer Safety Patrols could also be established to enhance services provided by existing police officers.

Landscaping should be done in a manner that limits deep shadows and hiding areas.

Solar-powered Emergency Telephones should be installed in key areas of the path.

Use of the path should be limited to daylight hours. This in itself would limit exposure to unsafe situations.

Adequate instructional signage is necessary to support the rules of

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etiquette and mixed usage safely. Community educational programs would also reinforce the importance of these issues.

Additional suggestions from the Rails-to-Trails Conservancy regarding maintenance and security concerns can be seen in Exhibit G.

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HISTORICAL AND CULTURAL COMMITTEE

PARTNERSHIP LISTING

The Historical/Cultural Committee consists of the following participants:

Organization:	Name:
Burial Council	Cheryl Lovell-Obatake
Ho'okipa Network	Puanani Rogers
Kauai Community College	Andrew Bushnell
Kauai Community College	William Kikuchi
Kauai County Office of Econ. Dev.	Nalani Brun
Kauai Heritage Center of Hawaiian Culture and the Arts	Kehau Kekua
Kauai Historical Society	John Lydgate
Malama O Ho'opili	Stanley Oana, Jr.
Onipa'a Kealia	Kane Pa
State DLNR Historic Preservation	Nancy McMahon
	Liberta Albao
	Kimo Evans
	Jane Kitlau
	Robert Measel, Jr.
	Joe Prigge
	Emmaline White

HISTORICAL/CULTURAL AREAS:

A list of historical/cultural areas along the eastern coastline of Kauai can be seen in Exhibit J. These areas are divided into three categories:

1. Cultural (relating to Hawaiian Culture/legendary in nature)
2. Historical (relating to influx and influence of other cultures)
3. Movie (relating to cinematography)

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SIGNAGE:

Historical/cultural signage will be provided at the beginning and ending of the path and at various increments along the way in four languages to accommodate the diversity of visitors who will use the path. The Hawaiian language will be the standard language on signage, and this language will be translated into English, Japanese, and Spanish.

Individual location signage will be characterized as follows: cultural signage will be marked with a petroglyph; historical signage will be marked with an outline of Kauai; and movie signage will be marked with a movie take-board.

Signs depicting the entire length of the path will be installed at the beginning and ending of the path.

Incremental signage will highlight each section with a section overview in all categories.

Pictorial signs containing explanations of the significance of the various identified areas will be posted along the path. These pictorial signs will feature three types of pictures: aerial photographs, panoramic photographs, and artist's renditions of the areas that no longer exist. The following is a list of areas and the type of pictures to be used in those areas:

1. Nawiliwili Park will be represented with a panoramic view of the bay and valley area, pinpointing numerous historical and cultural sites.
2. Ninini Point will be represented with a panoramic view of the bay and a history of the harbor and its development.
3. Hanamaulu Bay will be represented with an aerial view of the bay and its historical and cultural sites.
4. The Wailua Valley area, which is rich in cultural history, will be represented with an aerial view.
5. Kapaa Town will be represented with an artist's rendition of what the town looked like earlier in the century. This signage will be placed at Kapaa Town Park.
6. Kealia and Anahola will be represented with an aerial view of the areas. This signage will be placed at Anahola Beach Park.

Smaller signs will be used to show the proper Hawaiian place names of identified areas as well as the names that those areas have come to be known as today.

Ahupua'a boundaries will also be marked by signs. These signs could be attached to bridges or at streams, which are often boundary lines.

Signs indicating the various fishing seasons will also be posted at appropriate areas along the path.

Information regarding various types of interpretive signs, the costs of various signs, and their uses within State parks can be seen in Exhibit K.

ROUTE ENHANCEMENTS:

There are several areas along the path that could be enhanced. One area is Ahukini Landing that is rich in heritage and could be made functional again to serve local recreational needs.

Camping areas at Hanamaulu Beach Park, Lydgate Park, Kealia Beach, and Anahola Beach Park could be developed or enhanced and identified with signage.

Horticultural gardens will enhance the area along the path leading to Hanamaulu Park. This area will include traditional taro lo'i among other things. Other gardens featuring flora, including medicinal and herbal plants, could be planted near the Wailua Golf Course and in Anahola.

Wetland gardens and boardwalks in the wetland areas which already exist in Nukoli'i and near the Wailua Golf Course could also be developed.

FINANCE COMMITTEE

PARTNERSHIP LISTING:

The Finance Committee consists of the following participants:

Organization:	Name:
Anahola Homesteaders Council	James Torio
Bank of Hawaii	Curtis Tom
Burial Council	Cheryl Lovell-Obatake
Commission on Persons with Disabilities	Stan Yates
Garden Island RC&D	Laurie Ho
Hawaii Community Foundation	Nani Larsen
Kauai Chamber of Commerce	Mamo Cummings
Kauai County Housing Agency	Jo Shimamoto
Kauai Visitors Bureau	Fred Atkins
Miura Store	Tad Miura, Jr.
Onipa'a Kealia	Kane Pa
State of Hawaii	Rep. Hermina Morita
Wilcox Hospital	Stevan Yee
	Laurel Brier
	James Hackett
	Robert Measel, Jr.

BASIC COST:

Based on costs of raw development, the proposed paved path would cost approximately $5,813,925 based on 20.1 miles @ $289,250 per mile of asphalt. The cost of raw development for each increment is as follows:

1. Waikaea Canal to Kealia Pedestrian Access
   3.6 miles @ $289,250 per mile = $1,041,300

2. Kealia Pedestrian Access to Anahola Beach Park
   2.6 miles @ $289,250 per mile = $752,050

   A. Kealia Pedestrian Access to Crack 14
      0.5 miles @ $289,250 per mile = $144,625

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B. Crack 14 to Anahola Beach Park
2.1 miles @ 289,250 per mile = $607,425

3. Nawiliwili Park to Hanamaulu
7.9 miles @ $289,250 per mile = $2,285,075

4. Hanamaulu to Wailua River (Lydgate Park)
3.8 miles @ $289,250 per mile = $1,099,150

5. Wailua River to Waikaea Canal
2.2 miles @ $289,250 per mile = $636,350

Information regarding signage material and costs is shown in Exhibit K.

RAILING COST:

For safety, approximately 2.6 miles of railing are needed in the area from Hanamaulu Bay extending to Nukoli'i, and approximately 4 miles of railings are needed in the area between Kealia and Anahola. The approximate cost for metal railing would be $696,690 ($20/foot X 5,280 feet/mile X 6.6 miles). The approximate cost of $20 per foot breaks down to $15 for materials and $5 for labor. The metal railing would need to be replaced quite often due to corrosion. Another option would be to use wood railing, but the nails would also corrode. A third option would be to use recycled plastic material.

BRIDGE ENHANCEMENTS:

Bridge enhancement in the area between Waikaea Canal and Crack 14 will include installation of a pedestrian crossing made of recycled plastic material at the first washout in Kealia and back filling to link both sides of the second washout in Kealia which has remained intact.

Bridge development or enhancement will be necessary to cross the Waipouli Drainage Canal.

The railroad bridges in Hanamaulu and Nukoli'i will also need to be enhanced.

Final linkage of the path will be delayed until the State Department of Transportation Highways Division finishes work on the bridge over the Wailua River, making it capable of fulfilling motorized traffic needs and thus leaving the

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cane haul bridge available for pedestrians and non-motorized transportation.

POTENTIAL FUNDING SOURCES:

Potential funding sources have been divided into four categories:

1. Government
2. Foundations
3. Corporations
4. Community

Category 1 sources include:

1. ISTEA
2. Rural Development
3. ADA
4. CDBG
5. DBEDT
6. Land and Water Conservation Grant Funds
7. National Recreation Trails Funding Programs
8. Bridle Trails

Category 2 sources include:

1. Rails to Trails Conservancy
2. Historic Hawaii Foundation
3. Local Trusts

Category 3 sources will be asked to participate in any of the following sponsorship programs:

1. Adopt-a-section:

   A section = 1/4 mile
   $25,000 per section
   72 sections to choose from

2. Adopt-a-rest-stop:

   $5,000 per rest stop
   17 rest stops to choose from

3. Adopt-a-bridge:

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$ amount to be announced per bridge
5 bridges to choose from

4. Legacy Funding

Category 4 sources will be asked to participate in any of the following programs:

1. Adopt-a-brick
2. Sale of subsurface rights
3. Sign adoption (small businesses)

Additional sources of funding can be seen in Exhibit H and Exhibit I.

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CONCLUSION:

The community has taken a comprehensive approach to developing Ke Ala Hele Makālae, Kaua'i's Health and Heritage Corridor. They have researched and discussed all aspects of this development plan. The discussions have led to development of consensus and plausible, workable scenarios that will bring the project to fruition.

This project is all about partnership, and we ask you to join us as a community dedicated to improvement and enhancement of its natural resources.

Imagine...A community hand in hand...businesses and environmentalists, neighbor and neighbor, young and old...creating a legacy...a legacy known as Ke Ala Hele Makālae, Kaua'i's Health and Heritage Corridor.

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BIKE PATH COST PER MILE PER FOOT WIDTH

	WIDTH (FEET)	COST/MILE
ONE LANE*	3	$102,375
	4	126,750
	5	151,125
	6	175,500
TWO LANE	5	167,375
	6	191,750
	7	216,125
	8	240,500
	9	264,825
	10	289,250

* no C/L stripe, 1/2 signage, 3/4 drainage

EXHIBIT A

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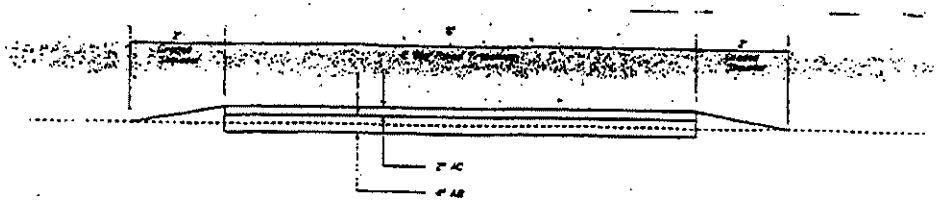
TYPICAL BIKEWAY COSTS

ITEM		$ / MILE
PAVEMENT SECTION		$150,000
3" EXCAVATION 4" AGGREGATE BASE 2" ASPHALT CONCRETE TRIM & DRESS SHOULDER		
DRAINAGE ITEMS		$ 10,000
ASSUME 2 MAJOR INLET/CULVERTS / MILE		
SIGNING AND STRIPING		$25,000
4" CENTERLINE	WHOLE LENGTH	
DIAMOND OR BIKE SYMBOL	10/MILE	
BIKE TEXT	10/MILE	
SIGNS (BIKE, STOP, DIRECTION, ETC.	20/MILE	
DESIGN & CONSTRUCTION		$ 55,500
ASSUME 30%		
TOTAL		$240,500

ASSUMPTIONS:

8' wide two lane path as shown below.
All cost in 1999 dollars.
No right-of-way acquisition



TYP. BIKEWAY SECTION

EXHIBIT B

Proposed Coastal Bike Path for Kauai

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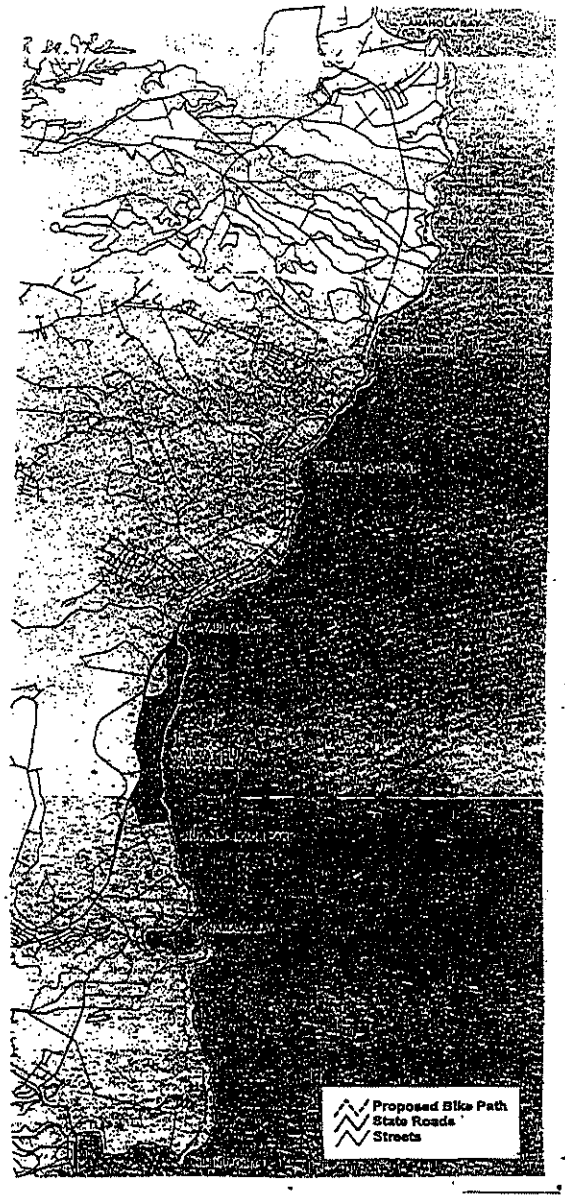
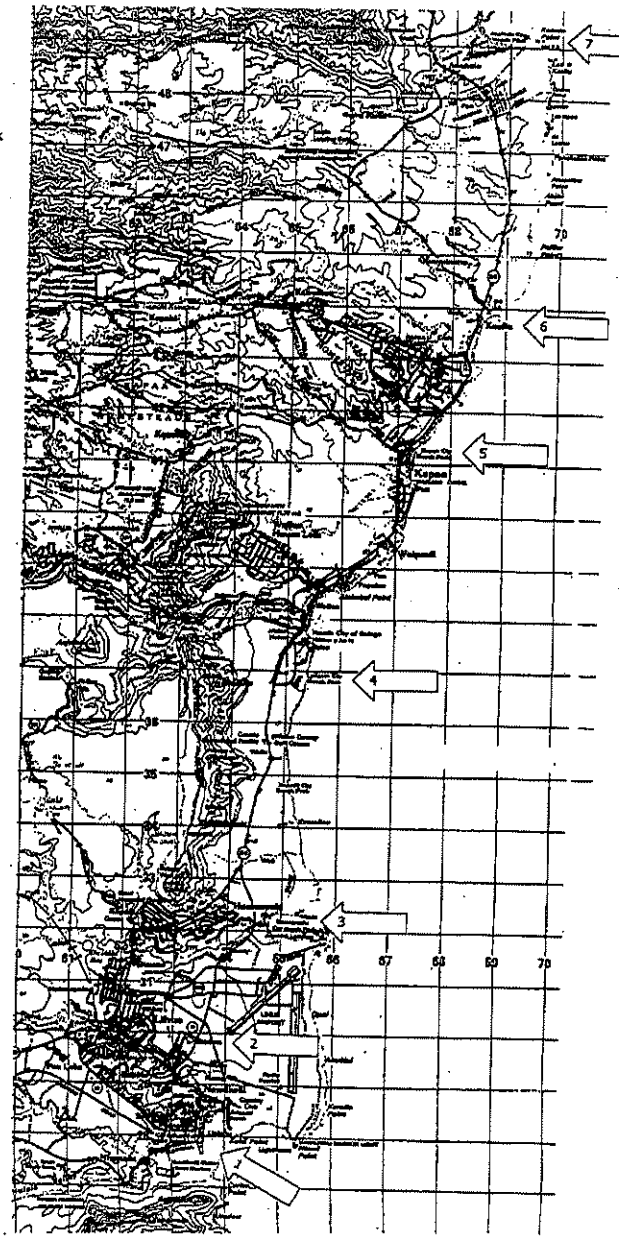


EXHIBIT C

ACCESS POINTS:

1. Nawiliwili Park
2. Vidinha Stadium
3. Hanamaulu Park
4. Lydgate Park
5. Kapaa Beach Park
6. Kealia Beach
7. Anahola Beach Park

EXHIBIT D



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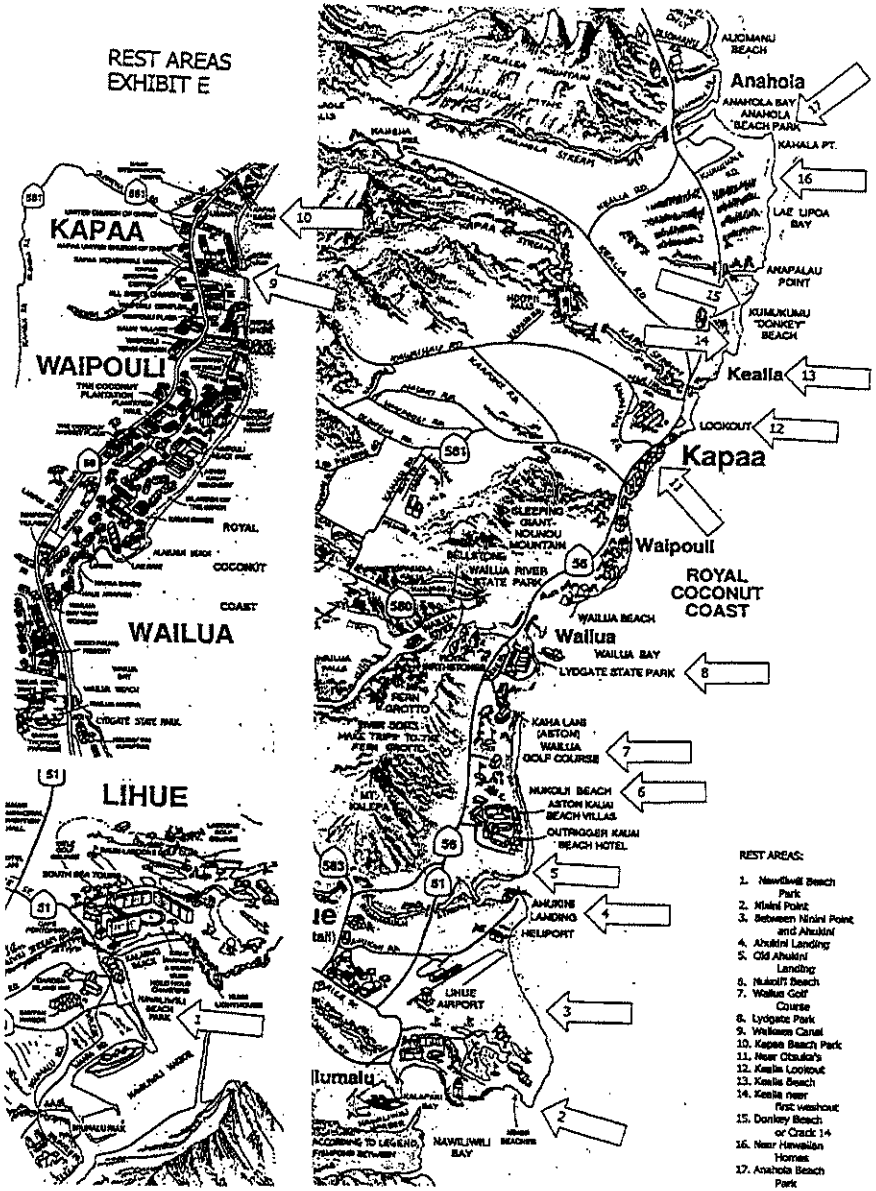
REST AREAS
EXHIBIT E



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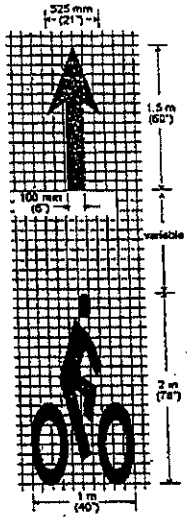

Figure 115: Bike lane stencil dimensions

Sign OBR1-3 should be used at the beginning of multi-use paths and at important access points to warn cyclists of the presence of other users:

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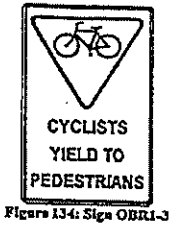

Figure 134: Sign OBR1-3

Signs R5-3 and OBR10-14 may be used at the beginning of a multi-use path if there are problems with motor vehicles using the path:

Figure 135: Signs R5-3 and OBR10-14

B.1. Regulatory Signs

Regulatory signs inform users of traffic laws or regulations. They are erected at the point where the regulations apply. Common regulatory signs for bicyclists are:

Figure 136: Signs R1-1 and R1-2

Note: signs R1-1 and R1-2 are reduced versions of standard motor vehicle signs, to be used where they are visible only to bicyclists (where a path crosses another path or where a path intersects a roadway at right angles).

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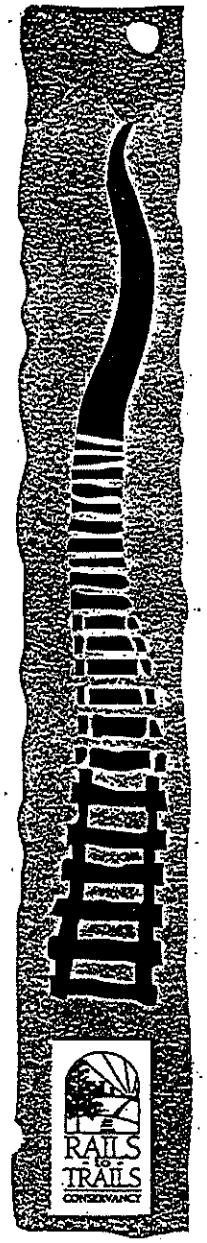
Suggestions from Rails-to-Trails Conservancy

1. Maintenance of bikeway/walkway:
   a. Trails are generally managed by local, state, or federal government agencies.
   b. Some are operated by other types of organizations, including non-profit "friends of the trail" citizen groups, land trusts, and community foundations.
2. Trash clean-up:
   a. Some trails have successfully adopted a "pack out what you pack in" position.
   b. Others have a regular maintenance schedule to empty well placed waste and recycling receptacles.
   c. What ever method is used, proper sign placement along the trail and in trail brochures will help ensure its success.
3. Security concerns:
   a. The trail's design can enhance safety, such as landscaping in a manner that limits deep shadows and hiding areas
   b. Emergency telephones could be installed in key areas along the trail.
   c. Hours of operation could be limited to daylight hours.
   d. Volunteer trail ranger programs could be established.
   e. Periodic "safety days" could be held.
   f. Regular police patrols could be instituted.
4. Safety concerns:
   a. Trail advocates can work with the community to develop user education programs that teach trail etiquette and bicycle safety.
   b. Trail rules should posted at trailheads and near major road crossings, as well as in any trail-related literature.



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50+ Fun Ways to Fund Your Trail

1. lease trail right-of-way for cellular phone towers
2. lease trail right-of-way for other utilities (gas, electric, water, sewer, cable, telephone)
3. charge concession stands a fee to operate on the trail
4. set up a concessions stand
5. rent bicycles and other trail equipment
6. sell posters or art of the trail
7. sell sponsorships of feet/ meters/ miles of the trail
8. sell mileage markers
9. sell trail tags with trail logo and donor's name for donors to wear on t-shirts and hats
10. sell planks or bricks
11. sell trees with plaques
12. sell trail amenities (drinking fountains, shelters, benches, etc.)
13. sell special trail products like Rail-Trail Ale
14. create a gift catalogue to sell trail items, including trail feet, amenities, etc.
15. sell memberships in friends of the trail groups
16. ask the railroad or property owner to donate the right-of-way
17. ask sporting goods stores to impose a voluntary surcharge on sales and donate the proceeds to the trail
18. ask bookstores or other businesses to donate a percentage of sales on a given day to the trail
19. at large events, operate a bicycle corral where people can safely store their bicycles and riding gear, charge a fee
20. hold a 'fly-the-trail' event – pilots donate their time and airplanes to fly people over the trail to build membership and support
21. "Blues 'n' Brews" – live blues performers at a micro-brewery festival
22. "Chowder Challenge" – restaurants and hotels donate food and facility
23. hold a dance on the trail event
24. sponsor a poker game along the trail
25. hold a long-distance race, charge an entry fee
26. hold a regatta on the river adjacent to your trail, charge an entry fee
27. establish a farmer's market along the trail, charge vendors a fee
28. charge a fee for groups who use the trail for special events
29. ask your local court to direct non-felons to perform community service work on trails
30. impose fines for violations of trail rules
31. arrange for trips on the trail for officials and potential sponsors – ask them for donations

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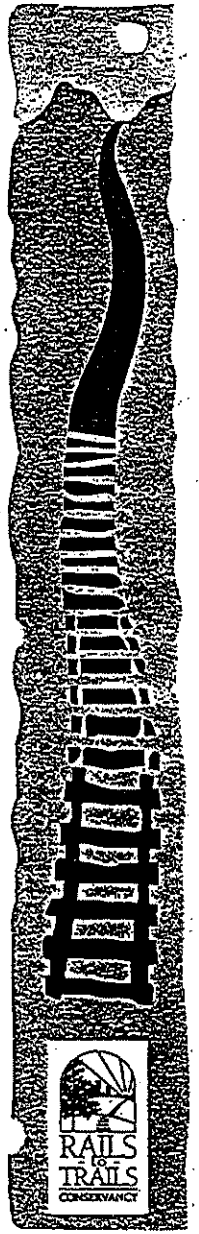
32. have an art show – artists donate their work
33. hold a raffle with donated items from local businesses
34. hold an auction – sell donated items
35. hold yard sales, bake sales, etc.
36. run an adopt-a-trail program
37. "Bridge Builder Program" – individuals and businesses adopt a bridge by helping fund its construction
38. ask the National Guard to help build or maintain your trail
39. ask Army Engineering Battalions for their services
40. ask local unions for donations of services
41. off-track betting mitigation
42. gambling fees for charitable purposes
43. approve a real estate transfer tax for open space and trails
44. establish a "quality-of-life" sales tax
45. earmark lodging taxes or resort taxes
46. check-off box on income tax form
47. motor vehicle title transfer fees
48. sin taxes
49. pass a bond
50. approve a new sales tax
51. lobby for local government appropriations
52. bottle bill fund
53. set up a memorial fund
54. work in partnership with an experienced fund-raising organization, e.g. a local college or university or a local foundation



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Trail and Greenway Grant Programs

American Greenways Kodak Awards Program, administered by The Conservation Fund, provides grants of $500 to $2500 to local greenways projects. Grants can be used for almost any activity that serves as a catalyst for local greenway planning, design or development. Contact the American Greenways Program at The Conservation Fund, 1800 North Kent Street, Suite 1120, Arlington, VA 22209 or email at dswol@conservationfund.org

California Greenways Creative Grants Program provides grants from $500 to $2000 to benefit greenway programs throughout California. Awards recognize creative strategies or problem solving by local groups. Contact the California Greenways Board, 633 Los Palos Drive, Lafayette, CA 94549.

Clean Water/ Clean Air Bond Act - Hudson River Valley Greenway Projects in conjunction with the State of New York, the Hudson River Greenway Council offers grants for greenway trail systems that include development of walkways, bikeways, intermodal storage areas for bicycles, canoes and kayaks and related projects that would enhance public access to the greenway trail system. For an application, please contact David Sampson or Maggie Vinciguerra, Hudson River Valley Greenways, Capitol Building, Room 254, Albany, NY 12224, by phone 518/473-3835; by fax 518/426-0330 and by email hrgreenway@aol.com

Delaware Greenways Program initiated by the Land Protection Act of 1990 provides aggressive land protection through grants to various Delaware agencies. Those eligible to receive funding include municipalities, counties and state agencies. For more information contact Susan Moerschel at Division of Parks and Recreation, Office of Planning and Greenways, P.O. Box 1401, Dover, DE 19903.

The Design Arts Program of the National Endowment for the Arts funds projects that promote excellence in urban design, historic preservation, planning, architecture and landscape planning. Contact the staff at Room 625, Nancy Hanks Center, 1100 Pennsylvania Ave., NW, Washington, DC 20506.

Fish America Foundation provides funding to public and private organizations for projects that enhance or conserve water and fisheries resources, including community efforts. The grant award is approximately $10,000. Write the Fish America Foundation, 1033 N. Fairfax Street, Suite 200, Alexandria, VA 22314.

The Global Relief Heritage Forest Program, American Forestry Association, provides funding for planting tree seedlings on public lands. Emphasis is placed on diversifying species, regenerating the optimal ecosystem for the site and implementing the best forest management practices. Write the American Forestry Association, P.O. Box 2000, Washington, DC 20013.

RAILS-TO-TRAILS CONSERVANCY • 1100 Seventeenth Street, NW, 10th Floor, Washington, DC 20
(202) 331-9696 • FAX (202) 331-9680 • www.railtrails.org

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Massachusetts' Greenways and Trails Small Grants Program is managed by the Department of Environmental Management (DEM) and awards grants to support communities' and organizations' innovative greenway and trail protection projects. For information contact Jennifer Howard, Greenways Planner, DEM, Division of Resource Conservation, 100 Cambridge St., Room 1404, Boston, MA 02202. (413) 586-8706.

Pennsylvania Environmental Education Grants is directed through the Pennsylvania Department of Environmental Protection. Grants can be used to develop new programs or improve the quality of existing programs and require a 25% local match. For an application, contact DEP's Office of Program Planning and Development, Environmental Education Grants Program, P.O. Box 8475, Harrisburg, PA, 17105-8475. (717) 772-1828.

Plant A Tree, Leaf a Legacy! is a two part application process to plant trees. The first deadline is May 31, 1999 to receive seedlings and the second part is due October 1, 1999 for a detailed report on tree planting project. To receive part one: Seedling Order Form, or for more information on the America's Treeways and Community Tree Planting programs, please call Ashley Link at the National Tree Trust 1-800-846-8733 ext. 27 or email her at alink@nationaltreetrust.org

PowerBar's Direct Impact on Rivers and Trails Program (D.I.R.T.) provides grants ranging from $2,000 - $5,000 in support of efforts to protect, preserve and restore recreational lands and waterways. Applications are available on PowerBar's Web site at www.powerbar.com/whoweare/ or write to Powerfood, Inc., Attn: DIRT Program, 2150 Shattuck Avenue, Berkeley, CA 94710.

Recreational Equipment Incorporated (REI) awards seed grants of $200 to $2,000 to state and local conservation groups for projects that enhance river protection. Contact the National Rivers Coalition, American Rivers, Inc., 801 Pennsylvania Ave., SE, Washington, DC 20003.

