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January 12, 2015

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

FILE COPY

JAN 23 2015

Ms. Jessica Wooley, Director
Office of Environmental Quality Control
Department of Health
State of Hawaii
235 South Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Ms. Wooley:

Re: Notice of Determination of Draft Environmental
Assessment for Napule Restaurant at Tax Map
Key ("TMK"): 2-1-058: 128, Lot 1

It is the Hawaii Community Development Authority's understanding that Environmental Risk Analysis, LLC has transmitted the Draft Environmental Assessment and anticipated Finding of No Significant Impact, in accordance with Hawaii Administrative Rules §11-200-11.1, for the Napule Restaurant situated at TMK: 2-1-058: 128, Lot 1, in the Honolulu District on the island of Oahu for publication in the next available edition of the Environmental Notice.

Should you have any questions or concerns regarding this Project, please contact Mr. Deepak Neupane, P.E., AIA, Director of Planning and Development, at 594-0338.

Sincerely,

Anthony J. H. Ching
Executive Director

AJHC/DN/CS:ak
c: Environmental Risk Analysis, LLC

**APPLICANT ACTION
SECTION 343-5(C), HRS
PUBLICATION FORM (JANUARY 2013 REVISION)**

Napule Restaurant Kewalo Basin Draft EA

Island: O'ahu
District: Honolulu
TMK: (1) 2-1-058:128, Lot 1
Permits: Building Permit, Flood Determination, Development Permit, Special Management Area Use Permit, Site Development Approval, Sewer Connection Application

Approving

Agency: Hawai'i Community Development Authority, 461 Cooke St., Honolulu, Hawai'i 96813.
Contact: Mr. Tony Ching, (808) 594-0300

Applicant: Bellavita, Inc., 3-16-1 Minami-Aoyama Minato-ku, TOKYO 107-0062.
Contact: Mr. Masahiko Nakamura, +81-3-3404-6111

Consultant: Environmental Risk Analysis LLC, 820 W. Hind Dr. #240606, Honolulu, Hawai'i 96821.
Contact: Ms. Rachel Okoji, (808) 783-6840

Status (check one only):

- _X_ DEA-AFNSI** Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.
- __FEA-FONSI** Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.
- __FEA-EISPN** Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.
- __Act 172-12 EISPN** Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
- __DEIS** The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.
- __FEIS** The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.
- __Section 11-200-23 Determination** The approving agency simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.
- __Statutory hammer Acceptance** The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

___Section 11-200-27
Determination

The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

___Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

The subject area, defined by TMK 2-1-058: 128, Lot 1, is currently a charter boat building located between Kewalo Basin Harbor and Ala Moana Blvd. The existing structure will be renovated and/or redeveloped to accommodate the needs of the proposed restaurant's operations, including the installation of a wood fired oven. The renovations may also include some site work for the construction of the outdoor seating patio. The proposed project will encompass approximately 6,000 square feet within Kewalo Basin and will be occupied by an Italian Restaurant, Napule.

The proposed action will fully comply with programs designed for the protection and stewardship of Hawai'i's environmental resources and is intended to re-establish the Kewalo Basin area as a viable commercial area. The proposed action will facilitate the current and future uses of Kewalo Basin for commercial operations. As a part of the Kaka'ako Community Development District Makai Area Plan, the proposed action is intended to create a vibrant pedestrian-oriented urban community.

DRAFT
ENVIRONMENTAL ASSESSMENT

Napule Restaurant
Proposed Development Project
1125 Ala Moana Blvd
Honolulu, HI 96814
Tax Map Key (1) 2-1-058: 128, Lot 1

Applicant:

Bellavita, Inc.

Approving Agency:

Hawai'i Community Development Authority

January 2015

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DRAFT
ENVIRONMENTAL ASSESSMENT
Napule Restaurant
Proposed Development Project
1125 Ala Moana Blvd
Honolulu, HI 96814
Tax Map Key (1) 2-1-058:128, Lot 1

Prepared by:
Environmental Risk Analysis, LLC
820 West Hind Drive #240606
Honolulu, Hawai'i 96824

Prepared for:
Bellavita, Inc.

Applicant:
Bellavita, Inc.

Approving Agency:
Hawai'i Community Development Authority
461 Cooke St.
Honolulu, Hawai'i 96813

January 2015

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Acronyms and Abbreviations

Census	U.S. Census Bureau
Cl ⁻	chloride
CO	carbon monoxide
dB(A)	decibels
EA	Environmental Assessment
EIS	Environmental Impact Statement
HAR	Hawai'i Administrative Rules
HCDA	Hawai'i Community Development Authority
HDOH	Hawai'i State Department of Health
HRHP	State of Hawai'i Register of Historic Places
HRS	Hawai'i Revised Statutes
FEMA	Federal Emergency Response Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
LOS	Level of Service
mg/L	milligrams per liter
NAAQS	National Ambient Air Quality Standards
NO ₂	nitrogen dioxide
NRHP	National Register of Historic Places
PM _{2.5}	particulate matter at 2.5 microns or less
PM ₁₀	particulate matter at 10 microns or less
SAAQS	State ambient Air Quality Standards
SEL	sound exposure levels
SO ₂	sulfur dioxide
TMK	tax map key
ug/m ³	micrograms per cubic meter of air
UIC	Underground Injection Control
US	United States
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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Executive Summary

This Environmental Assessment (EA) was conducted to assess potential environmental impacts associated with the construction and operation of an Italian restaurant, Napule, at Kewalo Basin, Hawai'i on the island of O'ahu. The EA was prepared to identify, document and address potential environmental impacts associated with the Proposed Action. The EA examines two (2) alternatives, a No Action Alternative, and a Proposed Action Alternative defined as follows:

- Alternative I – No Action Alternative
- Alternative II – The Proposed Action – Building renovation/redevelopment for a restaurant to serve both O'ahu locals and visitors. This development aims to revive Kewalo Basin as a commercial area.

The following potentially impacted environments were evaluated in this EA.

- Topography and Geology
- Soils
- Natural Hazard
- Flora and Fauna
- Wetlands
- Water Resources
- Climate and Air Quality
- Noise
- Solid Wastes
- Land Use Considerations and Zoning
- Archaeological and Cultural Considerations
- Circulation and Traffic
- Social Factors and Community Identity
- Economic Considerations
- Recreational and Public Facilities
- Visual and Aesthetic Resources
- Infrastructure Systems and Utilities

Findings

- A Finding of No Significant Impact (FONSI) is anticipated based on the environmental and societal factors considered under Alternative I and Alternative II.
- While potential impacts to Soil, Air Quality, Noise and Circulation and Traffic are possible during construction, implementing best management practices would reduce these impacts to less than significant levels.
- Beneficial impacts to Land Use Considerations and Zoning are anticipated assuming implementation of either Alternative I or II as they would address the commercial needs of the Kaka'ako/Ala Moana neighborhood area.
- Under Alternative I, the No Action Alternative, Land Use Considerations and Zoning would incur a negative impact as full use of the land will not be realized. Additional negative impacts are anticipated to Social Factors and Community Identity under Alternative I.

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SECTION 1 INTRODUCTION AND SUMMARY

1.1 Scope and Authority

This Draft Environmental Assessment (EA) has been prepared pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS) and associated Title 11, Chapter 200 Hawai‘i Administrative Rules (HAR). Section 343-5, HRS, establishes nine “triggers” that require environmental review under the statute. The specific trigger for environmental review of the proposed project is the use of State lands. The project area is owned by the State of Hawai‘i. The project area is located within the Special Management Area (SMA), which is regulated by the State of Hawai‘i, Department of Business, Economic Development & Tourism (DBEDT), Office of Planning (OP). This EA will also fulfill future SMA Use Permit application requirements of compliance with HRS Chapter 343.

State of Hawaii, Declaratory Ruling Nos. 80-01 and 84-01 state the entire Kaka‘ako Development District Plan to be evaluated as a “group of proposed or possible actions” taken as a comprehensive whole. As projects are proposed for development, separate supplemental assessments are required for evaluation. The intent of the document is to ensure that systematic consideration is given to the environmental consequences of the Proposed Action. The Proposed Action is the construction of a new multi-use facility at Kewalo Basin, O‘ahu, Hawai‘i (Figures 1 and 2).

1.2 Project Information

Project Name:	Napule Restaurant Kewalo Basin, Honolulu, Hawai‘i
Applicant:	Bellavita, Inc. 3-16-1 Minami-Aoyama Minato-ku TOKYO 107-0062 Contact: Mr. Masahiko Nakamura +81-3-3404-6111
Agent:	Environmental Risk Analysis, LLC 820 West Hind Drive #240606 Honolulu, Hawai‘i 96824 Contact: Rachel Okoji (808) 391-9906
Approving Agency:	Hawai‘i Community Development Authority (HCDA) 461 Cooke St. Honolulu, Hawai‘i 96813
Project Location:	Kewalo Basin Honolulu, Hawai‘i 96814 Island of O‘ahu
Tax Map Key No.:	2-1-058: 128, Lot 1
Total Affected Area:	Approximately 6,000 sq feet
Existing Land Use:	Currently Charter Boat Building
State Land Use Classification:	Urban
State Special District:	Kaka‘ako
LUO Zoning:	Kaka‘ako Community Development District
LUO Special District:	Kaka‘ako-Makai Area

Flood Zone: Flood Insurance Rate Map Zone VE
Land Owner: Kaka‘ako Community Development Authority
Anticipated Determination: Finding of No Significant Impact (FONSI)

1.3 Kakaako Makai Area Background

This section provides a background of the Makai Area, as excerpted from the 2005 Kakaako Makai Area Plan Amendment Final EA. The Kakaako Community Development District was established in 1976. This area is divided into two areas; Mauka and Makai:

- Mauka Area: The land between Punchbowl Street, King Street, Piikoi Street, and Ala Moana Boulevard.
- Makai Area: The land makai of Ala Moana Boulevard between Kewalo Basin and Pier 4, totaling 133 acres.

Over the years, many amendments to the Kakaako Makai Area Plan were made. In the 1985 revision, concerns unique to the Makai Area were addressed. These concerns included:

- Harbor use at the Fort Armstrong area;
- Central residential area;
- Preservation of scenic views;
- A proposed waterfront park at the kakaako peninsula; and
- Potential use of the Makai Area as a relocation area for displaced Kakaako Makai Area businesses.

The boundaries of the Makai Area were revised in 1987, then again in 1990. Land makai of Ala Moana Boulevard from Ala Moana Park to the Aloha Tower were now included. However, lands between Piers 4 and 8 were reassigned to the Aloha Tower Development Corporation. Property occupied by Hawaiian Electric Company makai of Nimitz Highway were excluded from those lands. The Makai Area expanded the area from 133 acres to 221 acres.

With the revised area, a 1990 revision to the Makai Area Plan was made. These revisions included:

- Removal of residential and industrial uses from the Makai Area;
- Relocation of existing uses to Sand Island, Kapalama, and Honolulu Harbors;
- Revision of roadways;
- Expansion of Ala Moana Park into Kewalo Basin;
- Creation of an inland waterway system;
- Provision for cultural and educational facilities within the waterfront park; and
- Passenger cruise ship terminals at Piers 1 and 2.

Feasibility studies were conducted in the early 1990s by HCDA on ideas proposed by the 1990 Makai Area Plan. A reevaluation of land use patterns and concepts followed, and the 1994 Proposed Makai Area Plan and Supplemental EIS were produced. This culminated in the Final Supplemental EIS which was accepted in October 1994, though the revisions to the Makai Area Plan were never adopted by HCDA.

A 1998 revision to the Makai Area Plan was made “because of a desire to balance public costs with revenues from private development, create a livelier urban environment, and improve vehicular and pedestrian flow through the area.” Other revisions include, elimination of the proposed residential component from the 1994 plan, redesignation of the Commercial Zone to include a wide-range of commercial land uses such as office and retail, the addition of a Mixed-Use Zone-Industrial designation to support maritime activities, and reduction of the maximum building height from 300 to 200 feet. The 1998 Makai Area Plan was adopted by HCDA in August 1998.

The Waterfront Business Plan was adopted in October 2002. The Plan established a vision, mission, and strategy for future development of the Makai Area, and recognized the importance of residential use in a work-live-shop-play community.

The 2005 Kakaako Makai Area Plan Amendment Final EA addressed the need for residential use in the Makai Area. A Mixed-Use zone was proposed to include residential, commercial, and public use. Additionally, residential use would be allowed in the Waterfront Commercial zone. This EA will include the evaluation of the larger Makai Area in consideration of the Proposed Action.

1.4 Future Development

The Makai Area is currently undergoing many changes and development, with more planned for the future. Projects planned for the area include:

Bellavita: The site of the current a charter boat building located between Kewalo Basin Harbor and Ala Moana Blvd will be renovated and/or redeveloped to accommodate the needs of the proposed restaurant's operations, including the installation of a wood fired oven. The renovations may also include some site work for the construction of the outdoor seating patio. The proposed project will encompass approximately 6,000 square feet within Kewalo Basin and will be occupied by an Italian Restaurant, Napule.

Kupu Green Job Training Center: First-of-its-kind facility for creating leadership in the growing green jobs sector. The new facility will provide youth with the opportunity to learn skills for a more sustainable future and to build partnerships that can serve as a global model of responsible stewardship and a thriving community.

Kewalo Basin Improvements: Replacement of piers and utilities of the small boat harbor. Other improvements may include security upgrades and dock renovations, to benefit the charter boat businesses, fishermen and other harbor users, upgrading restrooms, adding food service and a convenience store for boaters.

Seagull Schools: Kaka'ako First School project will provide for a new 15,380 square foot center for up to 270 children on a 3/4 acre parcel of land adjacent to the Kaka'ako Park. The three building center consists of 11 classrooms, a commercial kitchen, administrative space, two playground areas, and a kupuna training/gathering room.

Historic Pump Station: Restoration of the historic structure and inclusion of plan for community use.

Kamehameha Schools Redevelopment: Kamehameha Schools lands west of the Kewalo Harbor are being redeveloped with low-rise residential and a few commercial units. There will be a pedestrian pathway to access the City & County of Honolulu rail station.

Howard Hughes Corporation: Currently constructing luxury high-rise condominiums mauka of Ala Moana Boulevard, with development rights for a total of 22 condos in its Ward Villages master plan.

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PROJECT NAME:
 Environmental Assessment for Napule Restaurant
 Bellavita, Inc.
 TMK 2-1-058-128, Lot 1
 Kewalo Basin
 Honolulu, Hawaii

FIGURE TITLE:
 Site Location Map

FIGURE NUMBER:
 1

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PROJECT NAME:
 Environmental Assessment for Napule Restaurant
 Bellavita, Inc.
 TMK 2-1-058-128, Lot 1
 Kewalo Basin
 Honolulu, Hawaii

FIGURE TITLE:
 TMK Map

FIGURE NUMBER:
 2

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SECTION 2 PROJECT DESCRIPTION

2.1 Purpose and Need

Purpose: This EA has been prepared to satisfy the requirements of HRS Chapter 343. The purpose of the Proposed Action (i.e., the proposed addition) is to re-establish the Kewalo Basin area as a viable commercial area.

Need: The proposed action will facilitate the current and future uses of Kewalo Basin for commercial operations. As a part of the Kaka'ako Community Development District Makai Area Plan, the proposed action is intended to create a vibrant pedestrian-oriented urban community.

2.2 Project Description

The subject area, defined by TMK 2-1-058: 128, Lot 1, is currently a charter boat building located between Kewalo Basin Harbor and Ala Moana Blvd. The existing structure will be renovated and/or redeveloped to accommodate the needs of the proposed restaurant's operations, including the installation of a wood fired oven (Figures 3-7). The renovations may also include some site work for the construction of the outdoor seating patio. The proposed project will encompass approximately 6,000 square feet within Kewalo Basin and will be occupied by an Italian Restaurant, Napule.

2.3 Construction Time Frame and Estimated Project Construction Costs

The proposed action will fully comply with programs designed for the protection and stewardship of Hawai'i's environmental resources. Construction is expected to commence in August 2015. It is projected that construction would take place for a duration of 6 months. The total budget for these improvement activities is estimated at \$3 million. The anticipated primary financing will be provided by Bellavita, Inc. and its investors.