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Puna District
Kaua'i Island

I. Anahola Ahupua'a

- A. Anahola Stream and Delta
- B. Anahola Hawaiian Home Lands
- C. Ili Lands
- D. Cultural Sites
  1. Kalale'a Peak
  2. Aikanaka Heiau
  3. Hokualele Heiau
  4. Pa-eaea Heiau
  5. Unknown Name Heiau
  6. Kuhua Heiau
  7. Dune burials
  8. Taro terraces
- E. Traditional Resources
  1. Hole in the Mountain (legend of Kapu-nohu)
  2. Legend of Kawelo
  3. Legend of Hulukoki
  4. Surf at Anahola
- F. Historic Resources
  1. Ko'olau Hulia Congregational Church

II. Kealia Ahupua'a

- A. Archaeological Resources
  1. Kealia 'auwai
  2. Kawelomamaia Heiau
  3. Maile-huna Heiau
  4. Mano Heiau
  5. Noea-maka-li'i Heiau
  6. Pa-hua (Pa-ahua) Heiau
  7. Pio-uka Heiau
  8. Pueo Heiau
  9. Pu'u-koa Heiau
  10. Una Heiau
  11. Wai-ehu-o-malama Heiau

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- B. Waipahe'e Slide
- C. Kealia Sugar Mill and Plantation
- D. Makee Sugar Mill and Plantation Company

III. Kapa'a Ahupua'a

- A. Hawaiian Canneries
- B. Hawaiian Fruit Packers
- C. Japanese Monument
- D. Japanese Lantern
- E. Kapaa Swamp
- F. Opium Dens

IV. Waipo'uli Ahupua'a

- A. Ili Lands
- B. Kula lands
- C. "Village"
- D. Fishpond (Hapakio or Kopekia)
- E. 'Auwai
- F. Hawaiian Sites
  1. Maluae Heiau
  2. Waipo'uli Archaeological Site
- G. Awapuhi Store
- H. Waipo'uli Drainage Canal

V. Olohena Ahupua'a

- A. Kaikihaunaka Heiau
- B. Mahe-walu Heiau
- C. Wailua Cultural Information
  1. Uli-poai-o-ka-moku
  2. Wailua-nui-a-hoano
  3. Holoholoku
  4. Kawelo-wai
  5. Kua-mo'o-loa-a-Kane
  6. Mama-aku-a-Lono
  7. Molokua
  8. Pihana-ka-lani
  9. Wai-ehu
  10. Wai-hoi-kaea

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11. Ka-pae-ki'i-mahu-o-Wailua
12. Pu'uhonua
13. Hikinaakala
14. Holoholoku
15. Kalaeokamanu
16. Kauakahi Heiau
17. Kaulana-a-Kane Heiau
18. Ke-kuila Heiau
19. Mahua-pu'uone Heiau
20. Maka-aoa Heiau
21. Makani-ho'o-puoho Heiau
22. Malae Heiau
23. Ni-olo-pua
24. Pale-halii Heiau
25. Poipoi-lio Heiau
26. Poliahu

D. Legendary Resources

1. Nounou (The Sleeping Giant)

E. Sites

1. Dune Burials
2. Kaua'i County Jail
3. Fern Grotto
4. Opaeka'a Falls
5. Pu'u-Pilo Hill
6. Bell Stone
7. Smith's Motor Boat Service
8. Waialeale Boat Tours
9. Paradise Pacifica (Smith's Tropical Paradise)

VI. Hanama'ulu Ahupua'a

A. Sites

1. Kalauokamanu Heiau
2. Hanamaulu Street Names

B. Hanamaulu Sugar Mill Company
C. Nu'ukoli
D. Kawailoa

VII. Kalapaki Ahupua'a

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A. Cultural Resources

1. Ahukini Heiau
2. Ahukini Terminal and Railway Company
3. Ninini Heiau
4. Kalapaki Residence/Settlement

a. Beach home of the Rice family
b. Gilbert Islanders Camp
c. Hawaiian settlement

5. Kuboyama Hotel
6. Kaua'i Airport

VIII. Nawiliwili Ahupua'a

A. Cultural Resources

1. Nawiliwili Harbor
2. Paukini Rock
3. Papalinahoa
4. Nawiliwili Bridge
5. Court House
6. Kuhiau Heiau
7. Halehaka Valley

IX. Niumalu Ahupua'a

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SIGN MATERIAL PERFORMANCE GUIDE FOR INTERPRETIVE APPLICATION

Sign Material	Scratch Resistance	Impact Resistance	Weather Resistance	Replacement Cost	Graphic Range	Required Maintenance	Years of Services	Relative Cost	Overall Rating
Porcelain enamel on steel (glass)*	Very Good	Very Good	Very Good	High	Very Good	Low	20+	Very High	Very Good
Fiberglass embedded*	Good	Very Good	Very Good	Very Low	Very Good	Low	10+	High	Very Good
Baked enamel on metal (paint)	Poor	Good	Fair	High	Fair	Medium	5+	Medium	Fair
Photo processed aluminum*	Good	Good	Very Good	Medium	Good	Low	10+	High	Good
Silkscreened or painted aluminum	Poor	Poor	Good	Medium	Fair	Medium	5+	Medium	Fair
Cast aluminum	Fair	Fair	Very Good	High	Poor	Low	20+	Medium	Poor
Cast bronze or brass	Fair	Good	Very Good	High	Poor	Low	40+	High	Poor
Engraved or etched stainless steel	Fair	Good	Good	Medium	Fair	Low	10+	Medium	Poor
Routed or sandblasted wood (painted)	Poor	Poor	Poor	High	Fair	High	5+	Medium	Fair
Engraved plastic	Poor	Fair	Fair	Low	Poor	Low	5+	Low	Poor
Rear screen printed plastic*	Fair	Fair	Good	Medium	Good	Medium	5+	Medium	Good
Applied vinyl	Poor	Fair	Fair	Low	Poor	Medium	2+	Low	Poor

*Materials appropriate for outdoor interpretive signs.

Compliments of:

Interpretive Exhibits, inc.

1865 Beech Ave. NE, Salem, OR 97303
(503) 371-9411 FAX (503) 371-9402

EXHIBIT K

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COMPARISON OF VARIOUS INTERPRETIVE SIGN MATERIALS

MATERIAL	SIZE	COST*	FRAMING	REPLACEMENT COST	CONSIDERATIONS	CONTACT COMPANY	PARK LOCATIONS
Fiberglass Embedment	2 x 3 feet	~$1,000 (2 embedments) (10 paper copies)	$750 frame with posts (aluminum)	$100 per panel	• Relatively inexpensive to replace • Wide range of graphics • Subject to weathering - replace every 3-5 years • 6-8 week production	+ GS Images (MD) + Interpretive Exhibits (OR) - General Graphics (MD) - Natural Resource Connection (CO)	• Na Pali • Wailua River • Ulupo Heiau • Halekii-Pihana Heiau • Nu'uanu Pali
Anodized Aluminum	18 x 24 in.	~$500 (includes post)	Mounted on post	$500 per panel	• Weather resistant - life span of ~10 years • Limited use of color • 6-8 week production	PhotoTech, Inc. (Arizona)	• *Keauhou Lookout (private)* • *Lahaina Trail (Na Ala Hele)*
Digital Graphics on PVC	2 x 3 feet	~$300 (digital artwork) (2 fused panels)	$750 frame	$300 per panel	• Full color graphics • Subject to weathering replace every 3-5 years • 1-3 week production	Grand Visuals (Colorado)	
Bronze Plaque	15 x 20 in.	~$1,600 (includes pedestal)	• Pedestal • Boulder	$1,600 per plaque	• Limited graphics • Long life span (60 years) • Weather resistant	Brass & Glass (Honolulu)	• Makapu'u
Porcelain Enamel	2 x 3 feet	~$3,000	Mounted on post	$3,000 per panel	• Very durable - vandal & weather resistant • Initial expense to produce and replace	Honolulu Sign and Graphics	• Diamond Head • *Kilauea Refuge* • *Hanalei Lookout (Fish & Wildlife)*

+ Company used by State Parks for sign production.
- Quotes received by State Parks but company not used for sign production.
* Costs do not include original artwork, typesetting, and camera-ready layout.

Prepared by State Parks
January, 1997

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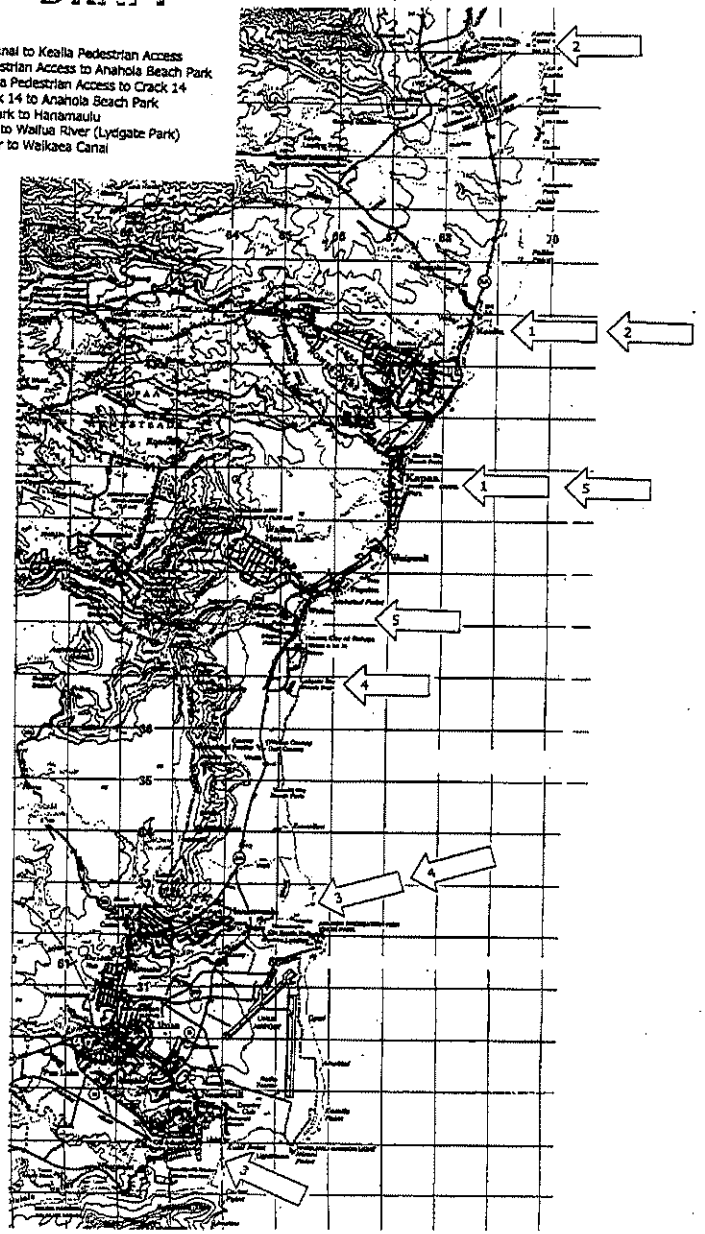
INCREMENTS
EXHIBIT L

1. Waikaea Canal to Kealia Pedestrian Access
2. Kealia Pedestrian Access to Anahola Beach Park
   A. Kealia Pedestrian Access to Crack 14
   B. Crack 14 to Anahola Beach Park
3. Nawiliwili Park to Hanamaulu
4. Hanamaulu to Wailua River (Lydgate Park)
5. Wailua River to Waikaea Canal



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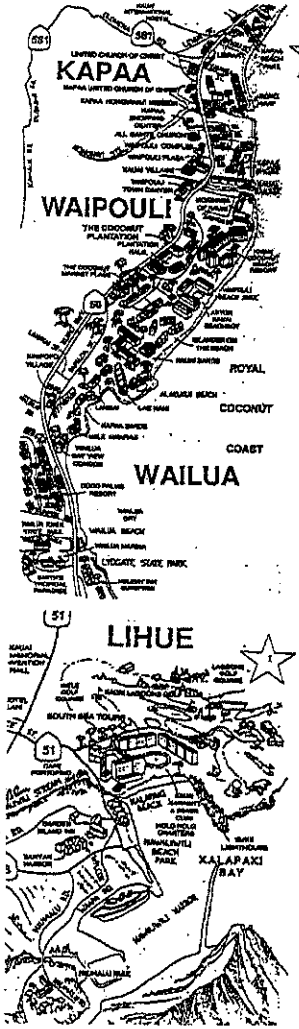
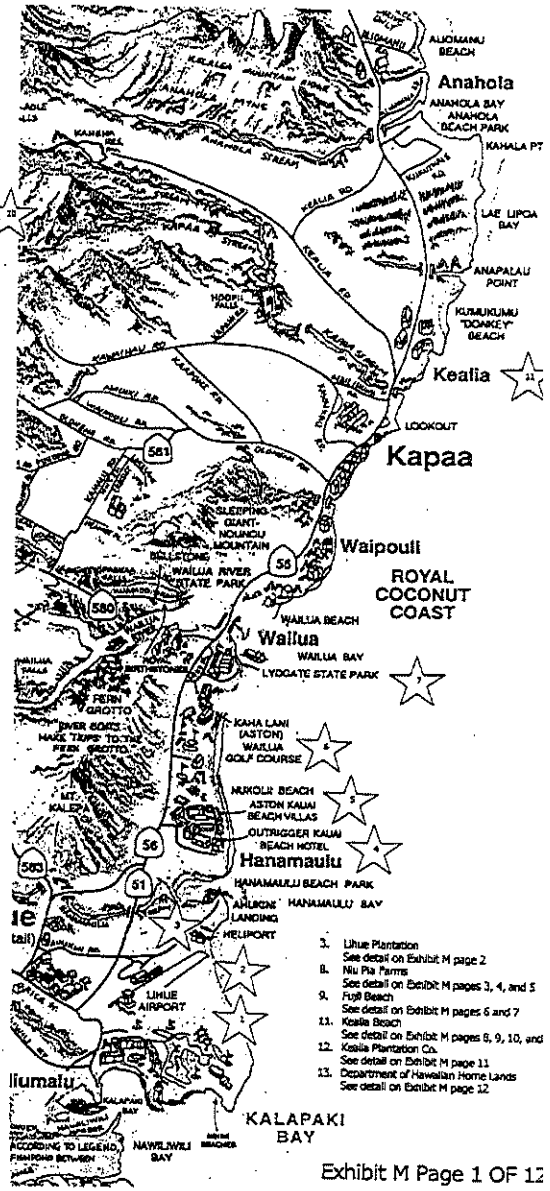
LAND OWNERS
EXHIBIT M

1. Kauai Lagoons Resort Co.
2. Lihue Airport (State of Hawaii)
3. Lihue Plantation
4. Outrigger Kauai Beach Hotel
5. Aston Kauai Beach Villas
6. Wailua Golf Course (County of Kauai)
7. Lydgate Park (County of Kauai)
8. Niu Pia Farms
9. Fuji Beach (State of Hawaii)
10. Kapaa Beach Park (County of Kauai)
11. Kealia Beach (County of Kauai)
12. Kealia Plantation Co.
13. Department of Hawaiian Home Lands





3. Lihue Plantation
   See detail on Exhibit M page 2
8. Niu Pia Farms
   See detail on Exhibit M pages 3, 4, and 5
9. Fuji Beach
   See detail on Exhibit M pages 6 and 7
11. Kealia Beach
    See detail on Exhibit M pages 8, 9, 10, and
12. Kealia Plantation Co.
    See detail on Exhibit M page 11
13. Department of Hawaiian Home Lands
    See detail on Exhibit M page 12

Exhibit M Page 3 OF 12
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Exhibit M Page 2 OF 12
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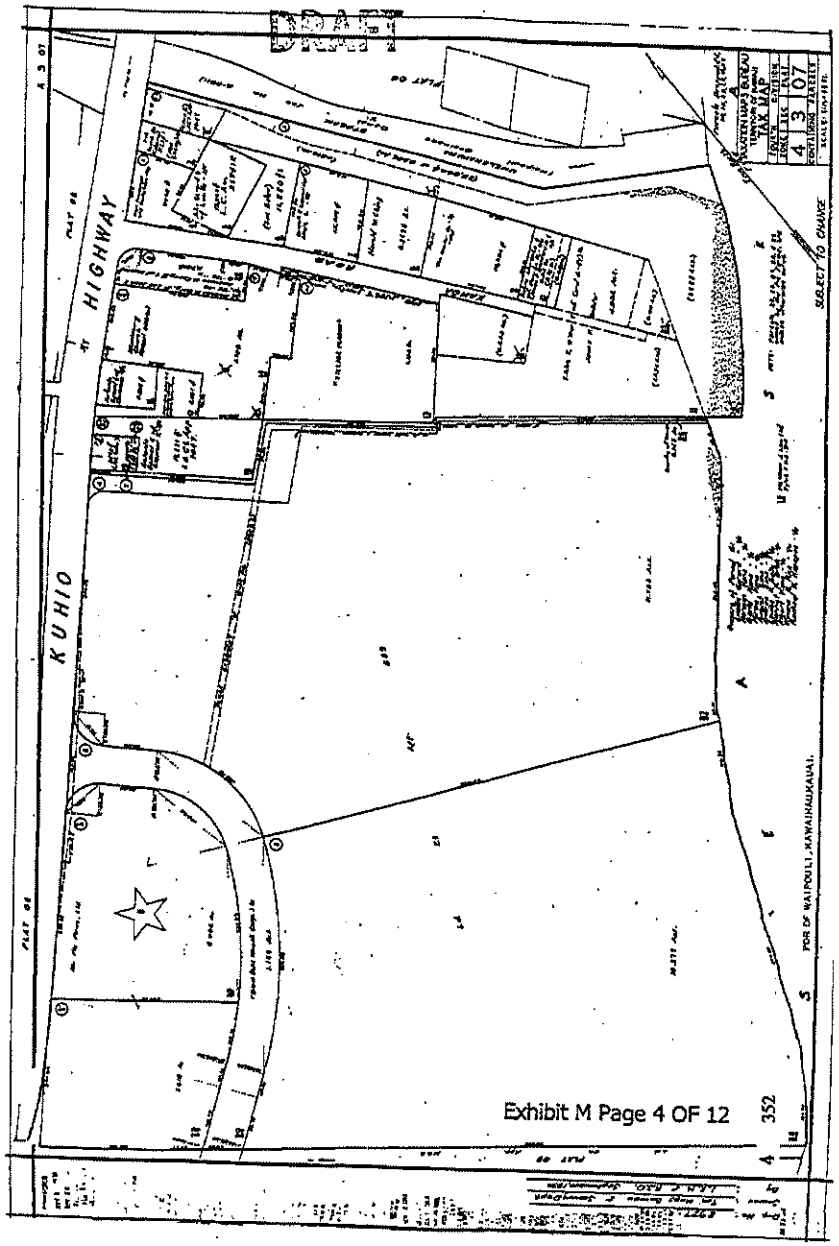

Exhibit M Page 4 OF 12

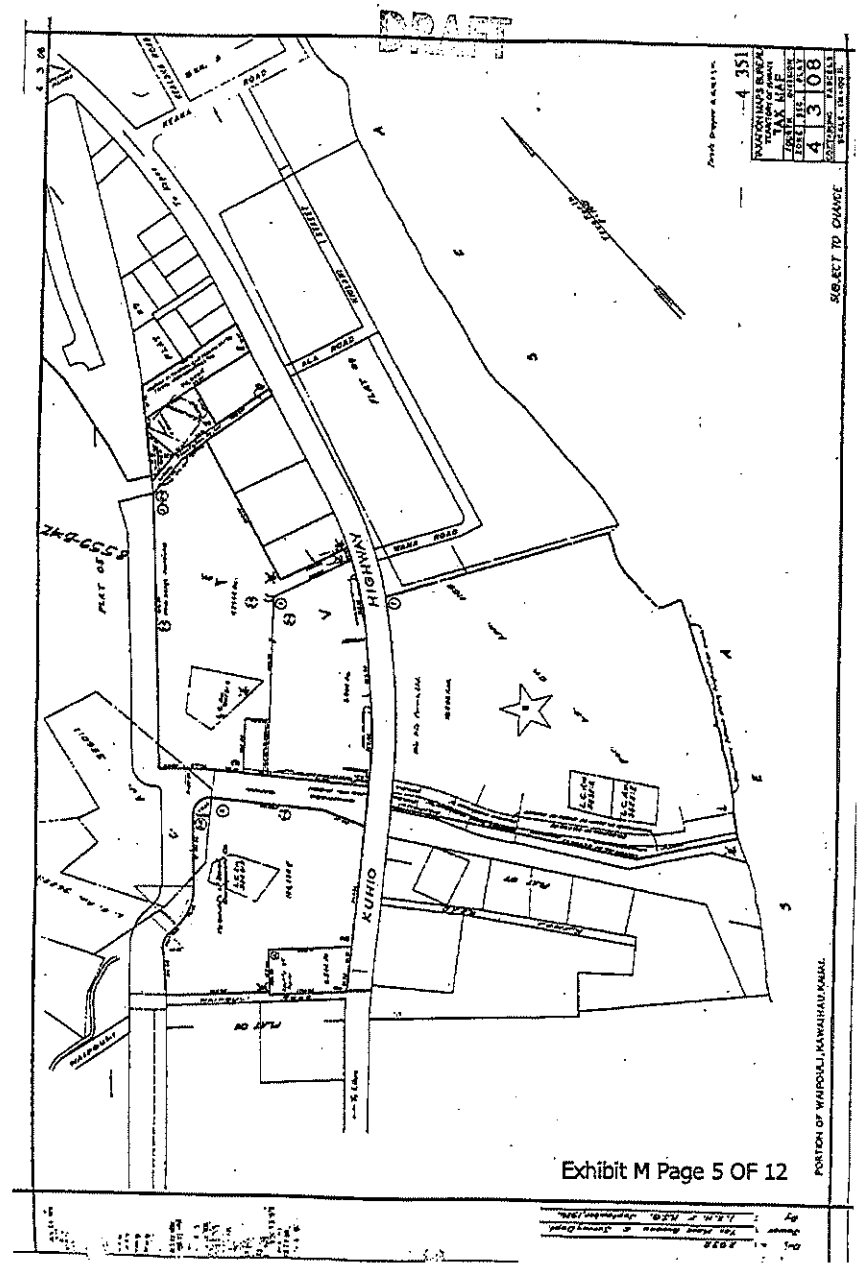

Exhibit M Page 5 OF 12

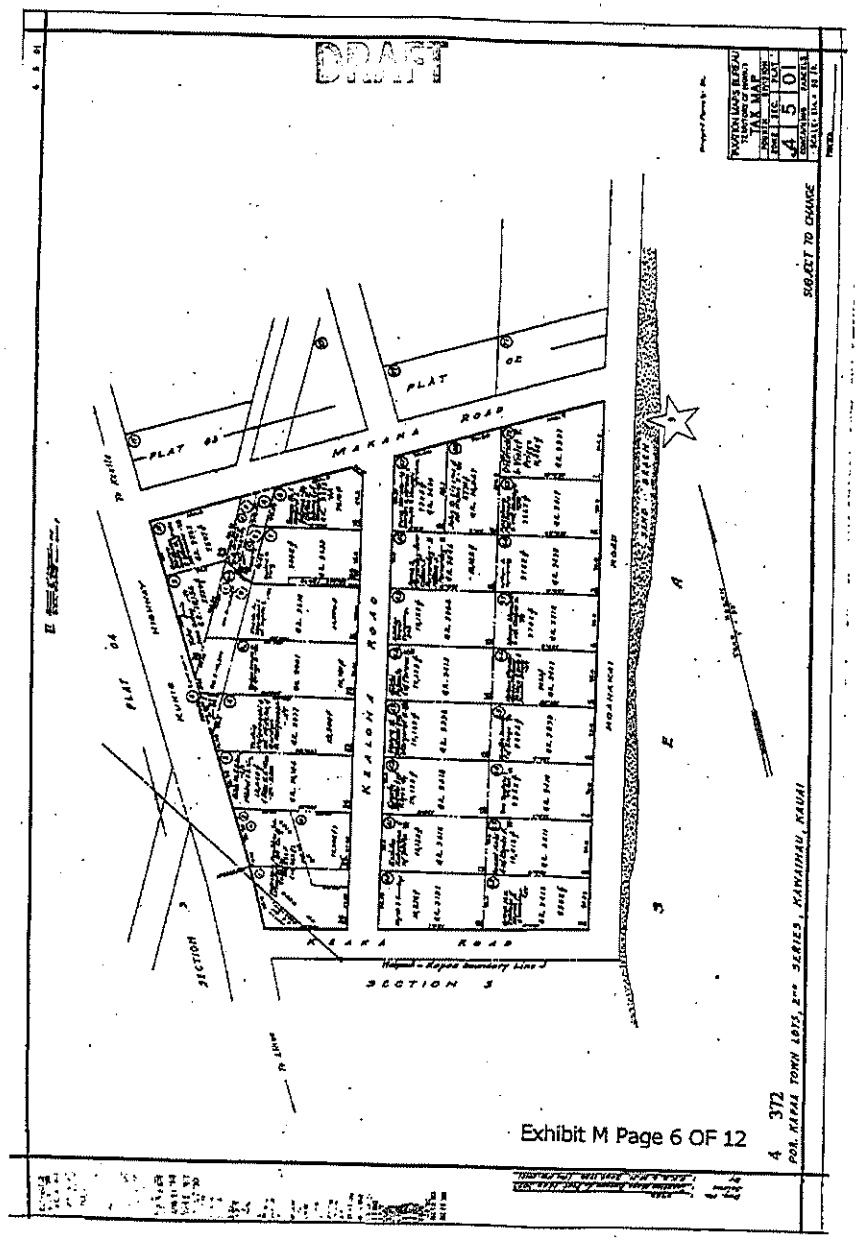

Exhibit M Page 6 OF 12

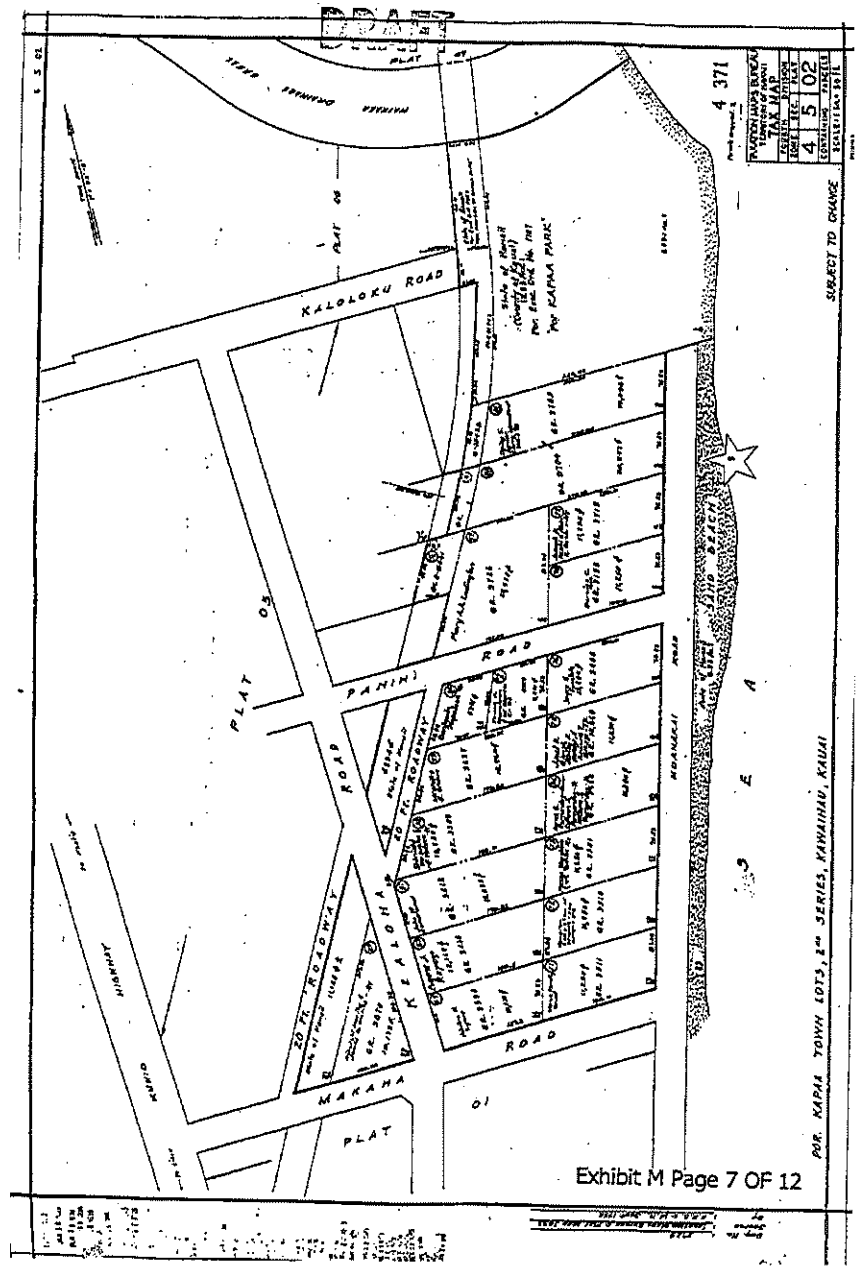

Exhibit M Page 7 OF 12

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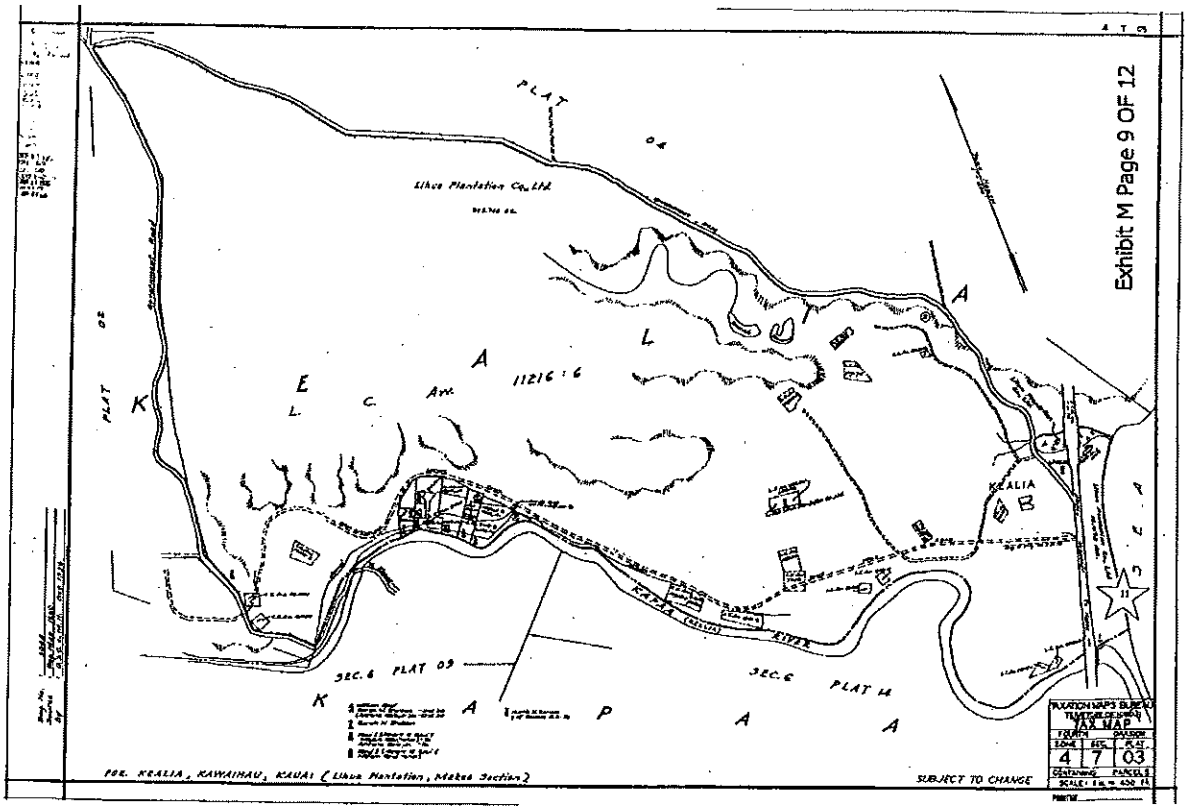

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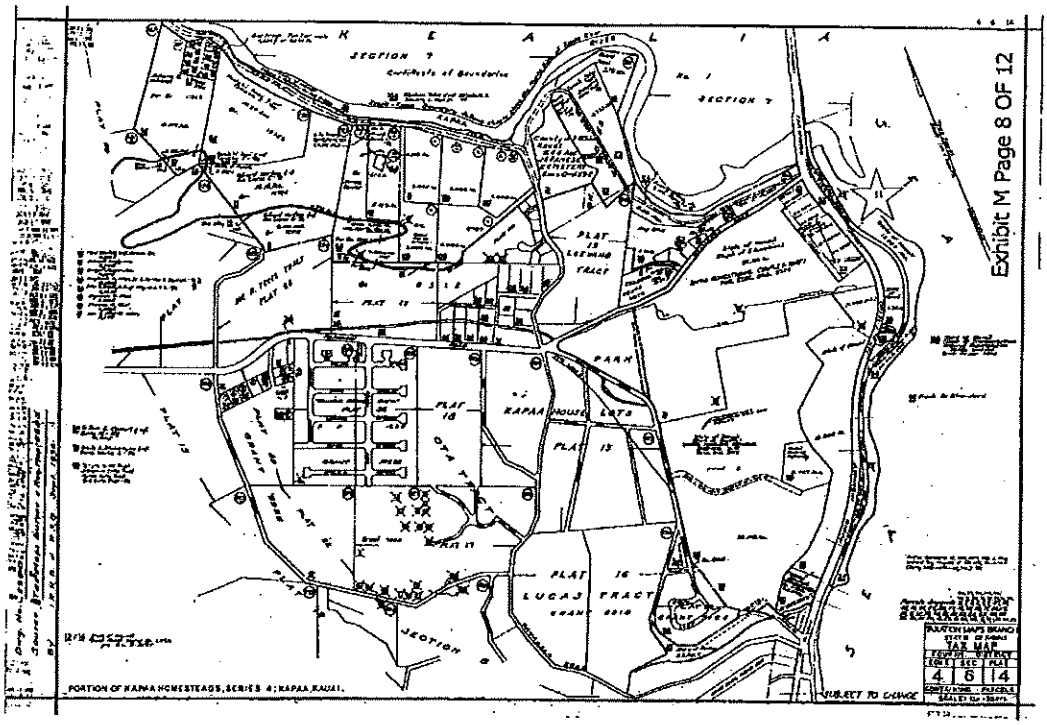

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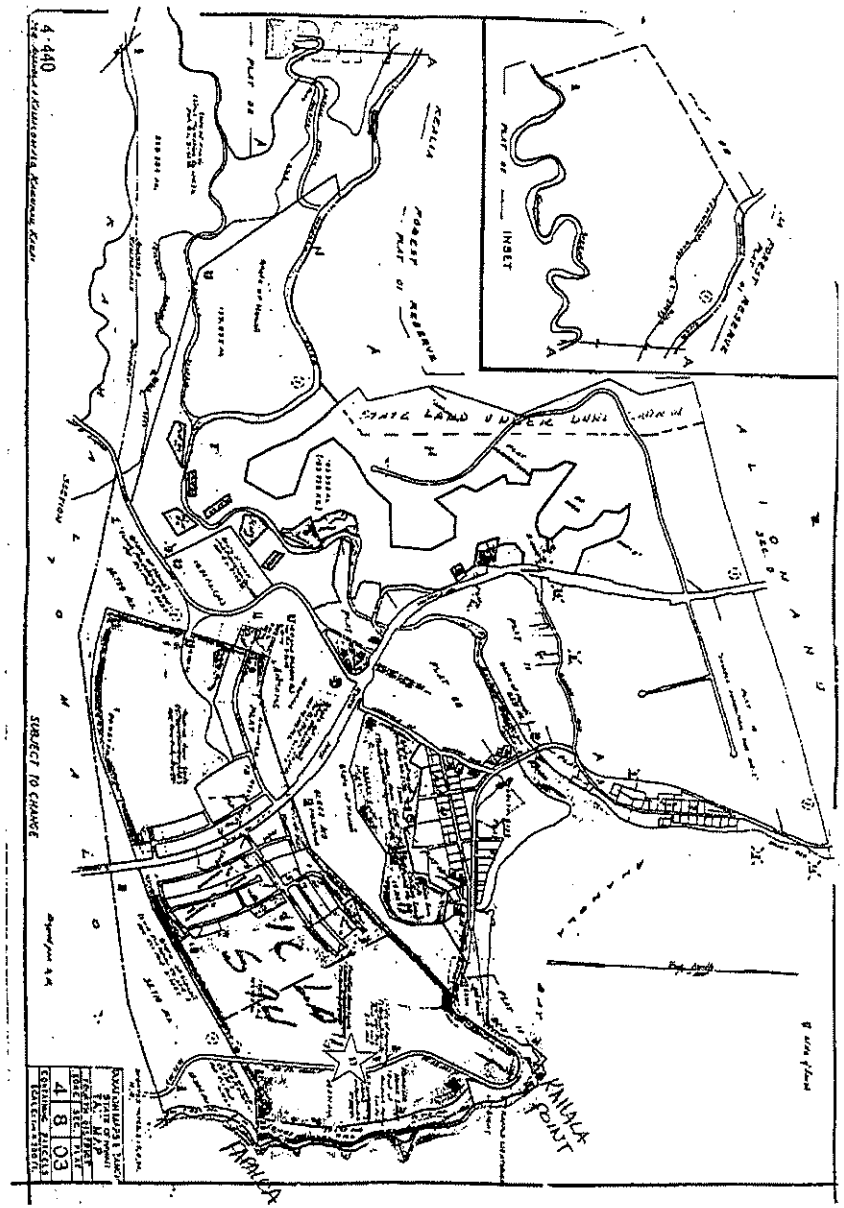
Exhibit M Page 11 OF 12

Exhibit M Page 10 OF 12



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PROPOSED AREAS FOR EQUESTRIAN PATH
EXHIBIT N

1. Kauai Lagoons guard house to Ninini Point
   (Point A to Point B)
2. Ninini Point to Ahukini Road
   (Point B to Point C)
3. Ahukini to Hanamaulu
   (Point D to Point E)
4. Hanamaulu to Lihue end of Nukolii Beach
   (Point E to Point F)
5. Cane haul road to end of Kealia Beach
   (Point G to Point H)
6. Kealia Beach to Anahola
   (Point H to Point I)

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PROPOSED EQUESTRIAN PATH
EXHIBIT O

The equestrian path on the Kaua'i Health and Heritage Corridor is proposed to be in the following areas:

1. Kauai Lagoons guard house to end of running path
2. End of running path to Ninini Point
3. Ninini Point to Ahukini Road
4. Ahukini Road to Masterworks site
5. Ahukini to Hanamaulu
6. Hanamaulu to Lihue end of Nukolii Beach
7. Cane haul road to end of Kealia Beach
8. Kealia Beach to Anahola

Each of these areas could accommodate a four (4) foot wide unpaved bridle path adjacent to the bikeway/walkway and could be separated by five (5) or more feet from the paved path. In some areas where the path is ten (10) feet or less, the bridle path and the bikeway/walkway could merge for a few feet.

Multi-use paths in California frequently do not separate equestrian use from other uses, suggesting a four (4) foot minimum for paths allowing only one type of use (e.g. pedestrian OR bicycle OR equestrian) and an eight (8) foot minimum for multi-use paths (pedestrian and bicycle and equestrian).

AREAS 1-6 inclusive

The paved road from the Kauai Lagoons guardhouse to the end of the running path (area 1) has adequate unpaved areas on either side to accommodate a separate equestrian path. The areas between the end of the running path and Hanamaulu (areas 2-5) are in disrepair or are unpaved and appear to be wide enough to allow for a separate path the entire length. Parking for trailers could be on the road across from the Kauai Lagoons guardhouse or near any of the other proposed access points. Where bridges exist in Hanamaulu, the bridle path may or may not be appropriate, depending on how the bridges are set up.

AREAS 7-8 inclusive

The cane road from Otsuka's to Kealia Beach is generally eighteen (18) feet wide, with thirteen (13) feet width at foot mark 1280 (foot marks start at proposed parking areas across the ditch from Otsuka's). There are some areas with scenic points that are over thirty (30) feet wide, and adequate space for

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trailer parking exists at the beginning of the path. There are many points at which the road is being undermined by erosion, and this needs to be addressed by engineers as to safety along the entire length of this section of the multiuse path.

There is an area at footmark 3700 that would allow for trailer parking and has a high point where a future picnic area could be considered.

The bridge over the Kealia stream (footmark 5400, just over one mile from Otsuka's) is in disrepair. It is fifteen (15) feet in total width of which eleven (11) feet are paved. There appears to be severe rot on the bridge that should be replaced for future users of the path. This bridge could accommodate horses, pedestrians, and bicycles if it is replaced with a bridge of the same size.

Adequate space for trailer parking exists at Kealia Beach (footmark 7130). Horses, hikers, and bicycles have traditionally used the cane road that runs along the coast here. In general, the road is eighteen (18) feet wide, with an eroded area narrowing it to sixteen (16) feet at footmark 8850. There is a steep edge at footmark 10,100 where a guardrail may be needed.

While there are many areas with steep drop-offs on the entire length of the road from foot mark 7375 to foot mark 10100, it is not suggested that guard rails be installed the entire length of this path as it would detract from the natural feel of the path.

The first washout bridge area is at footmark 12200 (2.3 miles). This area has sufficient grade and space to go around it for horses and may need a small bridge for pedestrians and bicycles if the ditch has runoff water flowing through. Immediately after this washout, there is an area that could be utilized as a rest stop/picnic area with views up and down the coast and of the old cane-loading pier.

Continuing to Donkey Beach, which is approximately three (3) miles from Otsuka's, there are steep drop offs from the road. However, the road is 30 feet wide at this point. A suggestion is to put hitching trails for horses and bicycle lockups where the roadway has sufficient room so the area can be savored.

The next bridge washout is at footmark 17134 (3.25 miles). It is possible to avoid the washout and route the path closer to the ocean along the path currently used. Doing this would allow use of a smaller bridge with natural swales that could accommodate all users. The bridge at this point would be at footmark 17484. The rest of the path on this section is over twenty (20) feet wide with sufficient land to place the horse path near to, but not abutting, the paved section in many places.

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DEPARTMENT OF HAWAIIAN HOME LANDS

The Anahola Hawaiian Home Lands section is also a cane road and has been used by horses, hikers, and bicycles for many years. It begins at footmark 18661 where it is nineteen (19) feet wide. At foot mark 18929 (3.6) miles, there is a thirty (30) foot drop-off on a twenty-four (24) foot wide path where a guard rail could be installed.

The road splits at foot mark 19120, and it is suggested that the path run along the lower road to stay close to the shoreline. There is a spot at footmark 20259 that is only ten (10) feet wide, but horses could travel through the ravine at this point. If the path is kept on the upper road, a full thirty (30) foot width exists to accommodate all users. If the lower road is followed, the next footmark is at 21020 where the upper road is rejoined.

At footmark 21161 (4 miles), the road splits once again with the upper road leading to the old dump. There are small roads leading to cliffs above the beach at foot mark 24586, although there is no coastline view from the existing cane road along here.

At footmark 25978, the road bears left to the highway or right to Anahola Beach Park. If the road to the highway is taken, the trail ends at footmark 28746 with plenty of space for parking currently.

The lower road hugs the shoreline and is currently used by 4-wheel drive vehicles to access the cane road from Anahola Beach Park through Kealia. The path would end approximately 6 miles from the start at Otsuka's. There is sufficient room for parking of trailers at the north end of Anahola Beach Park.

APPENDIX F

Federal Consultation Correspondence

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

May 12, 2008

James Nierman, AICP
R.M. Towill Corporation
2024 N. King St., Suite 200
Honolulu, Hawaii 96819

LOG NO: 2008.1647
DOC NO: 0805NM15
Archaeology

Dear Mr. Nierman:

SUBJECT: **National Historic Preservation Act – Section 106 Consultation -**
(County of Kauai) Job No. 20987
Nawiliwili –Civic Center – Ahukini Pedestrian /Bike Path
Nawiliwili/Hanamaulu, Lihue District, Island of Kaua'i

Several historic properties (heiau, Ahukini Landing) were found in the area. Therefore we recommend that the archaeological inventory surveys for this area be updated and include some subsurface testing:

1. An archaeological inventory survey work shall be conducted by a qualified archaeologist to ensure significant historic sites have been properly identified and treated in the project area. The archaeological inventory survey must meet our standards today and approved by SHPD. If historic properties are found, appropriate mitigations plans must be developed in consultation with our office.

If you have any questions, please call Nancy McMahon, our Kauai Archaeologist, at 652-1510.

Aloha,

Laura H. Thielen,
State Historic Preservation Officer

NM:

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
ABBEY SETH MAYER
DIRECTOR
OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

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

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

Ref. No. P-12118

May 13, 2008

Mr. James Niermann
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, Hawaii 96819-3494

Dear Mr. Niermann:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review for the Nawiliwili-Civic Center-Ahukini Pedestrian/Bike Path, Lihue, Kauai

This is in response to your Section 4(f) consultation under the Department of Transportation Act of 1966, for the proposed Nawiliwili-Civic Center-Ahukini Pedestrian/Bike Path in Lihue, Kauai. Independent of the Section 4(f) consultation, the use of funds from the Federal Highway Administration (FHWA) requires Hawaii CZM Program federal consistency review. CZM consistency concurrence is pre-requisite to the awarding of the FHWA funds. The CZM federal consistency application should be submitted to the Office of Planning when the draft environmental assessment for the project is published. If any portion of the project should require a Department of the Army Permit from the Corps of Engineers, additional CZM federal consistency review may be necessary.

If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

Abbey Seth Mayer
Director

c: U.S. Army Corps of Engineers, Regulatory Branch
Department of Planning, County of Kauai

HISTORIC HAWAI'I FOUNDATION

May 15, 2008

James Niermann, AICP
Senior Planner
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, HI 96819-3494

RE: Nāwiliwili-Civic Center-Ahukini Pedestrian/bike Path, Job. No. 20987
Līhu'e, Kaua'i, Hawai'i

Dear Mr. Niermann:

Thank you for referring the above-referenced project to Historic Hawai'i Foundation for consultation under Section 106 of the National Historic Preservation Act.

Since 1974, Historic Hawai'i Foundation (HHF) has been a statewide leader for historic preservation. HHF's mission is to preserve and encourage the preservation of Hawaii's historic buildings, places, objects and communities.

HHF is currently unaware of any historic resources that would be affected by the proposal. If additional research determines that historic or cultural resources are present and would be affected, HHF would like to be informed and may have additional input at that time.

Very truly yours,

Kiersten Faulkner

Kiersten Faulkner, AICP
Executive Director

680 Iwilei Road, Suite 690 / Honolulu, Hawai'i 96817 / Tel (808) 523-2900 / Fax (808)523-0800
Email preservation@historichawaii.org / Web www.historichawaii.org

LINDA LINGLE
GOVERNOR OF HAWAII

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

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

In reply, please refer to:
EMD / CWB

05062PDCL.08

May 19, 2008

Mr. James Niermann, AICP
Project Planner
R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Niermann:

Subject: Section 4(f) Consultation Notification, Department of Transportation Act of 1966 (United States Code – 49 U.S.C. 303)
Nawiliwili–Civic Center–Ahukini Pedestrian/Bike Path, Job No. 20987
Lihue, Kauai, Hawaii

The Department of Health, Clean Water Branch (CWB), acknowledges receipt of your letter, dated May 6, 2008, requesting comments on the proposed project in accordance with 49 U.S.C. Section 303, Section 4(f). The CWB does not have jurisdiction over the use of public parks, recreation areas, wildlife and waterfowl refuges, or historic properties. It is recommended that you contact the following agencies: the State Department of Land and Natural Resources, the State Department of Agriculture, the U.S. Fish and Wildlife Service, and the U.S. Department of Housing and Urban Development.

The CWB has been given the responsibility of water pollution control in the State of Hawaii under the authorization of CWA; Hawaii Revised Statutes, Chapter 342D; and Hawaii Administrative Rules (HAR), Chapters 11-54 (titled Water Quality Standards) and 11-55 (titled Water Pollution Control). Based on the limited information provided in your letter, the CWB offers these general comments on your project. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

   a. Storm water associated with construction activities, including excavation, grading, clearing, demolition, uprooting of vegetation, equipment staging, and storage areas that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. An NPDES permit is required before the start of the construction activities.

   b. Hydrotesting waters.

   c. Construction dewatering effluent.

   You must submit a separate NOI form for each type of discharge at least 30 calendar days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 calendar days before to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

3. For types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, you must obtain an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

4. You must also submit a copy of the NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

5. If this project involves work in a water body, including wetlands, the Honolulu Engineer District of the U.S. Army Corps of Engineers should be consulted with respect to the Department of Army permitting requirements.

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

6. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

If you have any questions, please visit our website at http://www.hawaii.gov/health/environmental/water/cleanwater/index.html, or contact the Engineering Section, CWB, at 586-4309.

Sincerely,

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

DCL:np

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL ST., ROOM 325
HONOLULU, HAWAII 96813
TEL (808) 587-0166 FAX (808) 587-0160

May 21, 2008

Mr. James Niermann, AICP
Senior Planner
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, Hawaii 96819-3494

Dear Mr. Niermann:

Subject: ESA Section 7 Interagency Consultation
Nawiliwili-Civic Center-Ahukini Pedestrian/Bike Path, Job No. 20987
Lihue, Kauai, Hawaii

Your letter dated May 6, 2008 to Laura Thielen, Chairperson of the Department of Land and Natural Resources was referred to DLNR, Division of Forestry and Wildlife. We provide the following comments for your consideration regarding the subject proposed bike path project:

1. Federally listed T-E waterfowl species such as the Hawaiian goose (*Nesochen sandvicensis*), Hawaiian coot (*Fulica alai*), Hawaiian gallinule (*Gallinula chloropus*), Hawaiian stilt (*Himantopus mexicanus*) and Hawaiian duck (*Anas wyvilliana*) are known to use the golf course and ponds at the Kauai Lagoons Golf Club for feeding and nesting, in particular, the Hawaiian goose. Listed waterfowl species are also known to feed and possibly nest along the Nawiliwili stream and wetlands west of the Harbor Mall and south of the proposed bike path. However, the proposed bike path(s) using existing paved and unpaved roads are not likely to pose a negative impact on list species.

2. Federally listed T-E seabirds species are not known to exist in the proposed project area, however, the threatened Newell's shearwater (*Puffinus newelli*), the endangered Hawaiian dark-rumped petrel (*Pterodroma phaeopygia*), and candidate species, Band-rumped storm petrel (*Oceanodroma castro*) are known to transit these areas at night to and from their mountain nesting areas and the sea. Because of their nocturnal habit, and their known attraction to man-made lights, it is recommended that seabird safe lights be installed where lighting may be needed.

3. The federally endangered Hawaiian hoary bat (*Lasiurus cinerus*) may transit the area at night, but are not likely to be impacted by the proposed project.

4. At Ninini Point Lighthouse, south of the Lihue Airport runway contains a known wedge-tailed shearwater (*Puffinus pacificus*) nesting colony. The species is not listed as threatened or endangered; however, the proposed project indicates a path to the lighthouse area. Rana Productions recently conducted a seabird survey for the proposed Lihue Airport Expansion project indicated a population up to three hundred birds. For this area, we recommend that human activity be limited due to the close proximity of the seabird-nesting colony. Seabird mortalities caused by neighborhood dogs have been reported in the past.

5. We recommend strategically placing educational signage to inform the general public of native wildlife in the area and Kauai's pet leash laws.

6. We recommend that night time construction activities using overhead construction lights be avoided as much as possible during the period of mid-September to mid-December due to the Kauai seabird light attraction problem. For more information on seabird friendly lights, please call Ms. Andrea Erichsen, Kauai Seabird Habitat Conservation Plan Coordinator at (808) 245-9160.

7. To our knowledge, the proposed project area is not within a proposed or designated critical habitat, however, please check with the U.S. Fish and Wildlife Service as this falls under their jurisdiction. If you have any questions, please contact Mr. Thomas Ka'iakapu, Kauai Wildlife Manager at (808) 274-3433. Thank you for the opportunity to comment on your subject request.

Sincerely yours,

Paul J. Conry
Administrator

C: Alvin Kyono, DOFAW Kauai Branch Manager
Thomas Ka'iakapu, DOFAW Kauai Wildlife Manager

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
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RUSSELL Y. TSUJI
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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

DIVISION OF STATE PARKS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 21, 2008

Mr. James Niermann, Senior Planner
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, Hawai'i 96819-3494

Dear Mr. Niermann,

SUBJECT: 6(f) and 4(f) Review of Proposed Nawiliwili-Civic Center-Ahukini Pedestrian/Bike Path, Kaua'i

Thank you for the opportunity to review the County of Kaua'i's proposal to extend the pedestrian/bike path from Ahukini Pier to Nawiliwili Harbor. We are taking this opportunity to comment on the project in regards to both 6(f) and 4(f) because the project has the potential to affect parks and recreation areas that have received federal funding assistance through the Land and Water Conservation Fund (LWCF) Program. The proposed route for the pedestrian/bike path is along the coastline of the Lihu'e area and we believe this project will enhance existing parks and expand outdoor recreation. It also meets one of the recreation priority needs identified in the 2003 Hawai'i Statewide Comprehensive Outdoor Recreation Plan (SCORP) which is the need for more linear paths to accommodate bicycles and pedestrians.

Project Area and 6(f) Recreation Sites

Both Nawiliwili Ramp and Nawiliwili Small Boat Harbor have received LWCF assistance, but the path alignment will not directly affect either site. The 10-foot wide concrete path appears to run alongside Wa'apa Road and does not enter the Nawiliwili Small Boat Harbor. If the path stays within the road right-of-way, there will be no taking of recreational land.

The path will have a more direct affect on the Vidinha Stadium property where the path runs along Ho'olaka Street on the west side of the park and Ninini Road on the north side. A bike depot will be established in the park at the northwest corner of the Stadium. The parkland proposed for the path and depot will not impact existing recreational uses of the property and will actually provide additional recreational opportunities.

Preliminary Assessment

It does not appear that this project will have any negative impact to any of the LWCF protected parks. The construction of a bike depot will affect an area outside the Vidinha Stadium facility, but

appears to keep the parkland in recreation use. Therefore, the project is expected to benefit outdoor recreation for this area of Kaua'i.

Prior to submitting our assessment to National Park Service (NPS) for their concurrence, we request confirmation of the following:

- The path and bike depot at Vidinha Stadium will be retained as part of the park for recreational purposes.
- The bike depot will not impact or replace any other recreational facility. From the maps, it appears that the depot is located in an undeveloped portion of the park.
- The path at Nawiliwili Small Boat Harbor will be constructed within the existing road right-of-way.
- If any of the Vidinha Stadium or the Nawiliwili Small Boat Harbor property is used during construction, a temporary non-conforming use permit will be obtained from NPS. This use of the park is not to exceed 180 days.
- We note that funds from FHWA will be used for this project. Is there a Federal Aid Number or any other federal designation that should be cited on correspondence to NPS?

Ahukini State Recreation Pier

We commented on this portion of the project area when we reviewed the Hanama'ulu to Ahukini Pier section of the pedestrian/bike path. Proposed in this area is a new comfort station and use of the existing parking lot at the pier. We believe that the project will enhance recreational opportunities at the park, but requested that State Parks be consulted during the planning of the path and facilities in the area of the park. It was also pointed out that the pier structure is over 50 years old and needs to be assessed for its historical significance. The State Historical Preservation Division should be consulted on this matter.

If we can be of further assistance, please contact Martha Yent, Hawai'i LWCF Coordinator, at 587-0287 or Martha.E.Yent@hawaii.gov. You may provide your response to our 6(f) questions by e-mail. With this information we will initiate correspondence with NPS on this project.

Very truly yours,

DANIEL S. QUINN
State Parks Administrator

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

In Reply Refer To:
2008-TA-0205

MAY 2 2 2008

Mr. James Niermann
R.M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819

Subject: Technical Assistance for Nawiliwili-Civic Center-Ahukini Pedestrian and Bike Path, Lihue, Hawaii

Dear Mr. Niermann:

Thank you for your two letters dated May 6, 2008, both received May 8, 2008, in which you requested 1) a list of species and critical habitat in the project footprint, and 2) information regarding the proposed Nawiliwili-Civic Center-Ahukini pedestrian and bike path, and its potential effects on listed species (listed under the Endangered Species Act (ESA) of 1973 [16 U.S.C. 1531-1544], as amended), and their critical habitat.

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program and the Hawaii GAP Program. The federally endangered Hawaiian coot (*Fulica alai*), Hawaiian duck (*Anas wyvilliana*), Hawaiian common moorhen (*Gallinula chloropus sandvicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), and Hawaiian goose (*Branta sandvicensis*) (collectively referred to as waterbirds), and Hawaiian hoary bat (*Lasiurus cinereus semotus*), have been observed in the vicinity of the proposed project. The Hawaiian monk seal (*Monachus schauinslandi*) has used the coastal regions along the proposed project as a birthing and pup-rearing site. The federally threatened Newell's shearwater (*Puffinus auricularis newelli*) and the federally endangered Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*) (collectively referred to as seabirds) have been observed flying in and around the vicinity of the proposed project. We have determined that there is no federally designated critical habitat in the project vicinity.

To assist you developing a project that will minimize impacts to listed species, we offer the following information. One of the greatest impacts to seabirds is artificial night lighting. Seabirds are attracted to artificial lights and they fly around the light source until they either collide with a tall object such as an adjacent building, light pole, wire, or fall to the ground from exhaustion. Once grounded, they are vulnerable to predators or often struck by vehicles along roadways. If work is planned for night time, we suggest the following minimization activities:

TAKE PRIDE IN AMERICA

- Shield existing lights in the project footprint.
- Use downward-facing, shielded lights for night work throughout the construction period.
- Cease night work during the seabird fledging season from Oct. 1 through Dec. 15.
- Provide information about seabird fallout to all staff working on site prior to the initiation of work.
- Keep a cat kennel on site to temporarily hold downed seabirds.
- Contact the U.S. Fish and Wildlife Service (Megan Laut 808-792-9400) within 24 hours of finding a downed seabird. If alive, place the bird in the cat kennel and contact the Save Our Shearwaters program immediately (Heather Young, 808-246-4348) for further instruction on where to bring the bird.

To avoid impacts to listed waterbirds, we suggest the following:

- Have a biologist familiar with nesting behavior of Hawaiian waterbirds and Hawaiian goose conduct surveys no more than three days before work begins and after any delay in work of three or more days (during which water birds may attempt nesting).
- If a nest is discovered, cease work within a minimum radius of 100 feet of the nest for a minimum of 60 days; if a nest with chicks is discovered, cease work 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, cease work within a minimum radius of 100 feet of the nest and the contact the Service with in 24 hours.

Hawaiian hoary bats may be attracted to lights because of the concentration of insect prey around lights, exposing the bat to increased threats from collision or predation. However, shielding lights as described for seabirds should also reduce attraction of the Hawaiian hoary bat to the project area.

To minimize potential effects on the Hawaiian monk seal, we suggest you coordinate with the National Marine Fisheries Service. Additionally, we realize this project is part of a larger project being implemented by the County of Kauai. We suggest you coordinate with the County to work with other companies that have been contracted for other segments of the pedestrian bike path to ensure there are no cumulative impacts to protected species.

We appreciate your efforts to conserve endangered species. If you have questions, please contact Megan Laut, Fish and Wildlife Biologist, Consultation and Technical Assistance Program (phone: 808-792-9400; fax: 808-792-9581).

Sincerely,

for Patrick Leonard
Field Supervisor

cc: Chris Yates, National Marine Fisheries Service

BRYAN J. BAPTISTE
MAYOR

GARY K. HEU
ADMINISTRATIVE ASSISTANT

DONALD M. FUJIMOTO
COUNTY ENGINEER
TELEPHONE 241-6600

EDMOND P.K. RENAUD
DEPUTY COUNTY ENGINEER
TELEPHONE 241-6640

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUA'I
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MO'IKEHA BUILDING, SUITE 275
LIHU'E, KAUA'I, HAWAI'I 96766-1340

May 30, 2008

RM Towill Corporation
2024 N. King Street, Suite 200
Honolulu, HI 96819-3494
Attention: Mr. James Niermann

SUBJECT: SECTION 4(f) CONSULTATION NOTIFICATION, DEPARTMENT OF TRANSPORTATION ACT OF 1966 (UNITED STATES CODE -49 U.S.C. 303) FOR NĀWILIWILI-CIVIC CENTER –AHUKINI PEDESTRIAN/BIKE PATH JOB NO. 20987 LIHU'E, KAUA'I HAWAI'I PW 5.08.072

Gentlemen,

We reviewed the proposed activities for the subject Ahukini Pedestrian/Bike Path. We offer the following comments in regard to the public resources that will be affected by the proposed project:

A. AHUKINI RECREATIONAL PIER STATE PARK:
1. Ahukini Road leading to the Ahukini Recreational Pier is a state road way under the jurisdiction of the Airports Division. We recommend comments be solicited from the State DOT, Airports Division and State Parks.

B. KAUA'I MUSEUM:
1. It states that the proposed improvements are all within the County road right of way and do not affect the facility. If the bike and pedestrian facilities are located within the road right of way, we disagree that the facility is not affected. We wish to know how the new facility is being accommodated within the limited road right of way and not affect current traffic operations and level of service.

C. KAUA'I WAR MEMORIAL CONVENTION HALL:
1. It states that the proposed improvements are all within the County road right of way and do not affect the facility. If the bike and pedestrian facilities are located within the road right of way, we disagree that the facility is not affected. We wish to know how the new facility is being accommodated within the limited road right of way and not affect current traffic operations and level of service.

2. We wish to point out that the Vidinha Stadium property is **not adjacent** to the Kaua'i War Memorial Convention Hall. The Kaua'i War Memorial Convention Hall and the Vidinha Stadium are both separate properties. The Vidinha Stadium Property is shown at Exhibit "C". The soccer field; Veterans Center and Judiciary; and the Police and Emergency Operating Center are all separate properties for which the bike and pedestrian path will be encroaching onto.
   - The street name labeling for Ninini Road between the soccer field and the stadium is incorrect. There is no official street name labeling for this driveway.
   - Additionally, the street name labeling for Ahukini Road is incorrect. Ahukini Road is the roadway the leads to the Airport. The correct street name labeling is Kaana Street. Kaana Street is not a County roadway. The roadway has not been dedicated to the County. This portion of Kaana Street from Kāpule Highway to the Police Headquarters is a private roadway for which the County has a right of entry agreement with Visionary LLC doing business as Līhu'e Land Company for use of the roadway for public traffic.
   - The street name labeling for Kapule Highways needs to be amended to **Kāpule Highway.**
   - The roadway across the Kāpule Highway in the vicinity of the Stadium Access Road is called **Ninini Point Street.** Ninini Point Street is a private roadway and is not under the County jurisdiction. Plans are being developed by Kauai Lagoons Resort to improve the intersection. The County's TIAR which was completed more than ten years ago for the Vidinha Stadium expansion is outdated and needs to be updated as requested by the State DOT Highways Division. Kauai Lagoons TIAR that was accomplished recently did not include the County's expansion of the Vidinha Stadium Complex. As such, Kaua'i Lagoons is assisting the County by updating its TIAR to include the expansion of the Vidinha Stadium Complex Expansion. We recommend that comments be solicited from the State DOT on the proposed coastal bike and pedestrian path connection with the inland urban areas, especially at crossings with the State DOT highway facilities.