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EXTERIOR PERSPECTIVE

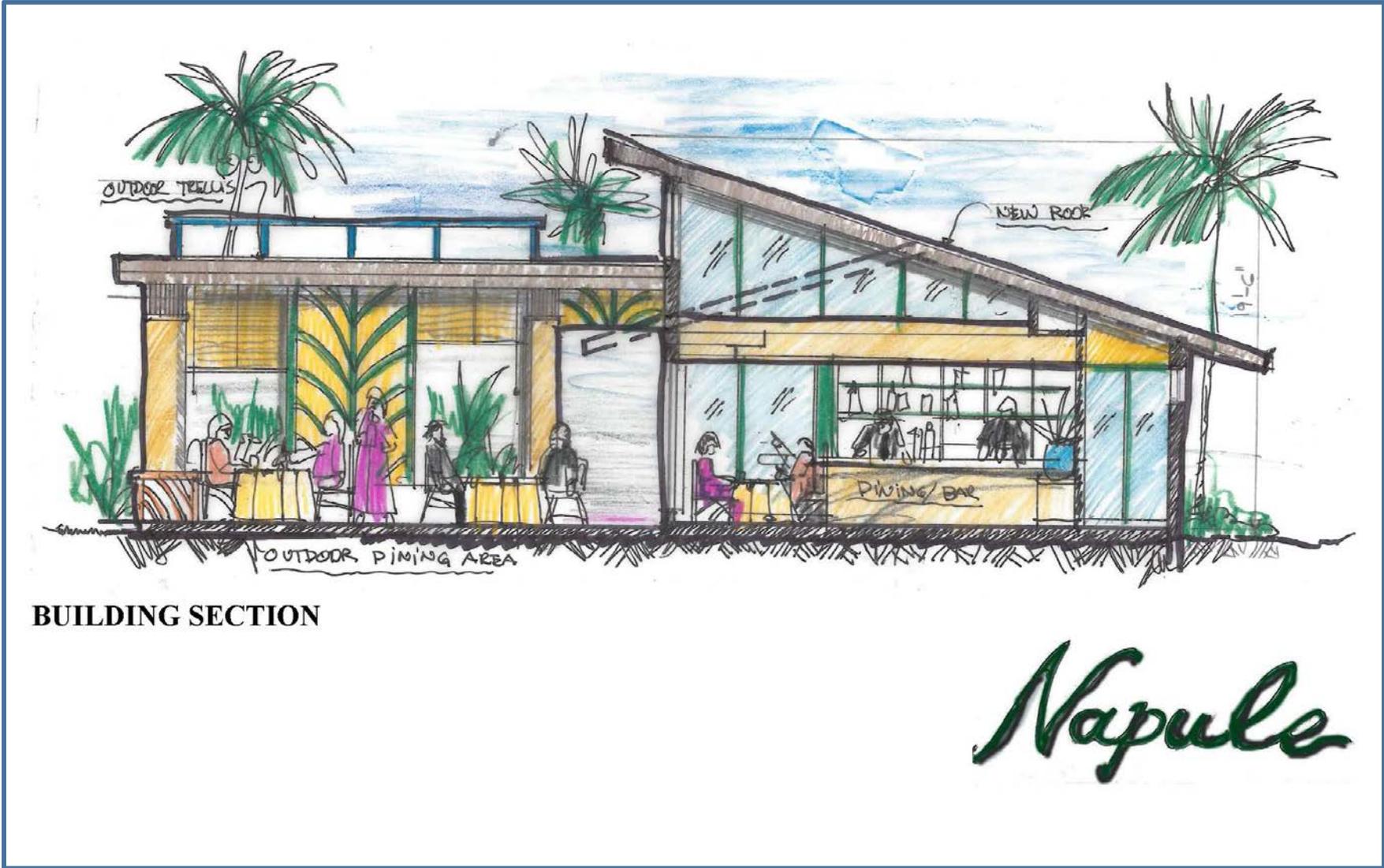
Napule



**Exterior Perspective
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii**

Figure 3

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BUILDING SECTION

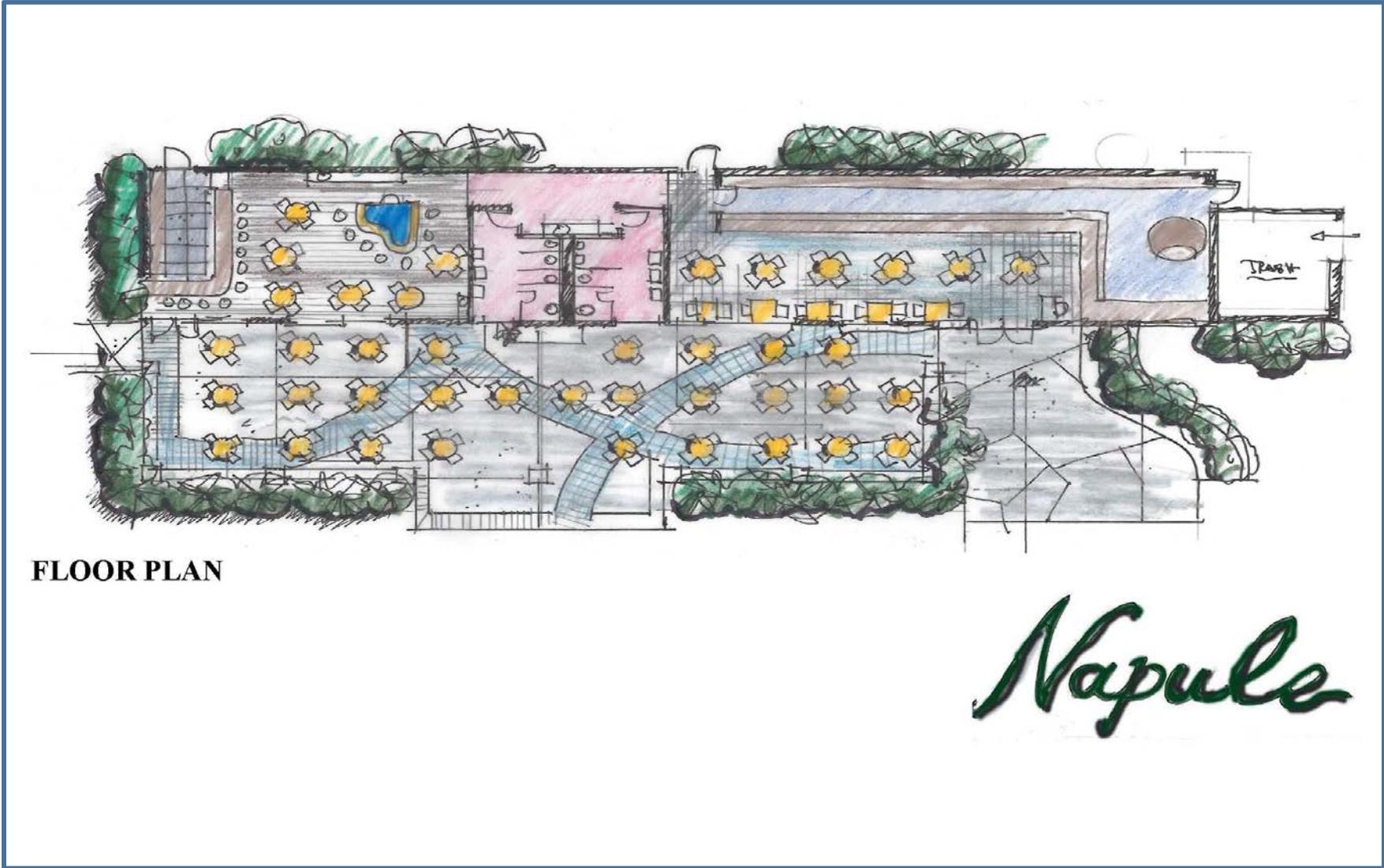
Napule



Building Section
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii

Figure 4

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FLOOR PLAN

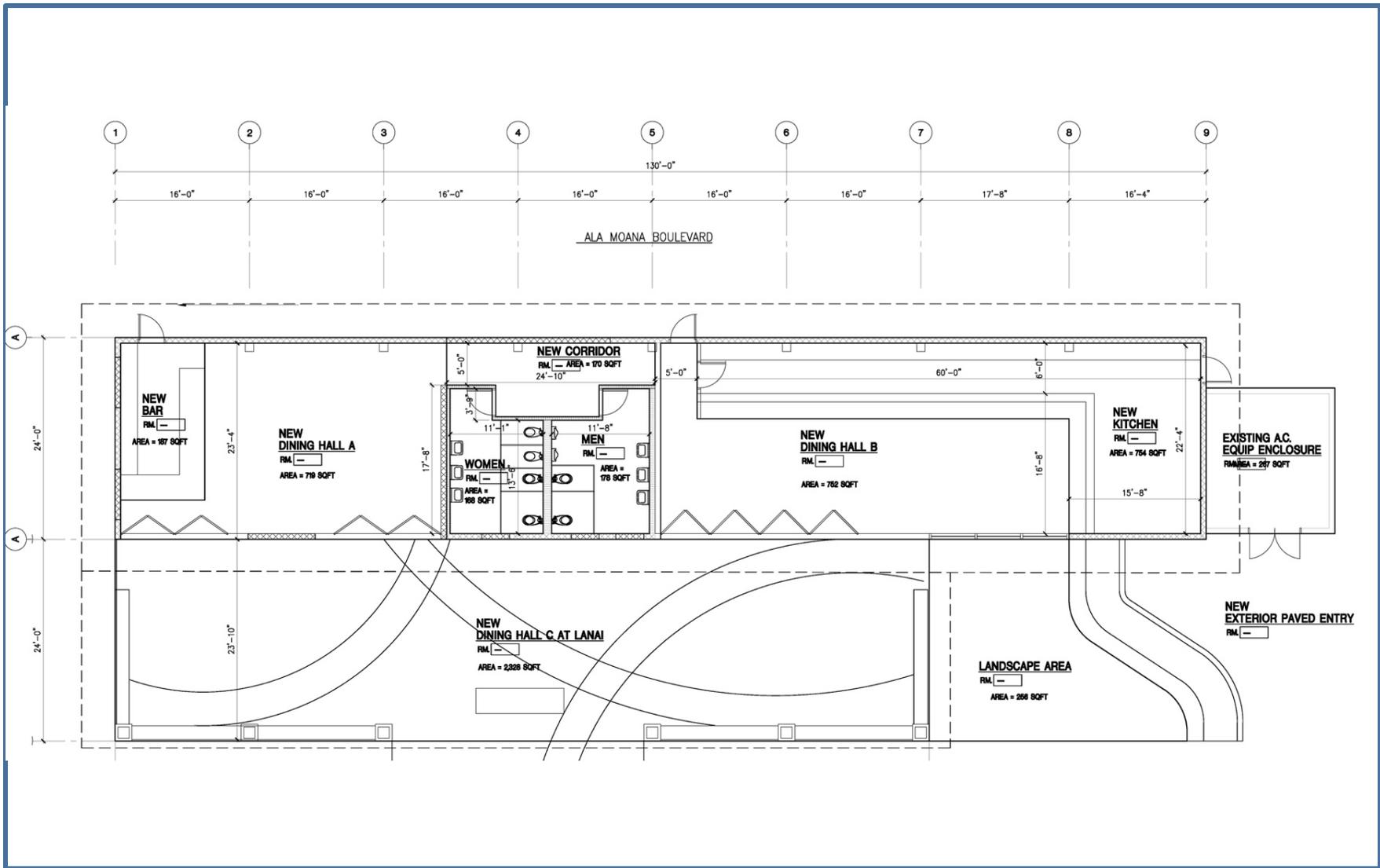
Napule



**Floor Plan
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii**

Figure 5

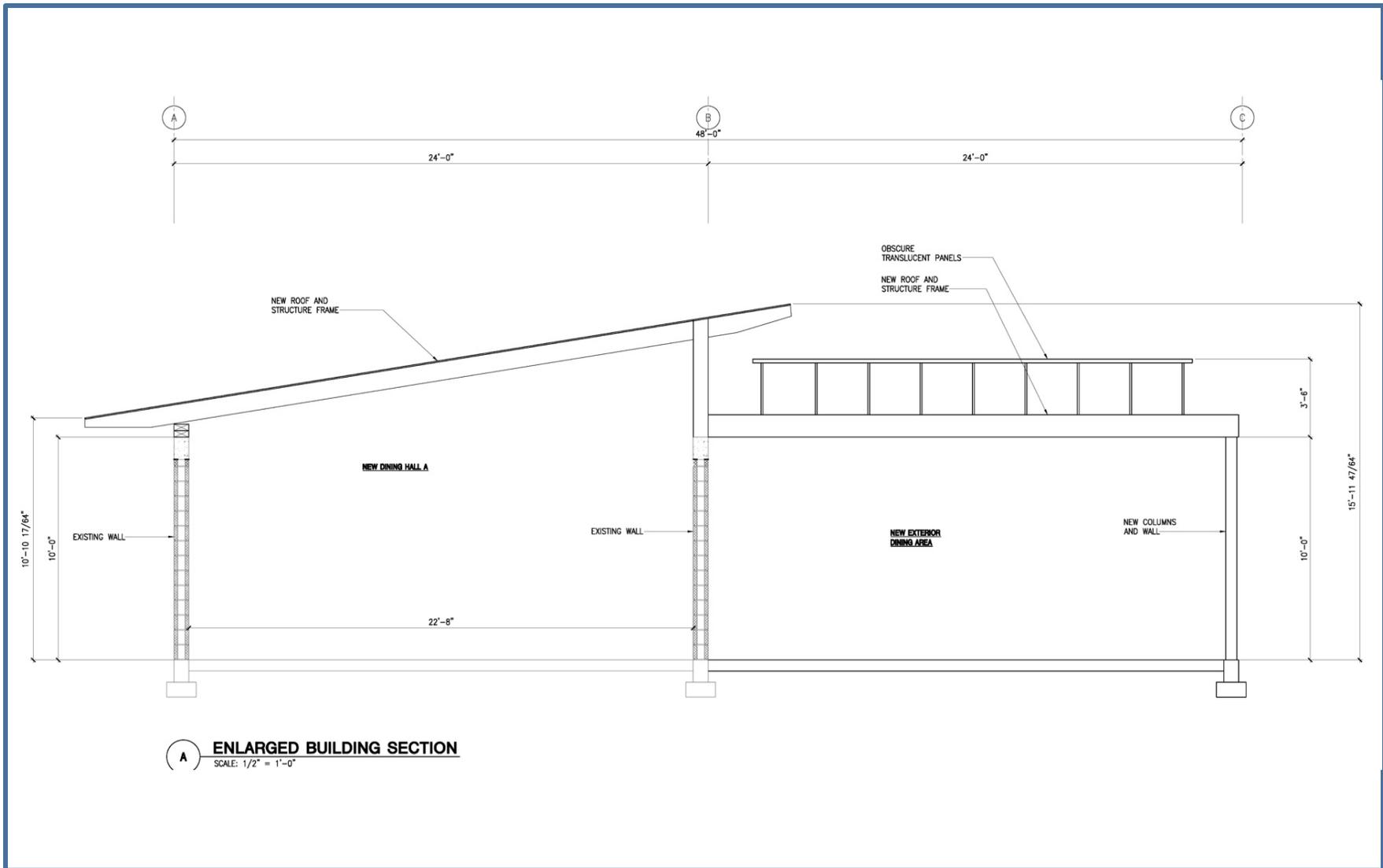
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Floor Plan
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii

Figure 6

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Exterior Elevation Section
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii

Figure 7

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SECTION 3 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section details the alternatives that were analyzed in the Draft EA. Under HAR, Title 11, Department of Health, Chapter 200 Environmental Impact Statement Rules, Section 11-200-17(f), all alternatives considered for the proposed project should be evaluated. These alternatives may possibly enhance environmental quality or avoid, reduce, or minimize some or all of the adverse environmental effects, costs, and risks.

3.1 Alternative I: No Action Alternative

Under the No Action alternative, the Site would be kept as is with no changes or alterations. This alternative would not accomplish the goals detailed in Section 2.1, Purpose and Need and would leave the Site in its current condition.

3.2 Alternative II: The Proposed Action

The subject area, defined by TMK 2-1-058: 128, Lot 1, is currently a charter boat building located between Kewalo Basin Harbor and Ala Moana Blvd. The existing structure will be renovated to accommodate the needs of the proposed restaurant's operation, including the installation of a wood fired oven. The renovations may also include some site work for the construction of the outdoor seating patio. The proposed project will encompass approximately 6,000 square feet within Kewalo Basin and will be occupied by an Italian Restaurant, Napule.

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SECTION 4 AFFECTED ENVIRONMENT

This section discusses the current status of the potentially affected environments should the Proposed Action be implemented. Affected environments include important natural and cultural sources and systems. Environmental consequences are provided in Section 5.

4.1 Physical Environment

4.1.1 Topography and Geology

According to the U.S. Geological Survey (USGS), Honolulu, Hawai‘i, 7.5 minute topographic quadrangle map, the Kewalo Basin Harbor elevation is approximately 0 feet above mean sea level (USGS, 1989). The Site is primarily flat and is mostly paved or constructed upon. The area of the proposed construction currently is a paved asphalt parking lot.

The 2005 Makai Area Final EA noted the Makai area is underlain by a coral layer approximately 5 to 20 feet below mean sea level.

4.1.2 Soils

The *Web Soil Survey* (U.S. Department of Agriculture (USDA), 2012) presents detailed information regarding soil types present on the Island of O‘ahu. The dominant soil type in the project area is listed as 100% Fill Land. Existing vegetation is sparse and only in designated planter box or lawn areas.

4.1.3 Natural Hazard

Flood hazard areas are delineated by Flood Insurance Rate Maps (FIRMs) prepared by the Federal Emergency Response Agency (FEMA), National Flood Insurance Program. Firm Panel 15003C0362G depicts flood hazard for the Site (Figure 8). The project area is categorized as Zone AE and defined as an area where flood hazards are determined.

A tsunami is a series of great waves, typically the result of a violent displacement of the seafloor. Tsunamis are characterized by high speed (up to 560 miles per hour (mph), long wave lengths (up to 120 miles), and long periods between successive wave crests (up to several hours). Tsunamis have the potential to inundate the coastline, causing severe property damage and/or loss of life. Tsunami inundation zone map 17 indicates the tsunami hazard for the area (Figure 9). The project area is designated as Tsunami Inundation Zones (City and County of Honolulu, 2010). Draft Extreme Tsunami Evacuation Maps were produced by the City and County of Honolulu and proposed in 2014. The area is located on Map 19, Inset 2, and is still designated as a tsunami hazard zone.

4.1.4 Flora and Fauna

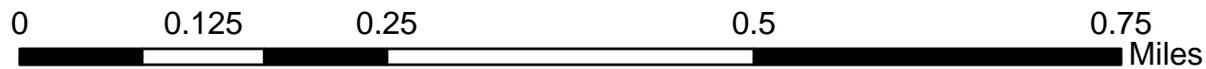
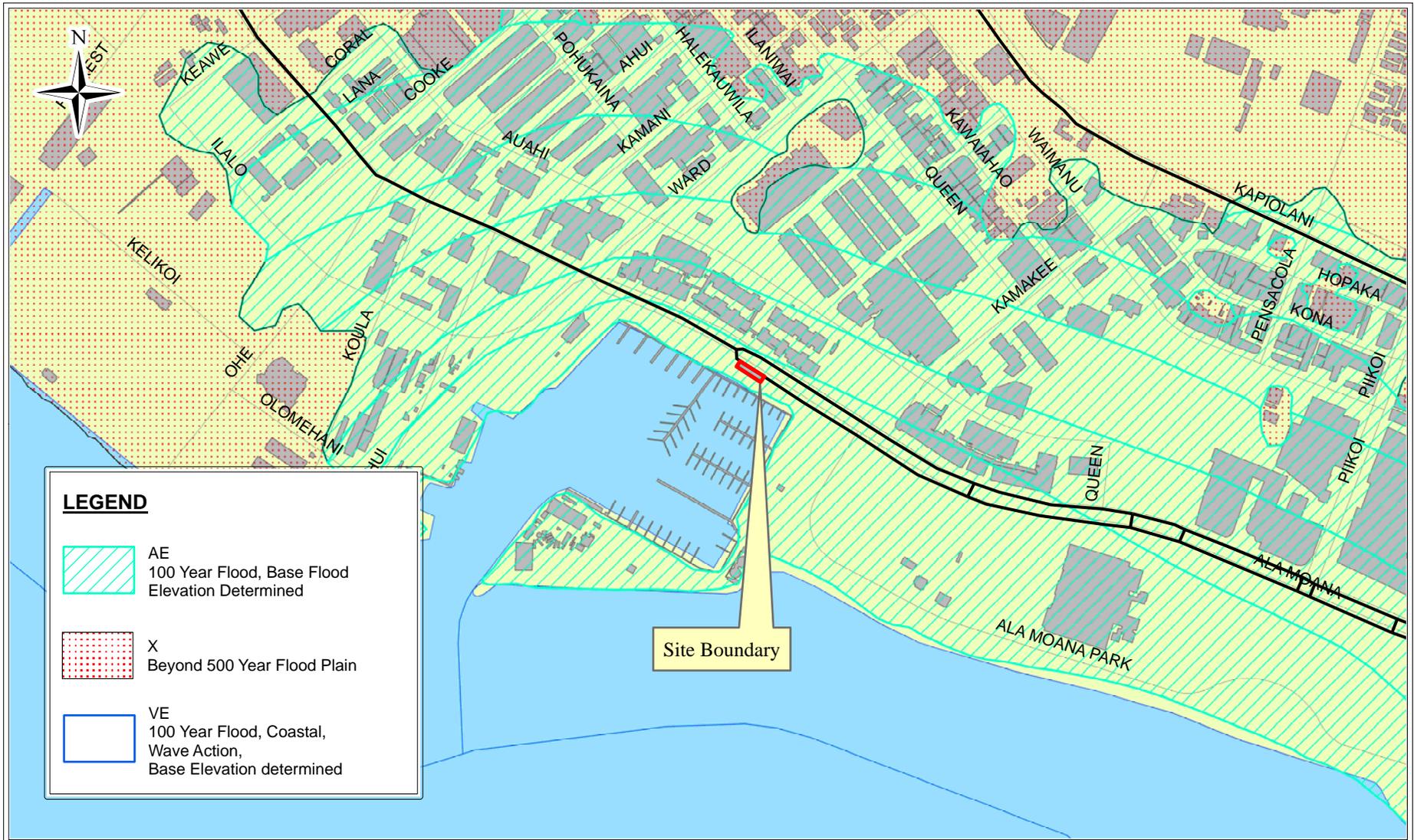
There is moderate landscaping on Site consisting mainly of trees and grasses. As noted in the Kewalo Basin Repairs Project, Draft Environmental Impact Statement (October 2010), a few native species were observed in the park landscaping. These included the hala, loulu palm, and areca palm.

Dogs, cats, rodents, and mongoose have been documented in the Kaka‘ako area. Birds commonly observed in the area include common mynahs, common pigeons, zebra dove, spotted dove, sparrows, and finches. University of Hawai‘i, Center for Conservation Research and Training records were reviewed by the U.S. Fish and Wildlife Service (USFWS) resulted in no record of threatened or endangered species at the Site.

4.1.5 Wetlands

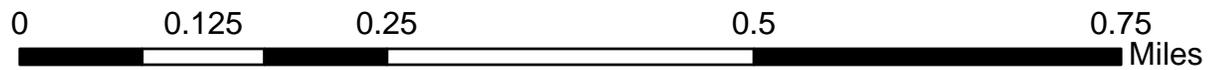
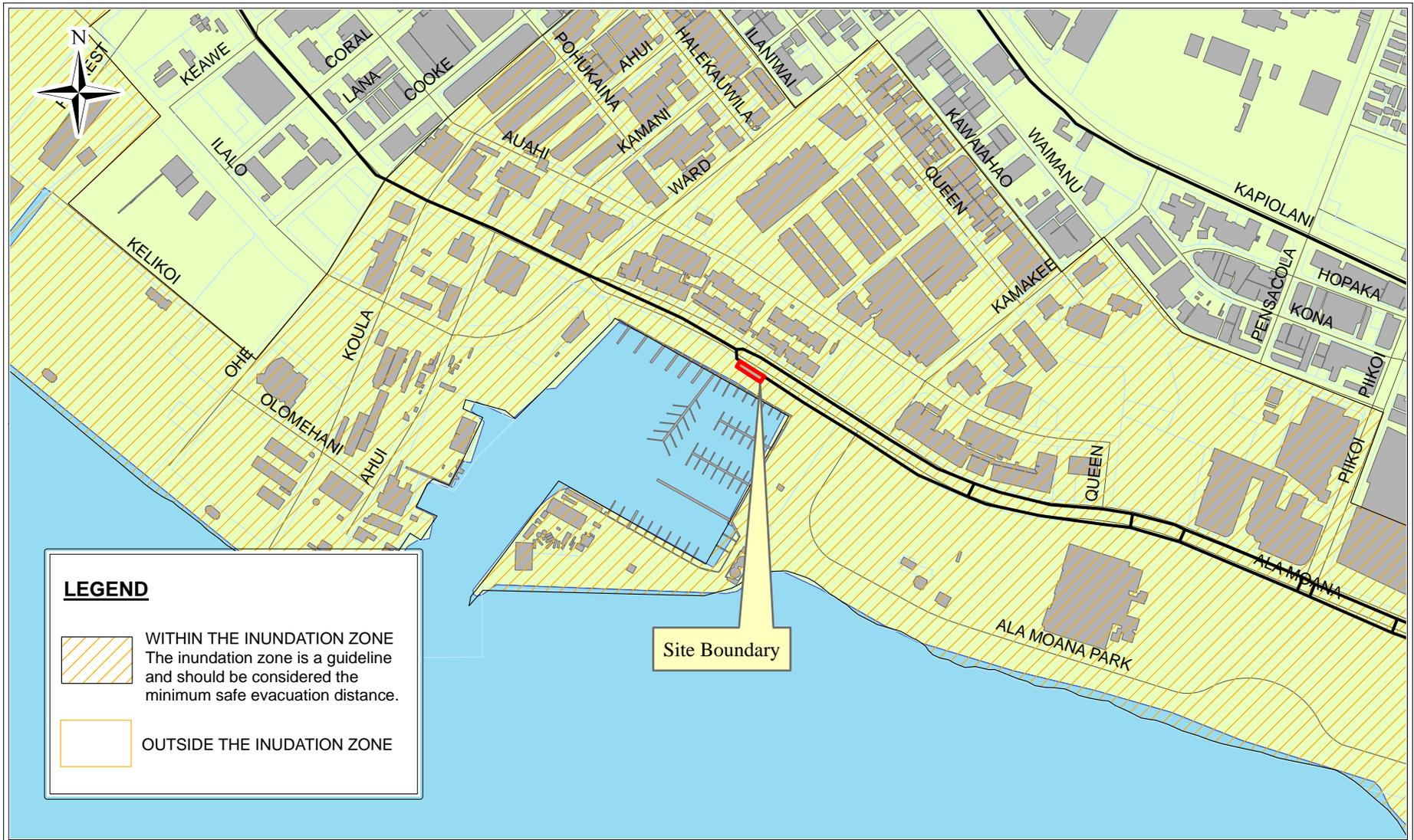
The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (USFWS, 2012) did not identify any wetlands in the project area. However, the harbor area is approximately 20 feet from the project area. It is classified as a 32.97-acre estuarine and marine deepwater wetland.

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	PROJECT NAME: Environmental Assessment for Napule Restaurant Bellavita, Inc. TMK 2-1-058-128, Lot 1 Kewalo Basin Honolulu, Hawaii	FIGURE TITLE: FIRM Map
		FIGURE NUMBER: 8

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	PROJECT NAME: Environmental Assessment for Napule Restaurant Bellavita, Inc. TMK 2-1-058-128, Lot 1 Kewalo Basin Honolulu, Hawaii	FIGURE TITLE: Tsunami Inundation Zone Map
		FIGURE NUMBER: 9

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4.1.6 Water Resources

Groundwater

The Site is defined by aquifer code: 30101116 (23321). The Site is situated in the Palolo aquifer system which is comprised of a sedimentary caprock aquifer. The upper, sedimentary caprock aquifer is an unconfined, sedimentary, basal aquifer. It has moderate salinity (1000-5000 milligrams per liter [mg/L] chloride [Cl⁻]), and is categorized as a non-drinking water source that is also not ecologically important. It is replaceable, and highly vulnerable to contamination (Mink and Lau, 1990). The majority of the aquifer system is makai, or down-gradient, of the Hawai'i State Underground Injection Control Line (UIC). Typically, aquifers that are down-gradient of the UIC line are considered non-potable, and aquifers up-gradient of the UIC line are considered potential drinking water sources. Since the Site is located down-gradient of the UIC line, the water below the Site is characterized as non-potable.

Surface Water

There are no streams or surface water features at the Site. The nearest surface water bodies is the Pacific Ocean and Kewalo Harbor to the west.

4.1.7 Climate and Air Quality

The climate found in Kewalo Basin is characterized by mild and constant temperatures, moderate humidity, and the persistence of the northeasterly trade winds. Daily maximum temperatures range from low to high 80s. Daily minimum temperatures range from mid-60s to low 70s. The average annual rainfall is approximately 20 to 25 inches per year. The majority of the total annual rainfall occurs between October and March, with the wettest months occurring in November through January.

Air quality at the Site is considered to be good and meets National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards (SAAQS). Air quality in the vicinity is most likely affected by emission from industrial activities, commercial vessels, and motor vehicle traffic on local roadways.

The Hawai'i State Department of Health (HDOH) maintains air monitoring locations throughout the state. There are two monitoring locations near the Site. The Honolulu air quality monitoring station is located on the roof of the DOH building (Kinau Hale) in downtown Honolulu's business district, approximately 1.5 miles north of the Site. Parameters monitored at this location are carbon monoxide (CO), particulate matter at 10 microns or less (PM10), particulate matter at 2.5 microns or less (PM2.5), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Measurements reported in the 2011 Annual Summary Hawai'i Air Quality Data (HDOH, 2011) and applicable NAAQS and SAAQS are found in the following table, Table 1.

Table 1: Hawai‘i Air Quality Data 2011

2011 Annual Summary of Hawai‘i Air Quality Data					
Air Pollutant	Averaging Time	Annual Mean (micrograms per cubic meter of air [ug/m ³])	Standards		
			Hawai‘i State Standard (ug/m ³)	Federal Primary Standard (ug/m ³)	Federal Secondary Standard (ug/m ³)
Carbon Monoxide	1-hour	0.4	10,000	40,000	40,000
	8-hour	0.4	5,000	10,000	10,000
Nitrogen Dioxide	Annual	---	70	100	100
PM ₁₀	24-hour	12.2	150	150	150
PM _{2.5}	24-hour	4.7	---	65	65
Sulfur Dioxide	3-hour	0.001	1,300	---	1,300
	24-hour	0.001	365	365	---

4.1.8 Noise

Noise impacts from construction-related activities are regulated under the HAR, HDOH, Title 11, Chapter 46, Community Noise Control. The project area is zoned urban; and as such falls into District Class B under the HDOH regulations, with a maximum day (7:00 a.m. to 10:00 p.m.) and night (10:00 p.m. to 7:00 a.m.) sound level threshold of 60 A-weighted decibels (dBA). District Class B covers areas zoned as multi-family dwellings, apartment, business, commercial, hotel, or resort type facilities.

Construction activities will exceed the HDOH sound level thresholds noted. Table 2 lists sound exposure levels (SELs) associated with typical equipment, in varying operating modes. A construction noise permit will be required during construction activities.

Table 2: Typical Equipment Sound Levels

Equipment	Sound Level (in dBA) Under Indicated Operational Mode		
	Idle Power	Full Power	Moving Under Load
Dozer	63	74	81
Dump Truck	70	71	74
Excavator	62	66	72
Forklift	63	69	91
Front-end Loader	60	62	68
Grader	63	68	78
Sweeper	64	76	85
Tractor-Trailer	67	78	77

Once operations of the multi-use commence, noise at the Site will increase via contributions through operation of the restaurant, live music, and other entertainment type activities. These activities will be limited to day hours. Those establishments with a liquor license will be held to the Hawaii Liquor Commission laws. Hawaii Liquor Commission laws are similar to HDOH regulations. The project area falls into Zoning district B under the Hawaii Liquor Commission rules, with a maximum day (7:00 a.m.

to 10:00 p.m.) and night (10:00 p.m. to 7:00 a.m.) sound level threshold of 60 C-weighted decibels (dBC). Zoning district B covers areas zoned as multi-family dwellings, apartment, business, commercial, hotel, or resort type facilities. According to the National Restaurant Association, the average noise levels found at restaurants is around 70 decibels. Inclusion of live entertainment would increase noise levels during performance times to above 70 decibels. Typical concert levels can exceed 100 decibels. Noise levels at the live music venue are expected to be much lower than concert levels as the scale of the event is much smaller. These noise levels may be obscured by traffic noise on Ala Moana Boulevard or adjacent maritime activities (i.e., boat engines in the harbor).

4.1.9 Solid Waste

Solid waste on the island of O‘ahu is incinerated at the H-POWER waste-to-energy facility located in Campbell Industrial Park. According to the City and County of Honolulu, Department of Environmental Services website, Opala.org, O‘ahu recycling rates are above the national average and Honolulu ranks among the top cities in the country in landfill diversion. The H-POWER facility reduces the volume of waste entering the landfill by 90%. The remaining ash is deposited at the Waimanalo Gulch Sanitary Landfill. Construction and demolition wastes are handled separately and are disposed of at the PVT Landfill.

4.2 Social Environment

4.2.1 Land Use Considerations and Zoning

According to the State Land Use Commission district classifications, the project site is designated as Urban.

4.2.2 Archaeological and Cultural Considerations

The following information was taken from the Kewalo Basin Repairs Project Draft EIS October 2010 document.

Over the last century, the Kaka‘ako area has been heavily modified by filling of the area for land reclamation. The act of adding fill to the area has also contributed to preserving the pattern of early Hawaiian life and the remains of nineteenth century Honolulu. Hawaiians used the lowland marshes, wetlands, salt pans, and coral reef flats of the area for salt-making and farming of fishponds. Land Commission Award documents reveal that much of Kaka‘ako lands were used to produce salt. Kaka‘ako has also served as a location for undesirable land uses such as a quarantine camp and cemetery for victims of the 1853 smallpox epidemic; hospital for victims of the 1895 cholera epidemic; quarantine camp for patients of 1899 bubonic plague; animal quarantine; and garbage incinerator.

Kewalo Basin was later home to the commercial fishing industry, though this declined after World War II. Currently Kewalo Basin houses four items that may be considered cultural resources:

- a statue at the harbor entrance enshrining the pueo (owl) as the protector of the Kaka‘ako area;
- an honorific statue of the Blessed Mother Marianne Cope for her historic efforts in battling Hansen’s disease;
- a Native Hawaiian garden associated with the Hālau Kū Māna public charter school (that leases space in the net shed next to Kewalo Basin Park);
- and the net shed, a structure originally designed for the repair of the fishermen’s nets.

In 2014, an Archaeological and Cultural Impact Assessment was performed by Garcia and Associates, which included historical research to construct a history of land use and determine if archaeological sites have been recorded in or near the area was performed in support of this project. The findings of the study are summarized in this section; the full report is included as Appendix A.

Archaeological

As the Site rests upon fill land, the potential for subsurface items of significance are considered low. The Charter Boat Building (planned to be renovated into the Napule Restaurant) was noted as potentially eligible for nomination to the National Register of Historic Places (NRHP) or State of Hawai'i Register of Historic Places (HRHP). It was recommended the State Historic Preservation Division (SHPD) be consulted prior to any renovation work. It was further recommended the SHPD be consulted prior to any ground disturbance work.

Cultural

Cultural items at the Kewalo Basin were identified as the historic aku fishing, the statue at harbor entrance enshrining the pueo, and the honorific statue of the Blessed Mother Marianne Cope. It was noted the individuals who were interviewed did not feel the construction of an Italian restaurant as culturally sensitive. This was not based on traditional Hawaiian practices, resources, or practices associated with the Site. It was recommended the Hawaiian community be included in the planning process.

Research and interview with Hawaiian community members knowledgeable of the project area and vicinity did reveal concerns about the proposed project. However, potential adverse impacts on cultural, historic, or natural resources, or practices and beliefs were not identified.

4.2.3 Circulation and Traffic

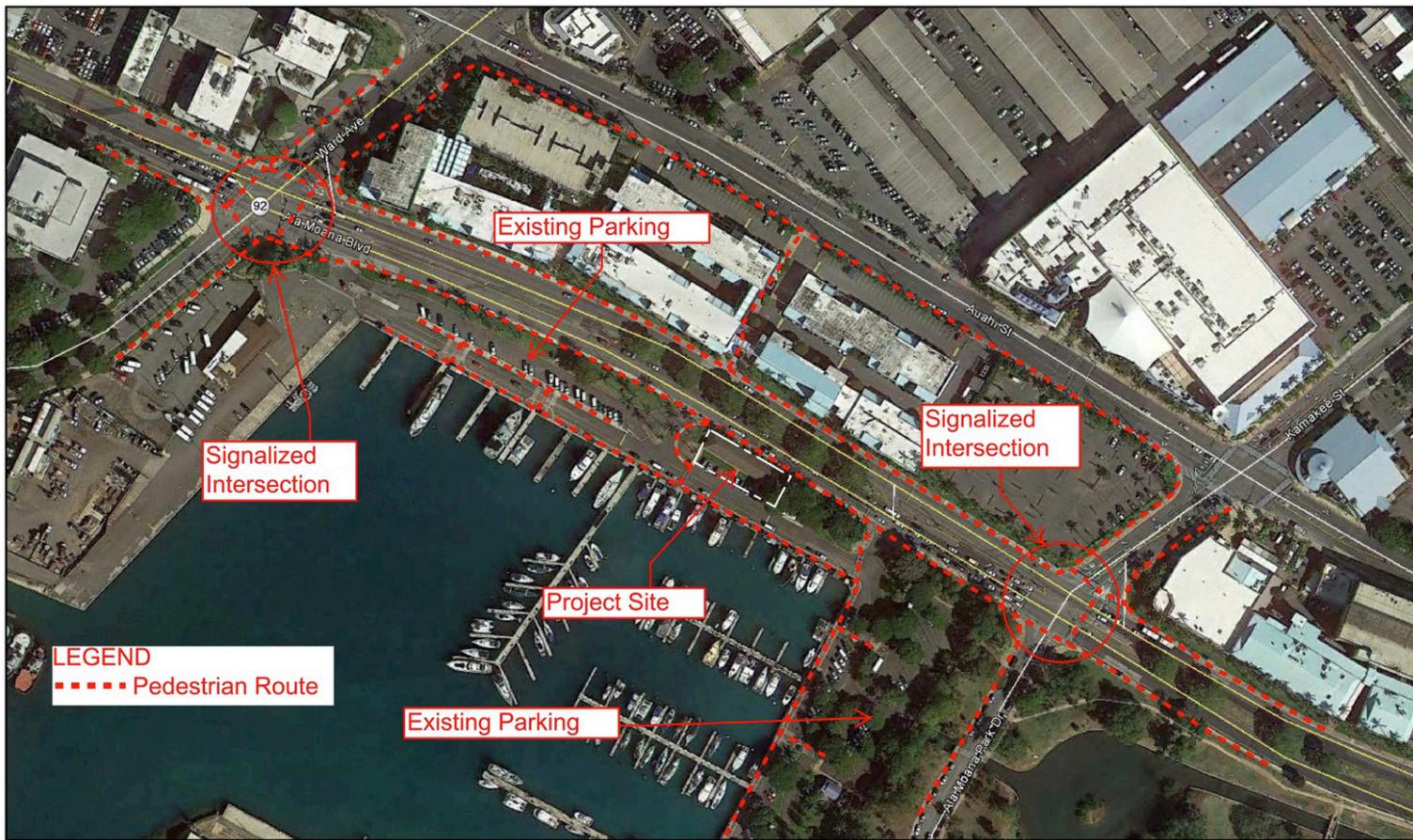
Access to the site would mainly be from Ward Avenue/Ilalo Street and Ala Moana Boulevard. Ala Moana Boulevard fronts the Kewalo Basin property to the north, with Ward Avenue /Ilalo Street intersecting Ala Moana Boulevard from the north (Figures 10 and 11). There are three entrances to the Kewalo Basin area. All are along Ala Moana Boulevard. The area surrounding the Site is densely populated, and traffic is usually moderate to heavy.

A traffic study was prepared in support of this EA (Appendix B). The purpose of the study was to analyze the traffic impacts resulting from the proposed Napule Restaurant. The study included:

1. An evaluation of the existing roadway and traffic conditions.
2. An analysis of the future traffic conditions without the proposed project.
3. The development of the trip generation characteristics of the proposed project.
4. The identification and analysis of traffic access impacts resulting from the development of the proposed project.
5. The development and evaluation of traffic improvements, which would mitigate the traffic impacts identified in this study.

The following information is excerpted from that document.

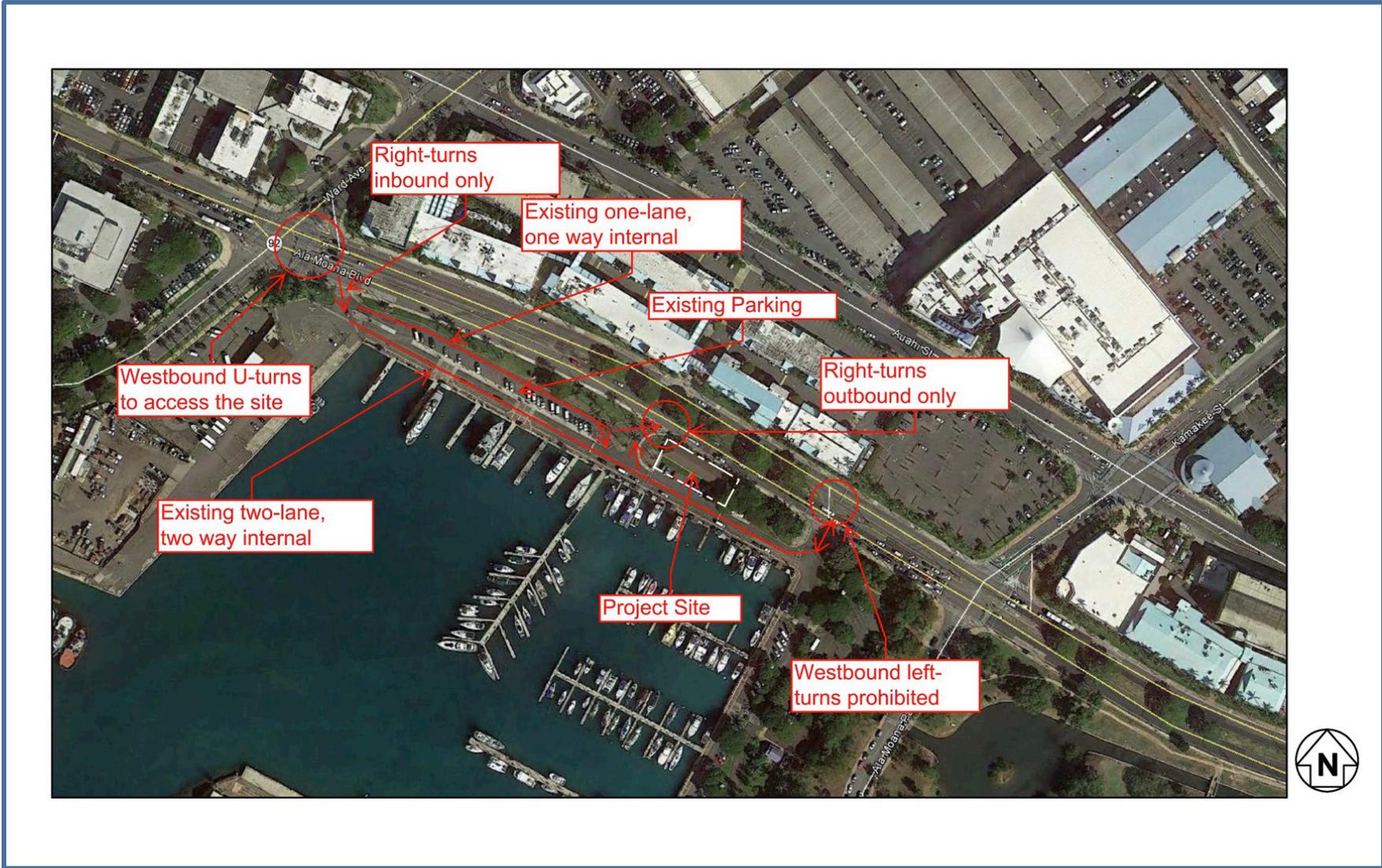
Direct ingress to Kewalo Basin Harbor from the Ewa bound direction on Ala Moana Boulevard is prohibited. Ewa bound traffic must make a U-turn at Ward Avenue to enter the Kewalo Basin Driveways from Koko Head bound direction. The left-turn restriction at the East Driveway is due to its proximity with the Kamakee Street/Ala Moana Park Drive intersection. The closely spaced intersections limit the left-turn storage lengths available between the Koko Head bound direction at Kamakee Street and the Ewa bound direction at the East Driveway. As result, the increase in



**Pedestrian Circulation
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii**

Figure 10

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Project Location
Environmental Assessment for Napule Restaurant
Kewalo Basin, Honolulu, Hawaii

Figure 11

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Ewa bound traffic, entering any new development at the Kewalo Basin Harbor, can be expected to impact the intersection of Ala Moana Boulevard and Ward Avenue.

Consideration should be given to modifying the traffic signal phasing at the intersection of Ala Moana Boulevard and Ward Avenue to mitigate the traffic impacts of the new development at Kewalo Basin Harbor. The traffic signal phasing should be modified from the existing split-phase operation on Ward Avenue to a more efficient 8-phase operation, with separate left-turn phases in both directions on Ward Avenue, followed by the through phases. The proposed Napule Restaurant is expected to increase the PM peak hour traffic at the Ward Avenue and at the East Driveway intersections on Ala Moana Boulevard by 1.0 percent and 2.0 percent, respectively.

A transportation impact analysis report was conducted for a larger multi-use project in the nearby area. The study findings project an increase in delays at the seven study intersections in the area; however no significant traffic impacts were identified at any of the study intersections. Generally, the proposed project is not expected to substantially increase the walking, biking, or transit demand to a level where it could not be accommodated by existing or planned facilities. The installation of bicycle racks is recommended to provide secure bicycle storage within sight of employees and customers.

A traffic study was performed for the area as part of the Kewalo Basin Repairs Project Draft EIS October 2010 document. The following information is excerpted from that document.

Existing traffic conditions, as observed in the 2010 supporting study to the Kewalo Basin Repairs Project Draft EIS document, for the Ala Moana Boulevard and Ward Avenue/Ilalo Street intersection were found to be at acceptable levels of service for urban areas (Level of Service [LOS] D or better) during peak morning and afternoon hours.

Existing traffic conditions, as observed in 2010, for the Ala Moana Boulevard and Kewalo Basin Access intersection were found to be at good levels of service for urban areas during peak morning and afternoon hours.

Traffic conditions projected into 2012, maintained the same LOS for both intersections.

Public transportation in Hawai'i is provided by the City and County of Honolulu, Department of Transportation Services. O'ahu Transit Services (operator of TheBus) is contracted by the Department of Transportation Services to provide fixed route bus service. There are numerous bus stops in the area (within ½ mile) that service 23 fixed-route bus lines. Bus routes for the area include:

- Route 3
- Route 6
- Route 8
- Route 9
- Route 13
- Route 17
- Route 18
- Route 19
- Route 20
- Route 23
- Route 40
- Route 42
- Route 52
- Route 53
- Route 55
- Route 56
- Route 57, 57A
- Route 62
- Route 65
- Route 88A
- Route A
- Route C

The O'ahu Bike Plan calls for bikeways to be added to most of the major streets in the Kaka'ako area. Multiple bicycle paths are proposed for the Kewalo area. Of these include a connection between the existing mauka and makai bike paths in Ala Moana Beach Park, as well as an extension to Kewalo Basin. Other projects include:

- Auahi Street between Ala Moana Boulevard and South Street (Route)
- Ward Avenue between Ala Moana Boulevard and Prospect Street (Route)
- Halekauwila Street between Ala Moana Boulevard and Ward Avenue (Route)

- Kamakee Street between Ala Moana Boulevard and McKinley High School (Lane)
- Ala Moana Boulevard between Kalakaua Avenue and Fort Street Mall (Lane)

The Honolulu Rail Project will also include the Kaka‘ako area, with the rail system beginning in East Kapolei and ending at Ala Moana Center. A rail station is planned at the intersection of Halekauwila Street and Ward Avenue.

The proposed restaurant will require a minimum of 24 parking stalls, which will be allocated in a proposed 250-stall parking structure. The new parking structure is proposed to be constructed as part of the Kewalo Basin Restaurant and Retail Project.

4.2.4 Social Factors and Community Identity

The Site is located in Kaka‘ako across the Ward Shopping area. The area is comprised of retail, commercial, and residential enterprises.

According to the U.S. Census Bureau (Census, 2010) Site falls within Census Tract 38 which has a population of 3,970 individuals.

4.2.5 Economic Considerations

Residents living within Census Tract 38 have an annual household median income between \$75,001 - \$100,000 (Census, 2010). This is in the range of Honolulu County’s annual household mean income of \$83,359 (Census, 2010).

4.2.6 Recreational and Public Facilities

Recreational activities in the area mainly consist of water or beach sports. Area beach activities include netting, fishing, topical fish collecting, surfing, scuba diving, paddling, kayaking, and shelling.

4.2.7 Visual and Aesthetic Resources

Currently, buildings in the immediate vicinity of the Site all range between approximately one and four stories. There are high rise residential structures also in the area.

4.2.8 Infrastructure Systems and Utilities

Currently water, is being supplied by the Board of Water Supply. Sewer services are provided for by the City and County of Honolulu. Electricity is maintained by Hawaiian Electric Co, and gas maintained by Hawai‘i Gas. Preliminary discussions with the City and County of Honolulu, Board of Water Supply, and Hawai‘i Gas have indicated the existing systems (sewer, water, and gas, respectively) can accommodate the needs for this project (Appendix C).

SECTION 5 ENVIRONMENTAL CONSEQUENCES AND PROPOSED MITIGATION MEASURES

Potential impacts of Alternative I: No Action, and Alternative II: Proposed Action are described in this section of the report. Impacts are evaluated on whether they constitute a “significant effect” on a particular environmental setting. Impacts are described as having No Impact, Significant Adverse Impact or Beneficial Impact depending on the outcome to the environment. The terms impact and effect are used synonymously in this EA. Impacts may apply to the full range of natural, aesthetic, historic, cultural and economic resources. The following subsections define key terms used throughout Section 5.

Significance Criteria

A “significant effect” is defined by HRS Chapter 343 as “the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic welfare, social welfare, or cultural practices of the community and State.”

Beneficial Versus Adverse

Impacts from the Proposed Action may also have beneficial or adverse affects to the environment. Beneficial impacts are those that would favorable outcomes and add value to the environment. Adverse impacts are those that produce detrimental effects and cause harm to the environment.

Cumulative Impacts

Cumulative impacts are two or more individual effects which, when considered together, compound or increase the overall impact. Cumulative impacts can arise from the individual effects of a single action or from the combined effects of past, present, or future actions. Thus, cumulative impacts can result from individually minor but collectively significant actions taken over a period of time. The cumulative impacts of implementing the Proposed Action along with past and reasonably foreseeable future projects proposed were assessed based upon available information. Cumulative impacts are discussed in Section 5.3.

Mitigative Measures

Mitigative measures are defined as measures taken to avoid, reduce and compensate for adverse impacts to a resource. Mitigative measures are identified and discussed for each alternative, where relevant. In this EA, mitigative measures are provided to reduce adverse impacts when levels of impact are more than minor and to ensure levels of impact are not significant. Only those mitigative measures that are practicable have been identified.

5.1 Physical Environment

5.1.1 Topography and Geology

Alternative I

No significant adverse impacts to the topography or geology are expected to result from Alternative I. The Site would remain the same as there would be no construction.

Alternative II

No significant adverse impacts to the topography or geology are expected to result from Alternative II. As the Site is currently flat, no significant changes to the topography are necessary for construction. Construction and operational activities would follow existing topography.

5.1.2 Soils

Proposed Action

No significant adverse impacts are anticipated for Alternative I. Site conditions would remain the same.

Alternative II

Alternative II could have a potential significant adverse impact to soils as a result of construction activities (i.e., clearing, grubbing, excavation and trenching) that disturb the earth and soils. Exposed soils are susceptible to erosion during periods of heavy rain or wind. Short-term adverse impacts would be minimized to less than significant or avoided by implementing temporary erosion control measures during construction activities. Typical construction best management practices could be employed to minimize any impacts.

In addition, the 2005 Makai Area Final EA noted the geology and quality of soils for the area as “average” and “poor”. Most of the “poor” soil designated areas have been planned for park use where lighter weight structures can be constructed. Structures built in other areas would need to have the appropriate support systems installed and costs may be prohibitive. The Proposed Action will have the required foundation system for the structures proposed. Building design will be developed by a licensed engineer and building permits obtained from the City and County of Honolulu.

The 2005 Final EA also identifies construction activities may increase stormwater runoff due to erosion from exposed soils. Water quality in the nearshore areas could be affected. A NPDES Permit for construction stormwater discharges is required for areas where soil disturbance is greater than one area. As the Proposed Action covers an area of 2.1 acres, where most of the land will be developed, a NPDES is required. As part of the NPDES Permit, a Drainage and Erosion Control Plan, documenting best management practices to minimize runoff, is required.

5.1.3 Natural Hazard

Alternative I

No significant adverse impacts to natural hazard vulnerability would result from Alternative I as the Site will not change. The Army Corps of Engineers issued guidance on likely changes in sea level rise through the year 2100. This guidance is recommended in evaluating shoreline areas. The Army Corps of Engineers has developed a website to provide information and determine a sites vulnerability to sea level changes. The nearest National Oceanic and Atmospheric Administration gauge to the project area was determined to be Point Reyes, California. Sea level changes on the low and high estimations were less than a foot to over 4.5 feet, respectively, by 2100.

Alternative II

No significant adverse impacts to natural hazard vulnerability would result from Alternative II. The project area is located in the tsunami inundation zone. The proposed action is not anticipated to increase vulnerability to flooding. Building floor elevations will be designed to be above the 10-foot elevation (Appendix C). As noted above, sea level rise in the area is an item of consideration. However, the Proposed Action would not be affected any more or less than the surrounding areas.

The 2005 Makai Area Final EA notes that all development in the Makai Area will be in accordance with regulatory shoreline setback requirements and flood hazard requirements. Planned uses and activities along the shoreline have considered the associated flood hazard potential and were identified in the park and open space uses. Additionally, Civil Defense sirens are located throughout the Makai Area in the

event of an emergency. The Proposed Action has submitted for shoreline certification has been submitted to HCDA.

5.1.4 Flora and Fauna

Alternative I

No significant adverse impacts to flora/fauna are anticipated due to Alternative I as the site would remain undeveloped.

Alternative II

No significant adverse impacts to flora/fauna are anticipated due to Alternative II. No threatened or endangered species are known to exist in the project area. The area surrounding the Site are also quite developed which makes it less likely that there are threatened or endangered species in the immediate vicinity of the Site.

The 2005 Makai Area Final EA did not identify significant adverse impacts to flora and fauna. The Makai Area Plan anticipated a variety of park environments introducing native and non-native plants. Residential developments are anticipated to include landscaped areas that will include introduction of various plant species which may attract other fauna.

5.1.5 Wetlands

Alternative I

No significant adverse impacts to wetlands are anticipated due to Alternative I as the Site would remain in its current state of developed.

Alternative II

No significant adverse impacts are anticipated under Alternative II. Alternative II, the Proposed Action, would not result in loss or destruction of existing wetland resources. Additionally, best management practices would be employed during construction activities to ensure no significant adverse impacts would occur. A NPDES Permit and Drainage and Erosion Control Plan will be produced to document mitigative measures.

5.1.6 Water Resources

Alternative I

No significant adverse impacts to groundwater or surface water would result under Alternative I, the no action alternative. Site conditions would remain the same.

Alternative II

No significant adverse impacts are anticipated to groundwater resources assuming implementation of Alternative II, the Proposed Action. Hazardous substances that could adversely affect groundwater are not likely to be introduced or released into the soil given the proposed use of the Site. Precautions should be taken during construction to avoid significant impact to surface water.

The 2005 Makai Area Final EA noted during construction activities, stormwater runoff may occur. NPDES Permit and Drainage and Erosion Control Plan will be produced to document mitigative measures. Additionally, dewater activities may be required for construction of building foundations and installation of subsurface utilities. A construction dewatering permit will be required if dewater activities are performed. Dewatering effluent will be treated prior to discharge.

5.1.7 Climate and Air Quality

Alternative I

Alternative I would not have a significant adverse impact to air quality as the existing conditions would remain unchanged.

Alternative II

Under Alternative II, potentially significant adverse impacts to air quality from earth moving and excavation activities during construction activities (i.e., fugitive dust emissions) are anticipated. Temporary increases in traffic during the construction phase of Alternative II are also anticipated to increase emissions from combustion as well as increase fugitive dust. An effective dust control plan for the construction phase should be prepared. Best management practices (i.e., watering of roads and trenches during project activities, use of a dust screen which surrounds the project area) would reduce any impacts to less than significant. Once project construction is complete, impacts to air quality would be seen as increased emissions from traffic vehicles. Mitigation by optimizing traffic flow would reduce buildup of vehicular emissions.

The 2005 Makai Area Final EA found short-term, construction air quality impacts due to dust from excavation activities, transportation, and emissions from construction and personal vehicles. Under normal conditions most of the emissions and dust would be blown toward the ocean, however on Kona wind days, emissions and dusts would be blown inland and may negatively impact air quality. Mitigative measures, as provided in the HAR, Chapter 11-60.1, can reduce these impacts.

Long-term impacts were found by the 2005 Makai Area Final EA to be mainly traffic related. Roadway improvements would help alleviate some of the impacts. Landscape and sidewalk improvements would also reduce impacts by providing a more pedestrian friendly environment, potentially reducing vehicle use. Residential use of the area was also identified to reduce traffic related emissions since residents would be able to walk to working, shopping, dining, and recreational destinations.

5.1.8 Noise

Alternative I

No significant adverse impacts to noise are expected to occur under Alternative I. Site conditions would remain unchanged.

Alternative II

Construction activities at the Site may increase noise levels during this project. Limiting those activities that may increase noise levels to daylight hours will help to minimize noise impacts during the renovation. HDOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" regulations will be complied with for the duration of the project. If noise levels are exceed allowable levels, stated in Chapter 46 rules, a noise permit will be obtained.

Once the project is completed, restaurant and entertainment venue activities are anticipated to be the primary sources of noise at the Site. Significant increases in noise from the proposed project are anticipated. While overall noise levels would increase due to an increase in activity, these levels would follow HDOH and Liquor Commission rules, and if required a noise permit will be obtained. No industrial processes or activities that would contribute to a significant adverse impact to the noise environment are planned under Alternative II.

According to the 2005 Makai Area Final EA, construction activities and equipment were anticipated to exceed allowable noise limits and a HDOH noise permit would need to be obtained. Mitigative measures such as using equipment with noise dampening mechanism installed, or substitution of equipment with those that produce less noise and vibration were recommended. Residential use of the area was not anticipated to significantly impact noise. Ambient noise levels were also not anticipated to significantly

impact residents. The residential structures were assumed to be constructed of concrete and include air conditioners, these items would help mitigate potential noise impacts. Additionally, if noise exceedances are anticipated, they will require a HDOH noise permit.

5.1.9 Solid Waste

Alternative I

No significant adverse impacts to noise are expected to occur under Alternative I. Site conditions would remain unchanged. No additional waste would be generated from the construction or operation of the additional facility.

Alternative II

Construction activities at the Site will increase solid waste and construction wastes. These wastes can be minimized by proper planning of building materials and recycling efforts.

Once the project is completed, solid waste generation will be increased over the current conditions. This increase in waste generation would not contribute to a significant adverse impact under Alternative II.

5.2 Social Environment

5.2.1 Land Use Considerations and Zoning

Alternative I

Alternative I would have a direct adverse impact to land use and zoning. The No Action Alternative would not be utilizing the land to its fullest potential.

Alternative II

Alternative II would have a significant beneficial impact on land use and zoning. Kaka'ako Community Development district is handled by the State of Hawai'i and not the City and County of Honolulu.

5.2.2 Archaeological and Cultural Considerations

Alternative I

No significant adverse impacts are associated with the No Action Alternative as no change to the current infrastructure would occur.

Alternative II

Alternative II would involve limited ground disturbing activities that could potentially have significant adverse impact on historical and archaeological resources. However, these impacts are considered unlikely. The area surrounding the Site is already developed with no history of archeological resources. The 2014 archeological inventory survey and cultural impact assessment did not reveal any cultural, historic, or natural resources, or practices and beliefs concerning the project area. The proposed project area subsurface soils may have been previously disturbed. If human osteological remains or a potential archaeological site are uncovered during construction activities, mitigation measures will be implemented. Specifically, site work will cease and the SHPD would be contacted in compliance with Chapter 6E of the HRS. A cultural monitor would also be retained. These mitigation measures will ensure no loss or destruction of historic and archaeological resources, avoid adverse impacts to potential sites, and ensure compliance with State laws and regulations. Implementation of mitigation measures would reduce any potential impacts associated with Alternative II to less than significant. In addition, consultation with the Hawaiian community could ease community concerns regarding the development of the area.

The 2005 Makai Area Final EA noted historic resources were to be preserved and shoreline areas where cultural activities will be maintained. Additionally, SHPD had stated (in response to the 1998 Makai

Area Plan Supplemental EIS) “because the area Makai of Ala Moana Boulevard is comprised of fill lands we believe that the development of the area will have “no effect” on subsurface cultural deposits because it is unlikely that they are present”. Should archaeological or cultural items be uncovered during construction, work activities must stop and SHPD shall be notified at once. Additional steps may be required to determine the proper course of action.

5.2.3 Circulation and Traffic

Alternative I

No significant adverse impacts are anticipated under Alternative I. Site conditions would remain the same.

Alternative II

No significant adverse impacts are anticipated under Alternative II. During construction activities, access and traffic are anticipated to increase compared to normal Site operations. If access and traffic are impacted as a result of renovation activities, minimizing impact on traffic and access to less than significant levels can be accomplished by the following:

- 1) Mobilizing and de-mobilizing construction vehicles and equipment during non-peak traffic hours.
- 2) Utilizing off-street loading (during non-peak hours).
- 3) Use of temporary traffic control devices, such as signage, barricades, and cones, in accordance with City and County traffic standards; and
- 4) If necessary, utilize off-duty police to manage traffic.

Once operations commence, an increase in traffic will impact the area. Implementation of the Makai Area Plan includes improvements to infrastructure which will help alleviate some of the congestion. Access to the Site would be via Ala Moana Boulevard. Parking would be available in a 200+ parking structure which is being proposed in an adjacent retail/restaurant project.

No significant impact to Public Transit is anticipated as a result of renovation activities. As part of standard O‘ahu Transit Services practice, theBus will continually monitor bus usage in the area and adjust their services accordingly. If a new bus stop is required at the location of proposed renovations, the Department of Transportation Services requires that the property owner pay for any sidewalk renovations necessary to ensure that the sidewalk and curb are ADA compliant. This is not expected to be a problem as there is currently a bus stop in front of the property. Additionally, planned bike paths and the Honolulu Rail Project will add other means of transportation besides personal vehicles.