D. EXHIBIT "B" NAWILWILI PARK IMPROVEMENTS:

1. Waapa Road is incorrectly labeled. Waapa Road begins at Rice Street and Lala Road vicinity of Anchor Cove and terminates at Niumalu Rd in the vicinity of the Coral Fill. Waapa Road is under the jurisdiction of the State Department of Transportation, Harbors Division. Comments should be solicited from the Harbor Division.

2. The street name labeling for Kalilikea Steet is incorrect and needs to be amended to **"Ka'ilikea Street".** Also the location of the street is incorrectly labeled. Ka'ilikea Street begins at its intersection with Nāwiliwili Road and terminates at its intersection with Wilcox Road.

E. NIUMALU PARK:
1. There is a one lane bridge at Niumalu Road that across Puali Stream. Again the right of way is narrow and limited in accommodating a bike and pedestrian

facility within the road right of way.

F. VIDINHA STADIUM:
1. The County has an ongoing consultant contract to expand the 10 acre soccer field with a tennis court complex, comfort station, pavilion, gymnasium and associated parking. The 10 feet wide foot path along the north side of the stadium access road is not accounted for in our master plan of the Vidinha Stadium Complex expansion. We question how the bike and pedestrian facilities will be accommodated within a narrow and limited right of way that has not been planned for with the Vidinha Stadium Expansion.
2. Wilson Okamoto has prepared a TIAR for the Kaua`i Lagoons Resort Project. The bike and pedestrian crossing is not included in their TIAR. Coordination is requested with the Kaua`i Lagoons Resort Project. The TIAR recommends a traffic signal at the Ninini Point Road, Stadium Access Road and Käpule Highway.
3. See above comments at Kaua'i Convention Hall.

G. ADA Compliance:
- The proposed project needs to address the American Disability Act. HRS 103-50 states all agencies of the State and Counties shall seek the "advice and recommendations" from the Disability and Communication Access Board (DCAB) on all plans and specifications to ensure conformance with the ADAAG, as well as any supplemental design specifications established by the Disability and Communication Access Board. Plans shall be submitted to DCAB and a copy of the final document review shall be submitted for our files and to the County's ADA Coordinator. We also recommend comments be solicited from the County's ADA Coordinator, Department of Parks and Recreation, and our Planning Department.

Thank you for this opportunity to provide our comments. Should you have any questions, please feel free to contact us.

Very truly yours,

Wallace Kudo, P.E.
Chief, Engineering Division

CONCUR:

DONALD M. FUJIMOTO, P.E.
County Engineer

WK
cc: Planning Department
County of Kauai ADA Coordinator
Department of Park and Recreation
Doug Haigh
Akinaka & Associates, Ltd.

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 2, 2008

Mr. James Niermann, AICP
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, Hawaii 96819-3494

LOG NO: 2008.1978
DOC NO:0806KK10
Architecture

Dear Mr. Niermann:

SUBJECT: Section 106 (NHPA) Consultation
Nawiliwili-Civic Center-Ahukini Pedestrian/Bike Path
Job. No. 20987
Lihue, Island of Kauai
TMK: (4) various

This letter acknowledges receipt of your transmittal of May 6, received in our Kapolei office on May 9, 2008.

The proposed undertaking is for the development of a bike/pedestrian path to connect Nawiliwili Harbor, the Lihue Civic Center, and Ahukini Point.

The project involves the demolition of an existing comfort station at Nawiliwili Park. Should this structure be over fifty years old the State Historic Preservation Division (SHPD) would like to have the opportunity to review the structure for eligibility for listing on the register. You informed SHPD via telephone that the structure was likely constructed in the late 1960s or early 1970s. If the structure is less than fifty years old, SHPD has no further concerns regarding its demolition.

SHPD does not have any concerns regarding any other aspects of this project.

SHPD feels that the finding for the proposed project is of **no historic properties affected**. Thank you for the opportunity to consult on this project. Should you have any additional questions or concerns, please do not hesitate to contact Katie Kastner in our O'ahu office at (808) 692-8023 or Katie.J.Kastner@hawaii.gov.

Sincerely,

Nancy A. McMahon
Deputy State Historic Preservation Office and Archaeology and Historic Preservation Manager

LOG NO: 2008.1858
DOC NO:0806KK10
Architecture

c:

U.S. Department of the Interior, National Park Service
Frank Hays, Director, Pacific West Region-Honolulu, West Regional Office, 300 Ala Moana, Blvd., Room 6-226, Honolulu, Hawaii 96850
Dr. Elaine Jackson-Retondo, National Historic Landmarks Program, 1111 Jackson Street, Suite 700, Oakland, California 94607-4807

JUN 04 2008

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax (808) 973-2941

Mr. James Niermann, AICP
Senior Planner
R.M. Towill Corporation
2024 N. King Street.
Suite 200
Honolulu, HI 96819-3494

Dear Mr. Niermann:

This responds to your May 6, 2008 letter regarding the County of Kauai, Department of Public Works proposed development of a bike/pedestrian path to connect Nawiliwili Harbor, the Lihue Civic Center, and Ahukini Point, Kauai (Job No. 20987), received by the National Marine Fisheries Service (NMFS) on May 8. In your letter, you requested information on marine listed species and their designated critical habitats, as well as proposed and candidate species and critical habitat for listing that may occur near any portion of the proposed path. Under our statutory authorities under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. §1531 *et seq.*), we provide the following ESA-listed marine protected species information.

Your letter stated that the project is a key segment of the 16-mile Nawiliwili to Anahola Bike and Pedestrian Path proposed in the 1994 State of Hawaii Master Plan – Bike Plan Hawaii. The project, funded through the Federal Highways Administration, will consist of a 10-feet wide concrete shared-use coastal path and extend along portions of southeastern Kauai.

Based on the map that you provided, the coastal areas of Lihue are known to have Hawaiian monk seals hauled out at multiple locations, either to rest on the beach, give birth to pups, or nurse/rear pups. Please be aware that the presence of the bike/pedestrian path near known monk seal haul outs could increase the likelihood of interactions between monk seals and people. Please also be aware that if monk seals are hauled out near the proposed path, it could become necessary to temporarily block sections of the shoreline or path in order to ensure that monk seals are not disturbed.

In addition to Hawaiian monk seals, green and hawksbill sea turtles may also be found hauled out onshore and basking on the beaches near the proposed path. A complete list of Hawaii's marine protected species under NMFS's jurisdiction is enclosed for your review. No additional marine species are proposed or are candidates for listing under the ESA at this time, and no critical habitat has been designated or proposed for any marine protected species around Kauai.

As for the next steps of the ESA Section 7 consultation process, we are happy to guide you through the process and have attached our recently developed "action agency consultation package". Please find attached the following documents:

1. "Action Agency Guide to ESA Consultation with NMFS" –This document will help determine the effects of the proposed action on each ESA-listed marine species in the action area (either "no effect", "may affect, but not likely to adversely affect", or "may affect, and is likely to adversely affect");
2. "Effects Determination Guidance" – This document further explains each of three possible effects determination;
3. "ESA Effects Determination Record" – This document helps the action agency document which ESA-listed species may occur in the action area under either NMFS's or the United States Fish & Wildlife Service's jurisdiction;
4. "Template for Consultation Request Cover Letter" – This document is intended to serve as a template for letters from Federal action agencies (or their non-Federal representatives) requesting consultation under Section 7 of the ESA on actions that may affect ESA-listed species;
5. "Template for Biological Assessments (BA) & Biological Evaluations (BE)" – This document is intended to serve as a template for a BA or BE submitted by Federal action agencies or their non-Federal representatives to NMFS for consultation as required by Section 7 of the ESA. The purposed of the BA-BE is to describe proposed actions and their effects on ESA-listed species; and
6. "Endangered Species Act (ESA) Consultation" – This document is from our website and provides a link to each of the aforementioned consultation documents.

Please note that these documents are in the process of being uploaded to our website. All documents should be online by June 18 and can be found at: http://www.fpir.noaa.gov/PRD/prd_index.html.

Thank you for working with NMFS to protect our nation's living marine resources. Should you have any other questions regarding this project or the consultation process, please contact Krista Graham on my staff at (808) 944-2238, or at the e-mail address Krista.Graham@noaa.gov. Please refer to consultation #: I-PI-08-685-CY.

Sincerely,

Chris E. Yates
Assistant Regional Administrator
For Protected Resources

Enclosures

MARINE PROTECTED SPECIES of the HAWAIIAN ISLANDS

National Marine Fisheries Service, Pacific Islands Regional Office

MARINE MAMMALS

All marine mammals are protected under the Marine Mammal Protection Act. Those identified under the ESA Listing are also protected under the Endangered Species Act.

Common Name	Scientific Name	ESA Listing
Blue Whale	*Balaenoptera musculus*	Endangered
Blainville's Beaked Whale	*Mesoplodon densirostris*	
Bryde's Whale	*Balaenoptera edeni*	
Cuvier's Beaked Whale	*Ziphius cavirostris*	
Dwarf Sperm Whale	*Kogia simus*	
False Killer Whale	*Pseudorca crassidens*	
Fin Whale	*Balaenoptera physalus*	Endangered
Humpback Whale	*Megaptera novaeangliae*	Endangered
Killer Whale	*Orcinus orca*	
Longman's Beaked Whale	*Indopacetus pacificus*	
Melon-headed Whale	*Peponocephala electra*	
Minke Whale	*Balaenoptera acutorostrata*	
North Pacific Right Whale	*Eubalaena japonica*	Endangered
Pygmy Killer Whale	*Feresa attenuata*	
Pygmy Sperm Whale	*Kogia breviceps*	
Sei Whale	*Balaenoptera borealis*	Endangered
Short-finned Pilot Whale	*Globicephala macrorhynchus*	
Sperm Whale	*Physeter macrocephalus*	Endangered
Bottlenose Dolphin	*Tursiops truncatus*	
Common Dolphin	*Delphinus delphis*	
Fraser's Dolphin	*Lagenodelphis hosei*	
Pantropical Spotted Dolphin	*Stenella attenuata*	
Risso's Dolphin	*Grampus griseus*	
Rough-toothed Dolphin	*Steno bredanensis*	
Spinner Dolphin	*Stenella longirostris*	
Striped Dolphin	*Stenella coeruleoalba*	
Hawaiian Monk Seal	*Monachus schauinslandi*	Endangered
Northern Elephant Seal	*Mirounga angustirostris*	

SEA TURTLES

All sea turtles are protected under the Endangered Species Act.

Common Name	Scientific Name	ESA Listing
Green Turtle	*Chelonia mydas*	Threatened
Hawksbill Turtle	*Eretmochelys imbricata*	Endangered
Leatherback Turtle	*Dermochelys coriacea*	Endangered
Loggerhead Turtle	*Caretta caretta*	Threatened
Olive Ridley Turtle	*Lepidochelys olivacea*	Threatened

Last updated April 2008

Action Agency Guide to ESA Consultation with NMFS

May 2008; NMFS PIRO Protected Resources Division
See http://www.fpir.noaa.gov/ "ESA Consultation"

Effects Determination Guidance

Pacific Islands Regional Office
NOAA Fisheries Service

1601 Kapiolani Boulevard, Suite 1110 | Honolulu, Hawaii 96814 | (808) 944-2200 | www.fpir.noaa.gov

ESA-listed Species Under NMFS' Jurisdiction That May Occur in Our Waters or Shorelines:

HAWAIIAN MONK SEAL (*Monachus schauinslandi*)	HUMPBACK WHALE (*Megaptera novaeangliae*)
SPERM WHALE (*Physeter macrocephalus*)	BLUE WHALE (*Balaenoptera musculus*)
FIN WHALE (*Balaenoptera physalus*)	SEI WHALE (*Balaenoptera borealis*)
NORTH PACIFIC RIGHT WHALE (*Eubalaena japonica*)	LEATHERBACK TURTLE (*Dermochelys coriacea*)
HAWKSBILL TURTLE (*Eretmochelys imbricata*)	GREEN TURTLE (*Chelonia mydas*)
OLIVE RIDLEY TURTLE (*Lepidochelys olivacea*)	LOGGERHEAD TURTLE (*Caretta caretta*)

Determination of Effects:
Under the ESA[2] Section 7(a)(2), each Federal agency shall ensure that any action authorized, funded, or carried out by such agency (hereinafter referred to as an "action agency") is not likely to jeopardize the continued existence of any endangered or threatened species, or destroy/adversely modify designated critical habitat, and as such is responsible for making one of the following effects determinations, as described in the ESA Section 7 Consultation Handbook[3]:

- No Effect (see Notes on Pages 3-4):
  - The appropriate determination when the proposed action will have no effect on listed species or designated critical habitat. For this determination, the effects of the action should be temporally or spatially separated from the listed species.
  - This determination is made by the action agency and does not require concurrence from NMFS; however, NMFS can provide technical assistance to agencies in reaching this determination.
- May Affect, but Not Likely to Adversely Affect (see Notes on Pages 3-4):
  - The appropriate determination when the effects of the action on listed species or critical habitat will be discountable, insignificant, or wholly beneficial (see Informal Consultation, next page).
  - In order to receive concurrence with this determination, the action agency must initiate informal Section 7 consultation. When the information indicates that the action has no likelihood of adverse effect, NMFS will provide a letter of concurrence, which completes informal consultation.
- Likely to Adversely Affect (see Notes on Pages 3-4):
  - The appropriate determination if any adverse effects on listed species or designated critical habitat may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant, or beneficial. Also the appropriate determination if any "take" of listed species will occur.
  - Initiation of formal Section 7 consultation is required and NMFS is responsible for completing a biological opinion on the proposed action (and may issue an incidental take statement).

[1] 'NOAA Fisheries Service' = 'National Marine Fisheries Service' = 'NMFS'
[2] The Endangered Species Act of 1973: www.nmfs.noaa.gov/pr/pdfs/laws/esa.pdf
[3] The ESA Section 7 Consultation Handbook: www.nmfs.noaa.gov/pr/pdfs/laws/esa_section7_handbook.pdf

Informal Consultation:
NMFS's justification for its concurrence with a "May Affect, but Not Likely to Adversely Affect" determination is based on three determinations of effects, as stated in the ESA Section 7 Consultation Handbook:

- Insignificant effects – relate to the magnitude of the impact: the effects cannot be meaningfully detected, measured, or evaluated, and should never reach the scale where a "take" occurs.
- Discountable effects – relate to the likelihood of the impact: the effects are extremely unlikely to occur.
- Beneficial effects – positive effects without any adverse effects.

Formal Consultation:
NMFS considers any action that is likely to result in the incidental take of a listed species, or in adverse effects on designated critical habitat, to be "Likely to Adversely Affect" the species, thereby requiring formal consultation and a biological opinion:

- Take is defined in the ESA Statute (section 3(19)) as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct".
- Adverse effects on designated critical habitat are not defined in the ESA Statute, the ESA Section 7 implementing regulations, or the ESA Section 7 Handbook. See "Notes on ESA Section 7 Effects Determinations" on Pages 3-4 for guidance with this determination.

For any consultation, implementation of monitoring, conservation measures, and best management practices are an important component in ensuring that impacts are minimized. For example:

1. A survey of the project area should be performed just prior to commencement or resumption of activity to ensure that no listed species are in the project area. If a listed species is detected, activities with potential to affect the animals should be postponed until the animals voluntarily leave the area. If a listed species enters the area during the conduct of activities, all activities with potential to affect the animals should cease until the animals voluntarily depart.
2. Project-specific conservation measures should be identified and implemented where applicable. For example, if a particular component of the action has the potential to disturb or harm a listed species, then specific measures to reduce or eliminate those impacts must be in place and described in detail.
3. All project personnel that may potentially interact with listed species in the action area must be informed of the species' status, the protections afforded under Federal laws, and of project specific measures to be taken to reduce impacts on those species. An overview of the laws and guidelines for listed species in Hawaii, American Samoa, the Commonwealth of the Northern Mariana Islands, and Guam may be downloaded at www.nmfs.noaa.gov/pr/education/hawaii/.

Please send consultation initiation and concurrence requests to: Chris Yates or Lance Smith, Protected Resources, NMFS Pacific Islands Regional Office, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814. If you have any questions regarding the ESA Section 7 consultation process, please contact the following Protected Resources staff: Lance Smith, ESA Section 7 Coordinator, at 808-944-2258 or Lance.Smith@noaa.gov, Krista Graham, Resource Management Coordinator, at 808-944-2238 or Krista.Graham@noaa.gov, or Don Hubner, Resource Management Specialist, at 808-944-2233 or Donald.Hubner@noaa.gov.

Notes on ESA Section 7 Effects Determinations:

"No Effect"

"May Affect, But Not Likely to Adversely Affect"

"May Affect, And Likely to Adversely Affect"

Craig Johnson, National ESA Coordinator, National Marine Fisheries Service

Introduction

1. To defensibly conclude that an action has "no effect" or "may affect, but is not likely to adversely affect" an ESA-listed marine species, an agency would have to build an argument based on the following four propositions:
   A. The Action *is not likely* to produce potential stressors or subsidies that would reasonably be expected to act directly on individual organisms or to have direct or indirect consequences (positive or negative) on the environment;
   B. If **not A** [that is, *the Action is likely to produce those potential stressors...*], endangered or threatened individuals *are not likely to be exposed* to one or more of those potential stressors or subsidies or one or more of the Action's direct or indirect consequences on the environment;
   C. If **not B** [that is, *listed individuals are likely to be exposed...*], those listed individuals *are not likely to respond*, positively or negatively, to that exposure;
   D. If **not C** [that is, *listed individuals are likely to respond...*], those responses *are not likely to be sufficient to reduce their individual performance.*
2. Two outcomes would justify a "no effect" determination:
   2.1. If an agency accepts Proposition A as true (more likely to be true than false, based on the evidence available) and can defend that acceptance as based on all of the relevant evidence available and the appropriate background, the agency is justified in a "no effect" determination.
   2.2. If an agency rejects Proposition A as false (more likely to be false than true, based on the evidence available), but concludes that Proposition B is true because listed resources have no possibility of being exposed to stressors or subsidies produced by the action (a 0.0 probability of listed individuals being exposed) and can defend that conclusion based on all of the relevant evidence available and the appropriate background, the agency is also justified in a "no effect" determination.

Effects Determination Guidance

3. Four outcomes would justify a "may affect, but not likely to adversely affect" determination:
   - 3.1. If an agency rejects Proposition A as false and accepts Proposition B as true (the action produces stressor or subsidies, but the probability of exposing listed individuals to those stressors is so small that it would not be reasonable to expect them to occur) and can defend that acceptance based on all of the relevant evidence available and the appropriate background, the agency is justified in a "may affect, but not likely to adversely affect" determination (because the probability of effects would be discountable).
   - 3.2. If an agency rejects Proposition A and B as false but accepts Proposition C as true (the action produces stressors or subsidies, listed individuals are likely to be exposed to those stressors or subsidies, but there is no possibility or only a small probability of those individuals responding to the exposure) and can defend that conclusion based on all of the relevant evidence available and the appropriate background, the agency is also justified in a "may affect, but not likely to adversely affect" determination (because the effects would be insignificant).
   - 3.3. If an agency rejects Proposition A, B, and C as false (the action produces stressors or subsidies, listed individuals are likely to be exposed to those stressors or subsidies, and listed individuals are likely to respond to that exposure), but concludes that listed resources have (a) no possibility of negative responses and (b) are likely to respond positively to the exposure and can defend that conclusion based on all of the relevant evidence available and the appropriate background, the agency is justified in a "may affect, but not likely to adversely affect" determination (because the effects would be entirely beneficial).
   - 3.4. If an agency rejects Proposition A, B, and C as false but accepts Proposition D as true (the action produces stressors or subsidies, listed individuals are likely to be exposed to and respond to those stressors or subsidies, but there is no possibility or only a small probability of those individuals experiencing a reduction in fitness as a result) and can defend that conclusion based on all of the relevant evidence available and the appropriate background, the agency is also justified in a "may affect, but not likely to adversely affect" determination (because the effects would be insignificant).
4. If an agency rejects Proposition A, B, C, and D as false (or cannot accept them as true) given all of the relevant evidence available and the appropriate background, the agency is justified in a "may affect, and likely to adversely affect" determination.

ESA[1] Effects Determination Record, Pacific Islands Region/Area

Project Name/Tracking #:
Project Location & Dates:
Agency & Office:
Contact Person:

Effects Determinations
(check off each category, or list species in each category, as appropriate):

Effects Category	NMFS-listed species (turtles in sea, Hawaiian monk seal, whales[2])	USFWS-listed species (turtles on land, birds, invertebrates, plants[3])
No effect (NE)[4]		
May affect, but not likely to adversely affect (NLAA)[5]		
May affect, and likely to adversely affect (LAA)[5]		

Notes:

Questions?: Call Lance Smith (944-2258), Krista Graham (944-2238), or Don Hubner (944-2233), PRD ESA Team

[1] Acronyms:
ESA: Endangered Species Act
NMFS: National Marine Fisheries Service
PIRO: Pacific Islands Regional Office (in NMFS)
PRD: Protected Resources Division (in PIRO)
USFWS: U.S. Fish & Wildlife Service
NE: No effect
NLAA: Not likely to adversely affect
LAA: Likely to adversely affect

[2] NMFS has ESA jurisdiction over marine species, the following of which are listed under the ESA and occur in the Pacific Islands region/area: Green, Olive Ridley, Loggerhead, Leatherback, and Hawksbill Sea Turtles, Hawaiian Monk Seal, and Humpback, Sperm, Blue, Fin, Sei and Right Whales – see http://www.fpir.noaa.gov/

[3] USFWS has ESA jurisdiction over terrestrial species, including the terrestrial life history stages of sea turtles. A list of species protected under the ESA that occur in the Pacific Islands region/area is provided at http://www.fws.gov/pacificislands/wesa/endspindex.html

[4] If NE, no further action is required – concurrence from NMFS and/or USFWS is not required.

[5] If 'may affect' (NLAA or LAA), consultation is required with appropriate regulatory agency and office (NMFS PIRO PRD, or USFWS Ecological Services); note if the proposed project is already covered by an existing programmatic or other consultation. If not, then note when & how consultation was initiated.

May 2008; NMFS PIRO Protected Resources Division
See http://www.fpir.noaa.gov/ 'ESA Consultation'

Template for Consultation Request Cover Letter

Provided by NMFS Pacific Island Regional Office, Protected Resources Division

Revision Date: May 2008

INSTRUCTIONS

The following document is intended to serve as a template for letters from Federal action agencies (or their representatives) requesting consultation under Section 7 of the Endangered Species Act (ESA) on actions that may affect ESA-listed species.

COLOR KEY

Text coloring schemes:

- Black font (boilerplate)
- Blue font (*guidance & examples*)
- Red font (places to insert information)

As you finalize sections you should delete blue and red text.

[Letterhead for Federal action agency OR non-Federal representative]

[date]

Chris Yates, Protected Resources
NMFS Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, HI 96814

Re: Request for Consultation under Section 7 of the Endangered Species Act

Dear Mr. Yates:

The [Federal action agency/non-Federal representative] proposes to [authorize/permit/fund/carry out] the [name, location and date of proposed project]. [*Non-Federal representatives must be designated as such in writing by the Federal action agency*]. Enclosed is a [Biological Assessment(BA)/Biological Evaluation(BE)/other document as explained in template for BAs-BEs] to initiate [formal/informal] consultation under Section 7(a)(2) of the Endangered Species Act (ESA).

As described in the enclosed [BA/BE/other document], [the proposed action will have no effect on the following ESA-listed marine species: list each species] [*no concurrence or other consultation with NMFS is required for 'no effect' actions*]. The proposed action may affect, but is not likely to adversely affect, the following ESA-listed marine species: [list each species]. [There is no designated critical habitat in the project area/Designated critical habitat for the Hawaiian monk seal occurs within the project area]. [The proposed action may affect, but is not likely to adversely affect, monk seal critical habitat.] We request your concurrence with our 'not likely to adversely affect' determinations, and hereby request informal consultation under Section 7 of the ESA.

[As described in the enclosed BA/BE/other document, the proposed action may affect, and is likely to adversely affect (list species) (monk seal critical habitat). Therefore, we request initiation of formal consultation under Section 7 of the ESA.]

[*If the consultation request is for multiple projects, an entire program, or is otherwise more than a single discrete project, edit the above accordingly. E.g., provide more detail or attach tables showing the different projects and ESA determination for each, if applicable*]

Please contact [person's name and contact info] of my staff regarding this consultation request.

Enclosure: [BA/BE/other document]
[action agency project tracking number]

Template for Biological Assessments & Biological Evaluations

Provided by NMFS Pacific Island Regional Office, Protected Resources Division
Revision Date: May 2008

INSTRUCTIONS

The following document is intended to serve as a template for Biological Assessments (BA) and Biological Evaluations (BE) submitted by Federal action agencies or their non-Federal representatives to the National Marine Fisheries Service (NMFS) for consultation as required by Section 7 of the Endangered Species Act (ESA). The purpose of the BA-BE is to describe proposed actions and their effects on ESA-listed species.

COLOR KEY

Text coloring schemes:

- Black font (boilerplate)
- Blue font (*guidance & examples*)
- Red font (places to insert information)

As you finalize sections you should delete *blue* and red text.

[BIOLOGICAL ASSESSMENT OR BIOLOGICAL EVALUATION]

[*use one term or the other, as explained below*]

[Project Name]

[ACTION AGENCY TRACKING NUMBER, IF APPROPRIATE]

[*A Biological Assessment (BA) is prepared for "major construction activities" considered to be Federal actions significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act of 1969 (NEPA). A BA is required if listed species or critical habitat may be present in the action area, and the contents for a BA are described in 50 CFR 402.12(f). "Biological Evaluation" (BE) is a generic term for all other types of analyses. Although agencies are not required to prepare a BA for non-construction activities,* ***if a listed species or critical habitat is likely to be affected, the agency must provide NMFS with an evaluation on the likely effects of the action.*** *Often this information is referred to as a BE. NMFS uses this documentation along with any other available information to decide if concurrence with the agency's determination is warranted. Recommended contents are the same as for a BA, as referenced above. The BAs and BEs should not be confused with Environmental Assessments (EA) or Environmental Impact Statements (EIS) which may be required for NEPA projects. These EAs and EISs are designed to provide an analysis of multiple possible alternative actions on a variety of environmental, cultural, and social resources, and often use different definitions or standards. However, if an EA or EIS contains the information otherwise found in a BE or BA regarding the project and the potential impacts to listed species, it may be used in lieu of a BE or BA.*]

Prepared for:
[Federal action agency]
[Address of above agency]

Prepared by:
[insert your name and title]
[insert date]

1.0 BACKGROUND/HISTORY

The purpose of this [Biological Assessment/Biological Evaluation (BA/BE)] is to address the effect of the [insert project name] Project on ESA-listed species, listed as endangered or threatened under the Endangered Species Act (ESA), or their designated critical habitat. [name the Federal action agency, the Federal nexus for the proposed action, and the governing statute – i.e. Federal action agency X intends to authorize, permit, fund, or carry out the action described above, under section X of the Governing Act].

If there are multiple federal action agencies involved, list each and identify which is the lead federal action agency for the consultation.

The project involves [insert project primary function] in [location]. Because work will occur [adjacent to, or in, the ocean], it has the potential to impact the following ESA-listed marine species that occur in the area: [insert common and scientific names of each species] and/or its/their habitat. [If the project area encompasses monk seal critical habitat (NWHI only), mention that the project also has the potential to affect that].

Early coordination and pre-consultation with NMFS was conducted during a series of site visits, meetings, and phone conversation including: [Insert list of pre-consultation coordination and dates here].

This [BA/BE], prepared by the [Federal action agency, non-fed rep, or consultant], addresses the proposed action in compliance with Section 7(c) of the ESA of 1973, as amended. Section 7 of the ESA assures that, through consultation (or conferencing for proposed species) with the National Marine Fisheries Service (NMFS) and/or the U.S. Fish and Wildlife Service (USFWS), federal actions do not jeopardize the continued existence of any threatened, endangered or proposed species, or result in the destruction or adverse modification of critical habitat.

The purpose of the proposed action is to [insert purpose and need].

The project purpose and need statement should provide a clear purpose for the proposed project, as well as a brief description of proposed actions in relation to the needs discussed.

2.0 DESCRIPTION OF THE ACTION & ACTION AREA

The proposed action includes [list project components here in a logical order].

Include a detailed description of what work will be done, and how it will be accomplished, particularly for components that are reasonably likely to have impacts on protected species and/or their habitats. Also include measures to be taken to reduce or eliminate potential impacts from the action, as well as any proposed beneficial components of the project intended as offsetting actions for unavoidable potential adverse effects or as enhancement opportunities: e.g, habitat protection, wetland creation, restoration or enhancements, etc.

The action area includes [describe the action area in terms of the geographic extent of all the project's potential effects – see definition below, and refer to attached maps or figures as appropriate].

Definitions from 50 CFR §402-02:
Action Area: *All areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.*
Direct Effects: *Direct or immediate effects of the project on the species or its habitat. Direct effects include those resulting from interdependent or interrelated actions.*
Indirect Effects: *Those effects that are caused by or will result from the proposed action and are later in time, but still reasonably certain to occur.*

3.0 LISTED SPECIES & CRITICAL HABITAT IN THE ACTION AREA

A large number of ESA-listed species occur in the Pacific Islands Region (Hawaii, Guam, Northern Marianas, American Samoa, and Pacific Remote Island Area), including many widely-distributed marine species. NMFS has ESA jurisdiction over marine species - see http://www.fpir.noaa.gov/ and click on 'ESA Consultation' for a list of marine species protected under the ESA in the Pacific Islands Region. USFWS has ESA jurisdiction over terrestrial and freshwater species, including the terrestrial life history stages of sea turtles – see http://www.fws.gov/pacificislands/wesa/endspindex.html for a list of terrestrial and freshwater species protected under the ESA in the Pacific Islands.

Species lists of ESA-listed marine species occurring in each archipelago in the Pacific Region (Hawaii, Marianas, American Samoa) may be obtained from the NMFS website above, or species lists requests for proposed project areas may be submitted to NMFS. However, because all ESA-listed marine species in the Pacific Region are widely distributed, a species list for a project area is the same a species list for an archipelago, thus it is much quicker to obtain the species list from the NMFS website.

ESA consultation is only necessary if ESA-listed species may be affected by the proposed project. However, the "not known to occur here" approach is a common but flawed way of arguing that a proposed project will not affect ESA-listed species. The operative word here is "known." Unless adequate surveys have been conducted or adequate information sources have been referenced, this statement is difficult to interpret. It begs the questions "Has anyone looked?" and "How did they look?". Remember that your evaluation of potential project effects does not end if ESA-listed are not found in the project area. You must still evaluate the effects of the proposed action on potential habitat for the species, even if it is not known to be occupied.

Once the listed species/critical habitat occurring in the action area have been identified, then this section should describe human activities and natural events that have led to the current status of the listed species/critical habitat. This section can rely extensively on cross-referencing existing documents, such as recent status reviews, recovery plans, biological

opinions, federal register notices, NEPA documents, etc. This section presents the biological or ecological information relevant to completing the biological assessment. Appropriate information on the species' life history, its habitat and distribution, and other data on factors necessary to its survival should be included to provide background for analyses in later sections. When designated critical habitat is affected, a companion analysis should be done for that habitat.