The 2005 Makai Area Final EA discussed the traffic analysis prepared for the Makai Area Plan. Traffic was evaluated for the years 2009, 2014, and 2025. Several mitigative measures were suggested for each of the years projected. The following are actions recommended for the respective years and is taken from the 2005 Makai Area Final EA in full:

2009

1. Maintain adequate turning radii at all roadways to avoid or minimize vehicle encroachments to oncoming traffic lanes.

2. Maintain adequate sight distances for motorists to safely enter and exit all roadways.
3. Extend Punchbowl Street from Ala Moana Boulevard to Ilalo Street. At the intersection with Ala Moana Boulevard, provide three northbound left-turn lanes.
4. Modify Ala Moana Boulevard west of its intersection with Punchbowl Street to provide an exclusive right-turn lane for vehicles turning right onto the new Punchbowl Street extension, as well as an additional westbound departure lane from the intersection. The additional departure lane will provide a free right-turn movement for the outer southbound right-turn lane along Punchbowl Street.
5. Restrict pedestrian crossings on the west side of the intersection of Ala Moana Boulevard and Punchbowl Street. Crossings will be allowed across the east, north, and south sides of the intersection.
6. Modify the traffic signal timing and phasing at the Ala Moana Boulevard Punchbowl Street intersection to accommodate a four-way intersection.
7. Provide two lanes of traffic in each direction along Ilalo Street with through and turning lanes provided at each intersection along its length.
8. Restrict access along Ilalo Street from adjacent parcels. Access points adjacent parcels should be located along intersecting streets.
9. Prohibit parking along Ilalo Street.
10. Provide exclusive left-turn lanes on the northbound and southbound approaches the intersections along Ilalo Street.
11. Provide all-way stop intersection control at the following intersections along Ilalo Street: Forrest Avenue; Keawe Street; Cooke Street; Ahui Street.
12. Provide two-way stop intersection control at the following intersections along Ilalo Street: Coral Street; Ohe Street; Koula Street.

2014

1. Maintain adequate turning radii at all roadways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
2. Maintain adequate sight distances for motorists to safely enter and exit all roadways.
3. Prohibit north- and south-bound left-turn and through traffic movements at the following intersections along Ala Moana Boulevard: Keawe Street; Coral Street; Koula Street.
4. Prohibit eastbound and westbound left-turn traffic movements at the intersections along Ala Moana Boulevard: Keawe Street; Coral Street; Koula Street.
5. Prohibit eastbound and westbound left-turn traffic movements at the intersections along Ala Moana Boulevard: South Street/Forrest Avenue; Keawe Street; Coral Street; Koula Street.

6. Prohibit parking along Cooke Street between Ala Moana Boulevard and Ilalo Street to provide two lanes in each direction along that segment.
7. Modify the existing lane use along Cooke Street north of Ala Moana Boulevard to provide an exclusive south-bound left-turn lane and a shared through and right-turn lane.
8. Provide exclusive north-bound left-turn, through, and right-turn lanes along Cooke Street south of Ala Moana Boulevard.
9. Verify the length of the left-turn lanes along Ala Moana Boulevard at the intersection of Cooke Street to provide adequate storage for vehicles at that intersection.
10. Modify the existing lane use along Ward Avenue north of Ala Moana Boulevard to provide one north-bound departure lane, two exclusive south-bound left-turn lanes, and exclusive through and right-turn lanes.
11. Provide two exclusive north-bound left-turn lanes and exclusive through and right-turn lanes at the intersection of Ala Moana Boulevard and Ward Avenue/Ilalo Street.
12. Provide two westbound left-turn lanes along Ala Moana Boulevard for vehicles turning left onto Ilalo Street.
13. Modify the traffic signal timing and phasing at the intersections of Ala Moana Boulevard with Cooke Street and Ward Avenue to accommodate the modified lane configurations.
14. Conduct full traffic signal warrant studies for the intersections of Ilalo Street with Forrest Avenue, Keawe Street, Cooke Street, and Ahui Street after 2009. Install traffic signal systems where warranted. Preliminary application of the warrants indicate the potential need for a traffic signal system at the intersections with Forrest Avenue and Keawe Street.

2025

1. Maintain adequate turning radii at all roadways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
2. Maintain adequate sight distances for motorists to safely enter and exit all roadways.
3. Prohibit northbound and southbound left-turn movements at the intersection of Ala Moana Boulevard, South Street, and Forrest Avenue.
4. Reassess the traffic signal warrant studies previously conducted for the intersection along Ilalo Street where traffic signal systems were not warranted in 2014. Install traffic signal systems where warranted.

The 2005 Makai Area Final EA also discusses public transportation, bicycle use, and pedestrian activity. New developments in the Makai Area are anticipated to increase use of public transportation however, some of the impacts will be mitigated by the mixed use vision of the area which will allow for walking to retail, restaurant, and other destinations. Long-term plans include a potential for a shuttle service to the Makai Area from downtown Honolulu, and Aloha Tower. Bicycle facilities are also proposed in the Makai Area Plan which are consistent with the Honolulu Bicycle Master Plan. Bicycle racks, storage

areas, and other accessories are requirements of HCDA in future development projects. The pedestrian network will continuously undergo improvement via proposed projects in the Makai Area.

5.2.4 Social Factors and Community Identity

Alternative I

Alternative I would have an adverse impact to the social and community identity. The area would remain the same, underutilized and not contributing to the growth Kaka'ako is experiencing in community and economics.

Alternative II

Construction of Alternative II is expected to have a significant beneficial impact on the social and community identity of the area. The proposed project will add a commercial area to the district.

According to the 2005 Makai Area Final EA, upwards of 1,100 housing units could be built in the Makai Area. These units would be subject to the affordable housing requirements of Hawaii Administrative Rules 15-22-115. The Proposed Action would make available residences in a favorable location with many amenities.

5.2.5 Economic Considerations

Alternative I

No significant adverse impacts are anticipated under Alternative I. Site conditions would remain unchanged.

Alternative II

Adverse impacts to the economy in the vicinity of the Site are anticipated as a result under Alternative II as parking for harbor users will decline during construction of the proposed action. However, this is a short-term impact, the proposed renovations will result in long-term economic benefits for Kaka'ako.

The 2005 Makai Area Final EA identified short-term favorable impacts due to the increase in construction jobs. Long-term benefits were identified as commercial, medical education and research, retail, restaurant, office and maritime industrial activities. It was anticipated the Makai Area could support over 9,000 employees. This economic growth would have a positive influence on the overall city and state economy.

5.2.6 Recreational and Public Facilities

Alternative I

No significant impacts are anticipated under Alternative I. Site conditions would remain unchanged.

Alternative II

Alternative II is expected to have significant adverse impact on the recreational and public facilities on the island. Water will continue to be provided to the existing recreational and public facilities and their operations will continue as they exist today. Access to parking and public facilities will decrease during construction, however these are short-term impacts. An adjacent proposed project will increase the number of parking stalls for the area, and access to public facilities will be restored at completion of construction.

The 2005 Makai Area Final EA anticipated an increase of recreational and public facilities. This increase was deemed to be sufficiently met by the Kakaako Waterfront Park, Makai Gateway Park, and the Kewalo Basin Park.

5.2.7 Visual and Aesthetic Resources

Alternative I

There would be no significant adverse impact on the visual resources and aesthetics in or around the project area anticipated with Alternative I as this alternative shall not bring about any changes in the existing conditions.

Alternative II

Significant adverse impacts to visual resources are not expected under Alternative II. Construction of the new building structure will not significantly impact the view of adjacent buildings as the Proposed Action will be less than the proposed developments mauka of Ala Moana Boulevard. Significant public views will also not be affected.

The 2005 Makai Area Final EA developments in the Makai Area may marginally affect view planes. However these impacts are not anticipated to be significant as existing views are already affected by existing structures. Any redevelopment of the area would have similar impact on view planes and corridors.

5.2.8 Infrastructure Systems and Utilities

Alternative I

No significant adverse impacts are anticipated under Alternative I. Site conditions would remain unchanged.

Alternative II

Alternative II is expected to have little impact on the infrastructure and utilities in and around the project area. Implementation of the Makai Area Plan includes improvements to infrastructure which will help alleviate provide greater support to the area. Preliminary discussions with the BWS have indicated that BWS has the appropriate water allocation for the demands of the proposed project (Appendix C). Also discussions with the City and County of Honolulu Wastewater Branch have indicated that the 69-inch sewer line in Ala Moana Blvd has capacity to accommodate the estimated wastewater flow from the project (Appendix C).

According to the 2005 Makai Area Final EA, the HCDA has implemented an Improvement District Program to systematically improve infrastructure in the Kaka'ako area. Improvements will be made to streetlights, curbs, gutters, and sidewalks. Also, drainage, sewer, water, communication, and electrical systems will be upgraded and placed below ground.

5.3 Cumulative Impacts

The 2005 Makai Area Final EA determined a Finding of No Significant Impact during their evaluation. The Makai Area EA is a supplemental document and was intended to address the previous programmatic EIS and subsequent revisions. All future projects were to be considered in the previous programmatic EIS. Cumulative effects are not anticipated to be significant as a result of implementing Alternative II and other revitalization work being performed along Ala Moana Boulevard (the Howard Hughes planned vision for the Kaka'ako area mauka of Ala Moana Boulevard, the Kewalo Basin Repairs Project, Kupu Ho'ahu Campaign, Vida at 888 Ala Moana Boulevard, the future Honolulu Emergency Services Department lifeguard response station, the current Kewalo Basin Harbor Master's Office, Kamehameha Schools development projects). The action does not involve a commitment to larger actions as patrons of the proposed project would be transitory and not residing on the property. Alternatives II will likely not result in substantial secondary impacts, such as population changes or effects on public facilities. Alternative II involves the renovation of the existing structure into a restaurant at Kewalo Basin.

The Site and adjacent areas are already developed and major infrastructure and housing projects in the Kaka‘ako area are planned for in the near future. The Kaka‘ako Makai Master Plan outlines additional development phasing for the district.

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SECTION 6 RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

The purpose of Section 6 is to identify plans and policies that may be applicable to this project and summarize the relationship of the plans and policies to project actions. Additionally, the intent is to revisit these plans and policies to qualify any significant effects from actions proposed in this EA.

6.1 State and County Land Use Plans and Policies

The current land use and zoning does not need to be adjusted for the proposed renovation of the restaurant.

6.1.1 Hawai'i State Plan

The Hawai'i State Plan, HRS Chapter 226, was enacted in 1978 and is intended to guide the long-range development of the State of Hawai'i, as excerpted:

The Hawai'i state plan that shall serve as a guide for the future long-range development of the State; identify the goals, objectives, policies, and priorities for the State; provide a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improve coordination of federal, state, and county plans, policies, programs, projects, and regulatory activities; and to establish a system for plan formulation and program coordination to provide for an integration of all major state, and county activities.

The sections of the State Plan that is most relevant to the proposed project excerpted as follows:

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

To achieve the general facility systems objective, it shall be the policy of this State to:

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

(a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:

- (1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.
- (2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.

(b) To achieve the general economic objectives, it shall be the policy of this State to:

- (1) Expand Hawai'i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.
- (2) Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.
- (3) Seek broader outlets for new or expanded Hawai'i business investments.

- (4) Expand existing markets and penetrate new markets for Hawai'i's products and services.
- (5) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.
- (6) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.
- (7) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small scale producers, manufacturers, and distributors.
- (8) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.
- (9) Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.
- (10) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.
- (11) Maintain acceptable working conditions and standards for Hawai'i's workers.
- (12) Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.
- (13) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy.
- (14) Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.
- (15) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.
- (16) Foster a business climate in Hawai'i--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry. [L 1978, c 100, pt of §2; am L 1986, c 276, §5; am L 1988, c 70, §4; am L 1993, c 213, §4]

6.1.2 O'ahu General Plan

As described within the O'ahu General Plan for the City and County of Honolulu, the O'ahu General Plan is "a comprehensive statement of objectives and policies which sets forth the long-range aspirations of O'ahu's residents and the strategies of actions to achieve them." The General Plan addresses eleven areas of concern:

1. Population
2. Economic activity

3. The natural environment
4. Housing
5. Transportation and utilities
6. Energy
7. Physical development and urban design
8. Public safety
9. Health and education
10. Culture and recreation
11. Government operations and fiscal management

Of these eleven categories, the three that directly relate to the proposed project is Economic activity, Physical development and urban design, and Culture and recreation. Within each of these areas of concern, the O‘ahu General Plan itemizes key objectives, followed by specific policies. Those most relevant to the proposed project are cited below along with an evaluation of consistency:

Economic activity

Objective A: To promote employment opportunities that will enable all the people of Oahu to attain a decent standard of living.

Policy 1 - Encourage the growth and diversification of Oahu's economic base.

Policy 2 - Encourage the development of small businesses and larger industries which will contribute to the economic and social well-being of Oahu residents.

Policy 3 -Encourage the development in appropriate locations on Oahu of trade, communications, and other industries of a nonpolluting nature.

Physical development and urban design

Objective A - To coordinate changes in the physical environment of O‘ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.

Policy 2 - Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and public safety facilities.

Policy 3 - Phase the construction of new developments so that they do not require more regional supporting services than are available.

Policy 5 - Provide for more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.

Policy 6 - Encourage the clustering of developments to reduce the cost of providing utilities and other public services.

Policy 7 -Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities.

Objective E -To create and maintain attractive, meaningful, and stimulating environments throughout O‘ahu.

Policy 1 - Prepare and maintain a comprehensive urban-design plan for the Island of O‘ahu.

Policy 2 - Integrate the City and County's urban- design plan into all levels of physical planning and developmental controls.

Policy 3 - Encourage distinctive community identities for both new and existing districts and neighborhoods.

Policy 4 - Require the consideration of urban-design principles in all development projects.

Policy 5 - Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.

Policy 6 - Provide special design standards and controls that will allow more compact development and intensive use of lands in the primary urban center.

Policy 9 - Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve.

Culture and recreation

Objective A: To foster the multiethnic culture of Hawaii.

Policy 1 - Encourage the preservation and enhancement of Hawaii's diverse cultures.

Policy 2 - Encourage greater public awareness, understanding, and appreciation of cultural heritage and contributions to Hawaii made by the City's various ethnic groups.

Policy 3 - Encourage opportunities for better interaction among people with different ethnic, social, and cultural backgrounds.

Objective B: To protect Oahu's cultural, historic, architectural, and archaeological resources.

Policy 1 - Encourage the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.

Policy 2 - Identify, and to the extent possible, pre- serve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.

Policy 3 - Cooperate with the State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.

Policy 4 - Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts.

Objective C: To foster the visual and performing arts.

Policy 1 - Encourage and support programs and activities for the visual and performing arts.

Policy 2 - Encourage creative expression and access to the arts by all segments of the population.

Objective D: To provide a wide range of recreational facilities and services that are readily available to all residents of Oahu.

Policy 1 - Develop and maintain community-based parks to meet the needs of the different communities on Oahu.

Policy 3 - Develop and maintain urban parks, squares, and beautification areas in high density urban places.

Policy 5 - Encourage the State to develop and maintain a system of natural resource-based parks, such as beach, shoreline, and mountain parks.

Policy 6 - Provide convenient access to all beaches and inland recreation areas.

Policy 7 - Provide for recreation programs which serve a broad spectrum of the population.

Policy 12 - Provide for safe and secure use of public parks, beaches, and recreation facilities.

Policy 13 - Encourage the safe use of Oahu's ocean environments.

Policy 14 - Encourage the State and Federal governments to transfer excess and underutilized land to the City and County for public recreation use.

6.1.3 State Land Use

The purpose of the State of Hawai'i Land Use Commission is to preserve and protect lands and ensure appropriate uses of those lands. It is the intent that the Land Use Commission oversee development to maximize the potential to the impacted areas.

The Site is designated as urban. "The Urban District generally includes lands characterized by "city-like" concentrations of people, structures and services. This District also includes vacant areas for future development. Jurisdiction of this district lies primarily with the respective counties. Generally, lot sizes and uses permitted in the district area are established by the respective county through ordinances or rules."

6.1.4 Primary Urban Center Development Plan

The Primary Urban Center Development Plan envisions a Honolulu that is attractive in many facets to residents and visitors. Key elements for the Primary Urban Center Development Plan are:

- Protection of Honolulu's natural, cultural, and scenic resources.
- Promoting neighborhoods which have business districts, parks and plazas, and pedestrian-friendly streets.
- Providing in-town housing choices for all ages and incomes.
- Promoting Honolulu as the Pacific's leading city and travel destination.
- Providing transportation for residents and visitors.

The proposed project would most compliment promotion of neighborhoods which have business districts, parks and plazas, and pedestrian-friendly streets.

6.1.5 City and County of Honolulu Land Use Ordinance (LUO)

The purpose of the City and County of Honolulu LUO is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, and to promote and protect the public health, safety, and welfare. It is the intent that the LUO provide reasonable development and

design standards for the location, height, bulk and size of structures, yard areas, off-street parking facilities, and open spaces, and the use of structures and land for agriculture, industry, business, residences or other purposes.

The Site is designated as Kaka‘ako Community Development District and is administered by the State of Hawai‘i, not the City and County of Honolulu. Special Management Area Use Permit and Shoreline Setback permits will be submitted to the State of Hawai‘i Office of Planning.

6.1.6 Kaka‘ako Community Development Plan

The HCDA was created to initiate and guide redevelopment and revitalization of underdeveloped urban communities. Work within the area will conform to the Kaka‘ako Community Development District Rules for the Makai Area (HAR, Title 15, Subtitle 4, Chapter 23), the Makai Area Plan and Design Guidelines. The Kaka‘ako Community Development District Plan to serve as the basis for public and private development in Kaka‘ako and includes the Kaka‘ako waterfront area. The plan is currently comprised of two documents that discuss the development objectives and rationale for future redevelopment of the area: the Kaka‘ako Mauka Area Plan covering the area mauka of Ala Moana Boulevard) and the Kaka‘ako Makai Area Plan (covering the lands makai of Ala Moana Boulevard).

6.1.7 Kaka‘ako Makai Area Plan

The 2005 Kaka‘ako Makai Area Plan presents the overall vision for the Makai Area as:

“to create an active, vibrant area through a variety of new developments, including an expansive waterfront park, maritime uses along the harbor, restaurants, markets and entertainment along Kewalo Basin, a children's museum, educational and research facilities, residential and commercial developments”.

The Site area is designated as a Mixed Use District in the Kaka‘ako Special Design District. The proposed project is in line with the commercial uses stated for that designation. Under the Makai Area Plan, the Site is designated as Waterfront Commercial. The Waterfront Commercial zone is intended to allow for residential and commercial uses, with restaurants, shops, and entertainment as businesses that would best compliment the area from an urban design and market standpoint. The proposed project will adhere to building envelope definitions as stated in the plan. Buildings will be no more than 45 feet in height, and parking will be located within the interior sections of the development. A HCDA Development Permit will be secured prior to project commencement.

6.1.8 Hawai‘i Coastal Zone Management Program

The National Coastal Zone Management Program was created by the Coastal Zone Management Act of 1972. Hawai‘i’s Coastal Zone Management (CZM) Program (Chapter 205A, HRS) provides a basis for protecting, restoring and responsibly developing coastal communities and resources. The objectives and policies of the Hawai‘i CZM Program encompass broad concerns such as impact on recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development. Each of these previous items have been discussed within this EA. The Proposed Action seeks to increase public access to recreational and coastal scenic resources and open space. Design of the Proposed Action will address coastal hazards and include mitigative measures for natural hazards. If historic or archeological resources or coast resources are identified that may be impacted from actions of the proposed project, proper evaluation will be conducted to determine appropriate mitigative measures to protect these resources. Lastly, all required permits and approval will be obtained for the Proposed Action.

6.2 Necessary Permits and Approvals

The following approval will be required for the implementation of the project. All approvals will be obtained in accordance with approving agency guidelines. Per Honolulu Revised Ordinances Chapter 18, Article 3.1 (12), the project is exempt from having to obtain City building permits.

- Building Permit – City and County of Honolulu, Department of Planning and Permitting
- Environmental Assessment – State Office of Environmental Quality Control
- Flood Determination Approval – City and County of Honolulu, Department of Planning and Permitting
- Development Permit – HCDA
- Special Management Area Permit (SMA) – State of Hawaii Office of Planning
- Site Development Approval - City and County of Honolulu, Department of Planning and Permitting (Civil Engineering Branch, Traffic Review Branch, Subdivision Branch), and Board of Water Supply
- Sewer Connection Application - City and County of Honolulu, Department of Planning and Permitting, Wastewater Branch

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SECTION 7 FINDINGS AND REASONS SUPPORTING ANTICIPATED DETERMINATION

In accordance with the provisions set forth in Chapter 343, HRS, this EA has preliminarily determined that the project will not have significant adverse impacts on the environment. As such, a Finding of No Significant Impact (FONSI) is anticipated for the Proposed Action. Anticipated impacts will be temporary and will not adversely impact the environmental quality of the area.

A review of the “Significance Criteria” used as a basis for the above determination is presented below. An action is determined to have a significant impact on the environment if it meets any one of the thirteen (13) criteria.

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

Alternatives I and II will not provide irrevocable commitment to loss or the destruction of any natural or cultural resources. The adjacent areas have already been developed. The site area has been paved and landscaped, subsurface soils at the Site have been previously disturbed. Mitigative measures have been provided that would identify and minimize any impacts to natural or cultural resources if discovered.

(2) Curtails the range of beneficial uses of the environment;

Alternative II will not curtail the range of beneficial uses of the environment. In fact, the implementation of the Proposed Action would increase beneficial uses of the Site.

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

Alternative II will be in conformance with the Chapter 344, HRS, State Environmental Policy, to enhance the quality of life. The Proposed Action will facilitate the current and future uses of Kewalo Basin for commercial operations.

(4) Substantially affects the economic, social welfare, and cultural practices of the community or State;

Alternative II would have beneficial effects to the economic and social welfare of the community and State. The construction phase of the proposed alternatives would create jobs. The operation of the proposed alternative will further enhance the Kaka‘ako community. An archaeological and cultural impact assessment was performed and no cultural practices would be impacted by the Alternatives proposed.

(5) Substantially affects public health;

Alternative II will not have significant effects on public health. The Proposed Action will renovate current infrastructure, ensure a better standard of living. The proposed project may also have beneficial impacts to public health by maintaining and keeping clean an area that has not been used in sometime.

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

Alternative II will likely not result in substantial secondary impacts, such as population changes or effects on public facilities. Alternative II involves the renovation of the Charter Boat Building in Kewalo Basin. The existing structure will be renovated to accommodate the needs of the proposed restaurant's operations, including the installation of a wood fired oven. The renovations may also include some soil removal for the construction of the outdoor seating patio. The change in population and demand for public facilities would be readily met by existing infrastructure.

(7) Involves a substantial degradation of environmental quality;

Alternatives I and II are not likely to result in a substantial degradation of environmental quality. Impacts associated with the Proposed Action have been assessed to be minimal.

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

Cumulative effects are not anticipated as a result of implementing Alternatives I or II. The actions themselves do not involve a commitment to larger actions. The Site and surrounding areas are already developed. Infrastructure and housing projects are planned for in the near future. However, the restaurant would not add significant use of resources.

(9) Substantially affects a rare, threatened, or endangered species, or its habitat;

Alternative II is not anticipated to have substantial effects on rare, threatened, or endangered species, or any critical habitat. There is little potential for encountering such resources as there are no rare, threatened, or endangered species or critical habitats at the Site. Additionally, the Site and surrounding areas are currently developed.

(10) Detrimentially affects air or water quality or ambient noise levels;

No significant impacts on the area's long-term air or ambient noise environments are anticipated to result from Alternatives I and II. During the proposed project, these parameters will be monitored. Any exceedances in local, state, or federal rules or regulations will be mitigated to minimize their effects to the area. Water quality impacts are not anticipated and do not require mitigation measures.

(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 area, geologically hazardous land, estuary, freshwater, or coastal waters;

The Site is not located in an environmentally sensitive area, such as a beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters. Building floor elevations will be designed to be above the 10-foot elevation.

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

Alternative II will not adversely affect the visual aesthetics of the areas identified in the county or state plans and studies. The proposed structure will undergo interior renovation. The area mauka of Ala Moana Boulevard will be renovated to include structures that are taller than the proposed project. Coastal view planes will not be impacted by the Site.

(13) Requires substantial energy consumption.

Alternative II would require substantial energy consumption. The renovated restaurant would not increase permanent residents to the area. The change in population and demand for energy would be readily met by existing infrastructure.

The 2005 Makai Area Final EA determined a Finding of No Significant Impact during their evaluation. The Makai Area EA is a supplemental document and was intended to address the previous programmatic EIS and subsequent revisions. All future projects were to be considered in the previous programmatic EIS. This environmental assessment has determined that the project will not have significant adverse impacts to the natural, built, or social environment. Therefore, it is determined that an Anticipated FONSI be issued for this project.

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SECTION 8 REFERENCES

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SECTION 9 AGENCIES AND ORGANIZATIONS CONSULTED

The following agencies and organizations were contacted during the pre-consultation period. Pre-consultation comment letters and response letters have been reproduced and included in Appendix D.

Federal Agencies

United States Department of the Interior, Fish and Wildlife Service*

State Agencies

Center for Conservation Research and Training (formerly Hawai'i Biodiversity and Mapping Program)

Department of Business, Economic Development and Tourism (DBEDT)

Department of Education

Department of Land and Natural Resources (DLNR)

DLNR Historic Preservation Division

Department of Transportation

Hawai'i Community Development Agency

HDOH

HDOH, Office of Environmental Quality Control

Hawai'i Housing Finance and Development Corporation

Office of Hawaiian Affairs

Office of Planning

University of Hawai'i at Manoa, Environmental Center

County Agencies

Board of Water Supply

Department of Design and Construction

Department of Parks and Recreation

Department of Planning and Permitting

Department of Transportation Services

Honolulu Fire Department

Honolulu Police Department

Other

Hawaiian Electric Company

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APPENDIX A
ARCHAEOLOGICAL AND CULTURAL IMPACT ASSESSMENT

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**DRAFT—Archaeological and Cultural Impact Assessment
of Charter Boat Building Renovation at Kewalo Basin,
Honolulu Ahupua‘a, Kona District,
O‘ahu Island, Hawai‘i**

TMK (1) 2-1-058:043 and (1) 2-1-058:128 (por.)

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GANDA Report No. 2307-1

Hawai‘i SHPD Permit No. 14-12



5 November 2014

MANAGEMENT SUMMARY

At the request of Bellavita, Inc., Garcia and Associates conducted an archaeological and cultural resource assessment for renovation of the Charter Boat Building (TMK (1) 2-1-058:043) at 1085 Ala Moana Boulevard, Kewalo Basin, Honolulu Ahupua‘a, Kona District, O‘ahu Island. The primary objectives of the study are to evaluate the parcel for its potential to contain pre-Contact or historic properties and to assess the level of impact on current cultural practices and beliefs that would be caused by implementing the proposed project. These goals were accomplished through archival research, interviews with knowledgeable informants, and visual inspection of the area.

The Kewalo Basin, including the project area, was in the tidal zone and seaward of the shoreline in the pre-Contact and early post-Contact Periods. The boat channel, jetty, rock wall, catwalks, and reclaimed land that created Kewalo Basin were formed over a period of 60 years beginning in the 1920s. This land use history strongly suggests that no traditional or historic in-situ deposits are present in the project area.

Constructed in 1954, the Charter Boat Building is older than 50 years. It is hence potentially eligible for nomination to the National Register of Historic Places or the State of Hawai‘i Register of Historic Places. Prior to any ground disturbing activities associated with the Charter Boat Building, the Hawai‘i State Historic Preservation Division should be consulted to discuss the potential requirements for evaluation of the building’s eligibility as a registered site, an archaeological inventory survey, or monitoring of earthmoving.

The collected data indicate that that there will be no adverse impact to cultural resources, cultural practices, or traditional beliefs by the proposed renovations to the Charter Boat Building. Regardless, the cultural consultants stressed that placement of a commercial Italian-style restaurant in the building does not fit into the cultural nature or the *mana* of Kewalo Basin and may affect parking available to the local community using Kewalo Basin Park. It is recommended that the project developers include the Friends of Kewalos into their planning process.

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1.0 INTRODUCTION

At the request of Bellavita, Inc., Garcia and Associates conducted an archaeological and cultural resource assessment for renovation of the Charter Boat Building (TMK (1) 2-1-058:043 and :128 por.) at 1085 Ala Moana Boulevard, Kewalo Basin, Honolulu Ahupua‘a, Kona District, O‘ahu Island. The primary objectives of the study are to evaluate the parcel for its potential to contain pre-Contact or historic properties and to assess the level of impact on current cultural practices and beliefs that would be caused by implementing the proposed project. These goals were accomplished through archival research, interviews with knowledgeable informants, and visual inspection of the area.

The proposed renovation of the Charter Boat Building will convert the existing concrete block structure into a casual Italian seafood restaurant. Ground disturbance will only occur for the installation of new utility lines and to construct a patio seating area on the manicured land seaward of the building.

1.1 Project Location

The Charter Boat Building fills the entirety of TMK (1) 2-1-058:043, located adjacent to the seaward side of Ala Moana Boulevard in the Kewalo Basin on O‘ahu’s south shore (Figures 1 and 2). The parcel covers a 228-square-meter (.056-acre) area bordered by strips of landscaped ground. Ala Moana Boulevard bounds the north side, a concrete sidewalk and a Kewalo Basin parking lot is to the south, while roads leading into the basin are to the east and west. A lease will be secured for the ca. 6 x 6 meter landscaped strip, planned to contain the restaurant’s patio, between the Charter Boat Building and the parking area. This strip is a very small portion of TMK (1) 2-1-058:128.

Kewalo Basin is in a heavily urbanized environment of commercial buildings, paved streets, sidewalks, utility infrastructure, and landscaped margins. Approximately 120 m to the east is Ala Moana Beach Park while the commercial center of Ward Warehouse lies directly across the multi-lane and heavily trafficked Ala Moana Boulevard. Bordering Kewalo Basin’s west side is the artificially-constructed peninsula forming Kaka‘ako Makai, a part of the Kaka‘ako Community Development District (KCDD).

One of Hawai‘i’s nine commercial harbors, Kewalo Basin is a medium-draft harbor whose creation began in the 1920s by dredging the submerged reef fronting Honolulu and filling the coastal lowlands. Although in the process of being leased to the Howard Hughes Corporation, Kewalo Basin has been managed by the Hawai‘i Community Development Authority (HCDA), a public corporate entity that is part of the State of Hawai‘i’s Department of Business, Economic Development, and Tourism. The harbor currently provides berthing for charter, commercial fishing, and recreational vessels who offer local cruise trips and opportunities for sports fishing, scuba diving, and whale watching.

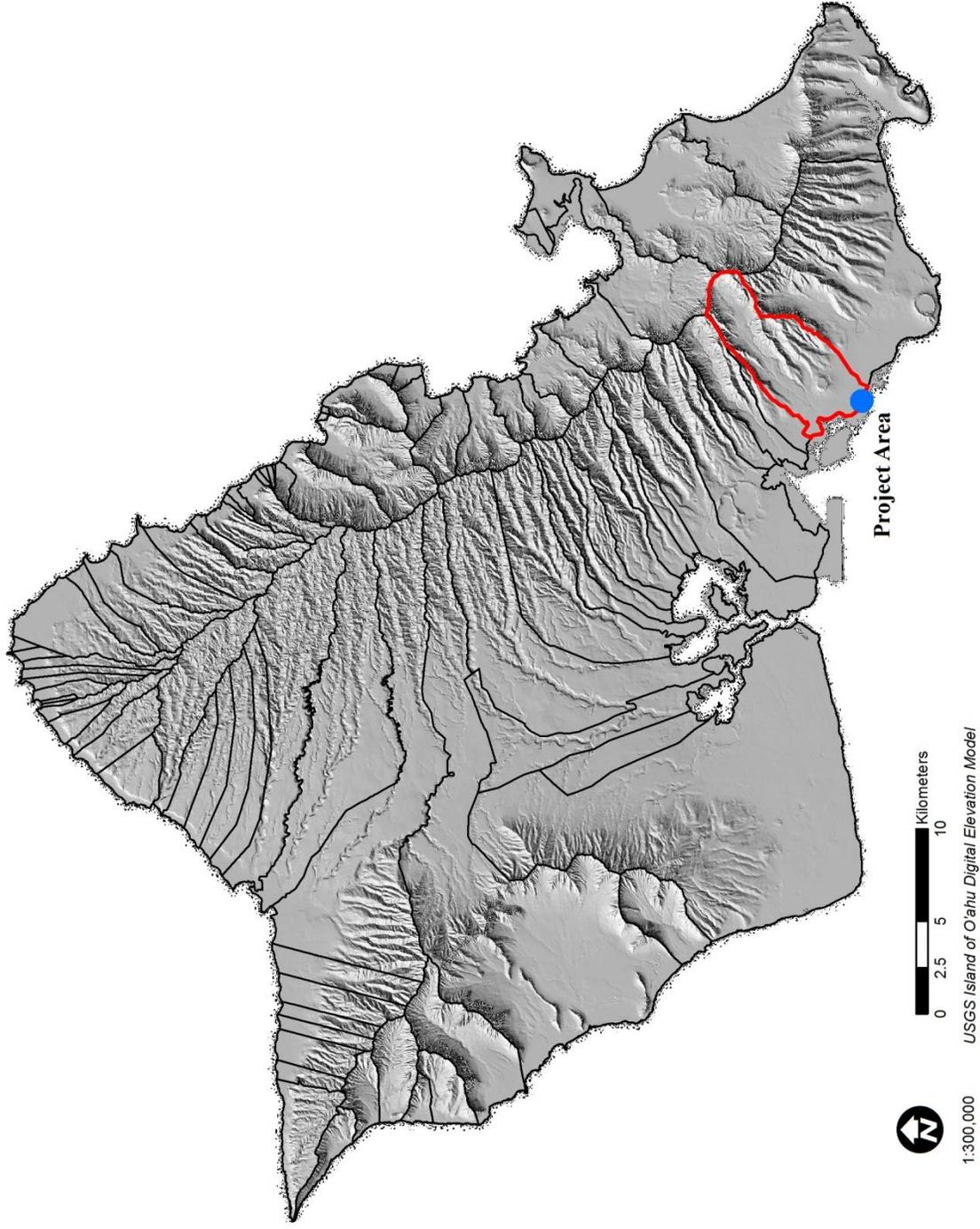


Figure 1. Island of O'ahu, showing Honolulu Ahupua'a in red and project area.

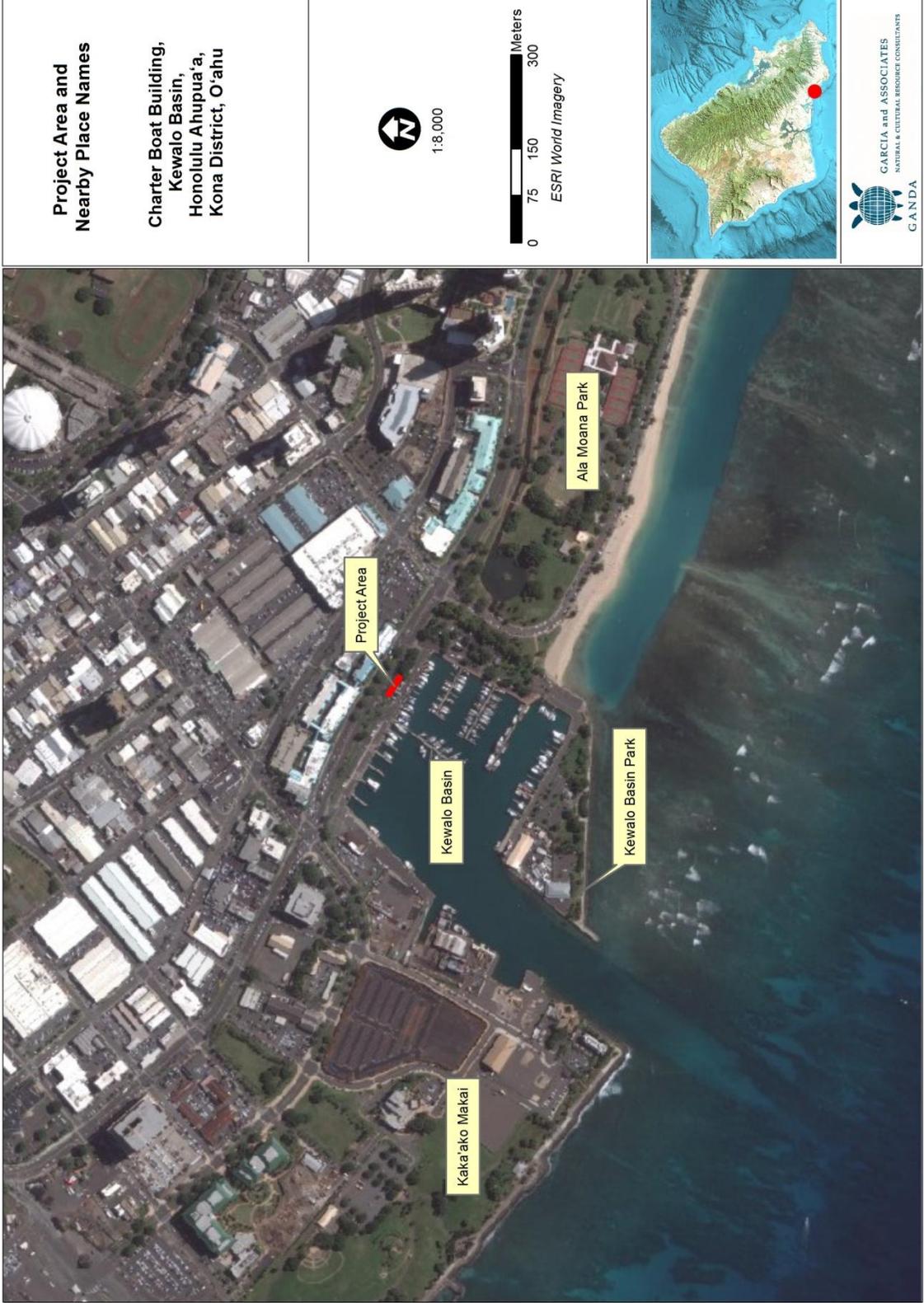


Figure 2. Project area and nearby modern place names.

1.2 Project Objectives

This archaeological and cultural resource assessment of the Charter Boat Building renovation is being undertaken in support of an Environmental Assessment (EA) for redevelopment of this property. The present study is not intended to fulfill standard Hawai'i State Historic Preservation Division requirements for an Archaeological Inventory Survey, but is being prepared for planning and consultation purposes.

This study involves identification and evaluation of two categories of cultural resources: historic properties and traditional cultural places, practices, and beliefs. The objective of the project is to identify any present or potentially-present tangible or intangible cultural resources, evaluate their significance, and assess the level of impact to these resources that would be caused by implementing the proposed project.

Evaluation of impacts to cultural and historic resources for the Charter Boat Building is required by National Environmental Policy Act (NEPA) regulations (40 CFR Parts 1500-1508), and the Hawai'i Environmental Policy Act (HEPA) as codified in Hawai'i Revised Statutes (HRS) Chapter 343, *Environmental Impact Statements*. Under NEPA and HEPA regulations, an EA must consider the effects of the proposed action on the *human environment*, which 40 CFR 1508.14 defines as "the natural and physical environment and the relationship of people with that environment." HRS Chapter 343 also requires consideration of a proposed action's effects on the cultural practices of the community and the State.

Significant historic properties are those cultural resources that are determined to be eligible for nomination to the National Register of Historic Places (NRHP), based on the criteria set forth in 36 CFR Part 64, the federal regulations implementing the National Historic Preservation Act (NHPA) or to the State of Hawai'i Register of Historic Places (HRHP), based on the criteria listed in HRS Chapter 343. A significant effect is any action that would adversely affect those qualities that make a cultural resource eligible for the NRHP or HRHP.

1.3 Project Methods

Identification and evaluation of historic properties and traditional cultural places, beliefs, and practices in the project area was conducted through a literature review, interviews with knowledgeable informants, and a field inspection of the project area.

The literature review was conducted to collect all documented information about the environment, place names and traditions, and traditional and historic land use in the project area and surrounding landscape. Hawaiian traditions are often found in *mo'olelo* (stories, oral traditions), *mele* (songs), *oli* (chants), and *'ōlelo no'eau* (proverbs). Documents examined included historic maps and photographs, aerial photographs, records of Land Commission Awards (LCA), ethnohistoric accounts, and archaeological reports. Archival documentation was collected from the GANDA library, the State Historic Preservation Division (SHPD) library, the University of Hawai'i Hamilton Library, the Bishop Museum library and archives, Hawai'i State Archives, and the State Land Survey Division. A great deal of data was collected online as many historic documents are now digitized and available to the public. For example, information on LCAs was accessed through AVA Konohiki (www.avakonohiki.org) and the Papakilo Database (www.papakilodatabase.com).

Recent community development projects in the surrounding area of Kaka‘ako and in Kewalo Basin have produced an enormous amount of environmental, cultural, archaeological, and historical information. Many of the literature reviews, archaeological surveys and cultural impact assessments produced are associated with Environmental Impact Statements prepared for the Kewalo Basin Repairs Project (Genz and Hammatt 2010; Hammatt and Shideler 2010), segments of the Honolulu High-Capacity Transit Corridor Project (Hammatt 2013), the Kaka‘ako Community Development District, Mauka (Spearing et al. 2008), and the Ward Neighborhood development (Sroat and McDermott 2012)

Other relevant works include an ethnohistorical study conducted for Kamehameha Schools (McElroy et al. 2008) and the University of Hawai‘i at Mānoa’s Kaka‘ako Ethnic Studies Oral History Project. The results of this latter research were published in a two-volume report titled *Remembering Kaka‘ako: 1910–1950* (Ethnic Studies Oral History Project 1978). The detailed research in these studies provides important baseline information for the current study.

Jolie Liston, PhD, served as the Principal Investigator. Dr. Liston meets the professional qualifications outlined in HAR §13-281-3 and is permitted to conduct archaeological investigations under SHPD Permit No. 14-12. She was assisted by Amanda Sims, BA.

A field visit was conducted by Amanda Sims, BA, on 16 September 2014 and consisted of walking the property and taking photographs of the study area. The purpose of the field inspection was to identify and document any historic preservation or cultural resource management issues associated with the project.

1.3.1 Cultural Impact Assessment Methods

The CIA was conducted in accordance with the State of Hawai‘i Office of Environmental Quality Control’s Guidelines for Assessing Cultural Impacts (1997). The CIA was accomplished by collecting and analyzing data on cultural practices and traditional land use in the project area through a combination of archival research and consultation with appropriate community members. The CIA focused on identifying historic and extant traditional Hawaiian practices associated with subsistence, medicinal, religious, and cultural activities and beliefs in the project area. This information was used to assess the impact of the proposed action on the relationship of community members to the identified cultural resources, beliefs, and traditional land use.

Ethnographic consultation consisted of locating expert cultural practitioners and appropriate community members to interview, consulting with these knowledgeable individuals, and analyzing the ethnographic data collected. For the Charter Boat Building project, locating individuals who were knowledgeable about, and willing to share, cultural practices, *mo‘olelo*, and traditional land use in the project parcel and the surrounding area was straightforward. The Friends of Kewalos community group have immediate ties to the area and favorably responded to a request for an interview. Two cultural consultants, Ron Iwami, president of the Friends of Kewalos and Thomas Iwai, Jr., also a member of Friends of Kewalos, agreed to be interviewed.

The Friends of Kewalos is a grassroots organization whose mission is to protect and preserve Kewalo Basin Park and the surrounding shoreline and ocean, and to ensure that recreational users will continue to be able to access and enjoy the area for future generations to come. Although Mr.

Iwami was born in Maui and raised in Manoa Valley, he has strong ties to the traditional use and enjoyment of O'ahu's shorelines. Mr. Iwai grew up in Kalihi and came to the harbor area frequently. When young, Mr. Iwai fished in Kewalo Basin until it was banned due to the lines catching on the commercial fishing boat lines.

The consultation was held with both men concurrently on 22 September 2014. Liston conducted the interview. The consultation began with a brief overview of the nature and location of the project. Time-progressive topographic and satellite view maps of the project area were provided to the consultants for their use. The cultural consultants were then provided with a consent or "agreement to participate" form to review and sign (Appendix A).

The interview was based on a "talk-story" form of sharing information, although questions were asked more directly when necessary. Research categories were addressed in the form of open questions that allowed the cultural consultants to answer in the manner in which they were most comfortable. Follow-up questions were asked based on the consultant's responses or to clarify what was said. Topics discussed included the cultural consultant's background, general knowledge of the project area, and information on past and current traditional land use, place names, legends, and stories.

The comments and stories related by the cultural consultants are incorporated directly into the body of the study rather than presented as a separate chapter or appendix to the report. This is due to the nature of the Charter Boat Building Renovation project area, which covers only a limited footprint on reclaimed land, and the fact that the consultation produced little information directly applicable to the project site.

2.0 ENVIRONMENTAL, TRADITIONAL, AND HISTORIC CONTEXT

Background information is presented below to provide context and assist in developing expectations regarding the nature of potential pre-Contact and historic resources in the study area. The section includes summary descriptions of environmental conditions, cultural history, and previous archaeology that are directly related to the study area.

2.1 Environment and Historical Ecology

Kewalo Basin is situated along the shore of leeward O‘ahu’s coastal lowlands in the geomorphic unit known as the Honolulu Plain. The topography of the site is level, with an elevation of about 2 m above mean sea level.

Average temperature in the area ranges from 18°C to 31°C (65°F to 88°F) (Juvik and Juvik 1998). Annual rainfall averages 650 mm with the wet season typically extending from November to March and the dry season from May to September (Giambelluca et al. 2013). Although annual precipitation was likely higher in traditional times (prior to deforestation), it was still probably at the margins required for non-irrigated agriculture.

Prevailing trade winds are cool and from the northeast with occasional Kona winds from the southwest bringing warm, humid air. No wind or rain names specific to the project area were found during this research. Wave activity at the shore is relatively mild since O‘ahu’s south shore is sheltered from both the tradewind-generated waves and the winter North Pacific swell. During the summer months, the southern swell can produce moderately high surf conditions.

The Honolulu Plain was fed by the perennial streams of Mānoa and Pālolo with their common outlet in Waikīkī. There are no perennial streams in or near the project parcel. The area is fed by freshet flows from intermittent streams and by springs emerging from the corals interbedded with other coastal plain sediments (Cox and Gordon 1970:77).

It should be noted that an ancient, buried stream channel, the HIC Alluvial Channel, was once thought to be close to current day Waimanu Street and to have crossed Kewalo Basin beneath the Charter Building (Ferrall 1976). Subsequent test borings encountered coral within the estimated extent of the channel. This led to the conclusion that:

Based upon this data . . . the major HIC Alluvial Channel was not present within this area. However, a small or secondary channel could exist between the locations where sub-strata information was available. [Hirata 1979:A-7]

The lands inland from Kewalo Basin, with the place name of Kewalo (see Section 2.2), were well known for freshwater springs. While one Kewalo spring was used to drown sacrificial victims (see Section 2.2), others were used as freshwater sources. An *‘ōlelo no ‘eau* tells of a spring in inland Kewalo:

Ka wai huahua ‘i o Kewalo. The bubbling water of Kewalo. Kewalo once had a large spring where many went for cool, refreshing water (Pukui 1983:178).

O‘ahu’s southern coastal plain was once composed of low-lying marshes and sand berms that traditionally contained taro patches, fishponds, and salt pans (Figure 3 and Figure 4). Whereas the project area is currently landscaped with manicured grass and areca palms (*Dypsis lutescens* synonym *Chrysalidocarpus lutescens*), native vegetation on the adjacent shoreline may have included *naupaka* (*Scaevola* spp.) and coconut (*Cocos nucifera*). In 1929, before Kewalo Basin was constructed, the shoreline extended to present day Ala Moana Boulevard and contained many *kiawe* trees (*Prosopis pallida*) (Ethnic Studies Oral History Project 1978:261).

2.1.1 Transformation of the Coastline

In pre-Contact times, O‘ahu’s southern coastal landscape was entirely different than it is today. The original landscape was extensively altered by progressive land reclamation during the urbanization of Honolulu. Beginning in the 1920s, coral dredged from the ocean and deposits of waste material hauled from nearby sources covered the coastal swampland and marshes extending from just east of Honolulu to the slopes of Diamond Head. This dramatically transformed the character of the shoreline and nearby lowlands.

The project parcel and the reclaimed lands extend across a wide swath of coastal lowlands surrounding Kewalo Basin are classified as “Fill Land, Mixed” (NRCS 2011) (Figure 5). The filled area begins near the intersection of Punchbowl and Halekauwila Streets and continues to the northeast through the intersection of Queen and South Streets, Cooke Street, and Kapiolani Boulevard to near the intersection of Ward Avenue and King Street (Hirata 1979:A-5). The fill continues to the southeast and bisects McKinley High School before continuing almost to the intersection of Piikoi and Elm Streets.

Underlying these fill deposits are intact lagoonal deposits and coral formations capping interbedded layers of coral, coralline detritus, and alluvium (Geolabs 2012:9). These soils comprise the coastal plain that formed on the eroded southern flanks of the Koolau Volcano through extensive alluviation, growth of coral reefs, and deposition of marine sediments when sea level was higher during the mid-Pleistocene and the mid- to late Holocene (Stearns 1985; Athens and Ward 1991; Dye and Athens 2000).

As documented in 1912, before the deposition of the fill layers:

The low lands along the sea front of six miles are largely swamps. Wherever profitable they are used for wet agriculture, and the area of wet land has been enlarged until it is difficult now to distinguish between them, nor can the source of water in the swamps be determined except by survey; much of it is water from irrigation. The total area of wet land is 36 per cent, of the land below the foothills. [Hawai‘i Sanitary Commission 1912:17]

An improved understanding of the stratigraphy of the Kaka‘ako/Kewalo coastal zone has resulted from the significant number of archaeological excavations performed in association with recent development projects. These works identify three major stratigraphic zones underlying the concrete and asphalt caps (Genz and Hammatt 2010:59–60). Zone 1 consists of two types of historic fill: one being the crushed coral and basalt used as construction basecourse, and the other is the dredged material and refuse from the nearby incinerator and dump in the land reclamation

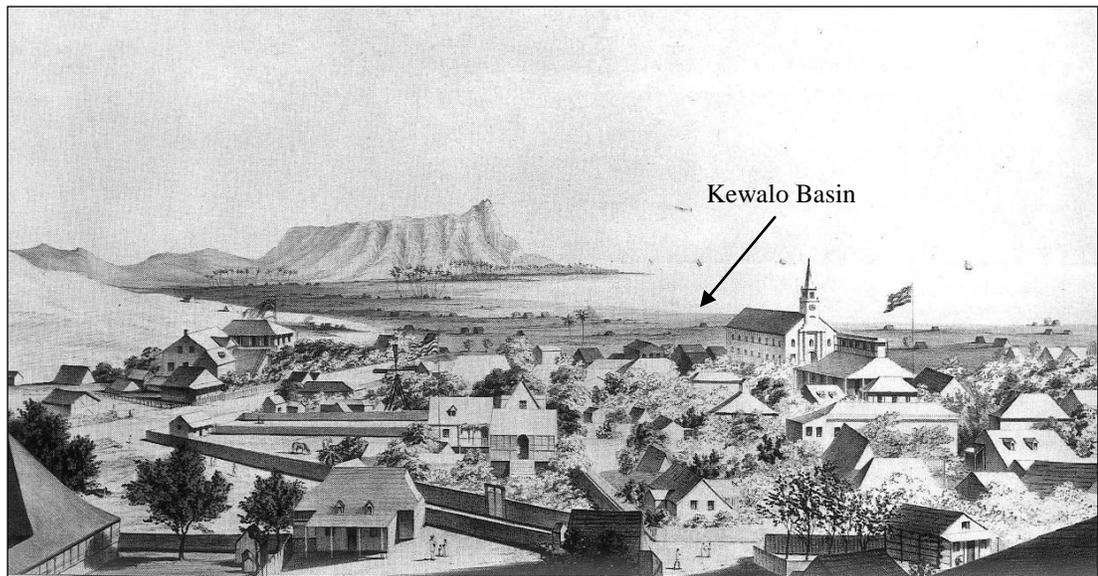


Figure 3. *View of Honolulu from Catholic Church*, by Paul Emmert, 1854 (Kamakau 1992: plate between pp. 258 and 259). Low-lying coastal plain shown near approximate location of Kewalo Basin.



Figure 4. 1944 aerial view of O'ahu's coastal plain from Honolulu Harbor to Diamond Head. Kewalo Basin is shown on the right (courtesy of the Hawai'i State Archives).