The following ESA-listed marine species occur within the action area, or may be affected by the proposed action: [insert species names]. [also describe any designated critical habitat that may be affected by the proposed action].

4.0 ENVIRONMENTAL BASELINE CONDITIONS

This section identifies and describes all known human-induced sources of impact to the listed species in the Action Area, except those caused by the proposed action. The purpose of the environmental baseline is to provide the context for the impacts of the proposed action with regard to the impacts of all the other human activities that are also affecting the listed species . Although the impacts described in this section are limited to those in the Action Area, it should be noted that additional impacts outside the Action Area often affect the same individuals and populations that are affected in the Action Area. E.g., for sea turtles, additional sources of impacts outside the action area may include pelagic fisheries, nearshore fisheries, directed harvest (of turtles and eggs) and various sources of nesting beach degradation.

5.0 EFFECTS OF THE ACTION

This section includes an analysis of the direct and indirect effects (defined above) of the proposed action, and any interrelated and interdependent actions (see definition below), on the species and/or critical habitat. Factors to be considered in the analysis include: proximity of the action, distribution, timing, nature of the effect, duration, disturbance frequency, disturbance intensity, and disturbance severity. A sufficiently detailed description of the proposed action should be provided in the Proposed Action and Action Area Section above so that the scope of the action and the subsequent analysis of it potential effects are clear.

*Definition: **Interrelated or Interdependent Activity**: An interrelated activity is an activity that is part of the proposed action and depends on the proposed action for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation.*

6.0 CUMULATIVE EFFECTS (Formal consultation only)

Describe all "non-Federal" actions reasonably certain to occur in the foreseeable future. Includes state, local, private, and tribal actions (e.g. residential developments, watershed

enhancement, etc.). Section 7 regulations require the Federal action agency to provide an analysis of cumulative effects, along with other information, when requesting initiation of formal consultation. Note that 'cumulative effects' under the ESA is defined more narrowly than under NEPA[1].

7.0 CONCLUSIONS

An effects determination should be made for the proposed action with regard to each listed species and designated critical habitat. Effects determinations by the action agency are summarized in the May 2008 "Action Agency Guide to ESA Consultation w/ NMFS" and "Effects Determination Guidance" accompanying this template, and also found at http://www.fpir.noaa.gov/ (click on 'ESA Consultation'). As described in those documents, the 3 possible effects determinations for each species are: 1) No Effect (NE); 2) May Affect, but Not Likely to Adversely Affect (NLAA); and 3) May Affect, and Likely to Adversely Affect (LAA).

In conclusion, we have determined that the proposed action [will have no effect on/may affect, but is not likely to adversely affect/may affect, and is likely to adversely affect] [each listed species/designated critical habitat].

As described in the May 2008 "Action Agency Guide to ESA Consultation w/ NMFS" and "Effects Determination Guidance" accompanying this template, and also found at http://www.fpir.noaa.gov/ (click on 'ESA Consultation'):

A NE effects determination requires no consultation with NMFS, a NLAA effects determination requires a request for concurrence from NMFS (informal consultation), and a LAA effects determination requires initiation of formal consultation with NMFS.

8.0 LITERATURE CITED

Include all scientific papers, agency reports, other literature, and personal communications.

[1] "Cumulative impacts", as defined by NEPA [40 C.F.R. §1508.7], are the impacts on the environment which result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts are distinct from "cumulative effects", as defined by the ESA [50 C.F.R. § 402.02], which are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area.

Endangered Species Act (ESA) Consultation

Section 7 of the Endangered Species Act (ESA) requires Federal agencies to ensure that actions they authorize, fund, or carry out do not jeopardize the existence of any species listed under the ESA (or destroy or adversely modify designated critical habitat for any listed species). Thus, Section 7 requires consultation by the Federal 'action agency' (the agency authorizing, funding, or carrying out the action) with the appropriate regulatory agency, either the National Marine Fisheries Service (NMFS) for marine species, or the U.S. Fish & Wildlife Service (USFWS) for terrestrial and freshwater species.

The purpose of this webpage is to provide Federal action agencies or their representatives with information and materials needed to consult with NMFS on Federal actions affecting ESA-listed marine species in the Pacific Islands region. The region includes the Hawaiian Archipelago including the Northwestern Hawaiian Islands, the Marianas Archipelago including Guam and the Northern Marianas, American Samoa, and the Pacific Remote Island Area (seven Central Pacific Islands/Atolls/Reefs: Wake, Baker, Howland, Jarvis, Johnston, Kingman, and Palmyra).

First, action agencies need to know what ESA-listed species or designated critical habitat occur in their project areas. The 'Species Lists' links below provides lists of ESA-listed marine species occurring in the Hawaiian Archipelago, the Marianas Archipelago (the Territory of Guam and the Commonwealth of the Northern Marianas), and the Territory of American Samoa. The only designated critical habitat for any of these species in the Pacific Islands region is for the Hawaiian monk seal in the Northwestern Hawaiian Islands.

Second, when a Federal action occurs within the range of ESA-listed species, action agencies need to determine if ESA consultation is required. In other words, if 'no effect' to listed species is expected, then consultation is not required. If listed species may be affected, then consultation is required. If consultation is required, action agencies need to provide the appropriate documentation. The 'Action Agency Consultation Package' links below provide the information to help action agencies determine if ESA consultation is necessary (Flow Chart: ESA Consultation for Action Agencies, Effects Determination Guidance), as well as Word templates that action agencies can use to assemble the appropriate documentation.

If you have any questions regarding ESA consultation, please contact the following NMFS Protected Resources staff: Lance Smith, ESA Section 7 Coordinator, at 808-944-2258 or **Lance.Smith@noaa.gov**, Krista Graham, Resource Management Coordinator, at 808-944-2238 or **Krista.Graham@noaa.gov**, or Don Hubner, Resource Management Specialist, at 808-944-2233 or **Donald.Hubner@noaa.gov**.

Species Lists (only listed species under NMFS jurisdiction)
Hawaii Species List <link to pdf file>
Marianas Species List <link to pdf file>
American Samoa Species List <link to pdf file>

Action Agency Consultation Package
Flow Chart: ESA Consultation for Action Agencies <link to pdf file>
Effects Determination Guidance <link to pdf file>
Effects Determination Record <link to Word file>

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

HRD08/3623B

June 10, 2008

James Niermann, AICP
Senior Planner
R.M Towill Corporation
2024 N. King Street, Suite 200
Honolulu, Hawai'i 96819-3494

RE: Section 106 Consultation Nāwiliwili-Civic Center-Ahukini Pedestrian/Bike Path, Job No. 20987, Līhu'e, Kaua'i, Hawai'i,

Aloha e James Niermann,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated May 6, 2008. The County of Kaua'i proposes to develop a bike/pedestrian path to connect Nāwiliwili Harbor, the Līhu'e Civic Center, and Ahukini Point. OHA has reviewed the project and offers the following comments.

Our office is concerned with the level of survey conducted in order to determine the presence of archeological resources within the APE. Although the proposed pedestrian/bike path is clearly outlined on the submission sent to our office, the exact location of the bike path in relation to historic sites is unclear. The 16-mile segment of the proposed path runs near the ocean and in the vicinity of a number of known historic sites.

Numerous historic sites are located along the coast fronting the Kaua'i Lagoons from Kalapaki Beach to Ninini Point. Due to the location of the proposed pathway, the potential to encounter historic resources and human burials may be probable. According to our records, six historic sites are located in the general vicinity of this portion of the segment. Below is a list of these historic sites that are registered with the State Historic Preservation Division:

Site #	Description
50-30-11-00100	Ninini Heiau
50-30-11-00101	Ahuhini Heiau (Ahukini)
50-30-11-00424	Oval Terrace Alignment
50-30-11-00421	Kalapaki Shell Midden Scatter
50-30-11-00423	Kalapaki Old Wall Remnant
50-30-11-00422	Kalapaki Old Wall Remnant

Near the harbor in Niumalu, the North Niumalu Complex (State Inventory of Historic Places Site 50-30-11-03168 historic site complex), is located at the end of the proposed pathway near the Nāwiliwili Small Boat Harbor.

Site #	Description
50-30-11-03168	North Niumalu Complex
50-30-11-00099	Kuhiau Heiau
50-30-11-06009	Kalapaki Cemetery
50-30-11-00495	Nāwiliwili Burial Site
50-30-11-00491	Nāwiliwili 'Auwai
50-30-11-00494	Nāwiliwili Lava Rock Marker
50-30-11-00934	Peekoa Heiau
50-30-11-09301	Grove Farm Homestead
50-30-11-00824	Nāwiliwili Burial Site

Appropriate efforts shall be made by the applicant in order to assess the presence of known archeological and cultural sites in the APE. These efforts include identification of historic sites. It is unclear from your documents whether any formal archaeological and/or cultural resource surveys have been conducted for the APE of the project.

Furthermore, if in fact an archeological survey has not been conducted for this project area, OHA requests that a comprehensive archaeological inventory survey for the project area be conducted and submitted to the Department of Land and Natural Resources – Historic Preservation Division for review and approval. We ask that this issue be addressed in future consultation regarding this project.

We request the applicant's assurances that should iwi kūpuna or Native Hawaiian cultural or traditional deposits be found during the construction of the project, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

Thank you for the opportunity to comment. If you have further questions, please contact Jason Jeremiah (808) 594-1816 or e-mail him at jasonj@oha.org.

'O wau iho nō me ka 'oia'i'o,

Clyde W. Nāmu'o
Administrator

C: OHA Kaua'i CRC Office

Laura Thielen
State Historic Preservation Officer
Department of Land and Natural Resources
601 Kamokila Boulevard, Room 555
Kapolei, Hawai'i 96707

LINDA LINGLE
GOVERNOR

BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI

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

IN REPLY REFER TO:

STP 8.2910

June 24, 2008

Mr. James Niermann, AICP
Senior Planner
R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819-3494

Dear Mr. Niermann:

Subject: Preliminary Draft Environmental Assessment (Prelim DEA)
Nawiliwili-Civic Center-Ahukini Pedestrian & Bike Path

The Department of Transportation (DOT) is supportive of safe bicycle and pedestrian path connectivity as an integrated transportation feature. The DOT submits the following comments on the proposed pedestrian/bike path project for the County of Kauai:

1. The project impacts the facilities of DOT's three divisions (Highways, Harbors and Airports). Planning for the project requires the involvement of each division to ensure that the project is properly coordinated with all appropriate staff.

2. Airport Impacts:

   a. A Federal Aviation Administration (FAA) navigational aid, the Middle Marker for Lihue Airport (LIH), is located at the site of the project's proposed comfort station near Ninini Point Lighthouse. FAA requires an unobstructed setback of 300-feet around the Middle Marker. The County must submit FAA Form 7460-1 (Notice of Proposed Construction or Alteration) to the FAA Hawaii District Office for any pedestrian/bike path project facilities around the Middle Marker.

   b. The Transportation Security Administration (TSA) should be afforded an opportunity to review the subject project for any security concerns.

   c. Continued coordination between the County of Kauai and the DOT Airports Division as regards routes through the airport or along any airport perimeter is necessary.

3. Harbor Impacts:

   a. Safety and liability issues associated with the proposed pedestrian/bike path alignment through Nawiliwili Commercial Harbor, as reflected in Figure 1 of the Prelim DEA, must be addressed. For example, Corridor IV and segment "O" (Page 2-45) of the pathway runs through Nawiliwili Commercial Harbor affecting DOT-owned roads such as Wilcox Road, Kanoa Street and Waapa Road. The Draft Environmental Assessment should thoroughly address all safety and liability issues posed by the proposed mix of pedestrians and bikes with industrial activity.

   b. The DOT Harbors Division does not recommend the pedestrian/bike path's use of Waapa Road. The pathway will compromise the maritime industrial area's high traffic movements of large container trucks, commercial vehicles and other heavy equipment.

   c. If, however the, pedestrian/bike route through Nawiliwili Commercial Harbor, including the use of Waapa Road, is deemed necessary, the DOT may consider the use of the mauka side of Wilcox Road, Kanoa Street and Waapa Road to avoid crossing the cargo terminal entrances. Safety measures (e.g., jersey barriers) must be implemented to reduce state and driver liability.

4. Highway Impacts:

   a. Recommend that 1) Kapule Highway between Ninini Street and Rice Street, and 2) Hoolako Street between Halau Street and Rice Street, be considered in the evaluation of Route Alternatives. The inclusion of these segments would provide additional, low-cost connectivity since the segments are "on street path facilities".

   b. Recommend that Kapule Highway and Ahukini Road (between Kapule Highway and Kuhio Highway) be considered for use as "on street path facilities," and that Kaana Street and Hoolako Street be considered as part of the Multi-use Path Alignment. The Multi-use Path may be better suited than DOT's busier highways and roads, and may be consistent with the concepts proposed in Grove Farm's adjacent Wailani Project.

   c. While the use of bicycle lockers offers a more secure alternative to bicycle racks, the solid or opaque lockers pictured on page 2-24 create safety and security risks. If lockers are preferred over racks, then security checks and transparent windows that enable viewing of the contents of the lockers are suggested. This is to prevent the lockers from being used inappropriately by the homeless or for storing items not related to bicycling. Placing covers over the lockers or obstructing viewing of the lockers' contents should not be allowed.

The DOT appreciates the courtesy of your advance consultation and for the opportunity to review the preliminary environmental assessment. The DOT may provide additional comments or suggestions upon receipt of the formal Draft Environmental Assessment (Draft EA).

Request that (7) copies of the Draft EA be sent to DOT, 869 Punchbowl Street, Honolulu, Hawaii 96813, ATTN: STP Office.

Very truly yours,

BRENNON T. MORIOKA, PH.D., P.E.
Director of Transportation

c: DPQ, Kauai County

APPENDIX G

Public Outreach Meetings

PROJECT SCOPE:

R. M. Towill Corporation's Scope of Work:

- Identify path alignment(s) & amenities
- Prepare an Environmental Assessment (EA)
- Prepare land use approval permit applications:
  - Special Management Area Permit (SMA)
  - Shoreline Certification
  - Shoreline Setback Variance (SSV)
  - Conservation District Use Application (CDUA)
- Prepare a Scope of Work for the design phase:
  - Prepare conceptual plans for engineering, architectural, and landscape work.
  - Prepare a map of the preferred path route(s) with existing conditions and constraints.
  - Prepare a maintenance and management plan report.

Basis for Selection of Bike and Pedestrian Path Alignment:

- Site opportunities and constraints
- Public input and preferences
- Land owner participation (Private, County, State, Federal)
- Draft EA – assessment of impacts of route alternatives
- Regulatory considerations and land use approvals

CONTACTS:

Prime Consultant:
R. M. Towill Corporation
Chester Koga
Jim Niermann
808-842-1133
kauaibikepath@hawaii.rr.com

Public Communication Project Consultant:
Roxanne MacDougall
822-5798

County of Kauai, Building Division:
Patrick Kaihara
241-6658
pkaihara@kauai.gov

Public Information Meeting #1

Nāwiliwili – Civic Center – Ahukini Bike & Pedestrian Path

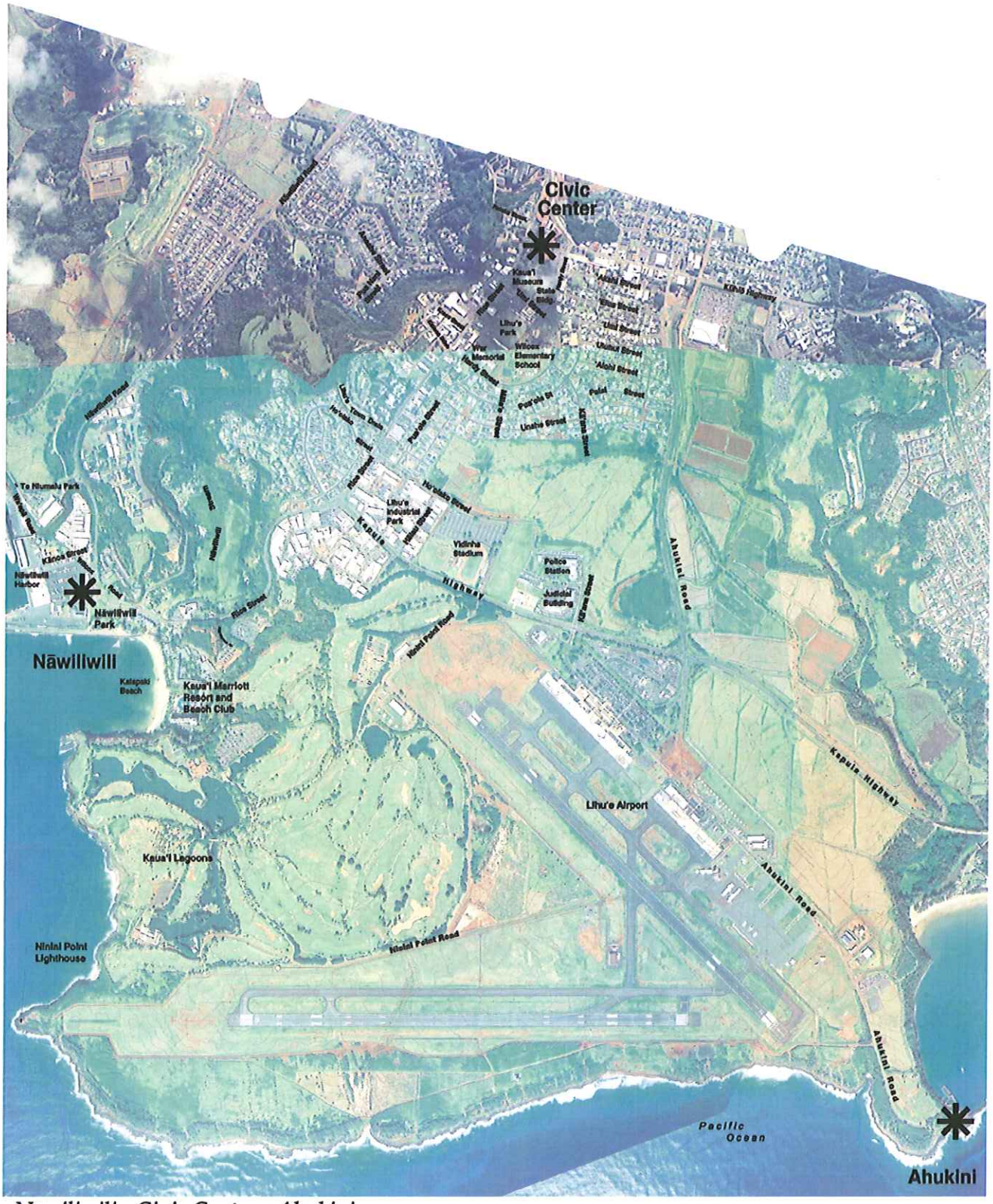
Nāwiliwili to Anahola Bike & Pedestrian Path Project
County of Kaua'i

June 26, 2007, 7:00 – 9:00 PM
War Memorial Convention Hall

The southernmost phase of the 16-mile Nāwiliwili to Anahola Bike and Pedestrian Path is unique in that it will be more triangular than linear. In addition to connecting Nāwiliwili Park with Ahukini Landing, the path will provide alternative transportation to and from the heart of Līhu'e by including the County of Kaua`i Civic Center as a primary destination. This approach will enhance non-motorized access to the governmental and business hub of Līhu'e, as well as provide safe access to the path system for Līhu'e residents.

AGENDA:

- Review the scope of work for the Nāwiliwili – Civic Center – Ahukini phase of the overall Nāwiliwili-Anahola path project.
- Orient meeting participants to the potential routes for the Nāwiliwili – Civic Center – Ahukini bike and pedestrian path.
- Conduct a small-group map exercise to identify:
  - Significant areas / opportunities / constraints
  - Path alignment alternatives
  - Desired amenities
- Address questions and receive comments from community members.



Nāwiliwili - Civic Center - Ahukini

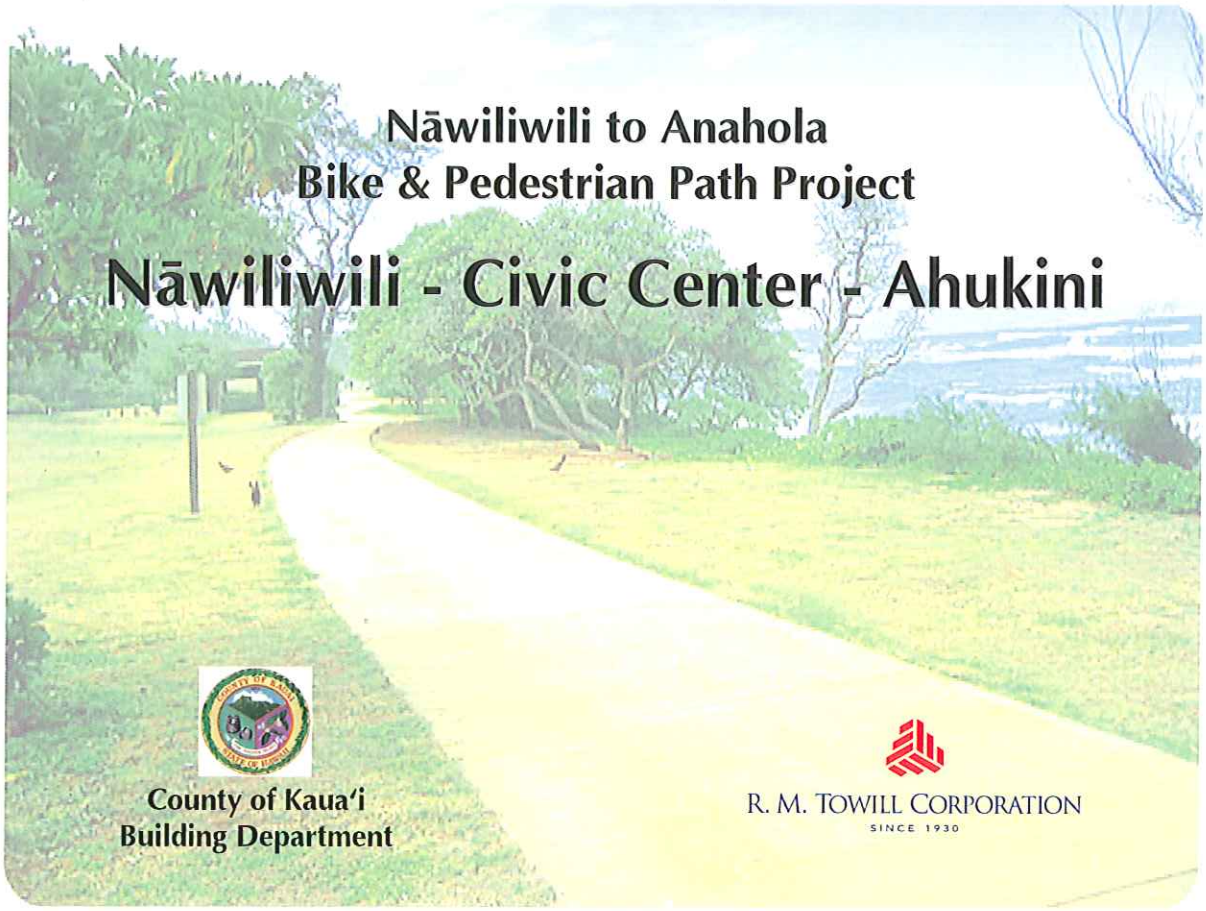
Nāwiliwili to Anahola Bike & Pedestrian Path Project

County of Kauai, Hawaii

0 400 800 1600 2400 Feet

R. M. Towill Corporation June 26, 2007

Notes:
(1) Aerial photos not orthographically rectified. Photo of makai areas taken March 28, 2007. Photo of mauka area obtained from SOEST based on NOAA/NOS aerial photography by the Pacific Disaster Center mapping program. Image taken between March and July 2000.
(2) Topographic data digitized from 1972 aerial topo agricultural maps by R. M. Towill Corporation.
(3) Exhibit is for planning and discussion purposes only, not for engineering design.



Nāwiliwili to Anahola Bike & Pedestrian Path Project County of Kaua'i

PHASE

V. Keālia, Kuna Bay - Anahola

II. Kapa'a - Keālia

III. Lydgate – Kapa'a

I. Lydgate Park

IV. Ahukini – Lydgate

VI. Nāwiliwili – Civic Center - Ahukini

Nāwiliwili – Civic Center – Ahukini Bike & Pedestrian Path

RMTC Project Role and Scope of Work (SOW)

Role:

- Coordinate with project participants & guide project progress
- Provide technical expertise
- Serve as a tool for the County and community of Kauaʻi
- Foster community participation and input

Scope of Work:

- Select path alignment & amenities
- Environmental Assessment
- Land use approvals
- Prepare Scope of Work for design phase

Path Alignment & Amenities

Basis for Selection:

- Site opportunities and constraints
- Public input and preferences
- Land owner participation (Private, County, State, Federal)
- Draft EA – assessment of environmental impacts of route alternatives
- Regulatory considerations and land use approvals

Environmental Assessment

Purpose and Need:

- Hawai'i Revised Statutes (HRS) Chapter 343
- National Environmental Protection Act (NEPA)

Tasks:

- Data collection and mapping
- Special studies: archaeology, flora, fauna
- Evaluation of project impacts
- Statutory clearances: CWA Section 401, 404; DOT Section 4(f), CZM, ESA, NHPA Section 106.
- Responses to comments from the community, public agencies, and private organizations.

Land Use Approvals

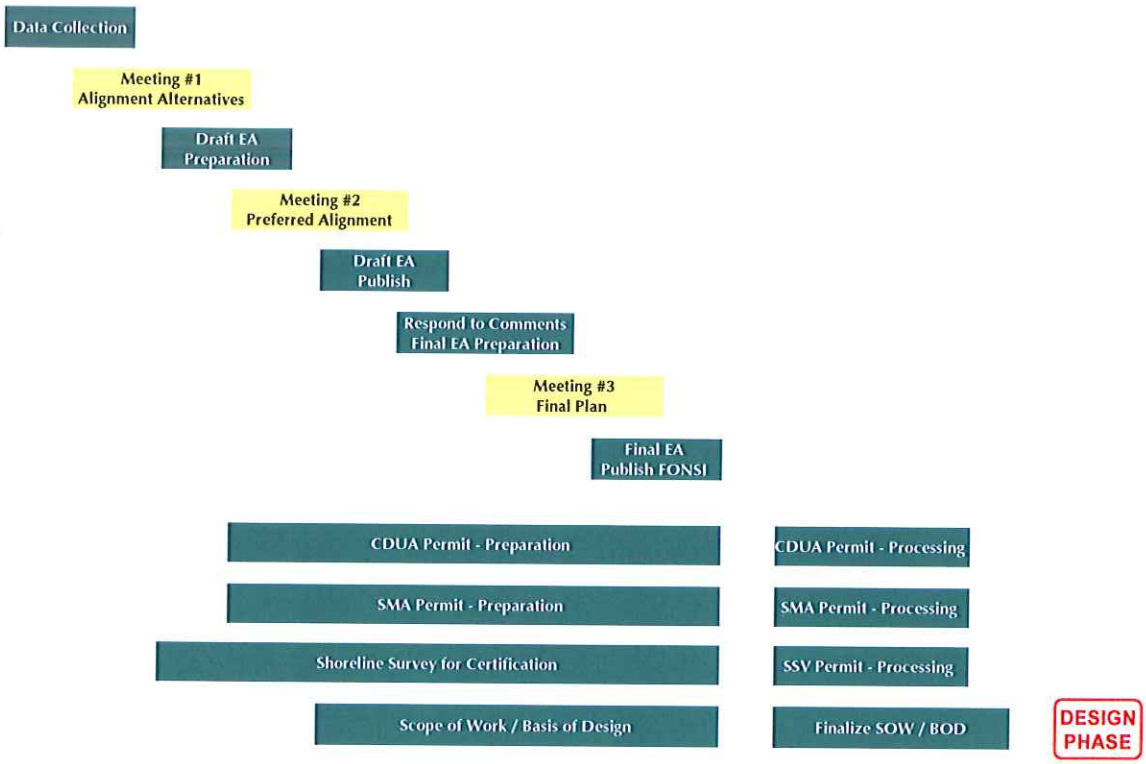
- Special Management Area Permit (SMA)
- Shoreline Certification
- Shoreline Setback Variance (SSV)
- Conservation District Use Application (CDUA)

Scope of Work for Design Phase

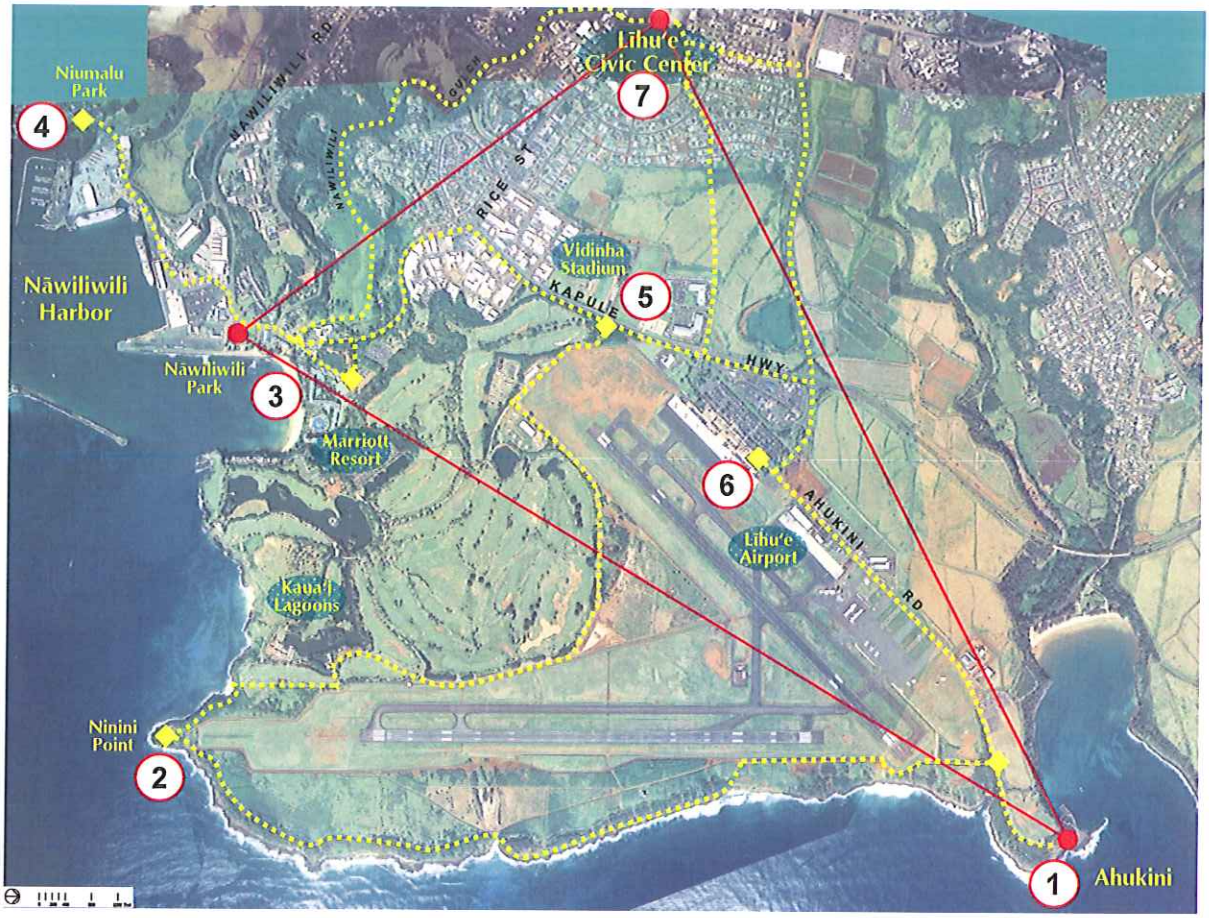
Tasks:

- Prepare conceptual plans for engineering, architectural, and landscape work.
- Prepare a map of the preferred path route(s) with existing conditions and constraints.
- Prepare a maintenance and management plan report.