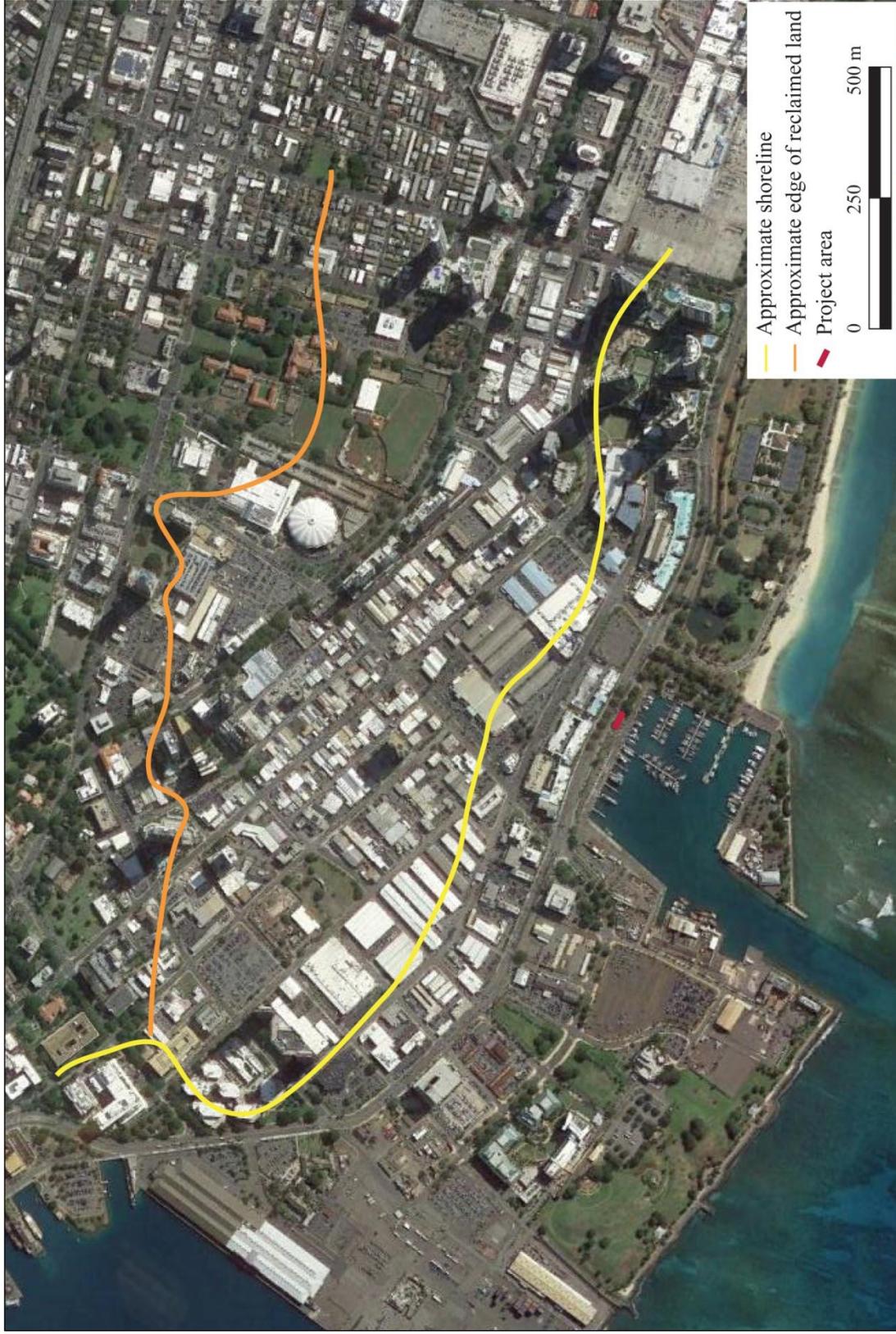


Figure 5. Google Earth image showing approximate original shoreline and edge of reclaimed land according to Hirata (1979:Exhibit Ab).

projects. Zone 2 consists of the natural and cultural strata present prior to historic filling. These buried strata are often truncated or disturbed and include fishpond and salt pan deposits and other pre- and post-Contact cultural layers. Zone 3 is the geologic underpinning of sterile coralline Jaucas sand deposits and a coral shelf dating to the last interglacial period.

The long period of land reclamation not only transformed the coastal landscape but also dramatically altered O'ahu's shoreline. Although historic maps illustrate slightly different coastal configurations, the current study area was clearly on a shallow reef that was partially exposed at low tide. The exact location of the former shoreline is not precisely known, but it appears to have begun:

at the intersection of Punchbowl and Halekauwila Streets and paralleled Punchbowl Street to the intersection with Ala Moana Boulevard. From this point, the shoreline followed Auahi Street in an easterly direction, deviating slightly to the north at Coral Street. The former shoreline was located approximately 200 to 300 feet north of and parallel to Auahi Street. From the eastern end of Auahi Street, the shoreline continued inland to the intersection of Pensacola and Waimanu Streets from where the shoreline sloped in a southeasterly direction. [Hirata 1979:A-5] (see Figure 5)

The reef fronting the project area was also transformed. Shallow fringing reef once protected the shoreline from deepwater wave energy, but now shore protection measures are required for coastal stabilization (HCDA 2005:7). A 500-meter-long shallow reef forms the highly frequented Kewalos surfing area, directly seaward of Kewalo Basin and about 275 m south of the coastline (Hawai'i Community Development Authority 1983:III-4).

The break at the mouth of Kewalo Basin harbor is called the Kewalos, a fast hollow wave that breaks on the shallow reef to produce 1 to 2 meter (4 to 6 foot) swells in the summer. Adjacent to the east is Rennick's surf break. Although mispronounced, the break is named after Renwick Miura, who was a regular surfer here in the 1980s (http://www.surfline.com/surf-news/spot-check:-kewalo-basin-1_112486). Following Rennick's is Straight Outs, a soft, walling left good for longboarding. The last peak at Kewalo's, or the first peak of Ala Moana Beach Park, is Marine Land.

2.2 Traditional History

In the pre-Contact period, the project area was in the tidal zone between the traditional population centers of Waikīkī to the east and Kou (modern-day Honolulu) to the west.

In the *ahupua'a* of Honolulu, Kona District, the project parcel was on the coastal edge of the *'ili* of Kukuluāe'o which extended from the reef inland to about Queen Street (Figure 6). Kukuluāe'o was named for the Hawaiian black-necked stilt (*Himantopus mexicanus knudseni*), an endangered Hawaiian subspecies of the black-necked stilt (*H. mexicanus*). The stilt is called the *kukuluāe'o* or *ae'o* which means, "to walk on stilts" (Pukui et al. 1974). Once defined by coastal marshlands, Kukuluāe'o was an excellent habitat for the stilt.

Kukuluāe‘o’s inland (north) side was bordered by one of the *‘ili lele* (“jump strip” or disconnected land units in an *‘ili*) of Kewalo (Handy and Handy 1991:50). Land Commission documents and historic maps identify Kewalo as between Sheridan and Cook Streets, inland of Queen Street, and the coastal sections of Ka‘ākaukukui, Kukuluāe‘o, and Kālia. In addition to this coastal land unit, Kewalo’s other *‘ili lele* comprised taro lands in Pauoa Valley and *kula* lands on the slopes of Punchbowl. Kewalo literally translates to “the calling,” referring to an echo.

Adjacent and west of Kukuluāe‘o was the *‘ili lele* of Ka‘ākaukukui. Ka‘ākaukukui translates to “the right, or north, light” and may refer to a navigational marker or a now filled-in reef (Pukui et al. 1974). Thrum (1922:635) translates Ka‘ākaukukui as a “radiating place for lamp.” Ka‘ākaukukui was described by Kekahuna as “a beautiful sand beach that formerly extended along Ala Moana Park to Kewalo Basin, a quarter mile long reef extended along the shore” (1958 in Genz and Hammatt 2010:15).

Currently, the project parcel is considered to be in Kewalo with the land bordering Kewalo Basin’s west side, in Kaka‘ako.

2.2.1 Mo‘olelo

As the place name of “Kukuluāe‘o” is not known to occur in Hawai‘i’s traditions and legends (e.g., Fornander 1916–1920; Gotanda 1989) the *mo‘olelo* presented here are those containing the place name of “Kewalo.” *Mo‘olelo* of neighboring Ka‘ākaukukui, or Kaka‘ako, are found in the Ethnic Studies Oral History Project (1978), McElroy et al. (2008:6–12), and Spearing et al. (2008).

2.2.1.1 Springs of Kewalo

The spring of Kewalo is part of the legend of the Waters of Ha‘o (Pukui 1988:84–89) where two of District Chief Ha‘o’s children ran away from their stepmother:

The caretakers of Kewalo Spring saw two children coming wearily along the trail. They saw the little girl stumble and fall. The boy, a little older, helped her to her feet and seemed to urge her to reach the spring. “Those two have been neglected,” one man remarked. “They look half starved, and their *kapa* is soiled and torn.” [Pukui 1988:84]

After staying with the caretakers of Kewalo Spring, the children ran away so that the kind couple would not be punished by their cruel stepmother for helping them. After following the trail to Kou, they collapsed from exhaustion and thirst. The boy, named after his father, dreamed that his mother instructed him to pull a nearby bush. Upon doing so, they found a spring to quench their thirst that became known as the Water of Ha‘o, or Kawaiaha‘o. They were welcomed home, as the cheifess would not dare harm them after the gods had been so benevolent to them.

Another spring in Kewalo was known as Kawailumaluma‘i, or “drowning waters,” because it was used to drown *kauwā*, the lowest class of servants, or those who broke *kapu* in the first step of a sacrificial ritual known as *Kānāwai Kaihehe‘e* (Kamakau 1991:6) or *Ke-kai-he‘ehe‘e* (“sea sliding along”) (Westervelt 1916:3). The victims were then taken to the *heiau* of Kānelā‘au, located at the present Robert Louis Stevenson School, formerly known as the Normal School. The

Dictionary of Hawaiian Localities published in the Saturday Press (October 6, 1883) reports that “The priest when holding the victim’s head under water would say to her or him on any signs of struggling, “*Moe malie i ke kai o ko haku.*” “Lie still in the waters of your superior.”

The human sacrifices were then transported to an altar on top of what is now called Punchbowl to appease the gods of the ruling chief (Bishop Museum, T. Kelsey Collection:820). During the pre-Contact period, Punchbowl was referred to as Pu‘u o Waina (Bishop Museum, T. Kelsey Collection:820), Pū o Waihoana (Emerson in Sterling and Summers 1978:291), or Pū o Waina (Pukui et al. 1974:195). These place names translate to “hill of placing human sacrifices” (Pukui et al. 1974:195). Kamakau (in McAllister 1933:82) states that both chiefs and commoners were taken to Pū o Waina for sacrificial burning, and that victims who violated a *kapu* were brought from Kaua‘i, O‘ahu, and Maui, but were not taken from Hawai‘i Island. Pū o Waina is also said to have been the dwelling place of *menehune*, with Pauoa serving as their excrement pit (Kamakau in McAllister 1933:82).

2.2.1.2 Battle of the Owls

Kewalo was the nesting ground of the great *pueo* (owl) who was the cause of the epic battle between the armies of the *ali‘i* Kākuhihewa and *pueo* from the main Hawaiian islands. The story of how the owl became the *‘aumakua* (deified ancestor) of a man named Kapo‘i and the ensuing battle to save his life is told by Westervelt (1915):

not far from the upper end of Fort Street at Kahehuna lived a man by the name of Kapoi.

His grass house was decaying. The thatch was falling to pieces. It was becoming a poor shelter from the storms which so frequently swept down the valley. Kapoi went to the **Kewalo**¹ marsh near the beach, where tall pili grass was growing, to get a bundle of the grass to use for thatching. He found a nest of owl’s eggs. He took up his bundle of grass and nest of eggs and returned home.

In the evening he prepared to cook the eggs.

With his fire-sticks he had made a fire in his small imu, or oven. An owl flew down and sat on the wall by the gate. Kapoi had almost finished wrapping the eggs in ti leaves and was about to lay them on the hot stones when the owl called to him: “O Kapoi! Give me my eggs.”

Kapoi said, “How many eggs belong to you?”

The owl replied, “I have seven eggs.”

Then Kapoi said, “I am cooking these eggs for I have no fish.”

The owl pleaded once more: “O Kapoi! Give me back my eggs.”

¹ Emphasis added.

“But,” said Kapoi, “I am already wrapping them for cooking.”

Then the owl said: “O Kapoi! You are heartless, and you have no sorrow for me if you do not give back my eggs.”

Kapoi was touched, and said, “Come and get your eggs.”

Because of this kindness the owl became Kapoi’s god, and commanded him to build a heiau (temple) and make a raised place and an altar for sacrifice. The name of the place where he was to build his temple was Manoa. Here he built his temple. He laid a sacrifice and some bananas on the altar, established the day for the tabu to begin and the day also when the tabu should be lifted.

This was talked about by the people. By and by the high chief heard that a man had built a temple for his god, had made it tabu and had lifted the tabu.

Kakuhihewa was living at Waikiki. He was the king after whom the island Oahu was named Oahu a Kakuhihewa (The Oahu of Kakuhihewa). This was the especial name of Oahu for centuries. Kakuhihewa encouraged sports and games, and agriculture and fishing. His house was so large that its dimensions have come down in the legends, about 250 x 100 feet. Kakuhihewa was kind, and yet this offence of Kapoi was serious in the eyes of the people in view of their ancient customs and ideas. Kakuhihewa had made a law for his temple which he was building at Waikiki. He had established his tabu over all the people and had made the decree that, if any chief or man should build a temple with a tabu on it and should lift that tabu before the tabu on the king’s temple should be over, that chief or man should pay the penalty of death as a rebel.

This king sent out his servants and captured Kapoi. They brought him to Waikiki and placed him in the king’s heiau Kapalaha. He was to be killed and offered in sacrifice to the offended god of the king’s temple.

The third legendary locality for the owl-gods was the scene of the “battle of the owls.” This was at Waikiki. Kapoi was held prisoner in the Waikiki heiau. Usually there was a small, four-square, stone-walled enclosure in which sacrifices were kept until the time came when they should be killed and placed on the altar. In some such place Kapoi was placed and guarded.

His owl-god was grateful for the return of the eggs and determined to reward him for his kindness and protect him as a worshipper. In some way there must be a rescue. This owl-god was a “family god,” belonging only to this man and his immediate household. According to the Hawaiian custom, any individual could select anything he wished as the god for himself and family. Kapoi’s owl-god secured the aid of the king of owls, who lived in Manoa Valley on Owl’s Hill. The king of owls sent out a call for the owls of all the islands to come and make war against the king of Oahu and his warriors.

Kauai legends say that the sound of the drum of the owl-king was so penetrating that it could be heard across all the channels by the owls on the different islands. In one day the owls of Hawaii, Lanai, Maui and Molokai had gathered at Kalapueo (a place east of Diamond Head). The owls of

Koolau and Kahikiku, Oahu, gathered together in Kanoniakapueo (a place in Nuuanu Valley). The owls of Kauai and Niihau gathered in the place toward the sunset—Pueohulu-nui (near Moanalua).

Kakuhihewa had set apart the day of Ka-ne—the day dedicated to the god Ka-ne and given his name—as the day when Kapoi should be sacrificed. This day was the twenty-seventh of the lunar month. In the morning of that day the priests were to slay Kapoi and place him on the altar of the temple in the presence of the king and his warriors.

At daybreak the owls rallied around that temple. As the sun rose, its light was obscured. The owls were clouds covering the heavens. Warriors and chiefs and priests tried to drive the birds away. The owls flew down and tore the eyes and faces of the men of Kakuhihewa. They scratched dirt over them and befouled them. Such an attack was irresistible—Kakuhihewa’s men fled, and Kapoi was set free.

Kakuhihewa said to Kapoi: “Your god has ‘mana’—that is, miraculous power; greater than my god. Your god is a true god.”

Kapoi was saved. The owl was worshipped as a god. This also was Ku-kana-kohi. The legends do not clearly state whether this was the name of the owl-god or the name of the battle. The place of that battle was “Kukaeunahio ka pueo,” or “The confused noise of owls rising in masses.” [Westervelt 1915:133–137].

Hawaiians consider the owl a powerful *akua* (god, divine). Both cultural informants, Mr. Iwami and Mr. Iwai, stressed that this story of the *pueo* is important to those who use Kewalo Basin. A statue of an owl with a plaque explaining its significance is situated on the west corner of Kewalo Basin Park.

2.2.1.3 Legend of Pumaia

Kewalo is the location of one of the battles in the Legend of Pumaia (Appendix B). The lengthy legend relates how the spirit of a dead man whose bones were worshipped forced the *ali'i* Kuali'i to respect a vow made to a god (Beckwith 1970:123). In the Kewalo battle, Pumaia killed all of Kuali'i's warriors and officers.

2.2.1.4 Chief Huanuikalala'ila'i

Huanuikalala'ila'i, a chief famous for his fondness of cultivation and kindness to the common people, was born in Kewalo. The chant telling of *ali'i* Hui's birth is provided by Kamakau (1991:24):

'O Hua-a-Kamapau ke 'li'i
Hua-a-Kamapau the chief
O Honolulu o Waikiki
O Honolulu, of Waikiki
I hanau no la i kahua la i Kewalo,
Was born at **Kewalo**,
'O Kalia la kahua
Kalia was the place

O Makiki la ke ēwe,
 At Makiki the placenta,
I Kānelā‘au i Kahehuna ke piko,
 At Kānelā‘au at Kahehuna the navel cord,
 I Kalo i Pauoa ka ‘a‘a;
 At Kalo at Pauoa the caul;
Iuka i Kaho‘iwai i
 Upland at Kaho‘iwai, at
Kanaloaho‘okau . . .
 Kanaloaho‘okau . . .

Chief Hua governed Pu‘ukea Heiau in the ‘*ili* of Kukuluāe‘o (Kamakau 1991:24). Pu‘ukea is a place name mentioned in two Land Commission Awards (LCA) within Kukuluāe‘o: LCA 1502 (not awarded) and LCA 1504. The exact location of the *heiau* is not known. Pu‘ukea translates to “white hill” and suggests the *heiau* was on an elevated location within the surrounding marshland. According to Genz and Hammatt (2010:19), as it is common for a *heiau* to be named after the ‘*ili* in which it is located, it is possible that Pu‘ukea Heiau was near the junction of Halekauwila and Cooke Streets.

2.2.2 Early Land Use

Because the project parcel was in or near the tidal zone during traditional Hawaiian settlement, the following section discusses traditional activity in the surrounding low-lying swampland. Heavy urbanization and land reclamation has destroyed much of the archaeological record. Most extant information about pre-Contact land use in the Kukuluāe‘o area is found in *mo‘olelo*, historic maps, and ethnohistoric accounts.

By the late pre-Contact Period, Kukuluāe‘o was known for marshes, salt pans, and small fishponds (Pukui et al. 1974). These types of land use probably extend back to the times of settlement expansion when an increasing population resulted in people expanding into slightly more marginal landscapes.

Although possibly never a congregated settlement, Kukuluāe‘o’s landscape provided valuable resources and was conveniently located between Honolulu and Waikīkī. Fronting Kukuluāe‘o was a shallow reef enclosing a deep section of water that would have been a suitable canoe landing. The settlement pattern was likely one of thatched houses close to the coastline and also dispersed among the different resource areas. Trails crossed the ‘*ili* to connect the population centers of Honolulu and Waikīkī

2.2.2.1 Trails

One of many early nineteenth century trails along O‘ahu’s southern coast illustrated by John Papa ‘Ī‘ī (1959:93) crosses Kukuluāe‘o (Figure 7). This central trail, probably paralleling Queen Street, is described as:

The trail from Kalia led to Kukuluāe‘o, then along the graves of those who died in the smallpox epidemic of 1853, and into the center of the coconut grove of Honuakaha. On the upper side of the trail was the place of Kināu, the father of Kekauonohi. [‘Ī‘ī 1959:89]

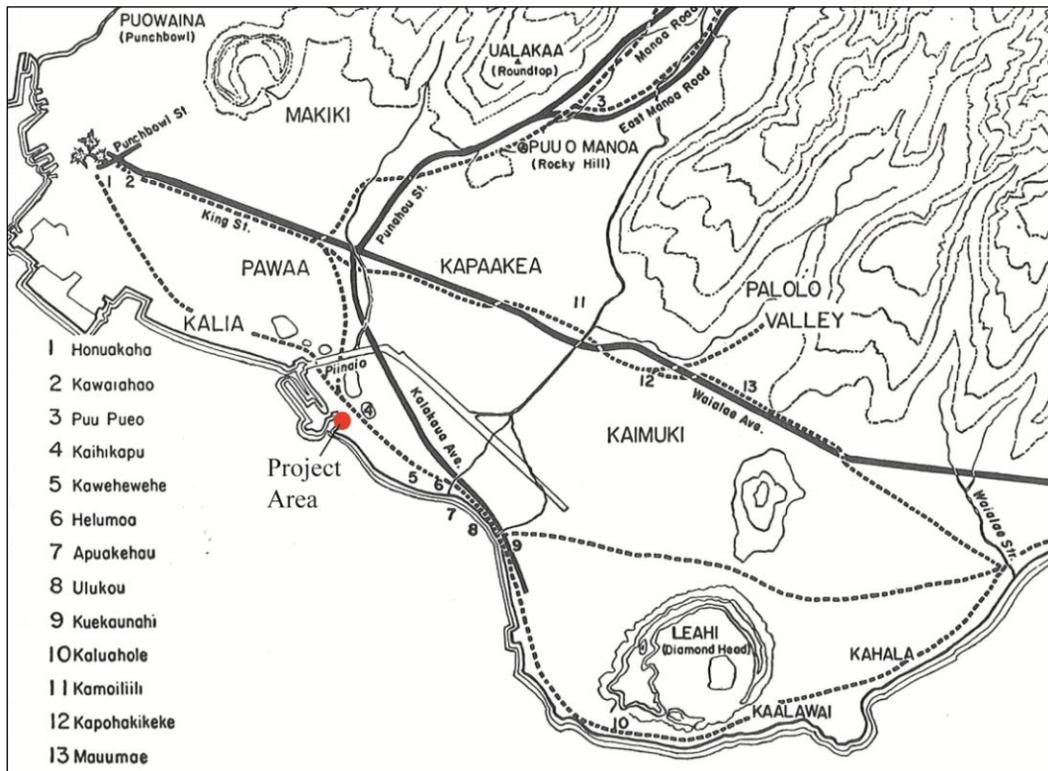


Figure 7. Honolulu trails from 'I'i (1959:93).

Kālia is an *'ili* in Waikīkī while the Honuakaha Cemetery (State Inventory of Historic Properties [SIHP] No. 50-80-14-3712) is near the intersection of South and Halekauwila Streets and contains more than 1,000 burials from the 1853–1854 smallpox epidemic. Honuakaha was a settlement between Punchbowl and South Streets.

‘I‘i also describes the lower, coastal trail from Honolulu towards Waikīkī:

From the makai side of Koaopa was a trail to the sea at Kakaako, where stood the homes of the fishermen. Below the trail lived Hewahewa and his fellow kahunas. (‘I‘i 1959:91)

As with many traditional pathways, parts of the trail were incorporated into modern roadways—in this case, Ala Moana Boulevard.

2.2.2.2 Terrestrial Resources

Cultivated taro was grown in the swamplands extending from the mountains shoreward to King Street (Handy 1985:78). The coastal swamplands were not well suited for agriculture and it

may be that people living here acquired most of their food from the *mauka* areas, particularly Nu‘uanu and Pauoa. However, Kamakau (1991) provides a reference to use of the area for cultivation when he says:

Hua was a good chief. His favorite occupation was cultivating, which he did at **Kewalo** and at Kō‘ula. [Kamakau 1991:24]

In addition to cultivated species, various types of useful grasses grew wild in Kukuluāe‘o that could be collected when needed. Kaka‘ako and Kukuluāe‘o were ideal for collecting *pili* grass (tanglehead grass; *Heteropogon contortus*), probably the dominant grass in Hawai‘i before the introduction of nonnative grasses used as cattle fodder. Thrum (1923:639) translates Kaka‘ako as “prepare the thatching” (*kākā* = to chop, beat, or thresh; *ako* = thatch). *Pili* grass was the preferred material for thatching structures, served as a black dye, and was a soft flooring pad. In the *mo‘olelo* of the Battle of Owls (Section 2.2.1), Kapoi went to the beach along the Kewalo marshlands (possibly in Kukuluāe‘o) to collect *pili* to use for re-thatching his house.

A prophecy recorded by Kamakau (1991:24–25) mentions the *mahiki* grass (seashore dropgrass or rushgrass; *Sporobolus virginicus*) at *ali‘i Hui’s heiau* of Pu‘ukea.

[*Ka makaua ua kahi o ‘Ewa*]
 [The increasing “first rain” of ‘Ewa]
Ua puni ka i‘a o Mokumoa,
 Overcomes the fish of Mokumoa,
Ua kau i‘a ka nene;
 Washes up fish to the nene plants;
Ua ha‘a kalo ha‘a nu;
 Lays low the taro as it patters down;
Ha‘a ka i‘a o kewalo,
 Lays low the fish of **Kewalo**,
Ha‘a na ‘ualu o Pahua,
 Lays low the sweet potatoes of Pahua,
Ha‘a ka mahiki i Pu‘ukea,
 Lays low the mahiki grass at **Pu‘ukea**,
Ha‘a ka umuunu i Pele‘ula,
 Lays low the growing things at Pele‘ula
Ha‘a Makaaho i ke ala.
 Lays low Makaaho [Makāho] in its path
E Kū e, ma ke kaha ka ua, e Kū,
 O Kū, the rain goes along the edge [of the island], O Kū
 [‘ai ‘na ka i‘a o Maunalua] . . .
 [“Eating” the fish of Maunalua] . . .

A different interpretation of this famous genealogical chant of Kualī‘i is provided by Fornander (1916:396–397):

69. *Ua puni ka ia o Mokumoa,*
 Entrapped the fish of Mokumoa;
Ua kau ia i ka nene,
 They are strewn on the grass.
Ua haa kalo, haa nu,
 The kalo danced, danced noisily,

Haa ka ia o Kawelo,
 The fish of **Kawelo** danced,
Haa na uala o Pahua,
 The potatoes of Pahua danced,
 70. *Haa ka mahiki i Puukea,*
 The mahiki grass at **Puukea** danced,
Haa ka ununu i Peleula
 The *ununu*² danced at Peleula,
Haa Makaaho i ke ala,
 Makaaho danced on the way.³
E Ku-e-ma Kekaha ka ua e Ku,
 Say, Ku, the rain comes by way of Kekaha, Ku,
I ai na ka ia o Maunalua
 Bringing food⁴ for the fish of Maunalua;

Pili and *mahiki* ('*aki'aki*) grass favor dry habitats such as coastal dunes, although *mahiki* grass can grow on the borders of swamplands. *Mahiki* means to jump, leap, or hop but also referred to a grass used to exorcise evil spirits, especially when the *mahiki* shrimp typically used in the rite were not available (Pukui and Elbert 1986:219). Use of the grass is explained in two passages by Green and Beckwith (1926).

Such an unfriendly spirit may enter into the body of a child or of a helpless person and make him insane, but it can be expelled by giving him a drink made by steeping in water a kind of coarse grass called *mazi-u-aki-aki*. [Green and Beckwith 1926:205]

The rite of *pi kai* or “sprinkling with salt water” must be performed upon all the bearers and those who are going to the grave. This purification ceremony is also performed all about the house and yard in order “to drive out bad spirits from the house after a death and keep the good.” A calabash of water containing salt and a bit of *olena* root or of *mauuakiaki* grass is used for this purpose. This sprinkling of the house insures the return of the spirit in a clean state; without such a purifying rite it might return in anger and cause trouble in the house. [Green and Beckwith 1926:180]

Pukui states that even during her youth, parents put “*ti* leaves, or *hala*, or '*aki'aki* grass, in a little sea-salt water and have the child drink it” (Pukui et al. 1972:163 in Genz and Hammatt 2010:18) to rid them of badly behaving spirits. The notoriety of Pu'ukea Heiau for having *mahiki* may relate to a combination of use of this grass by the Hawaiian *kahuna* (healers/priests) who lived in Kaka'ako until the mid-1930s (McElroy et al. 2008:9) and its ability to grow on the “white hill” with its slightly higher, and dryer, elevation than the surrounding marshlands.