Project Process



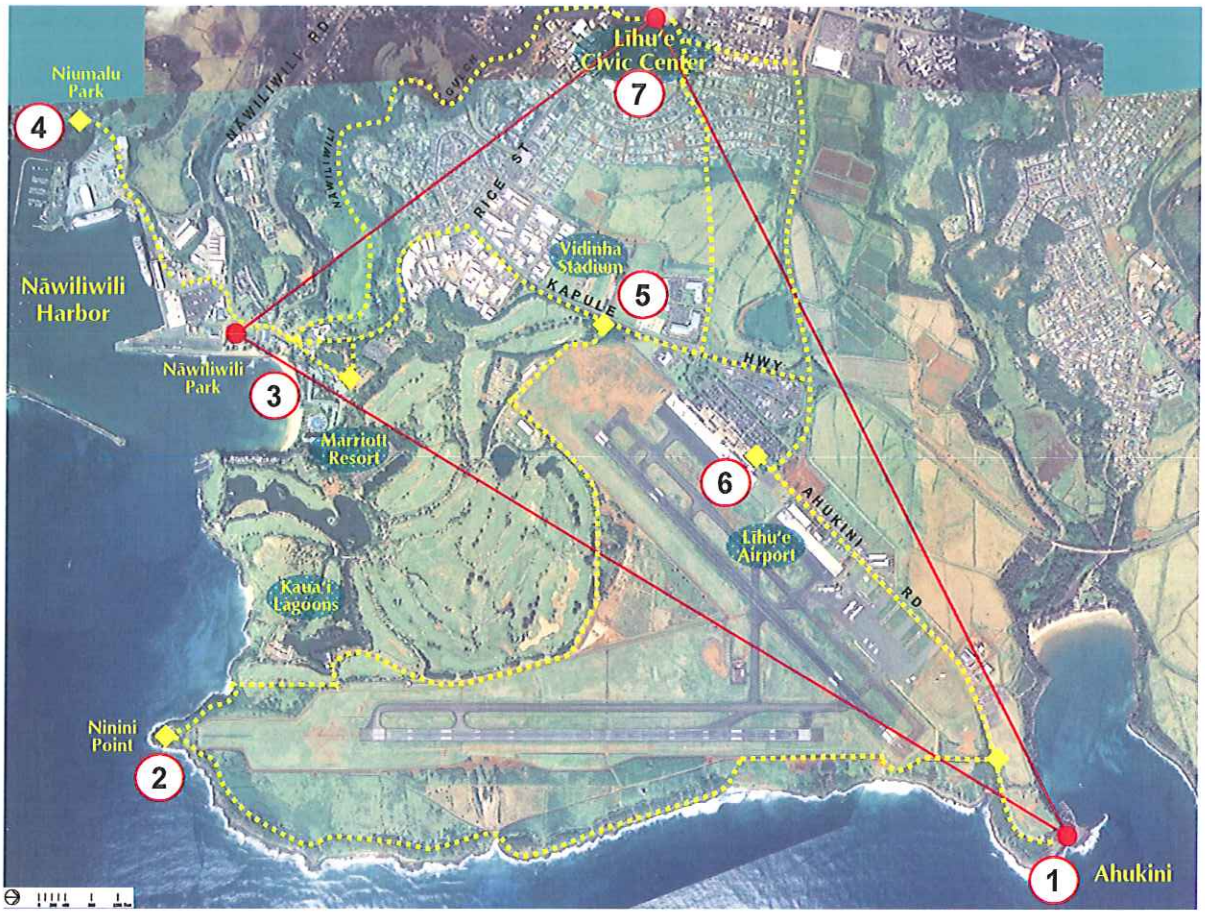
Route Orientation
Nāwiliwili – Civic Center - Ahukini



Ahukini to Ninini Point Lighthouse

Ninini Point Lighthouse to Nāwiliwili Park
Nāwiliwili Harbor
RICE ST
KAPULE
Vidinha Stadium
5
HWY
Nāwiliwili Park
3
Marriott Resort
Kaua'i Lagoons
Ninini Point Lighthouse
2
Ahukini to Nāwiliwili

Nāwiliwili Park
LALA RD
Stream
Nāwiliwili Park
Anchor Cove
Harbor Mall
RICE ST
Canoe Hale
Pine Inn
Nāwiliwili
Nāwiliwili Tavern
Kalapaki Beach
Duke's
Marriott Resort
Ahukini to Nāwiliwili


Lihu'e Civic Center
7
Niumalu Park
4
NĀWILIWILI RD
GULCH
NAWILIWILI
RICE ST
Vidinha Stadium
KAPULE
5
Nāwiliwili Harbor
HWY
Nāwiliwili Park
3
Marriott Resort
6
AHUKINI
Lihu'e Airport
RD
Kaua'i Lagoons
Ninini Point
2
1
Ahukini

Nāwiliwili Park to Līhu'e Civic Center
Līhu'e Civic Center
7
KŪHIŌ HWY
NĀWILIWILI
RD
GULCH
UMI ST
HARDY
RICE
KA'ANA ST
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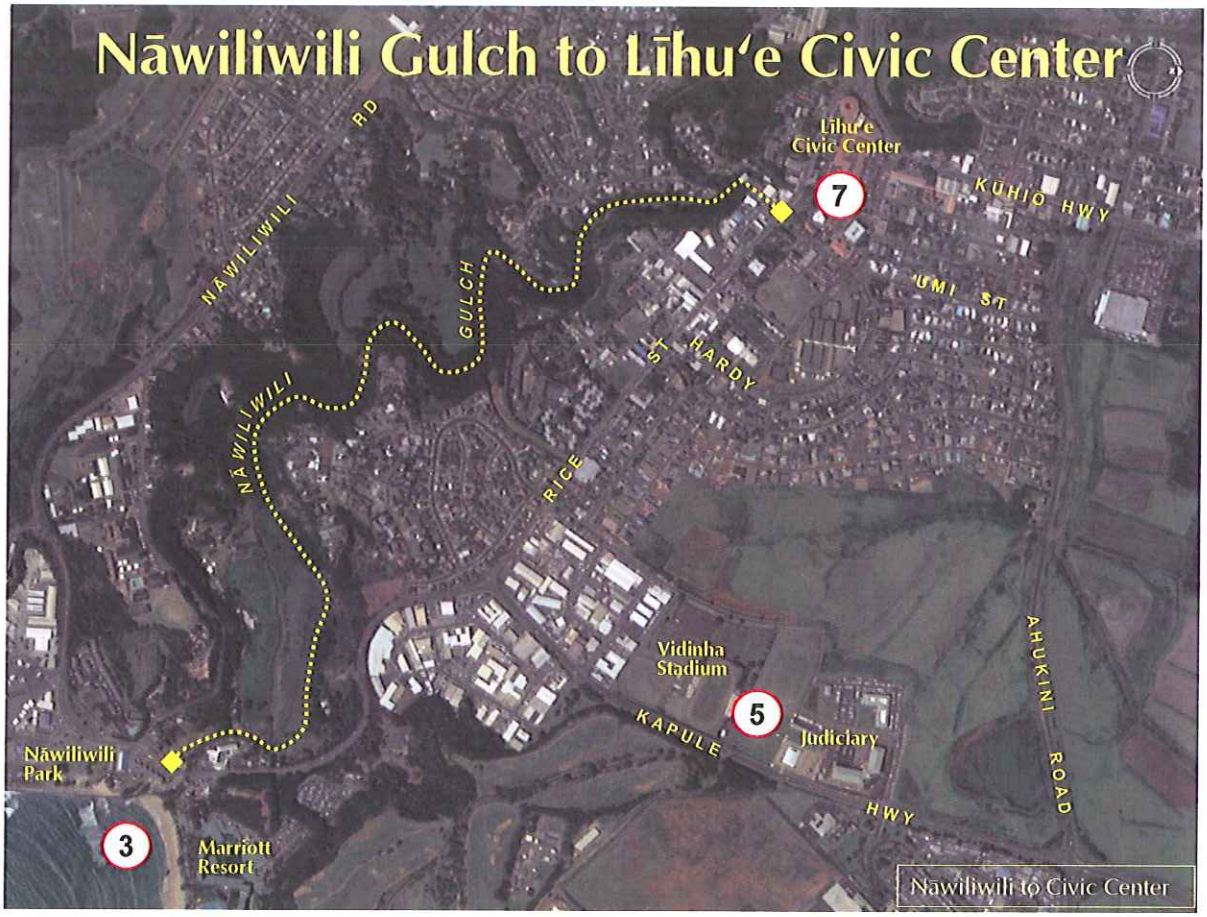
HWY
Nawiliwili to Civic Center


Nāwiliwili Gulch to Līhu'e Civic Center
Līhu'e Civic Center
7
KŪHIO HWY
NĀWILIWILI RD
NĀWILIWILI GULCH
UMI ST
HARDY ST
RICE ST
Vidinha Stadium
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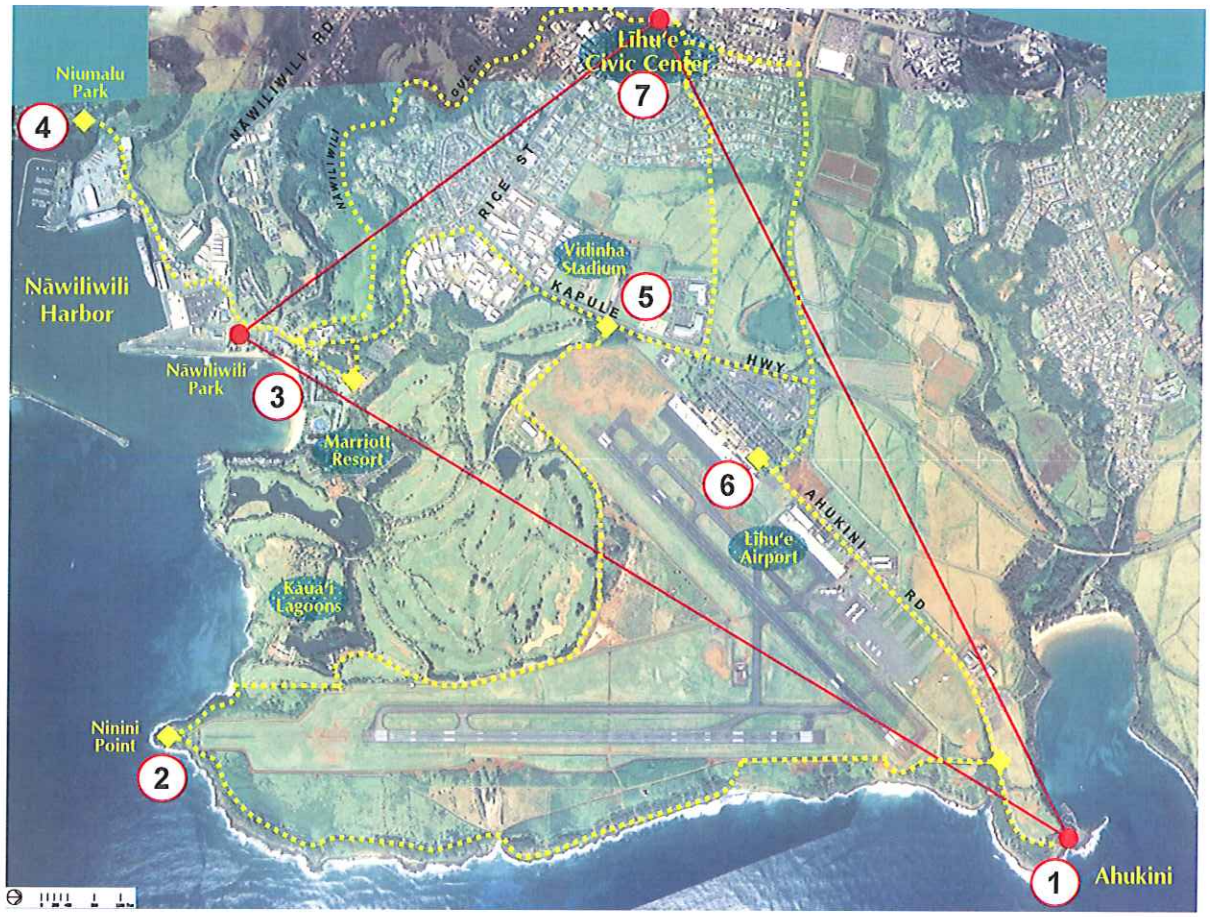
KAPULE HWY
Judiciary
AHUKINI ROAD
Nāwiliwili Park
3
Marriott Resort
Nāwiliwili to Civic Center


Niumalu Park
4
NĀWILIWILI RD
NĀWILIWILI GULCH
Līhu'e Civic Center
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RICE ST
Vidinha Stadium
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KAPULE HWY
Nāwiliwili Harbor
Nāwiliwili Park
3
Marriott Resort
6
AHUKINI RD
Līhu'e Airport
Kaua'i Lagoons
Ninini Point
2
1
Ahukini

Ahukini to Līhu'e Airport
KAPULE
Judiciary
HWY
Marriott Resort
Līhu'e Airport
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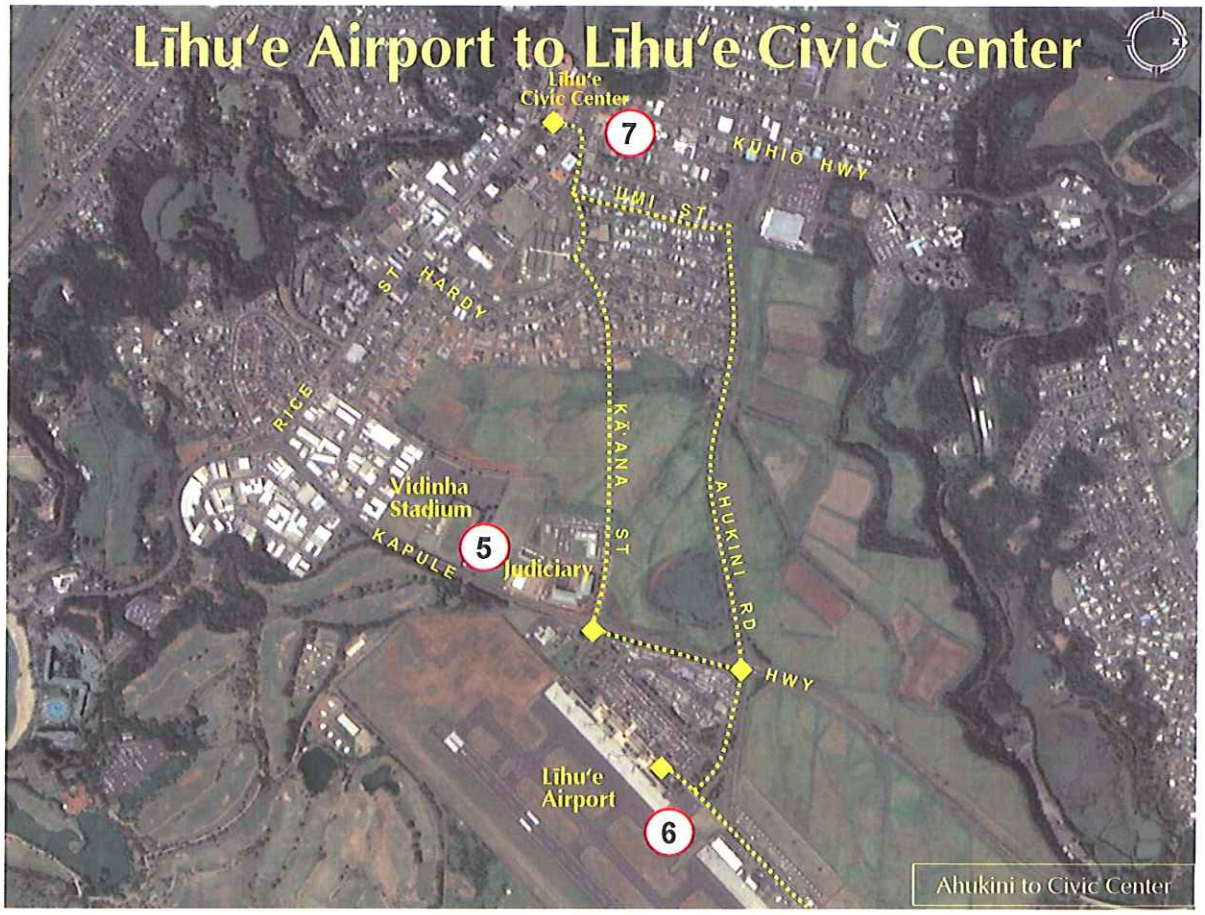
AHUKINI RD
Kaua'i Lagoons
Ahukini
1
Ahukini to Civic Center


Līhu'e Airport to Līhu'e Civic Center
Līhu'e Civic Center
7
KŪHIO HWY
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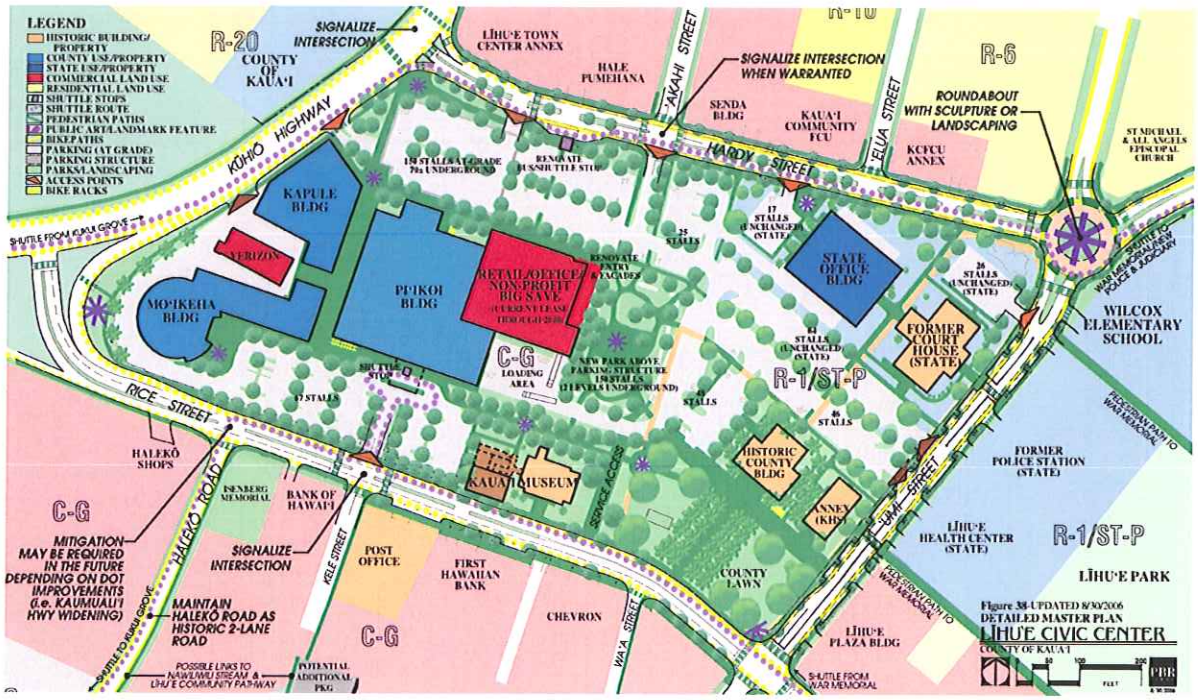
HARDY ST
RICE
KĀ'ANA ST
AHUKINI RD
Vidinha Stadium
KAPULE
5
Judiciary
HWY
Līhu'e Airport
6
Ahukini to Civic Center

Līhu'e Civic Center Master Plan



Questions and Answers

Small Group Exercise

- Breakout into small groups.
- Mark-up maps to identify:
  - Significant areas / opportunities / constraints
  - Suggested alignments
  - Desired amenities

Next Steps

1. Meeting notes will be published on Bike Path Project website:
   www.kauai.gov/Government/Departments/PublicWorks/BuildingDivision/BuildingDivisionProjects/BikePathProject
2. RMTC will use meeting input to develop alignment alternatives for preparation of the Draft EA and presentation to the community.
3. Preferred alignment(s) will be selected based on criteria previously presented.

Contacts

Prime Consultant:
R. M. Towill Corporation
Chester Koga
Jim Niermann
808-842-1133
kauaibikepath@hawaii.rr.com

Public Communication Project Consultant:
Roxanne MacDougall
822-5798

County of Kauai, Building Division:
Patrick Kaihara
241-6658
pkaihara@kauai.gov

www.kauai.gov

NAWILIWILI-CIVIC CENTER-AHUKINI BIKE & PEDESTRIAN PATH

Meeting Minutes

Environmental Assessment Public Meeting #1

Tuesday, June 26, 2007
7:00 PM to 9:00 PM
Kaua`i War Memorial Convention Hall

MEETING OVERVIEW
Facilitator Roxanne MacDougall called the meeting to order and welcomed the group of over 50 attendees. She reviewed the meeting objectives, agenda and guidelines, as follows:

Objectives
- Review the project scope and process
- Present a visual tour of the potential alignments for the Nawiliwili-Civic Center-Ahukini path and related opportunities/challenges.
- Generate public input via questions and comments, as well as a small group exercise using maps

Agenda
- Meeting overview
- Update on the overall Nawiliwili-Anahola bike and pedestrian path project
- Presentation/visual tour for Nawiliwili-Civic Center-Ahukini
- Questions, answers, comments
- Group activity with maps
- Close, next steps

Meeting Guidelines
- Focus on Nawilwili-Civic Center-Ahukini phase only
- One speaker at a time, to facilitate listening and respect for others.

- Use the microphone for questions and comments, so that all can be heard and Hoike Public Television can record the meeting
- Get to the point in questions and comments, for time efficiency
- Send written input to:
  Roxanne MacDougall
  Box 328
  Kapaa, HI 96746

Roxanne MacDougall introduced R. M. Towill Corporation (RMTC) consultant Jim Niermann, who then introduced consultants Chester Koga and Mike Okamoto from RMTC. Jim invited Doug Haigh, Chief of the Building Division in the Kaua`i Department of Public Works, to provide an update on the overall bike and pedestrian path project.

PRESENTATION ON NAWILIWILI-ANAHOLA BIKE AND PEDSTRIAN PATH
Before starting his presentation, Doug Haigh welcomed Councilman Tim Bynum and noted that Mayor Brian Baptiste was off-island and unable to attend. He expressed that the path project was a high priority for the Mayor.

Haigh, supported by a PowerPoint presentation, made the following points:

The Nawiliwili-Anahold path vision was first identified in the 1980's and was incorporated into the Hawai`i bike plan in the 1990's. Mayor Baptiste stresses that Kaua`i's path project is in part driven by the need for preserving and protecting shoreline access forever. Lands that had been open to the public during the days of the plantations had been sold and many were being closed off. Haigh showed several photos of the beautiful and varied terrain along Kaua`i's eastern shore.

Haigh gave a synopsis of the phases of the Kaua`i project:

Phase I	Lydate Park, 2.5 miles. The community effort in building the Kamalani Bridge served to provide the first path funding, via a match for volunteer labor. An abused area was restored and access for fishermen was preserved.
Phase II	Kapa`a to Kealia, 4.3 miles, including bridges and road amenities. Today the Planning Commission approved all 5 rest areas under controversy, so the project can be completed, hopefully this year.
Phase III	Lydgate Park to Lihi Boat Ramp, 2 miles. The Environmental Assessment was completed April of this year. SMA permit requests will be submitted soon, after the completion of the Findings Of No Significant Impact (FONSI). This phase will include a connector path up Kawaihau Road.
Phase IV	Ahukini Landing to Lydgate Park, 5 miles. The Environmental Assessment is ongoing. Permitting will follow. A special fourth public meeting addressed issues related to the preferred alignment along the Wailua Golf Course, next to Kuhio Highway.
Phase V	Kuna Bay to Anahola, 3 miles. The Environmental Assessment started in 2006. A first public meeting was held in 2006, which raised community concerns.

Department of Hawaiian Homelands incorporated public comment in their planning and is preparing for a second public meeting.

Phase VI Nawiliwili Park-Lihue Civic Center – Ahukini Landing, 8 miles. The Environmental Assessment process has begun. This meeting is part of that process.

Haigh pointed out that although this meeting is focused on phase VI, he is available to answer any questions on the overall project.

PRESENTATION ON THE NAWILIWILI-CIVIC CENTER-AHUKINI BIKE AND PEDESTRIAN PATH ENVIRONMENTAL ASSESSMENT SCOPE, PROCESS AND VISUAL TOUR

Jim Niermann reviewed an aerial map showing the entire path project and where the Nawiliwili-Civic Center- Ahukini path will fit in. He then reviewed a close-up map of that section, with the three destination points highlighted. The following background information was provided:

The consultant role is:

- Coordinate with project participants and guide project progress
- Provide technical expertise
- Serve as a tool for the County and Kaua`i community
- Foster community participation and input

The consultants are neutral in that they focus on what is best for the path planning from a technical standpoint, but they are not neutral in that they view bike and pedestrian paths as being beneficial to the community and support their development.

The scope of work is:

- Select path alignment and amenities
- Prepare an Environmental Assessment
- Prepare applications for land use approvals
- Prepare a scope of work for the design phase

The basis for selection of a preferred alignment and amenities includes:

- Site opportunities and constraints
- Public input and preferences
- Land owner participation (private, county, state, federal) – very important
- Draft EA assessment of environmental inputs of route alternatives
- Regulatory considerations and land use approvals

The purpose and need for an environmental assessment (EA) are driven by:

- Hawai`i Revised Statues (HRS) Chapter 343
- National Environmental Protection Act (NEPA)

Use of public funds and lands (federal and County funding) triggers the EA requirement. Several of the required environmental permits (Special Management Area permit, Conservation District Use Application) also trigger the EA requirement.

The tasks related to preparing the Environmental Assessment are:

- Data collection and mapping
- Special studies: archaeology, flora, fauna
- Evaluation of project impacts
- Statutory clearances: CWA Section 401, 404, DOT Section 4(f), CZM, ESA, NHPA Section 106
- Responses to comments from the community, public agencies, and private organizations

Land use approvals required:

- Special Management Area permit (SMA)
- Shoreline Certification
- Shoreline Setback Variance (SSV)
- Conservation District Use Application (CDUA)

RMTC prepares the applications, but can not guarantee the approvals.

Tasks for Design Phase scope of work, to be included in the Environmental Assessment:

- Prepare conceptual plans for engineering work.
- Prepare a map of the preferred path route(s) with existing conditions and constraints
- Prepare a maintenance and management plan report

Chart of project process: See **Attachment 1.**

There will be a 30 day comment period between the draft Environmental Assessment and the final Environmental Assessment. Public meeting #2 will be in late August, to review the draft. Public meeting #3 will be in October or November, to review the final. Permits will take 4-6 months after attaining the Finding of No Significant Impact (FONSI). The project is scheduled for completion March 2008.

Mr. Niermann then reviewed several aerial maps showing a variety of potential routes, adding the following comments:

- Alternatives to consider include routes on or along existing streets, through undeveloped areas such as the lands makai of the airport, and the Nawiliwili stream valley.
- One objective of the plan is to ensure that the path meets accessibility standards of the Americans with Disabilities Act (ADA) which allows a maximum slope of 8.33%.
- The alignment from the Ninini Point lighthouse to Ahukini Landing appears simple to achieve, but there are many issues that require consideration, including four major landowners: DLNR, DOT, Kaua`i Lagoons, and the Coast Guard; and existing uses, including fishing, grazing, construction activities, off-roading, ATV and motorcycle use, illegal dumping, and other activities.
- The path from the lighthouse to Nawiliwili Park will present challenges, including a steep grade and traffic, as well as landowner participation.
- Rice Street is problematic due to the steep grades and narrow corridor.

- A master plan is currently being developed by the County for the Lihue Civic Center. A separate project is also being undertaken to develop urban design guidelines. The path project will be coordinated with these efforts.

QUESTIONS AND ANSWERS, COMMENTS (some quoted, some paraphrased)

Q/C I am glad we have the ability to provide early input. Regarding Ka`ana Road and the Gulch, who owns them? What are the issues? The gulch looks like a nice option.

A Ka`ana Road is on Grove Farm land. The design standards are already in an ordinance. The bike and pedestrian pathways will be governed by that. We initially envisioned extending the path along the street, with a four foot sidewalk, but the Grove Farm section has a different design proposal. That road is going through and will be a logical extension of the path. Nawiliwili Gulch has several landowners and we are now contacting them.

Q/C There is an old railroad line through the gulch. Is the plan to follow that line?

A The plan has not progressed to that level. We are aware of the railroad easement and grade. From the mill we can trace it back to Kalena Street. Rails to trails is a good concept.

C Some of it still has old tracks, or new tracks have been added. The rails are there.

Q/C When you follow an existing public road that doesn't have a lot of space on it, what would the plan be? Would you actually look to widen the road and add a bike lane or is it going to be one of those little lines with signs, going through what is now parking?

A There are a lot of different possible treatments and ti comes down to choices that are very apparent, such as Rice Street. The only way to put a real bike path on that road is to condemn land and widen the right way. But consider the intense development along there. Just putting up signage is not and effective route. We have to take all of this into consideration when picking a route. We need to look at creative alternatives on other streets. We also need to be realistic when there is only so much space.

Q/C I am curious about widening the road. Is that considered ADA compliant for wheel chairs to go on a road?

A No. Not to go on the road. They would be on sidewalks or a path only. Then you Are talking about grades, certain minimum width, to allow for wheelchairs and two way Traffic.

Q/C After you start developing the plans, please indicate the areas for comfort stations and hales. Then the public would know ahead of time where you are going to have it and would not be surprised. Put it on your maps.

A We would like you to help us put it on the maps tonight and then the subsequent maps will show it. Absolutely yes, we can learn from past issues.

C My family are longtime residents of this ears and I am very concerned about it.

Q/C From Thomas Noyes, Chairman of the Kaua`i Path Committee Related to the build out of Phase II and the shoreline permit issues, there is a window of opportunity between shoreline permitting and building. Is this in your scope of work?

A Shoreline certification is good for one year. Then you need to re-certify. Within that window you have to get a shoreline setback variance for improvements within 40 feet of the shoreline. Building permits are not within our scope, but would also have to happen within that time period.

C From Doug Haigh, Chief of the Building Division
Shoreline certification is necessary for a Special Management Area permit, which is managed by the Planning Department and Planning Commission. They put conditions on it and it is up to them as to whether shoreline is to be recertified during the building process. We rely on them to make those conditions. So the permit that specifically triggered the shoreline survey is the SMA use permit. It is the conditions put on the use permit which will trigger whether or not we re-certify prior to actual building permits. (at this time, Haigh introduced Patrick Kaihara, Department of Public Works construction manager who will be very much involved in this phase of the path.)

Q/C In regard to the Gulch, I think it would be helpful to get maps from the Kaua`i Historical Society. I would be willing to help with this. They have a lot of old maps.

A That would be great. It would show us old routes. We'll exchange contact information.

Q/C The gulch route sounds like a really cool and beautiful recreational path, but I live right on Rice Street and I think it is more practical or useful for all of us right there in the center of Lihue to be connected to the path, like is being done with Kawaihau Road. The sidewalks on Rice street are too small, narrow. Parking lanes are on both sides. Let shoppers park in parking lots. Would you consider using the street better, on one side?

A Absolutely. We have right of way. It is a tradeoff. A collective decision. A viable Treatment alternative.

Q/C Go further to Chiefess Middle School, the shopping area. Roads are wide and workable.

A The larger vision for the overall path is that it would continue to link all sides of Lihue and form networks that meet transportation needs.

Q/C From the airport to the Civic Center, have you considered going through that neighborhood in back?

A Yes, we looked agt it. It is on our map. Please add your comments. We need your input.

Q/C Get it done now! A 1990 National Geographic magazine has a good article about bike paths. I recommend it to all doubters. This path is going to be one of the most wonderful things that have ever happened to this island, bar none. Our young people will go "wow, those folks had vision. They did the right thing." Get it done.

Q/C There are a lot of fishermen at Ahukini. Will this path eliminate vehicular access for them? If the path is multi use for animals and not vehicles, what will be the impact? Was thought given the a route by the Menehune Fish Pond? I live in Nawiliwili Gulch. The road barely has room for one vehicle, no parking, a challenge. If you follow the stream, you are in a flood plain. Have you considered these costs?

A Fishing access is important to preserve. We will address use conflicts. In shared use, different segments will have different users, maybe separate paths in places. Safety is the priority, along with liability, health and wellness. These are all very important elements. The narrow road is an issue. It may not work. We will look at it.

Q/C Thomas Noyes
At a Phase III meeting, Wailua Houselots residents voiced concerns about not being informed early enough. Councilman Rapozo recommended mailing to all residences and businesses within 500 feet of any potential alignment.

A We are aware of this. For this meeting we mailed out over 100 letters to addresses within 300 feet. We will work with the County on this. The goal is to get as many people out as soon as possible. Please tell people you know.

Q/C I am an advocate of the gulch route. I walked the whole trail. Building in flood plains is common. There is an opportunity to go through wonderful 12 foot culverts. Low cost, with drop dead beauty. An attraction for community and visitors.

A There definitely are examples of working with floodways. There are additional costs. Safety is the main concern, as well as not exacerbating more flooding.

Q/C What is the mileage from the lighthouse to Ahukini? Will each end be accessible for Parking?

A It's about 2 miles. There is parking at Ahukini. The lighthouse is controlled by the Coast Guard, so we would need to discuss this with them.

Q/C Is Kaua`i Lagoons on board to allow parking?

A It is too early to say. We have had only general discussions with them.

Q/C Please consider providing dog waste bags and trash cans.

A This is certainly something to consider. We have not gotten that far yet. Please add it to the amenities on the maps. There are maintenance considerations.

SMALL GROUP MAPPING EXERCISE
Attendees broke into self-selected groups at tables provided with large color aerial maps, colored markers and Post-it notes. The assignment was:

- Mark special and significant places in green
- Mark preferred trail alignments in blue
- Mark desired amenities and locations in red
- Use post-it notes to provide more detail

Approximately 45 minutes were provided for this exercise. Consultants worked with table groups to get input and answer questions. The maps were collected and will be used in developing the Environmental Assessment.

CLOSE, ADJOURNMENT
An announcement was made thanking attendees for their active participation and valuable input. They were reminded of the contact information for RMTC and Roxanne MacDougall, via a PowerPoint slide.

CONTACTS:

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R. M. Towill Corporation
Chester Koga
Jim Niermann
808-842-1133
kauaibikepath@hawaii.rr.com

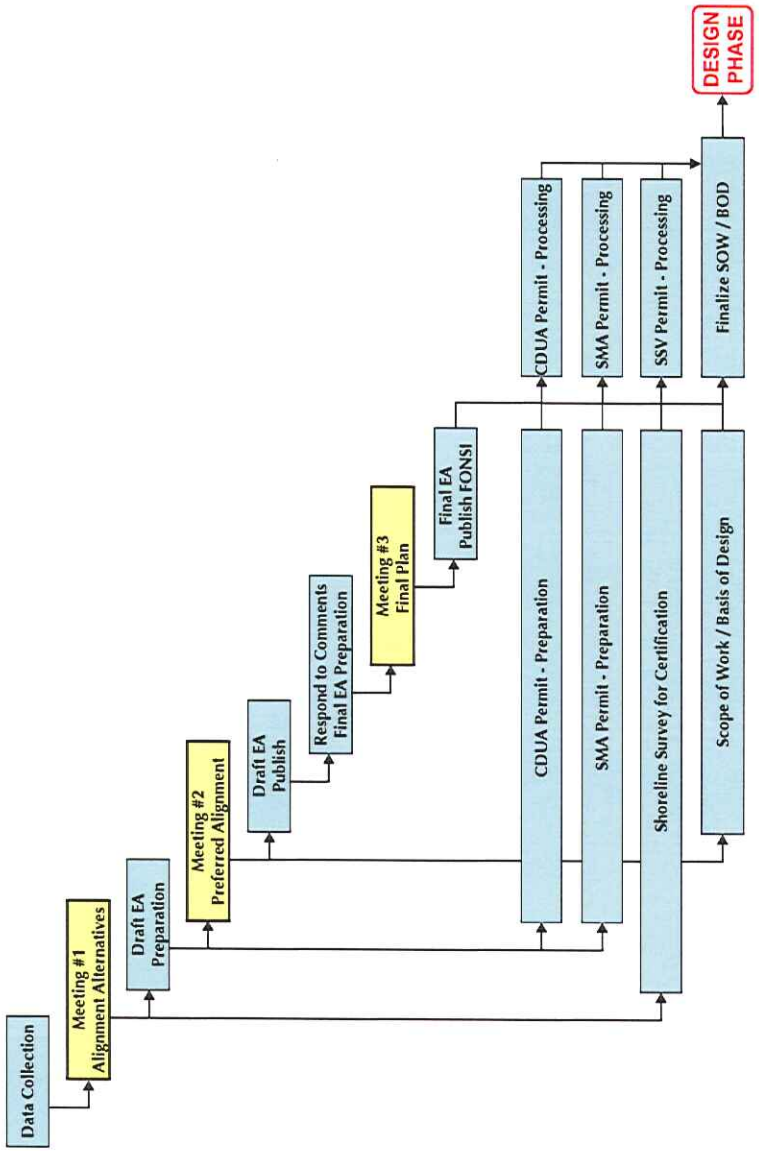
Public Communication Project Consultant:
Roxanne MacDougall
822-5798

County of Kauai, Building Division:
Patrick Kaihara
241-6658
pkaihara@kauai.gov

ATTACHMENT 1: *Meeting Notes - Public Meeting No. 1, June 26, 2007*

PROJECT PROCESS

Nāwiliwili-Civic Center-Ahukini Bike and Pedestrian Path



ATTACHMENT 2
Map Mark-Up Comments – Transcription of comments recorded on maps:

Map 1
- Opposed to eliminating parking on Rice Street. Provide several off-street parking lots for Rice Street businesses before eliminating any street parking.
- Ninini Point is a popular fishing spot – allowing bike/peds to park in area will limit fisher's access.
- Keep bike/ped path on Mauka side of access roads – keep makai side for fishermen/vehicles (lands makai of airport).
- Keep access road between Ninini Point – Ahukini open to vehicular access.
- Provide restroom / trash receptacle at Ahukini Landing.

Map 2
- Selected Nawiliwili Stream route and partner with Grove Farm Homestead railway concept.
- Use existing Kauai Lagoons roads to Ninini Point then to Ahukini – allow fishermen access (share the road)
- Connect Civic Center via Kaana so there are more ways to the airport.
- Suggest all paths have plenty of trash cans and dog dropping bag dispensers.
- Art / poetry on pathway (e.g. Tacoma Parks, Sydney-Paramatta)
- Fruit trees along pathway.
- Create trail head / provide amentities at Ninini Point Lighthouse.
- Keep area between Ninini Point and Ahukini rural.
- No picnic pavilions along shore anywhere. (Response: "Why?" marked on map).
- Mauka gravel road for fishermen.
- Makai path for bike / pedestrian / vehicles cross (path) to fishing spots.
- No picnic pavilions.

Map 3
- Key is to work with Kauai Lagoons on integrating with their project.
- How to get up here? (Nawiliwili Stream alignment).
- Is Nawiliwili Road a safe route?
- Opportunity to improve Nawiliwili Park.
- (Re: coastal pedestrian path at Kauai Lagoons) Don't have to be right on the coast. Can be up higher so its easier. Make the path a condition of private permit.
- Kaana Road is preferred route between Ahukini / Airport and Civic Center.

Map 4
- Shut down one uphill lane on Rice Street.
- Avoid Rice Street. (Additional note of agreement)
- Consider accessing Nawiliwili Stream gulch through Kapena Street.

Map 5
- No comments.

Map 6 (Redline of various alternative routes)
- No Picnic pavilions on the shore.
- Keep bike/ped on mauka side of access road. Leave makai side for fishers/vehicles.

SIERRA CLUB Kaua`i Group of the Hawai`i Chapter
Post Office Box 3412, Lihu`e, Kauai, Hawai`i, 96766

July 7, 2007

Chester Koga / Jim Niermann
R. M. Towill Corp.
420 Waiakamilo Rd., Suite 411
Honolulu, HI 96817

Dear Sirs:

After attending the first information meeting on the Nawiliwili-Ahukini phase of THE KAUAI PATH, we wish to make a few comments on behalf of the Sierra Club, Kauai Group pertaining to the coastal portion between Ninini Point and Ahukini Landing.

We urge the county to follow the intent of HRS205 and use a valid current shoreline certification from which the bike path setback will be determined. This will help ensure that the path is located safely from the shore and increase the life of this public structure. Ideally, an erosion-based setback would be used to increase both the safety and lifespan of the path and other proposed structures.

This undeveloped section of coastline has lovely views and the natural character of the landscape has remained preserved. We recommend that nothing be done to change this environment with the exception of the concrete path.

We hope that the intent of this phase of the project is to protect the wild feel of this beautiful coastal area. We do not support the development of any structures along this path -- in other words, no picnic pavilions, picnic tables or bathrooms. Providing bike racks should only be considered if they can be sited on the mauka side of the path or in discrete locations that do not interfere with views.

Furthermore, it is our recommendation that any spurs leading from the path to shore (beach or rocky coast) should remain unpaved.

Regarding landscaping, we recommend that no landscape improvements, new plantings or cutting of trees be allowed. Grass adjacent to the path can be mowed but not extending further than the width of the mower (ideally, no more than 2 feet).

The Nawiliwili-Ahukini section is only about 2 miles and no amenities are needed in so short a section. Restroom facilities and picnic tables could be placed at the Ahukini Camp area which is already developed. Beyond Ninini Lighthouse, similar amenities could be provided by Kauai Lagoons on its property.

It is important to keep some of the more undeveloped areas of the path untouched and natural looking. Since many segments of the path are landscaped and have amenities, we should strive to keep this coastal corridor as undeveloped as possible. Think "nature preserve" not "recreational attraction" to protect and perpetuate this area as an environmental resource.

Please consider these comments as you plan for the Nawiliwili-Ahukini section of THE PATH.

Sincerely,

Margery Freeman Rayne Regush

Marge Freeman and Rayne Regush
Sierra Club Executive Committee, Kauai Group, Hawaii Chapter

BASIS FOR SELECTION OF BIKE AND PEDESTRIAN PATH ALIGNMENT:

- Site opportunities and constraints
- Meets design objectives for safety and access
- Stakeholder interests – community, private landowners, government
- Engineering considerations - coastal erosion, drainage, grades, soils
- Construction costs
- Assessment of other environmental impacts of route alternatives:
  - Archaeological resources
  - Cultural resources and practices
  - Plants and animals
  - Social and economic factors
- Regulatory clearances

CONTACTS:

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Public Information Meeting #2

Nāwiliwili – Civic Center – Ahukini Bike & Pedestrian Path

Nāwiliwili to Anahola Bike & Pedestrian Path Project
County of Kaua'i

October 23, 2007, 7:00 – 9:00 PM
War Memorial Convention Hall

The southernmost phase of the 16-mile Nāwiliwili to Anahola Bike and Pedestrian Path is unique in that it will be more triangular than linear. In addition to connecting Nāwiliwili Park with Ahukini Landing, the path will provide alternative transportation to and from the heart of Līhu'e by including the County of Kaua'i Civic Center as a primary destination. This approach will enhance non-motorized access to the governmental and business hub of Līhu'e, as well as provide safe access to the path system for Līhu'e residents.

The first public meeting, held June 26, included a review of the scope of work, a visual tour of potential routes, a mapping exercise for participants and an opportunity to address questions and receive comments from community members.

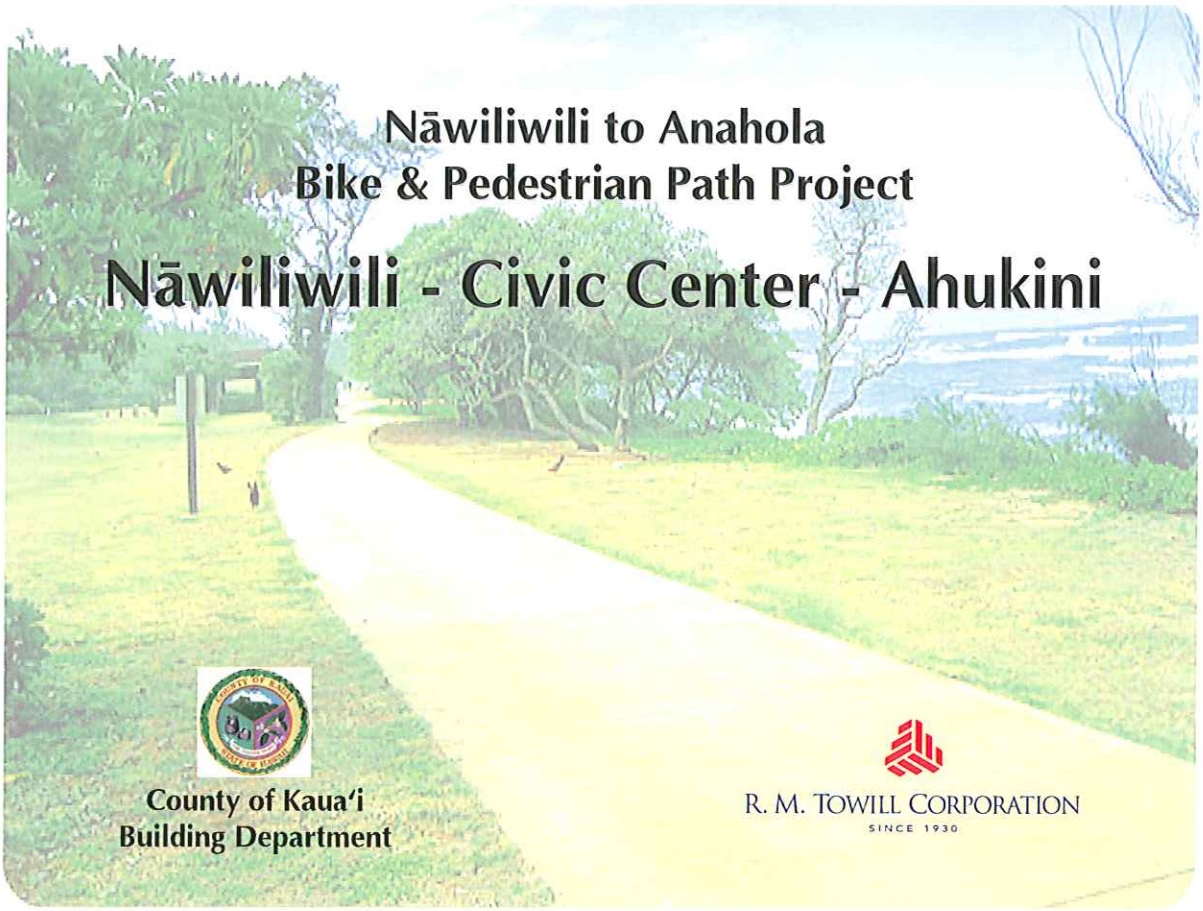
The agenda for public meeting #2, October 23, 2007 is:

AGENDA:

- Report on project status
- Review alignment assessment criteria
- Review route options and related issues for the Nāwiliwili – Civic Center – Ahukini bike and pedestrian path
- Address questions and receive comments from community members

Nawiliwili - Civic Center - Ahukini
Nawiliwili to Anahola Bike & Pedestrian Path Project
County of Kauai, Hawaii

R. M. Towill Corporation October 2007



Nāwiliwili to Anahola
Bike & Pedestrian Path Project
County of Kaua'i

PHASE

V. Keālia, Kuna Bay - Anahola

II. Kapa'a - Keālia

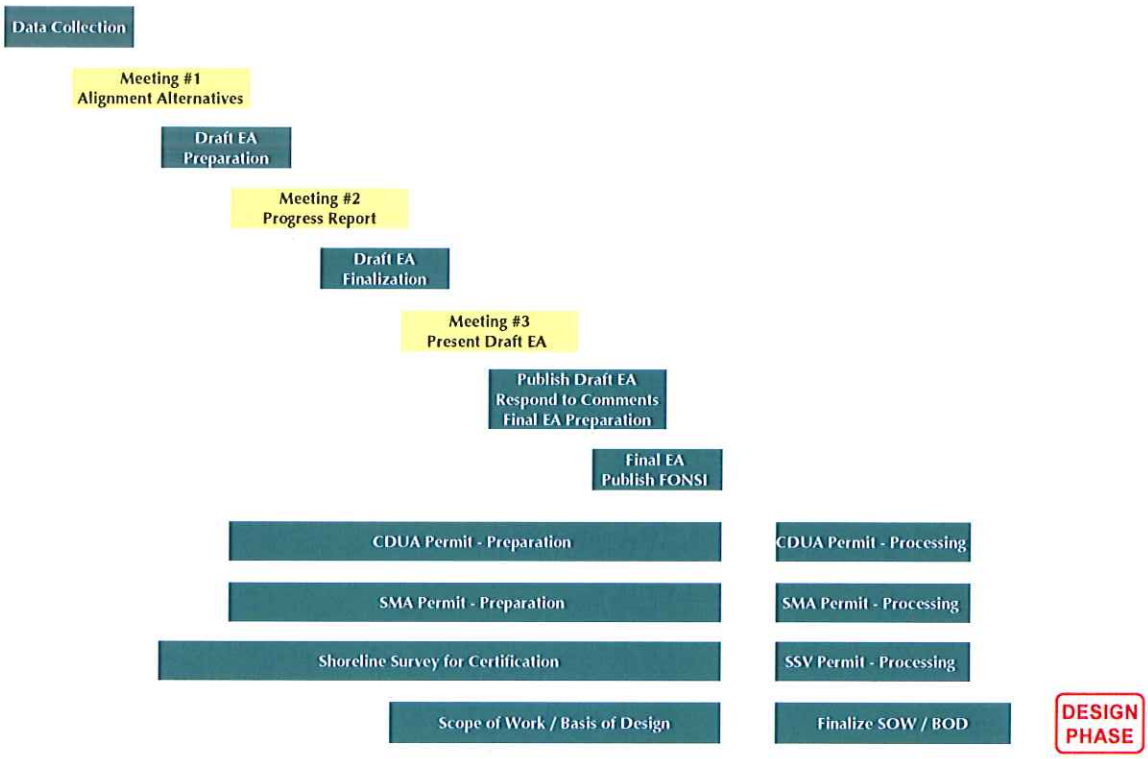
III. Lydgate – Kapa'a

I. Lydgate Park

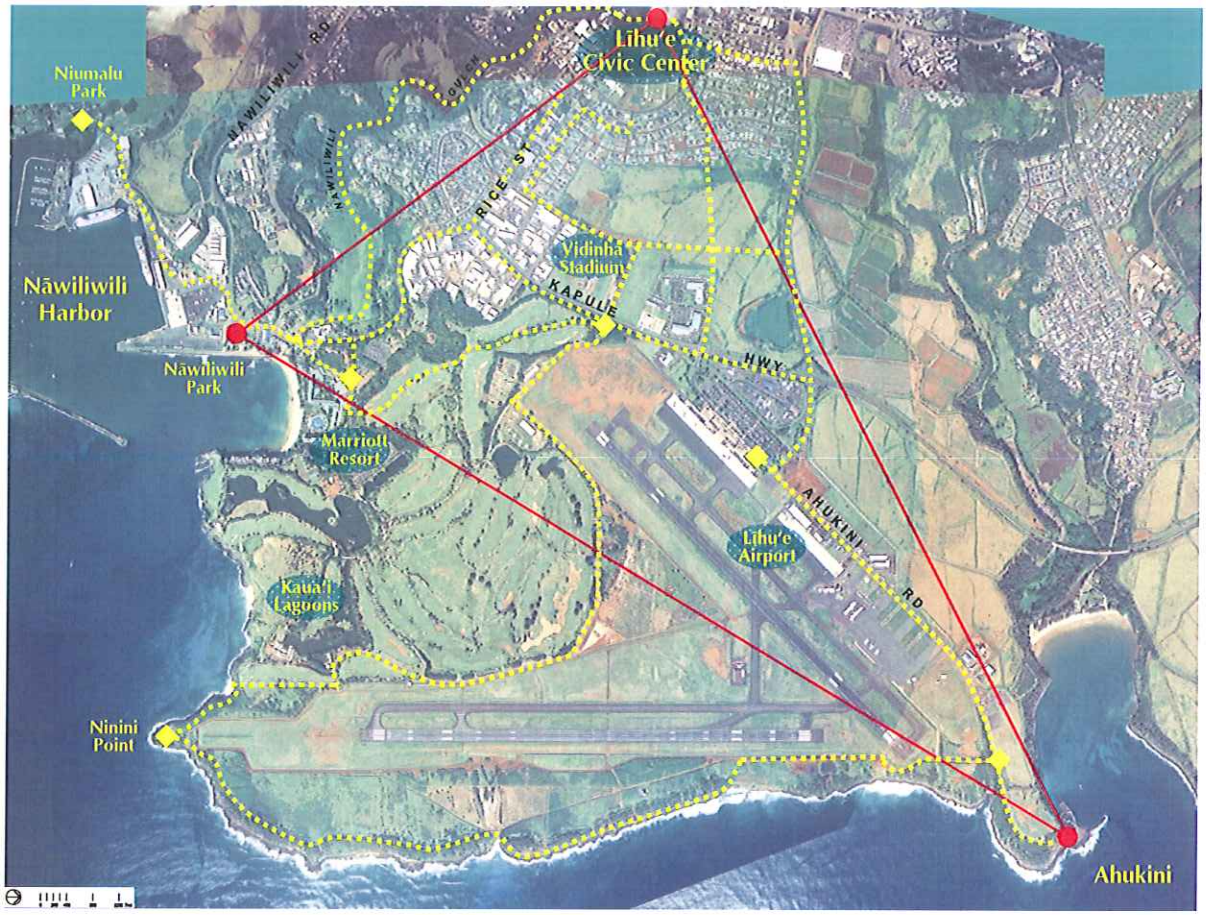
IV. Ahukini – Lydgate

VI. Nāwiliwili – Civic Center - Ahukini

Project Process



Nāwiliwili – Civic Center – Ahukini Bike & Pedestrian Path

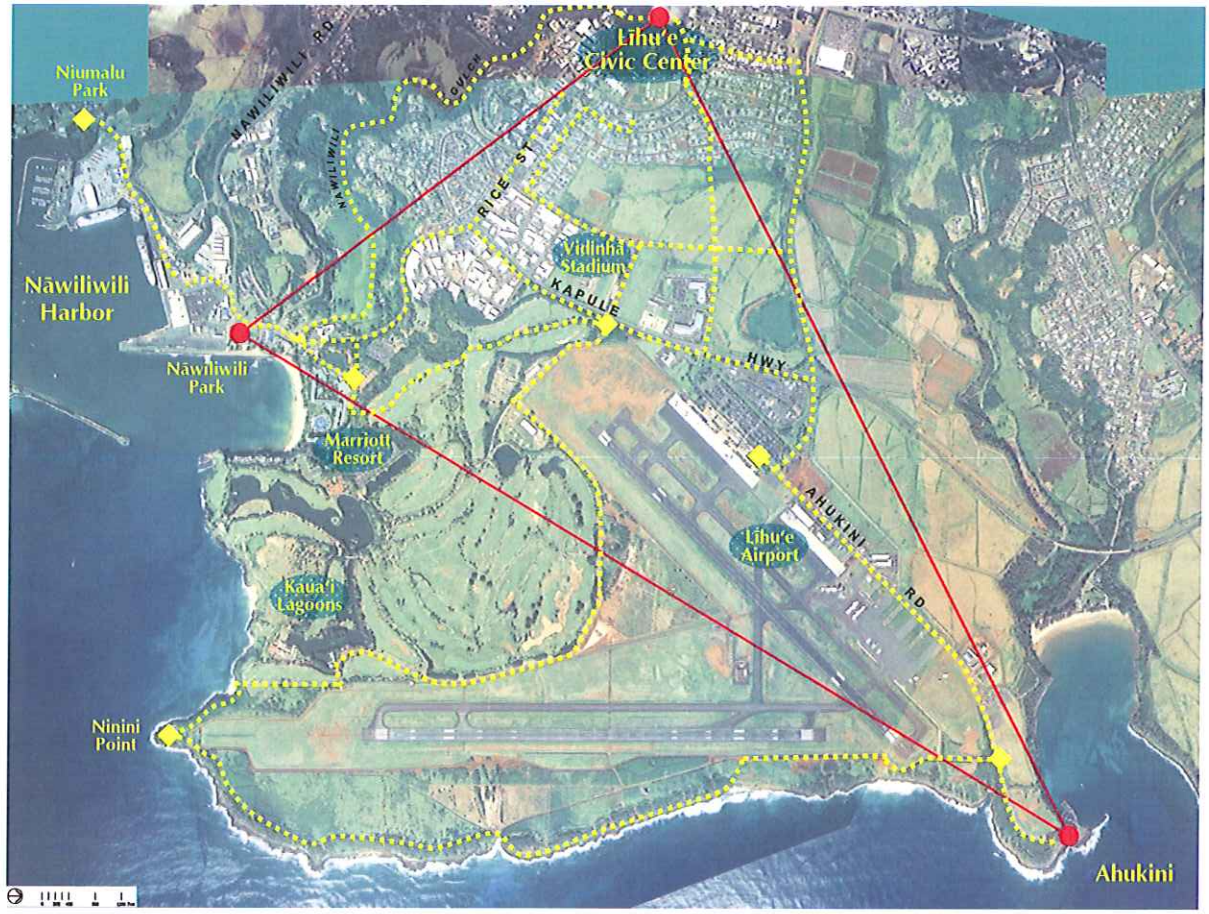


Assessment Criteria

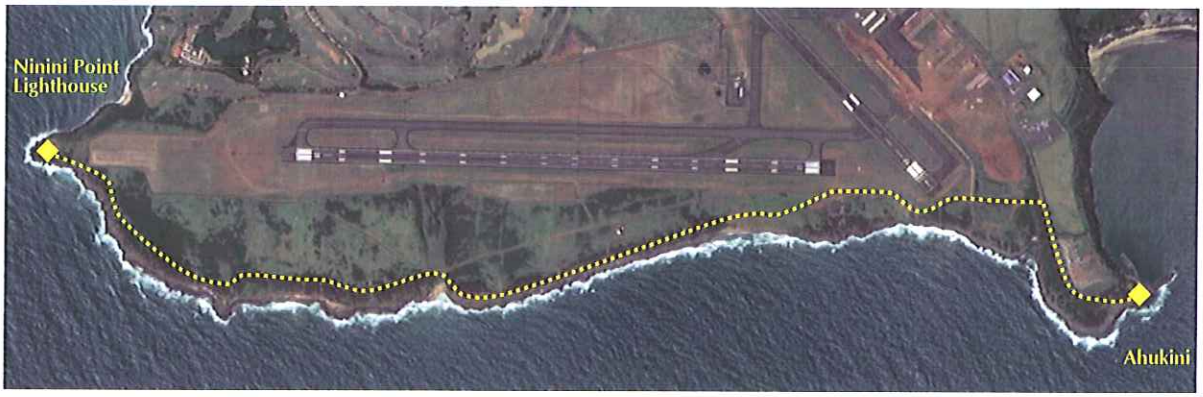
- Site opportunities and constraints
- Meets design objectives for safety and access
- Stakeholder interests – community, private landowners, government
- Engineering considerations - coastal erosion, drainage, grades, soils
- Construction costs
- Assessment of other environmental impacts of route alternatives:
  - archaeological resources
  - cultural resources and practices
  - plants and animals
  - social and economic factors
- Regulatory clearances

Alignment Options

1. **Ahukini to Ninini Point (Lighthouse)**
2. **Ninini Point to Kapule Highway**
3. **Ahukini to Lihue Airport**
4. **Lihue Airport to Lihue Civic Center**
   - Ahukini Street and Kapule Highway
   - Ka'ana and Hoolako Street Extensions
   - Umi Street to Hardy Street
5. **Ninini Point (Lighthouse) to Nawiliwili Park**
6. **Nawiliwili Park**
7. **Nawiliwili Park to Niumalu Park**
8. **Nawiliwili Stream Gulch to Lihue Civic Center**



Ahukini to Ninini Point



Ahukini to Ninini Point

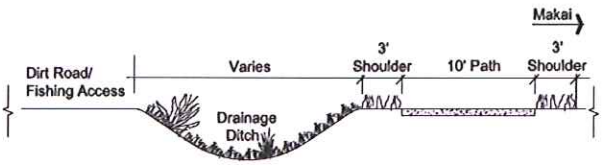
Shared Use Road (Existing Access Easement)

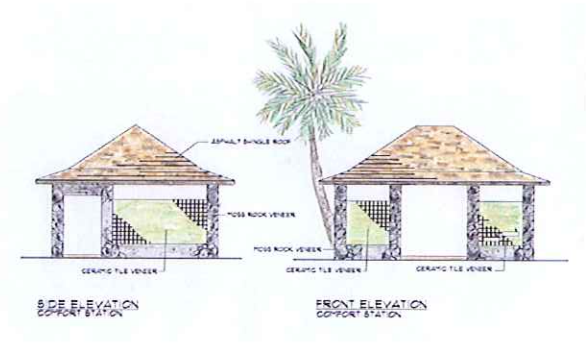
- Cheaper to construct
- Traffic calming required to mitigate use conflicts
- Mauka alignment diminishes coastal experience
- Mauka alignment has greater impact on future land uses

Separate Makai Path

- Exclusive use by pedestrians and bicycles is safer
- Makai alignment is best for coastal experience
- Requires designated crossing points for fishing access
- Greater cost due to steeper grades and drainage crossings.