² *Ununu*, a certain grass that abounded at Peleula.

³ Even the products of land and sea rejoice at Ku's approach.

⁴ The tribute to the god having been observed, therefore the hunger pangs - likened to a god, Kekiapololi - were appeased.

2.2.2.3 Salt Making

Perhaps one of the most important terrestrial resources in the Kukuluāe‘o area was salt. Kukuluāe‘o was described as “the land on the upland side of Ka‘ākaukukui. Salt was formerly made there” (Kekahuna 1958 in Sroat and McDermott 2014:9).

As described by Malo (1951) *pa‘akai* (salt) was important to traditional Hawaiians and used for a variety of purposes:

Salt was one of the necessities and was a condiment used with fish and meat, also as a relish with fresh food. Salt was manufactured in certain places. The women brought sea-water in calabashes, or conducted it in ditches to natural holes, hollows and shallow ponds (*kehaka*) on the sea-coast, where it soon became strong brine from evaporation. Thence it was transferred to another hollow or shallow vat, where crystallization into salt was completed. [Malo 1951:123]

The making of salt in pans was described by Captain Cook:

Amongst their arts, we must not forget that of making salt, with which we were amply supplied, during our stay at these islands, and which was perfectly good of its kind. Their salt pans are made of earth, lined with clay; being generally six or eight feet square, and about eight inches deep. They are raised upon a bank of stones near the high-water mark, from whence the salt water is conducted to the foot of them, in small trenches, out of which they are filled, and the sun quickly performs the necessary process of evaporation. [Cook 1784:151]

The importance of salt as a commodity is identified by Kamakau (1992:409) who reported, “The king and Isaac of Pu‘uloa are getting rich by running the salt water into patches and trading salt with other islands.” Traditional Hawaiian salt pans expanded greatly in the early post-Contact period and continued well into the twentieth century due to the need for salt as a preservative by Western ships.

2.2.2.4 Marine Resources

The chant of Kualii‘i also mentions the fish of Kewalo which could refer to the fishponds (*loko i‘a*) found in the area or fish caught in the sea. A *mo‘olelo* of Kū‘ula, the god of fish, and his son ‘Ai‘ai (Thrum 1912:242) refers to traditional subsistence in the adjacent Kaka‘ako area but likely also applies to Kukuluāe‘o. ‘Ai‘ai taught Hawaiians how to make various fishing lines and nets, made the first *ko‘a kū‘ula* (shrine for offerings to Kū‘ula), and recognized *ko‘a ia* (fishing stations).

After leaving his birthplace in Maui, ‘Ai‘ai traveled the islands, establishing *ko‘a kū‘ula* and *ko‘a ia*. On O‘ahu, ‘Ai‘ai was befriended by a man named ‘Āpua, with whom he stayed for several days in Kaka‘ako. ‘Ai‘ai was observing Kou, a chief and expert fisherman whose grounds were from Māmala to Moanalua. Kou was known for his fishing skill as well as his generosity for giving *aku* to the people in the region. While ‘Ai‘ai was staying with ‘Āpua, he wandered off along the shore of Kuloloia (a former name for the coastline from Fort Street to Kaka‘ako). He

continued on to Pākākā, an area *‘ewa* of Kaka‘ako, possibly in Kewalo or Kukuluāe‘o. ‘Ai‘ai did not return to ‘Āpua’s house because he met a young woman collecting *limu* and crabs.

Subsistence activities in the Kewalo and Kukuluāe‘o area, certainly by the late period of the pre-Contact Period (as illustrated in historic maps and related in the LCA documentation), included tending to the area’s large, subdivided, inland fishponds. The estuary environment of the Honolulu Plain was suitable for the development of fishponds.

These inland ponds are described by Summers (1964) as:

The inland ponds were of three types: those which connected with the sea, *pu‘uone*; those in which wet land taro grew, *loko i‘a kalo*; and fresh-water ponds, *loko wai*. The majority of these ponds were built and used by the land agents (*konohiki*) and the common people. A few were for the exclusive use of the chiefs.

The extent of fish farming in the early period of Hawaiian history is unknown, and the ponds of the project area are rarely mentioned in the legendary literature. In 1903, Cobb (in Wyban 1992:119) calculated that the Honolulu area, including Kalihi, Kapalama, Kewalo, and Waikīkī, had 23 shore-based fishponds totaling about 89 ha (220 acres) as well as a multitude of small inland ponds. A small piece of land between Kukuluāe‘o and Kewalo, roughly 280 m inland, contained the large fishpond of Kolowalu (SIHP No. 50-80-14-6856) shown in Figure 6.

2.3 Post-Contact History

After Western contact in 1776, historic maps and ethnohistoric accounts document significant changes in the Kukuluāe‘o area. The following section presents a chronological account of events, people, and general observations about Kukuluāe‘o and Kewalo, much of which broadens our understanding of late pre-Contact life in these *‘ili*. Historic maps used in this section are listed in Table 1.

2.3.1 Early Ethnohistoric Accounts

Georectified historic maps and foreign accounts identify the project parcel as being in the tidal zone of a low-lying marshy area in a largely unpopulated portion of the island. Apparently, both the local population and foreign visitors lived in the area. In 1810, when the American sailor Isaac Davis, confidant to Kamehameha, passed away, his funeral procession went to Kewalo and he was buried there (‘Ī‘Ī 1959:85).

The earliest depiction of Kewalo is a drawing made by John Papa ‘Ī‘Ī in the nineteenth century that illustrates what the area looked like in 1810 (see Figure 7). The drawing shows a trail along the shore and residences between the trail and the coast.

A schematic map illustrating the character of O‘ahu’s original southern coastline and reef was drawn in 1817 by Otto von Kotzebue, commander of the Russian ship *Rurick* (Figure 8). The map shows taro *lo‘i* (rectangles), fishponds (ovals), salt pans (clusters of squares), trails, and habitation centers (trapezoids). In this rendition, the Kewalo Basin area is located in the tidal zone

Table 1. Historic Maps Used in the Report

Date	Author	Registered Map No.	Name of Map
1817	Otto von Kotzebue	-	South O‘ahu
1825	Lt. Charles R. Malden	431	South Coast of Woahoo and Honorurou Harbour
1855	Lt. Joseph de LaPasse	-	Plan du Mouillage (Anchorage) d’Honolulu
1880	J.F. Brown	-	Honolulu Kewalo Section
1884	Sereno E. Bishop	1090	Honolulu, Kewalo Section
1887	W.A. Wall	-	Honolulu and Vicinity
1900	Special Sanitary Committee	-	Plan of the Kewalo Section of Honolulu, Kona, Oahu, H.I.
1911	G. Podmore	3094	Honolulu, Kewalo Section
1914	Sanborn Map Company	-	Fire Insurance Map of Honolulu, Oahu, Territory of Hawaii
1927	U.S. Geological Survey	-	7.5 minute topographic Honolulu Quadrangle
1933	U.S. Geological Survey	-	7.5 minute topographic Honolulu Quadrangle
1943	U.S. War Department	-	7.5 minute topographic Honolulu Quadrangle
1953	U.S. Geological Survey	-	7.5 minute topographic Honolulu Quadrangle

fronting a marshy uninhabited shoreline between the population centers of Kou and Waikīkī. A trail crosses Kewalo to connect the two large habitation areas. Fishponds are located inland with salt pans to the east and west. Most of the *lo‘i* are found to the east, in Waikīkī, around the streams descending from Nu‘uanu and Mānoa valleys. The closest concentrated settlement, with associated fish and salt pans, is clustered to the east in the Kaka‘ako area near Queen and King Streets.

One of the earliest descriptions of the area is provided by Reverend Hiram Bingham. In 1820, the area around Honolulu had yet to be transformed and still contained grass thatched houses and thousands of inhabitants. Rev. Bingham hiked to the top of Punchbowl Hill and described the area below that encompassed Kewalo:

Below us, on the south and west, spread the plain of Honolulu, having its fishponds and salt making pools along the seashore, the village and fort between us and the harbor. [Bingham 1848:92–93]

On April 26, 1823, missionary C. S. Stewart arrived on O‘ahu and described the shoreline. After passing Waikīkī, there was a level plain extending for four or five miles along the shore and a mile or two inland (Stewart 1970:92). On May 22, Stewart took a stroll for a mile through the marshes and fishponds along the beach south of the Mission House. The largest hut was not higher than his waist and contained only one family. They slept on a bed of dried grass, and the

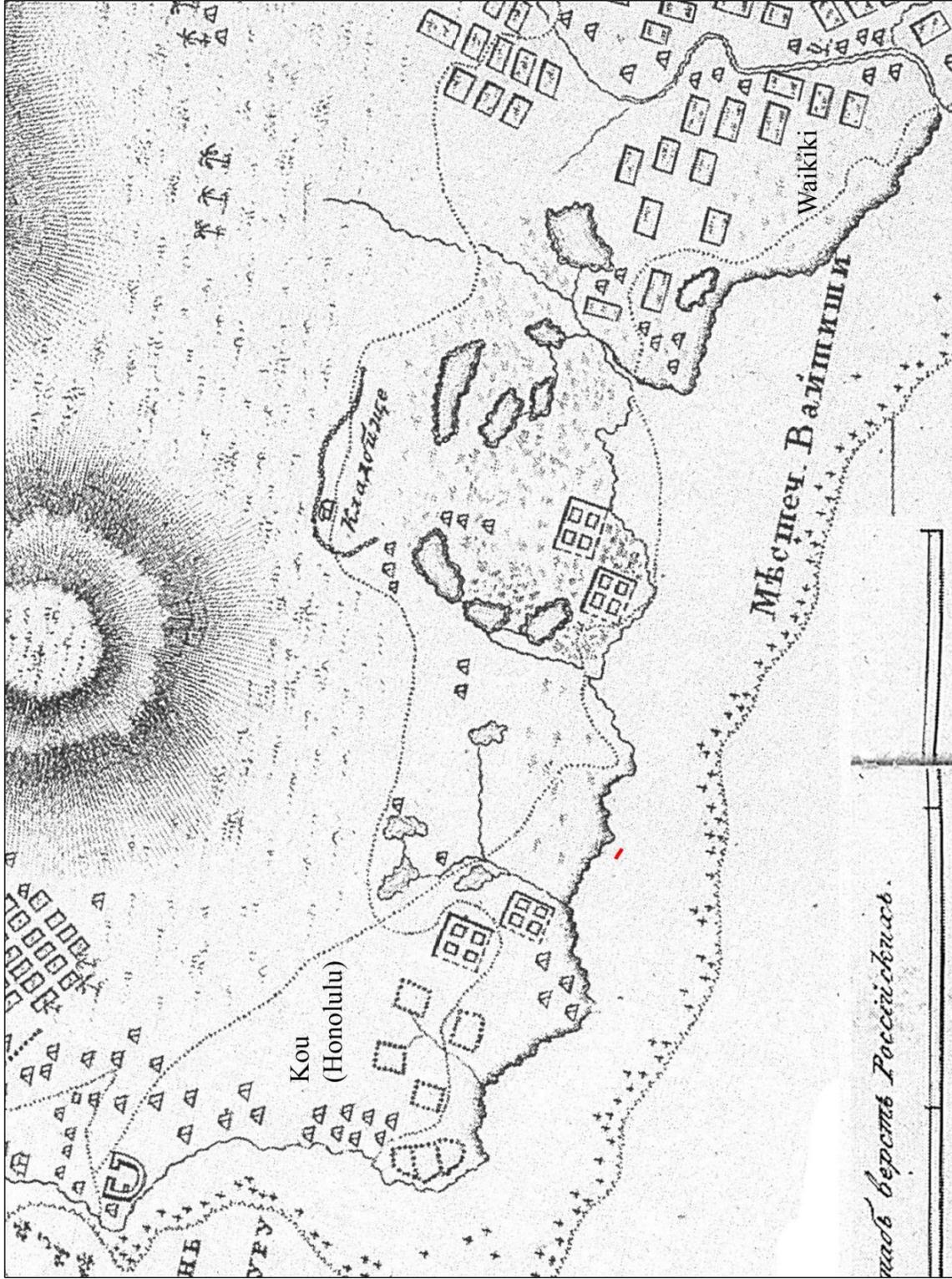


Figure 8. Portion of an 1817 map of South O‘ahu drawn by Otto von Kotzebue (from Fitzpatrick 1986:48–49).

dwelling was full of fleas. There was no vegetation. The family ate their dinner sitting on the ground and the meal consisted of *poi* with swarms of flies surrounding it. They shared their food with dogs, pigs, and ducks, who ate right out of their bowls (Stewart 1970:153). The native population seemed to be infected with an itchy skin disease. Most of the chiefs were free from it, but the common people were greatly affected. The people were also afflicted with sores and eruptions on their skin, similar to leprosy. There were very few people that had clear skin (Stewart 1970:155).

Another visitor to Honolulu in the 1820s was Captain Jacobus Boelen (1988), in command of the Dutch naval ship *Wilhelmina en Maria*, who commented on what appears to be the Kewalo area:

It would be difficult to say much about Honoruru . . . From the north toward the east, where the beach forms the bight of Whytete, the soil around the village is less fertile, or at least not greatly cultivated. [Boelen 1988:62]

Lt. Charles R. Malden, navigator of the British warship HMS *Blonde*, produced a map of O‘ahu’s southern coast in 1825 which shows fishponds but no dwellings or trails (Figure 9). The more coastal cluster falls to the west in Kaka‘ako with a second cluster inland of Kewalo Basin. Although the project parcel is now shown to be on solid land, this is likely due to inherent issues with georectifying historic maps. Most evidence indicates that the Charter Boat Building is actually built on filled tidal flats just inland of the “coral reef on which the sea is always breaking.”

In 1831, a fort overlooking Ka‘ākaukui Reef with a commanding sweep of Honolulu’s shipping channel came under the command of J.A. Kuakini. He had the older adobe and stone structure rebuilt with coral rock “cut by the people of Ko‘olauloa and assembled down at Kukuluā‘e‘o and Kahalepua‘a” (Kamakau 1991:304). An 1887 map by W.A. Wall shows no residential development or road construction near the study area, but a naval battery and flagstaff are depicted 700 m to the northwest (Figure 10). Although the exact location of the former coastal defense battery at Kaka‘ako is not known, it was likely near the site of what would later become Fort Armstrong.

In an 1855 map by Lt. Joseph Marie Henri de LaPasse of the French vessel *L'Eurydice*, fishponds or “*pecheries*” are depicted inland and on either side of the project area (Figure 11). Although no dwellings are shown, we know from unawarded Māhele claims that there were residences in the area at and before this time.

Andrew Bloxam, a naturalist on the HMS *Blonde*, described inland fishponds, which, although greater in number, probably resembled those in Kukuluā‘e‘o and Kewalo.

The whole distance to the village of Whyteete is taken up with innumerable artificial fishponds extending a mile inland from the shore, in these the fish taken by nets in the sea are put, and though most of the ponds are fresh water, yet the fish seem to thrive and fatten. Most of these fish belong to the chiefs, and are caught as wanted. The ponds are several hundred in number and are the resort of wild ducks and other water fowl. [Bloxam 1925 in Summers 1964:19]

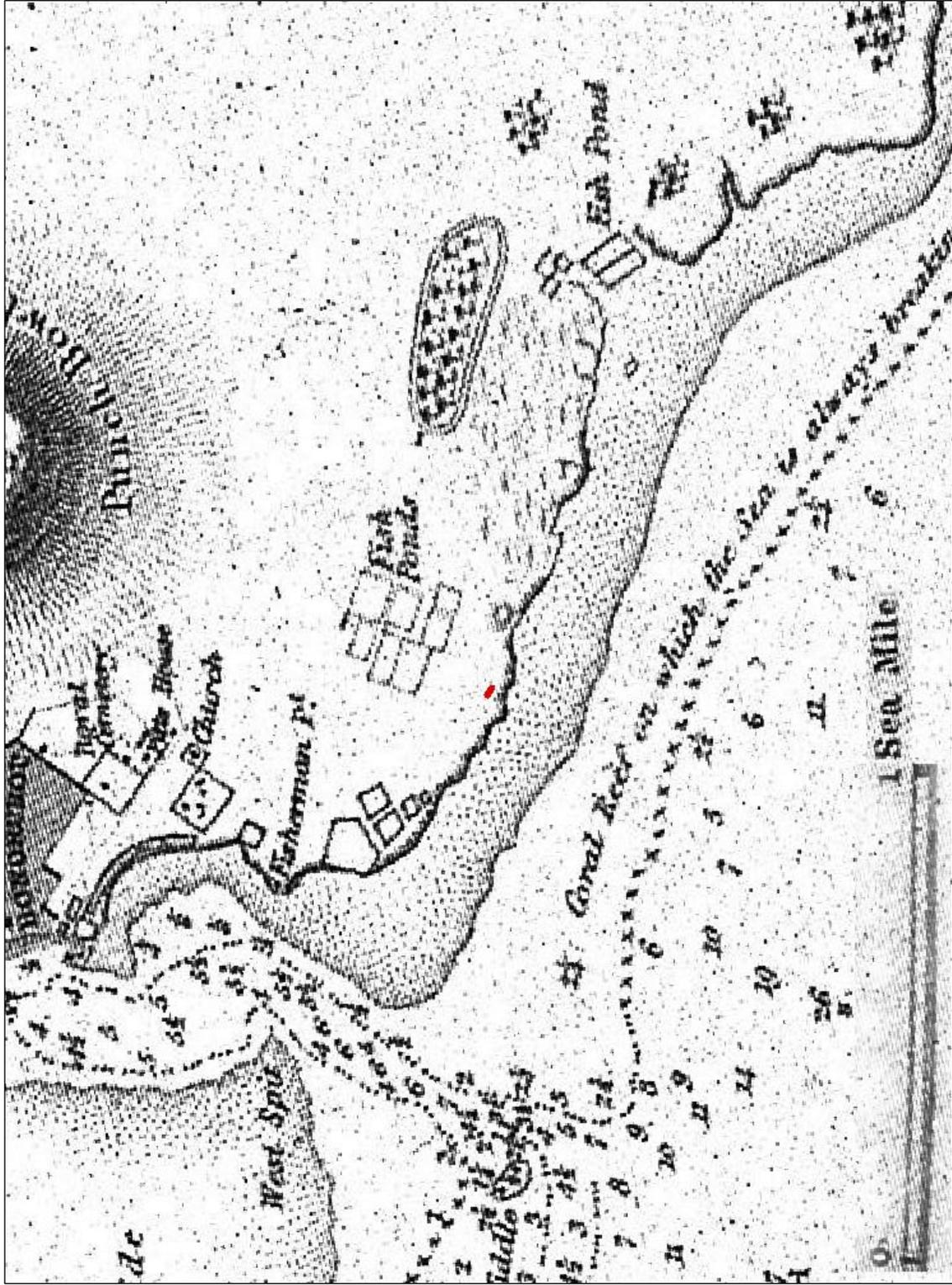


Figure 9. Portion of Lt. Charles R. Malden's 1825 map of the south coast of O'ahu showing the Kewalo area (from Fitzpatrick 1986:63).



Figure 10. Portion of W.A. Wall's 1887 map of Honolulu (copy at Library of Congress, Geography, and Map Division).

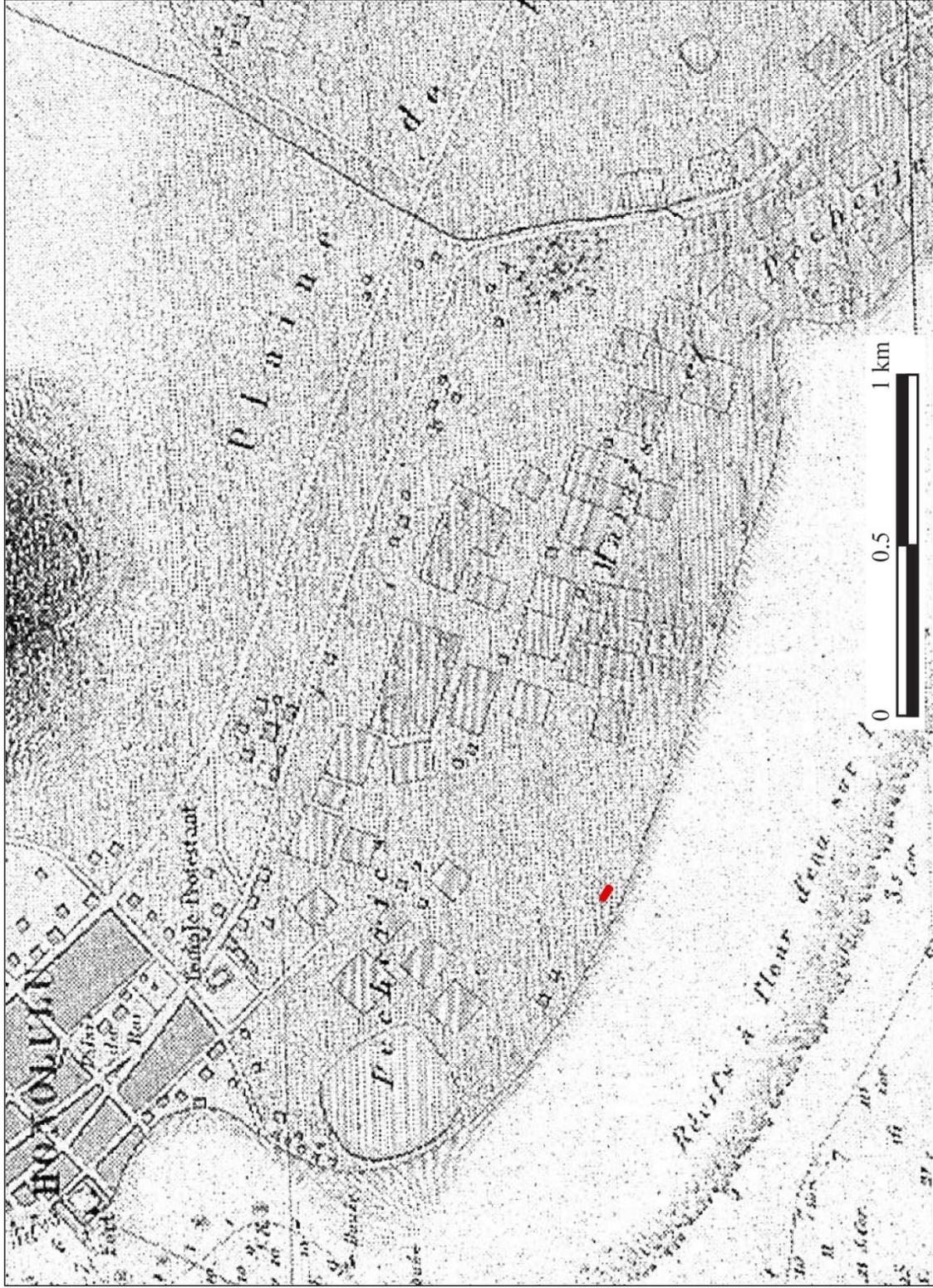


Figure 11. Portion of a map of Honolulu drawn by Joseph Marie Henri de LaPasse, ca. 1855 (from Fitzpatrick 1986:82).

Around 1840, Charles Wilkes (1970:86), commander of the U.S. Exploring Expedition, described the area between Honolulu and Waikīkī as containing a vast collection of salt pans (Figure 12). It was an extensive manufacturing process with large heaps containing one to two hundred tons of salt. The salt was exported to California, China, Oregon, and the Russian settlements of Kamchatka and Sitka. The Hawaiians used it for salting fish and pork, which was an old tradition even in Wilkes' time. Women were also frequently seen collecting seaweed from the salt ponds for food.

A recollection of the streets of Honolulu in the 1840s described the desolation of the area east of Punchbowl Street, in the project area (Gilman 1903).

The next and last street running parallel was that known as Punchbowl Street. There was on the entire length of this street, from the *makai* side to the slopes of Punchbowl, but one residence, the two-story house of Mr. Henry Diamond, *mauka* of King Street. Beyond the street was the old Kawaiahao church and burying ground. A more forsaken, desolate looking place than the latter can scarcely be imagined. One, to see it in its present attractiveness of fences, trees and shrubbery, can hardly believe its former desolation, when without enclosure, horses and cattle had free access to the whole place. [Gilman 1903:89]

This rather bleak and marshy landscape along the Kukulūāe‘o/Ka‘ākaukui shoreline in the 1800s is shown in an 1887 photograph taken of Kawaiaha‘o Church with the project area in the right background (Figure 13). Only a few scattered huts are shown on the marshlands. Missionary families grazed their cows in these empty lands seaward of the mission, potentially on lands near the project area (*Paradise of the Pacific* 1950 in Sroat and McDermott 2012:26).

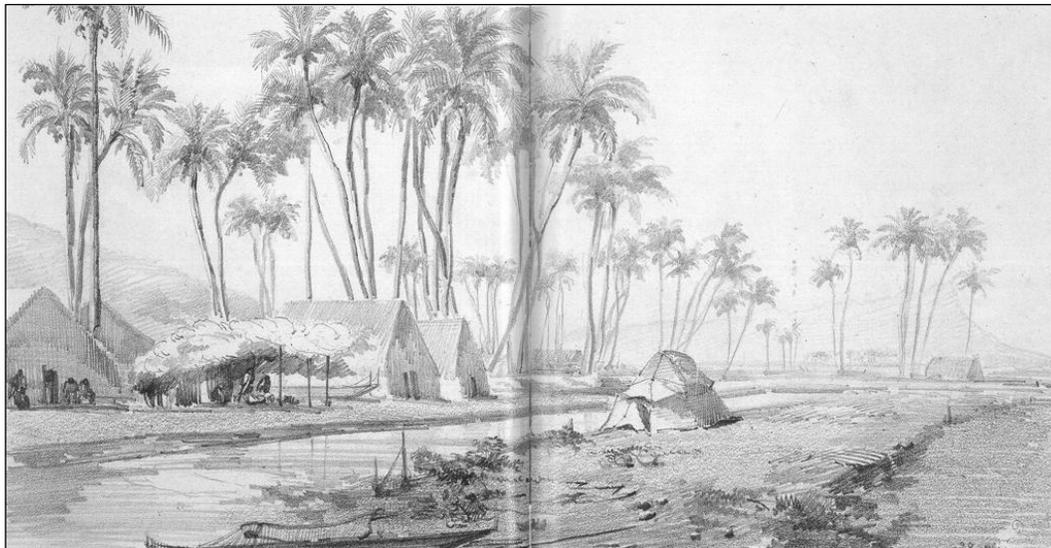


Figure 12. 1838 sketch of “Honolulu Salt Pans, Near Kakaako” by Auguste Borget (Peabody Essex Museum; reproduced in Grant et al. 2000:64–65).