Ahukini to Ninini Point

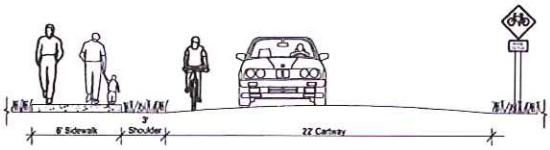


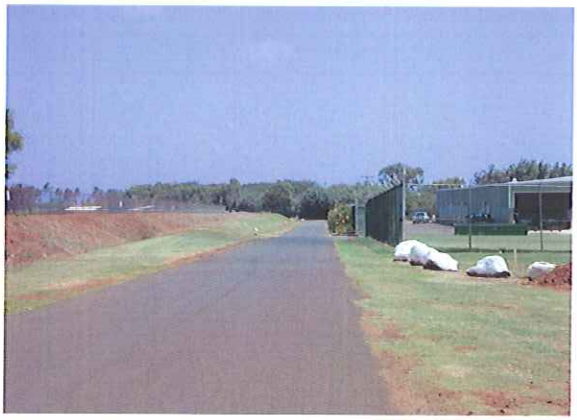


Ninini Point to Kapule Highway

Shared-Use Road with Pedestrian Path

- Existing public access easement
- Low-traffic road
- Wide shoulders
- Future construction traffic
- Presence of endangered birds





- Shared use with Airport perimeter security road
- Shared use with Kauai Marriott recreational path

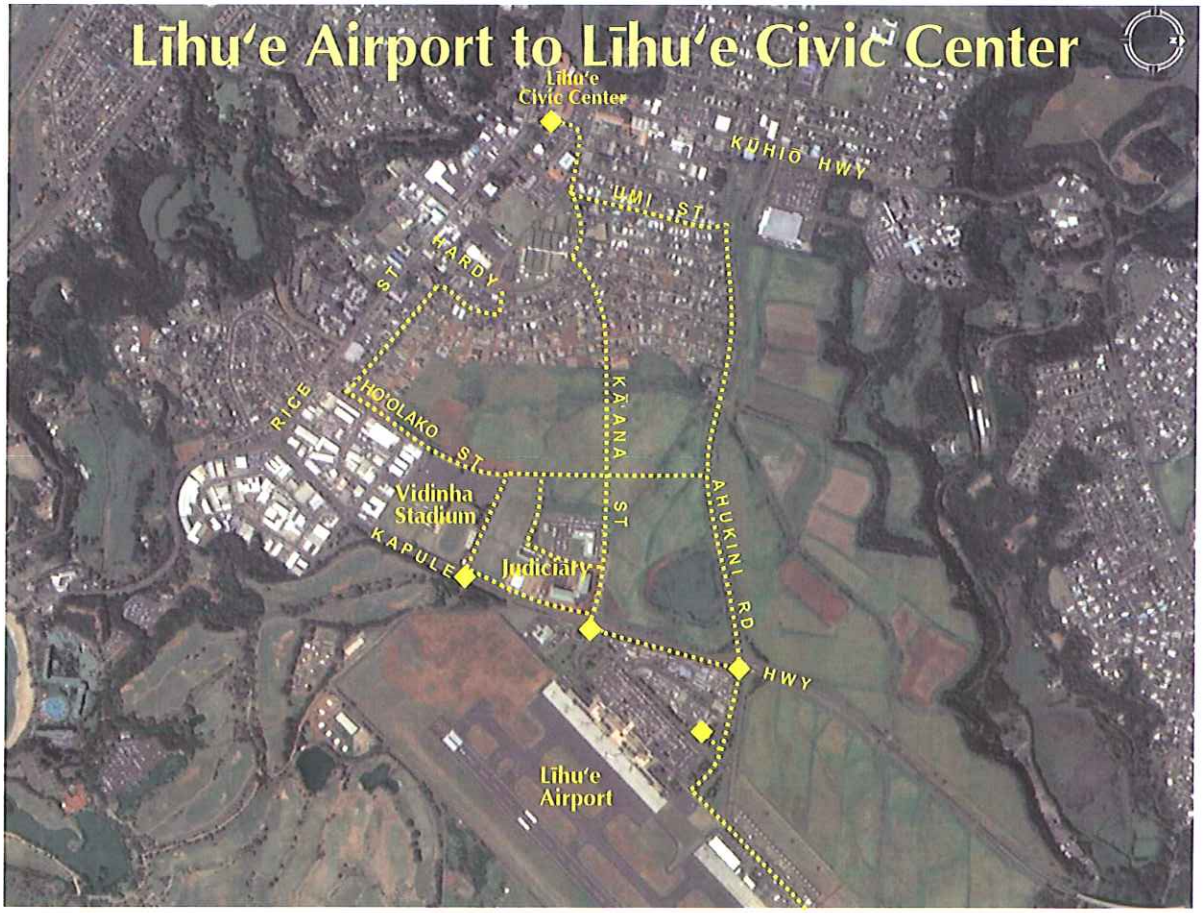
Ahukini to Līhu'e Airport

Paved Multi-use Path

Existing 7'-wide Sidewalk and Shared-Use Road

"Bike Depot" at Airport Terminal

- Utilize Existing street improvements on Ahukini
- Mauka alignment minimizes conflicts with airport traffic
- High volume traffic at terminal
- Airport security
- "End of ride" facilities to accommodate bike commuters



Līhu'e Airport to Līhu'e Civic Center

Ahukini Street and Kapule Highway

Multi-use path separated from motor vehicle traffic

- Safety
- Connection to major access points and public centers
- Reserve right-of-way for future road expansion
- Coordinate design with DOT-Highway plans
- Coordinate design with County Planning Department's Urban Design Guideline project and Civic Center Master Plan

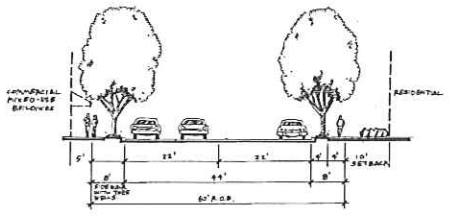
10'-wide Shoulder Bike Lane

- Not suitable for pedestrian use

Līhu'e Airport to Līhu'e Civic Center

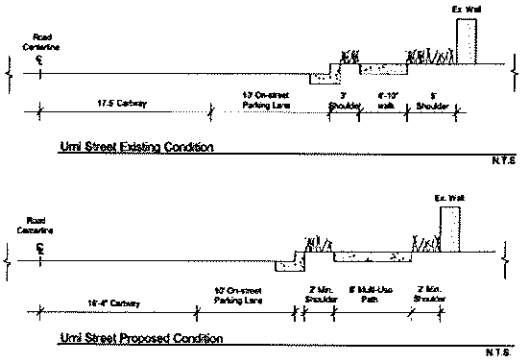
Kaana Street and Hoolako Street Extensions

- 60' right-of-way
- Continue existing road section adjacent to Judiciary
- Future Residential and Commercial Mixed-Use corridor
- Coordinate improvements with Grove Farms
- Accommodate peak traffic conditions



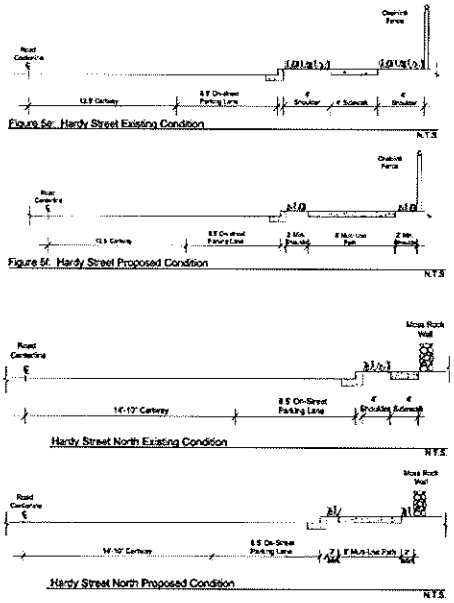
Līhu'e Airport to Līhu'e Civic Center

Umi Street and Hardy Street

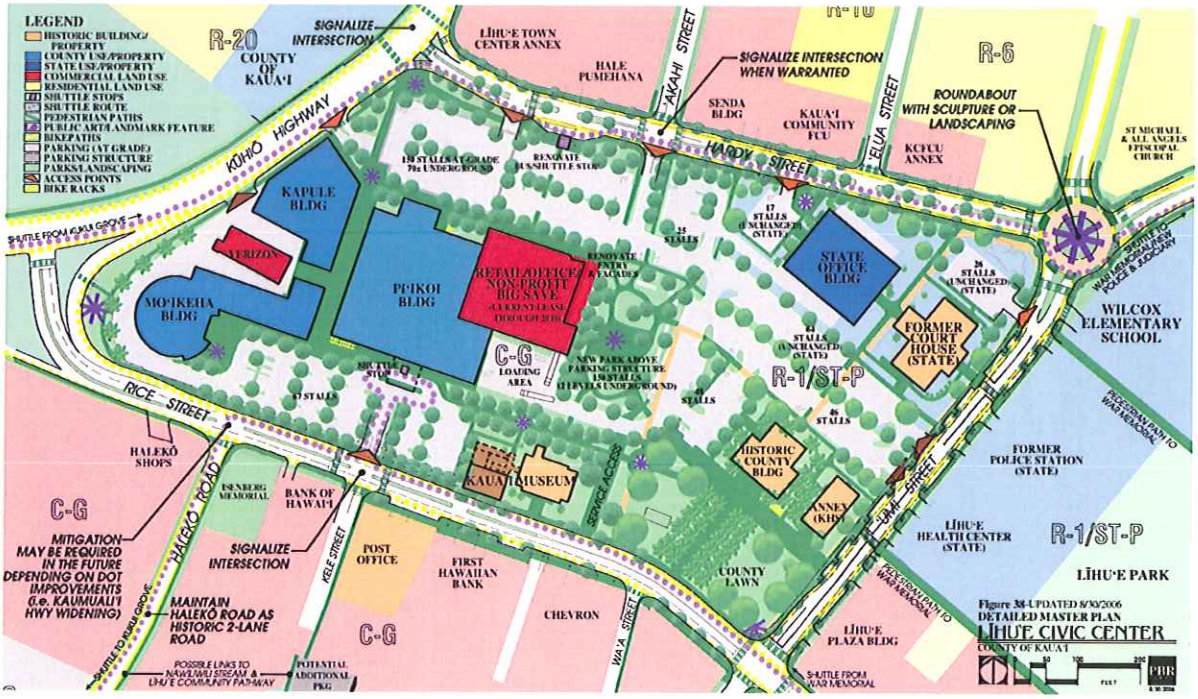


Līhu'e Airport to Līhu'e Civic Center

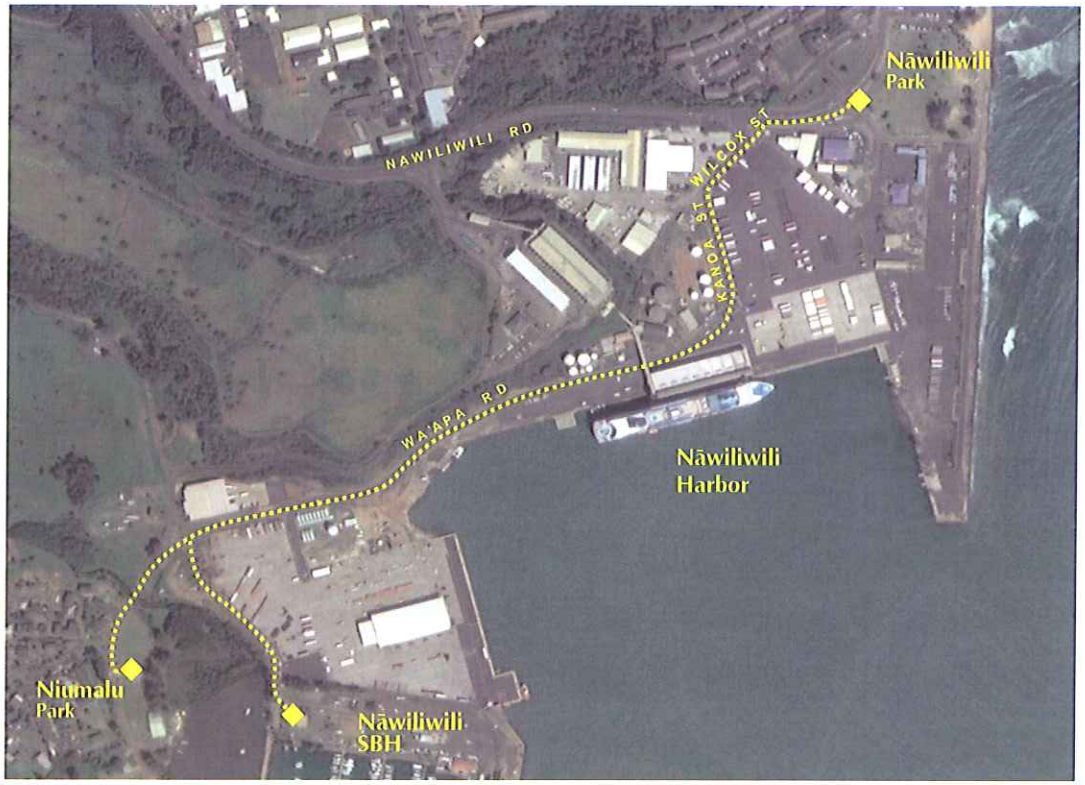
Hardy Street



Līhu'e Civic Center Master Plan



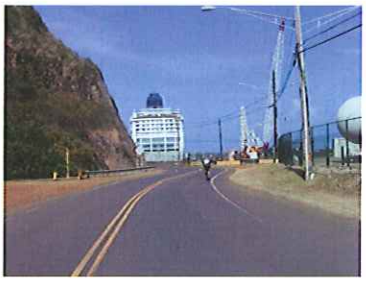
Nāwiliwili Park to Niumalu Park

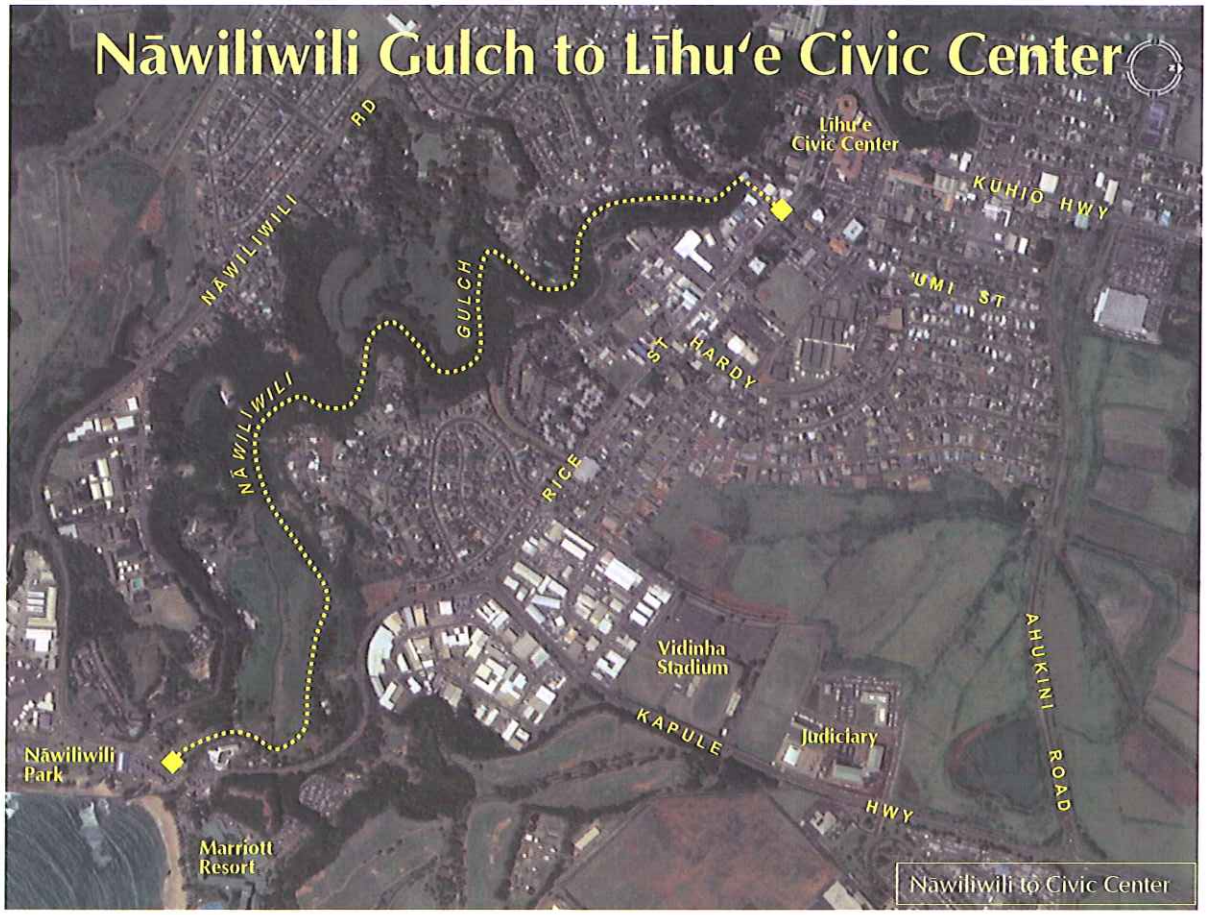


Nāwiliwili Park to Niumalu Park

Pedestrian Sidewalk and On-Street Bike Lane

- Link recreation centers of Nawiliwili Park, Nawiliwili SBH, and Niumalu Park
- Improve safety of bike and pedestrian access through harbor industrial corridor





Questions and Answers

Next Steps

1. Meeting notes will be published on Bike Path Project website:
   www.kauai.gov/Government/Departments/PublicWorks/BuildingDivision/BuildingDivisionProjects/BikePathProject
2. RMTC will continue to work with the County and private land owners to assess alternatives at Kauai Marriott, Nawiliwili Stream Gulch, and Nawiliwili Park.
3. RMTC will use meeting input to refine alignment alternatives for completion of the Draft EA.

Contacts

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NAWILIWILI-CIVIC CENTER-AHUKINI BIKE & PEDESTRIAN PATH

Environmental Assessment Public Meeting #2

Tuesday, October 23, 2007
7:00 PM to 9:00 PM
Kaua`i War Memorial Convention Hall

Meeting Minutes

MEETING OVERVIEW
Facilitator Roxanne MacDougall called the meeting to order and welcomed the group of over 40 attendees, including Councilman Tim Bynum. Also present were Doug Haigh, Chief of the Building Division, Department of Public Works and Patrick Kaihara of the Building Division.

The meeting objectives, agenda and guidelines were reviewed, as follows:

Objectives

- Review progress on the Draft Environmental Assessment
- Present an updated visual tour of the potential alignments for the Nawiliwili- Civic Center - Ahukini path and related opportunities/challenges.
- Generate public input via questions and comments.

Agenda

- Meeting overview
- Review of progress on the Draft Environmental Assessment, supported by a PowerPoint presentation/visual tour
- Questions, answers, comments
- Close, next steps

Meeting Guidelines

- Focus on Nawilwili-Civic Center-Ahukini phase only
- One speaker at a time, to facilitate listening and respect for others.

- Use the microphone for questions and comments, so that all can be heard and Hoike Public Television can record the meeting
- Get to the point in questions and comments, for time efficiency
- Send written input to:
  Roxanne MacDougall
  Box 328
  Kapa`a, HI 96746

Roxanne MacDougall introduced R. M. Towill Corporation consultant Jim Niermann, who then introduced consultants Mike Okamoto and Lehua Kauhane from R. M. Towill.

PRESENTATION: PROGRESS UPDATE ON THE NAWILIWILI-CIVIC CENTER-AHUKINI BIKE AND PEDESTRIAN PATH DRAFT ENVIRONMENTAL ASSESSMENT
Jim Niermann reviewed an aerial map showing the entire path project and where the Nawiliwili-Civic Center- Ahukini path will fit in. He then reviewed a close-up map of that section, with the three destination points highlighted. The following information was provided in the PowerPoint presentation, supported by aerial maps, photos and graphics.

PROJECT PROCESS:

- Public meeting #1-alignment alternatives – June 23, 2007
- Data collection continued
- Draft EA preparation
- Public meeting #2 - progress report - October 23, 2007
- Continued data collection and Draft EA completion
- Meeting #3 – present Draft EA - date to be determined
- Publish Draft EA
- Respond to comments (30 days)
- Final EA preparation
- Final EA published
- Publish FONSI – Findings of No Significant Impact
- CDUA Permit - processing
- Scope of Work / Basis of Design
- CDUA permit - preparation
- SMA permit - preparation
- Shoreline survey for certification
- SMA permit - processing
- Finalize SOW / BOD
- SSV permit - processing

ALIGNMENT ASSESSMENT CRITERIA

- Site opportunities and constraints
- Meets design objectives for safety and access
- Stakeholder interests – community, private landowners, government
- Engineering considerations - coastal erosion, drainage, grades, soils

- Construction costs
- Assessment of other environmental impacts of route alternatives:
  - archaeological resources
  - cultural resources and practices
  - plants and animals
  - social and economic factors
- Regulatory clearances

ALIGNMENT OPTIONS TO BE DISCUSSED THIS EVENING

1. Ahukini to Ninini Point (Lighthouse)
2. Ninini Point to Kapule Highway
3. Ahukini to Lihue Airport
4. Lihue Airport to Lihue Civic Center
   - Ahukini Street and Kapule Highway
   - Ka'ana and Hoolako Street Extensions
   - Umi Street to Hardy Street
5. Ninini Point (Lighthouse) to Nawiliwili Park
6. Nawiliwili Park
7. Nawiliwili Park to Niumalu Park
8. Nawiliwili Stream Gulch to Lihue Civic Center

AHUKINI TO NININI POINT (LIGHTHOUSE)

Shared Use Road (Existing Access Easement)
- Cheaper to construct
- Traffic calming required to mitigate use conflicts
- Mauka alignment diminishes coastal experience
- Mauka alignment has greater impact on future land uses

Separate Makai Path
- Exclusive use by pedestrians and bicycles is safer
- Makai alignment is best for coastal experience
- Requires designated crossing points for fishing access
- Greater cost due to steeper grades and drainage crossings.

NININI POINT TO KAPULE HIGHWAY

Shared-use road with pedestrian path
- Existing public access easement
- Low-traffic road
- Wide shoulders
- Future construction traffic
- Presence of endangered birds
- Shared use with airport perimeter security road
- Shared use with Kauai Marriott recreational path

AHUKINI TO LIHU'E AIRPORT

Paved multi-use path

Existing 7'-wide sidewalk and shared-use road

"Bike depot" at airport terminal
- Utilize existing street improvements on Ahukini
- Mauka alignment minimizes conflicts with airport traffic
- High volume traffic at terminal
- Airport security
- "End of ride" facilities to accommodate bike commuters

LIHU'E AIRPORT TO LIHU'E CIVIC CENTER

Ahukini Street and Kapule Highway

Multi-use path separated from motor vehicle traffic
- Safety
- Connection to major access points and public centers
- Reserve right-of-way for future road expansion
- Coordinate design with DOT highway plans
- Coordinate design with County Planning Department's Urban Design Guideline project and Civic Center Master Plan

10'-wide Shoulder Bike Lane
- Not suitable for pedestrian use

Kaana street and hoolako street extensions
- 60' right-of-way
- Continue existing road section adjacent to Judiciary
- Future residential and commercial mixed-use corridor
- Coordinate improvements with Grove Farm
- Accommodate peak traffic conditions

Umi Street and Hardy Street

NĀWILIWILI PARK TO NIUMALU PARK

Pedestrian sidewalk and on-street bike lane
- Link recreation centers of Nawiliwili Park, Nawiliwili SBH, and Niumalu Park
- Improve safety of bike and pedestrian access through harbor industrial Corridor

NAWILIWILI GULCH TO LIHUE CIVIC CENTER

Will be considered, meetings with landowners to be scheduled.

QUESTIONS AND ANSWERS, COMMENTS (some quoted, some paraphrased)

Q/C

I am familiar with duel use roads that we have here on Kaua`i. When I see it come up in a planning meeting, I see it as a last resort. Debris always gets kicked onto the shoulders of the road by vehicles and growth from the other side often covers the shoulders, so much that sometimes you have to actually go into the traffic lane to get around it. I think you should have a separate path for the bikes, or if it's on the shoulder, use poles with a raised barrier to block the debris and growth.

A
You want some physical indicator of separation. From the airport to the Lihue town center, we are looking at multiple routes. In some cases they may be shared and in other cases, Hopefully. We cam achieve a dedicated path. A path separated from vehicular traffic.

Q/C
I also bicycle the roads and I see the debris problem. There needs to be some physical separation, not just indicator. Bottles, cans and other debris get pushed in the shoulder. A line is not enough. We need a physical barrier to stop the debris. Regarding fishing makai of the airport, I also have fished there. I am not sure we want to encourage a lot of people to go near all the inlets, build pavilions, etc., right next to the fishermen. This might not be the best thing to do.

A
The turnouts and pavilions originally on the map are now not being included. There will be a coastal path from Ahukini Landing to the lighthouse at Ninini Point. Only those two areas will have facilities.

Q/C
You say you plan to keep it a wild coastal area. It is already this way. The path will not keep it wild. We have fished there for many years. With the path, it will be wild no more. Why do we need to change this?

A
The overall objective of the whole bike and pedestrian path project is to preserve coastal access. This is the inspiration for this project. This is important to the Mayor. Many former coastal access routes through cane fields are now shut off due to development. Houses threaten continued access. "Pristine" and "wild" have different definitions to different people. The object is to keep it unspoiled and accessible for existing practices, including fishing.

C
Thank you for all the work on this project. I love the bike path idea and to be able to ride my bike from Lihue to Kapaa safely. I hope that the bathroom near the lighthouse will be hard to see and not negatively impact the area there. I am also concerned for the homeowners on Umi Street. It is now very busy. How can any more go on it? Also, the 4 lane extension on Ka`ana and Ho`olako to accommodate peak traffic. In those times the bikes have to give way to cars? Bikes can't use the path? What does that do to people who will use it as transportation to and from work?

A
There will be an archeological and cultural study done of the area, including Ninini. We do not want to put a comfort station anywhere near any heiau. This is also in the Special Management Area and the project will be subject to the SMA permit process. It will all be scrutinized with sensitivity to this special place. Regarding Umi Street, the work was done in the Lihue Urban Design Guidelines project. And also, maybe in the Civic Center Master Plan. They did talk to the Umi residents. The plans are in review at the Planning Department now.

For Ho`olako and peak traffic use, we will provide passage during peak traffic times. This will not be sacrificed. We will find another way to get through. Maybe widen the sidewalk or add a bike lane.

Q/C
On the wild portions of the path, could you use something other than concrete? It is so nice now at Kealia, gravel. We need a surface that is more forgiving than concrete.

A
There are alternatives to concrete. The reason for using it is durability and low maintenance. It is not a cost issue. I understand the attraction of using soil binders. The decision on the material will be in the design phase, although we will include some design guidelines in the Environmental Assessment. We do have to address this.

Q/C
I am glad you have not eliminated Nawiliwili Gulch. The road into Lihue is dangerous.

Q/C
I represent the Kapa`a Business Association. We have supported this project for over 10 years. It is nice to see elements coming into fruition. It is a utility that increases transportation options. The more it gets pieced together, the better for the community. I am very excited about it.

A
I personally support the vision of multimodal transportation and am glad to be on this project.

Q/C
You just said you are selling the big picture. We are trying to save the picture. We don't like you guys coming in to do this project. Will you still allow motor vehicles access to the fishing sites?

A
Yes, we will. That is the plan. The cattle gate at Ahukini will still be closed at night. Shared road or not. Fishing access will not be curtailed. You may not have every turnoff to the ocean that is used now. We want to talk to fishermen to learn what access points to preserve. We will be meeting with fishermen about this.

C/Q
Young people now use this area near the fishing sites for 4 wheel drive riding. I know this is not legal, but they do it. You will take another place away from them, which now does not bother anyone. Also, there are a lot of homeless people living along there. What will happen to them? Have you thought about this? They have been there many years. They don't bother the local people. How will they respond to this?

The Environmental Assessment is the first step. There will be design and construction contracts which will include further public meetings and input gathering.

A

We have no response to that issue now, but we will have to comment on it in the Environmental Assessment in the Sociological Issues section. It will shake up their world. Some will leave. This has been an issue for the County.

Comment from Councilman Bynum
Thanks for this meeting. Keep the dirt road from Ahukini to Ninini, along with a separate path. Let the fishermen's trucks go where they have always gone. Keep it just a simple path. For Nawiliwili Gulch, check out the possibilities. Talk with landowners and help them to understand the positives of the path. Safe, beneficial, special.

Comment from Doug Haigh, Building Division Chief
I want to clarify that the land from Ahukini to Ninini is mostly private, with public dirt road access which is not along the coast. There is future potential that private lands can be fenced off. This is an opportunity for true shoreline access, which the current easements do not provide. The challenge for fishing access points is that they currently cross over private property. We hope to work well with the landowners.

Q/C
I want to clarify that Kealia Kai is not private. It is Hawaiian homeland. It might be private land by the airport, but Hawaiians have rights to go here. Gathering rights. Stuff like this stops the Hawaiians from access. Where does the money come from for this?

A
Federal funds.

C
There is a rumor that Linda Lingle funded it with stolen money from the Hawaiians.

A
I have not heard this rumor. As far as I know, this is federal money to be used only for multimodal transportation like bike and pedestrian paths.

Q/C
Will there be a way to get to Kukui Grove shopping center on the path? It seems like you will be almost there. Try to get the shopping center connection in the plan. The gulch path to Kukui Grove.

A
The Nawiliwili Gulch does run to the old sugar mill, not far from Kukui Grove. The grade is too steep for the ADA for that section to the mall.

Q/C
There are no trash cans along the path. We need them now. Also could use signage telling how far the next rest room is. At Nawiliwili Park, the path runs through cars and picnickers. How about a park and walk to the pier? We don't need so much more concrete around the park.

A
Point well taken. We do want to designate space that is not competing with cars. Signs are a Trade-off. Too many vs ones that are needed. Our goal is unobtrusive signs where needed.

Q/C
We need places to get away and be alone. Not with lots of walkers coming by. Have the path not always go by the water, by these places. Don't hug the shore.

Q/C
Is it possible to ask DOT to add lanes, not county roads? Keep the path more low key/

A
We are working with DOT to the path in state right-of-ways. A negotiated discussion. The EA will not make a strong statement on this, but will refer to the state bike path plan and recommend better access on Kapule Highway and Ahukini Road in this project.

NEXT STEPS

- Meeting notes will be published on Bike Path Project website: www.kauai.gov/Government/Departments/PublicWorks/BuildingDivision/BuildingDivisionProjects/BikePathProject
- RMTC will continue to work with the County and private land owners to Assess alternatives at Kauai Marriott, Nawiliwili Stream Gulch, and Nawiliwili Park.
- RMTC will use meeting input to refine alignment alternatives for completion Of the Draft EA.

CONTACT INFORMATION

Prime Consultant: R. M. Towill Corporation, Jim Niermann, 808-842-1133

Community organization: kauaibikepath@hawaii.rr.com

Public Communication Project Consultant: Roxanne MacDougall, 808-822-5798

County of Kauai, Building Division: Patrick Kaihara, 241-6658, pkaihara@kauai.gov

CLOSE, ADJOURNMENT
An announcement was made thanking attendees for their active participation and valuable input. They were reminded of the contact information for R. M. Towill Corporation and Roxanne MacDougall, via a PowerPoint slide. The date for meeting 3 will be announced at some time in the future, using the media on Kaua`i.