Figure 13. Photo of Kawaiahaʻo Church and Diamond Head, ca. 1887 (courtesy of the Hawaiʻi State Archives) (top), and close-up of Kewalo area showing marshlands and scattered houses along the coast (reprinted from Sroat and McDermott 2014:20).

The low-lying nature of the landscape inland from the study area is corroborated by LCA testimony. Salt making and fishpond farming are the primary activities described near the study area with minimal residential occupation.

2.3.2 Land Tenure

The Māhele of 1848 divided the lands of Hawai‘i, instituting a Western-style land tenure system in the islands. All land in Hawai‘i was divided between the king (crown lands), the Government (government lands), and the *ali‘i* and commoners (*konohiki* lands). *Ali‘i* and commoners were required to submit claims for property to the Board of Commissioners to Quiet Land Titles (known as the Land Commission). All claims were assigned Land Commission Award (LCA) numbers, whether or not they were eventually granted. In many areas, more lands claims were submitted than were accepted.

An 1880 government survey map by Brown shows the LCAs granted near the study area (Figure 6). Twenty-seven LCAs were recorded for Kewalo and six for Kukuluāe‘o (Office of the Commissioner of Public Lands of the Territory of Hawaii 1929) (Table 2). Because the Charter Boat Building and Kewalo Basin were still in the tidal zone, rather than on dry coastal land, neither one contains an LCA. Documentation for LCA 387, the LCA closest to the property area, is found in Appendix C.

The *‘ili* of Kukuluāe‘o was originally awarded through **LCA 387** to the king, but he returned it to the government. The *‘ili* was then conveyed by Kamā‘ule‘ule (Chief Boki) to the American Board of Commissioners for Foreign Missions, referred to as “AB Missions” on the 1884 map. This land was associated with Punahou School in Mānoa Valley, but in the Māhele this *makai* portion was separated from the Mānoa award and given to Hiram Bingham, the pastor of Kawaiha‘o Church (Foster 1991). One testimony described this area as “fishing grounds, coral flat, and salt beds” (Foreign Testimony, Vol. 2:33). John Papa ‘Ī‘ī described it as:

The makai part of Punahou is bounded:
Mauka by Kewalo and Koula
Waititi side by Kalia
Seaward it extends out to where the surf breaks
Honolulu side by Honoliili.

This land was given to Mr. Bingham for the Sandwich Island Mission by Governor Boki in 1829 . . . From that time to this, the Sandwich Island Mission have been the only possessors and konohiki of the land.

The name of the makai part is Kukuluao. There are several tenants on the land of Punahou whose rights should be respected.

[Foreign Testimony, Vol. 3:115]

Within the *‘ili* of Kukuluāe‘o, eight *‘āpana* (lots) of five *kuleana* were awarded to commoners: LCA 1503 (*‘Āpana* 1, 2, and 3), LCA 1504, LCA 1903 (*‘Āpana* 2), LCA 9549, and LCA 10463 (*‘Āpana* 1 and 2) (Figure 14).

Table 2. Māhele Awards for the ‘ili of Kukuluāe‘o*

Awardee	LCA	Area (ac.)	No. of Parcels	Contents
ABCFM	387	--	1 in Kukuluāe‘o	--
Puaa	1503	1.09	2	4 fishponds, house lot
Pahika	1504	--	1	fishpond, salt bed, house lot
Lolohi	1903	0.74	1	2 salt beds, 15 drains, 2 salt hollows, a salt <i>kula</i>
Kaholomoku	9549	1.80	1	fishpond, 4 salt pans
Napela	10463	1.65	2	two ponds, ditch, salt lands, house site

*From Office of the Commissioner of Public Lands 1929.

LCA 1503 went to Puaa and was composed of three fishponds and a house lot (Native Register, Vol. 3:138). **LCA 1504**, awarded to Pahiha (Pahika on the 1884 map), states that the parcel was on the salt-making plains of Honolulu, and the land was inherited from the claimant’s father (Foreign Testimony, Vol.3:220). A house lot, a salt pan, and a pond were located on the parcel.

LCA 1903, awarded to Lolohi (Lolopi on 1884 map), consisted of the salt works at Kukuluāe‘o. The Native Register (Vol. 3:293) listed the contents of the lot as:

- 2 salt beds
- 15 Hooliu [salt water drainage ditch]
- 2 Poho kai [depressions where salt is gathered]
- 1 salt kula [dryland]
- A small farm is at lower Kaliu, close to the kawa of Puehuehu
- 4 lo‘i
- 1 cultivated kula.

Foreign Testimony (Vol. 3:220) describes LCA 1903 as:

Peka W. [wahine] sw. I know this place. It is on the salt plains of Honolulu, used for making salt.

Mauka is a stream of salt water. Waititi is several salt ponds - Napela, Kuniaie and others own them. Makai - Gov’t road. Honolulu - Peka Kaula, Lilea, Bolabola, Poe.

Claimant recd this land from his father who died last year and held it a long time back in Kinau’s time.

LCA 9549, awarded to Kaholomoku, consisted of “three ponds, a salt mo‘o” in Kukuluāe‘o (Native Register, Vol. 4:477). **LCA 10463**, awarded to Napela, contained two ponds, a ditch, a house site, and two salt pans (Native Testimony, Vol.10:445).

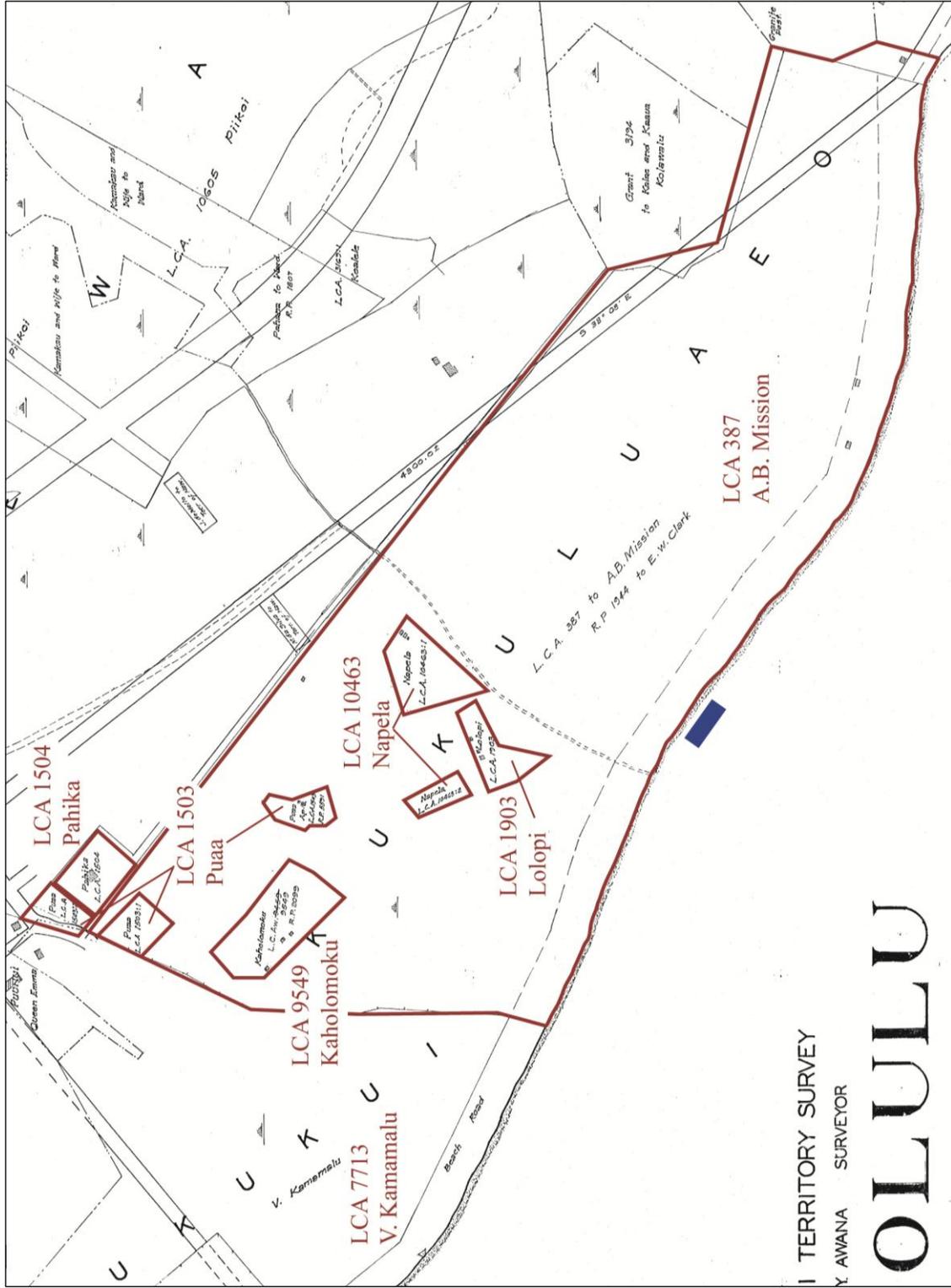


Figure 14. Detail of 1884 government survey map of Kewalo showing LCAs near the project area that is in blue (Bishop 1884).

A passage in Genz and Hammatt (2010) describes how the *'ili* of Kukuluāe'ō eventually became a part of the Ward Estate.

Large portions of the Kukuluāe'ō and Kewalo sections of the Kaka'ako district were once part of the Ward Estate. This land was first awarded as LCA 272 to Joseph Booth. Joseph Booth was an early English resident of the Hawaiian Islands who operated a saloon and hotel in Honolulu, known at the time of the Māhele as the Eagle Tavern. He was granted lands in downtown Honolulu, Kewalo Uka (Pacific Heights area), the *'ili* of Kapuni, and an area with "Three fish ponds, and a part of the plain near the road leading to Waikiki." Little information on these three fishponds is given in the LCA testimony, but the Royal Patent No. 306 for these lands, mentions one known as "the large fishpond" or "long fishpond," which had two huts beside it. The owners would later modify this pond into the "lagoon" on the Ward Estate. . . Curtis Perry Ward, a native of Kentucky, came to the Hawaiian Islands in 1853, and soon established a livery and draying business, moving goods from the harbor to Honolulu Town and loading goods at the docks for the whaling and shipping industries. In 1865, he married Victoria Robinson, who was descended from the Hawaiian *ali'i* and early French and British residents. For his new family, Ward purchased at auction the 12-acre Kewalo estate of Joseph Booth, Royal Patent 306, and additional contiguous lands in the Kō'ula area in 1870. This constituted the *mauka* portion of "Old Plantation" from Thomas Square on King Street to the *makai* border at Waimanu Street. A few years later (but before 1875), Ward added to his property with the purchase of 77 acres and 3,000 feet of ocean frontage in the *'ili* of Kukuluāe'ō, *makai* of Queen Street. [Genz and Hammatt 2010:27]

Of the four LCA's recorded for Kaka'ako proper and eight for Ka'ākaukukui, none are present on survey maps and it would therefore appear that they were never awarded. Instead, the entire *'ili* of Ka'ākaukukui was awarded to Victoria Kamāmalu, granddaughter of Kamehameha I and sister of Kamehameha IV and Kamehameha V, as part of the extremely large, multi-island, LCA 7713. Through judicial probate decisions in the following decades, most of Victoria Kamāmalu's land was turned over to Kamehameha Schools, in whose hands much of it remains.

2.3.3 Turn of the Twentieth Century

The 1880s marked the beginning of residential home and commercial business construction in the area surrounding Kaka'ako. This required that the fishponds, marshes, and mud flats be filled and the shoreline extended. The first areas to be filled were closest to downtown Honolulu (Hawai'i Community Development Authority 2003:3) not in the low-lying marshlands near the present study area. In the mid-nineteenth century, the majority of house sites in Kukuluāe'ō were located near Halekauwila Street and Queen Street, *mauka* of the low-lying coastal swamplands and on higher, dry ground. At first, filling was done on a small scale and the cost taken on by private landowners. When larger sections were filled, the government paid for the work and then taxed the landowners.

Beginning with an 1884 map by S.E. Bishop, road and building construction can be seen in the Kaka'ako Makai area (Figure 14). A leper hospital is illustrated 600 m west of the study area and a proposed beach road winds along the coast. An 1887 photo of Kawaiaha'ō Church provides a view toward Kaka'ako, with Diamond Head in the distance (Figure 13). Western-style houses

and heavy vegetation can be seen around the church, while the Kukuluāe‘o area, shown in close-up, appears open and marshy.

The 1884 map (Figure 14) illustrates the original footpath or “Beach Road” at the edge of the former coastline that was transformed through time to a horse path, buggy and cart path, and eventually to Ala Moana Boulevard. A 1900 map by the Special Sanitary Committee shows Ala Moana Boulevard completed (Figure 15). Through time, this road was widened to accommodate military transport vehicles and modern traffic.

According to the Hawaii Territory Survey map from 1911 (Figure 16), the project parcel is within an area labeled as “mud and coral flats covered at high tide.” A proposed sea wall is also shown in this region labeled as the “Fishery of Kukuluāe.” There are more land divisions and fewer ponds and marshy areas and an animal quarantine station is located 120 m east. A seawall stretches along the seashore west of Cooke Street and east of Coral Street.

During the Hawaiian monarchy, the Kaka‘ako Battery in the Ka‘ākaukui Reef Military Reservation housed three cannons used to salute visiting naval vessels (Judd 1975:57). In 1911, after the overthrow of the monarchy, the United States named the area Fort Armstrong. It was utilized as part of a larger system of forts providing defense for the main harbor and the leeward coastline generally. The fort also stored underwater mines and took over saluting incoming naval vessels (Williford and McGovern 2003:15). The fort can be seen on a 1914 fire insurance map by Sanborn Map Company that shows the completion of Ala Moana road and Fort Armstrong with land reclamation beginning west of the basin (Figure 17). Most of Fort Armstrong was returned by the federal government to the Territory of Hawai‘i in the 1950s. This area was used to expand the shipping piers of the harbor. Nothing now remains of Fort Armstrong or the Ka‘ākaukui Reef Military Reservation

2.3.3.1 Leper Hospital and Saint Marianne of Moloka‘i

Although the 1880s-era Kaka‘ako Branch Hospital for Hansen’s disease patients was located inland of the project area, it is discussed here due to the presence of a statue erected in the southeast corner of Kewalo Basin Park honoring the work of the Blessed Mother Marianne Cope, also known as Saint Marianne of Moloka‘i, who ran the hospital. Cope was declared a saint by Pope Benedict XVI on October 21, 2012.

Around September 14, 1881 Ruth Ke‘elikōlani donated five acres of land near Fisherman’s Point (near the ocean on the *makai* side of Kaka‘ako) to build a hospital for those suffering from Hansen’s disease, or leprosy. The land was donated for a period of 25 years, at the end of which there was hope that the disease would be cured and it would become obsolete (Hawaiian Gazette 1881:3). The Kaka‘ako Branch Hospital served as a receiving station for Hansen’s disease patients from all the islands. After processing, the more severe cases were transported to Moloka‘i for confinement in the settlement at Kalawao, and then later at Kalaupapa.

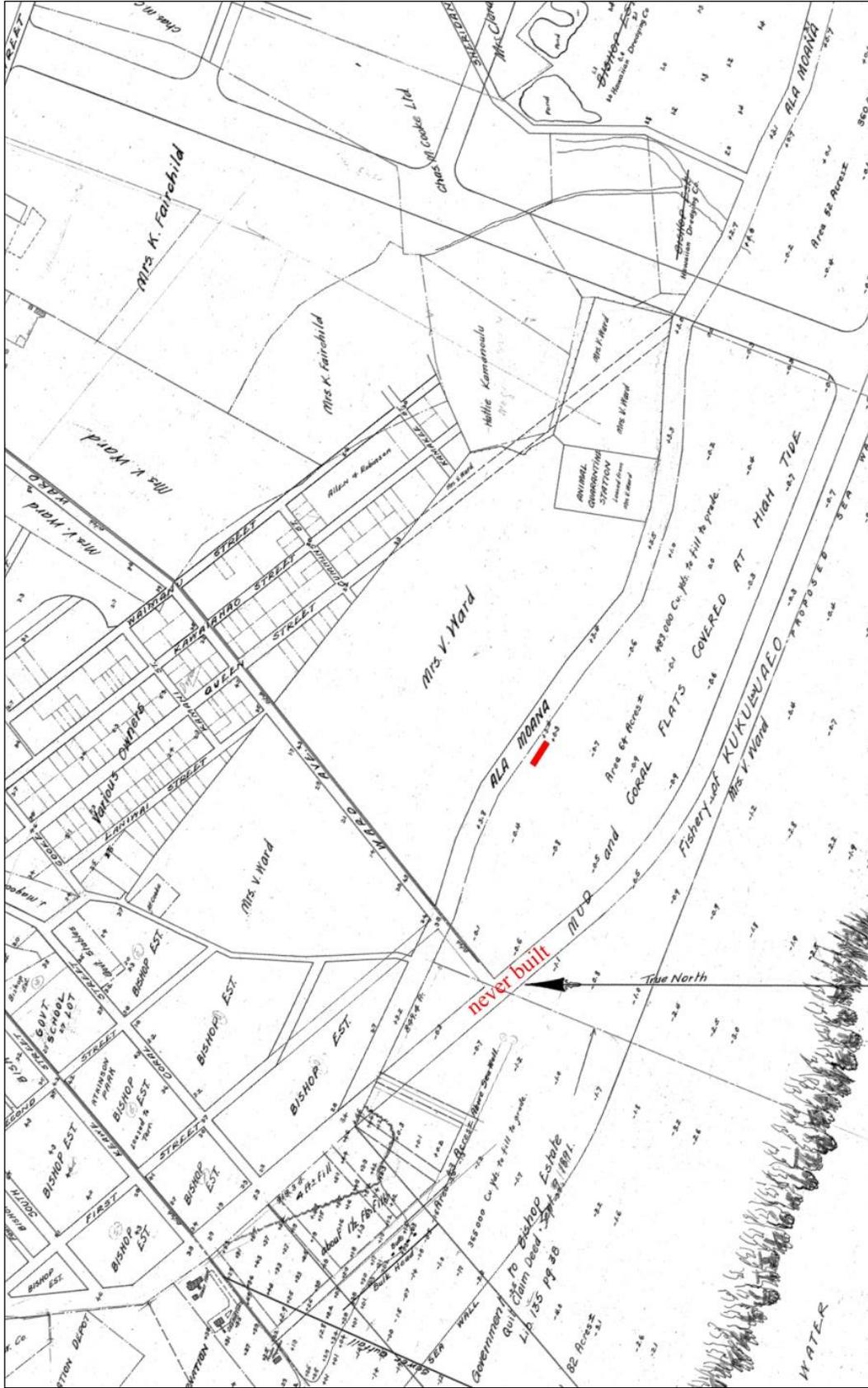


Figure 16. Portion of Hawaii Territory Survey map of Kewalo in 1911 (Podmore 1911). Note that road *makai* of Ala Moana was never built.

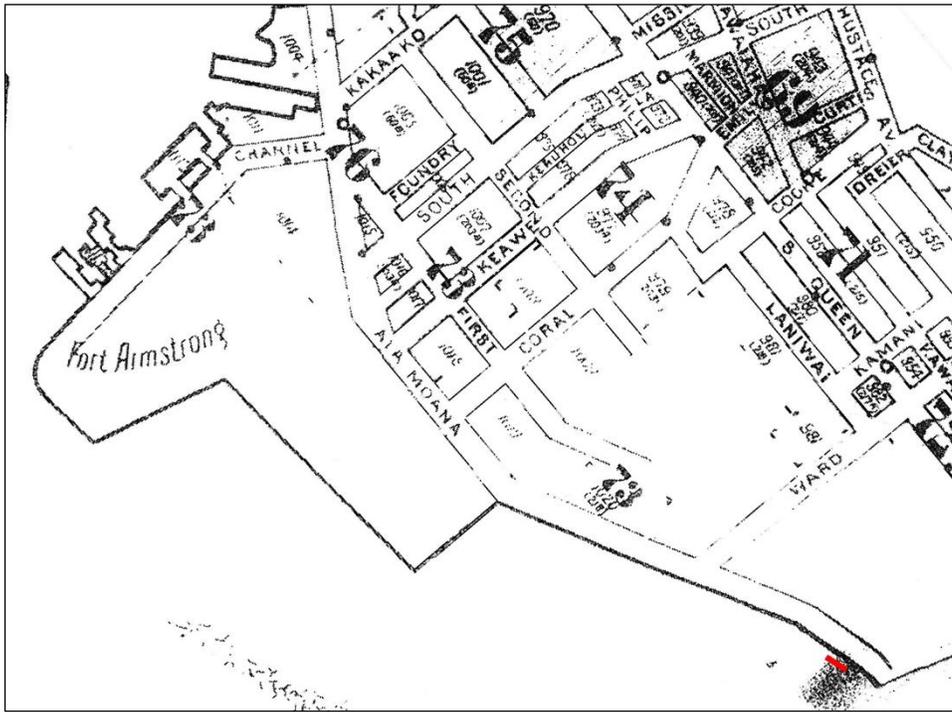


Figure 17. Sanborn fire insurance map for Honolulu.

By March 11, 1882, the Kaka'ako Branch Hospital was in full working order and at full capacity. The rooms were large, comfortable, and clean. Patients were given plenty to eat, and their friends and relatives brought them large quantities of *poi* and fish every day. A history was kept on each patient, and there was a special room for taking their pictures. Different stages of the disease were documented to add information to scientific knowledge and eventually find a cure. There was also a school for young girls and boys (Saturday Press 1882:3).

On December 11, 1882 the Board of Health ordered 29 Hansen's disease patients from the Branch Hospital at Kaka'ako, previously called the Leper Hospital, to be sent via the steamer *Mokoli'i* to the settlement on Moloka'i. Five patients were allowed to go home as they were either partially cured or were non-contagious. These patients had to report back frequently for check-ups (Pacific Commercial Advertiser 1882:2).

In 1883, Cope, a Franciscan nun in New York, received a plea for help in caring for leprosy sufferers from King Kalākaua. Mother Marianne and six other sisters arrived to take care of the Kaka'ako Branch Hospital. On September 15, 1885 an additional 22 patients were sent out from the Kaka'ako Branch Hospital to the Kalaupapa settlement on the steamer *J.I. Dowsett*. As the ship was leaving port, Kaluna, a native of Maui, reminisced of the kind women at the hospital. He did not hold any hard feelings for being sent to Moloka'i and seemed hopeful that there would be a cure soon (Pacific Commercial Advertiser 1885:3).

In 1888, after establishing Malulani Hospital, the first general hospital on Maui, and opening the Kapiolani Home for the homeless female children of leprosy patients, Cope moved to Kalaupapa. After the death of Father Damien in that same year, she took over the responsibility of caring for those on the colony.

2.3.4 The Oceanfront and Squattersville

In the 1920s and early 1930s, around the same time Kewalo Basin was being dredged, some of the coastal swampland northwest of the basin was reclaimed with burned fill produced at the Honolulu incinerator. This became a part of Kaka‘ako called “Squattersville,” a settlement for the homeless and destitute that likely included the project area.

All Squattersville, like Gaul, is divided into three parts. There is the original settlement at Kewalo Basin Point, there is a tiny offshoot of this and there is the later settlement along Ala Moana. [Johnson 1991:111]

The mostly Hawaiian settlement was protected from the ocean by a meter high sea wall (Shideler 2002:14). The roads were unpaved and residents built and lived in makeshift wooden shacks by the beach. The dirt-floor homes were kept neat and clean and contained a bed, an old-fashioned safe to store food, and a kerosene stove (Ethnic Studies Oral History Project 1978:215). The ocean provided adequate squid, *‘ōpae*, *wana*, and *limu* (Ethnic Studies Oral History Project 1978:360).

Residents of Squattersville would often swim in Blue Pond, now known as Kewalo Basin (Ethnic Studies Oral History Project 1978:899). A stone wall in the ocean near Squattersville was a beautiful surf spot called “Stone Wall.” Locals fashioned surfboards from 3 to 4 ft long ironing boards wrapped in unbleached muslin and blankets. It was mostly a men’s sport but a few women, such as Don Ho’s mother, also surfed (Ethnic Studies Oral History Project 1978:378).

A 1925 article in the Hawaiian language newspaper *Ka Nupepa Kuokoa*, translated in McElroy et al. (2008:94), discusses the controversy and plight of Hawaiians seeking to homestead these lands of Ka‘ākaukukui and Kukuluāe‘o. The date of the article suggests that the controversy centers on Squattersville, although it is not mentioned by this name.

Ka Aina o Kaakaukukui ame Kukuluāe, or The Land of Ka‘ākaukukui and Kukuluāe‘o (Ka Nupepa Kuokoa 1925)

Two determined statements were admitted inside of the house of the representatives that were urging the national assembly to return the lands of Ka‘ākaukukui and Kukuluāe‘o under the common law of the Hawaiian Homes, for Hawaiian homesteading. In regards to these statements, two testimonies were placed by the committee of the governments. The testimony of the minority of the committee were refusing to approve the agreed statements on their nature by which they were admitted. The majority of the committee were approving the statements that were placed. The assembly would fulfill the desires of those determined statements and perhaps veto.

One thing that was understood well in watching those testimonies of the committee was one demonstration was established on to the correct policy and another was placed on to the political policy.

The true thing regarding the lands of Ka‘ākaukukui and Kukuluāe‘o is they are lands that the government purchased and accrued. Another task the government wanted to use those lands for; the return of a scarce people and live on those said lands in these days. They returned with no responsibility, only remains under the goodwill of the supervisory services of the government responsible for the lacking of the other commoners from the needs to live on those lands.

The Hawaiians living on those lands understood that the day would arrive that they would stand and those lands would go. For that reason they have no solid foundation to continue living there. In that way, their hope is being placed on those two statements for the consensus of the assembly that these lands shall become the homesteading lands for the Hawaiians.

In May of 1926, the Territory of Hawai‘i, the owners of the land, evicted 700 Hawaiians and part-Hawaiians and sent bulldozers to break down the shacks (Shideler 2002:14). The residents took their possessions out of the houses before they were torn down and then slept outside. The unofficial leader of Squattersville at the time was a man named Blossom. He told people not to move because there was nowhere else to live and put up a sign that said, “Where shall we go from here?” (Ethnic Studies Oral History Project 1978:879, 899).

To keep the people from rebuilding, the government constructed the Opportunity School on the bulldozed land. It was for “slow,” but not necessarily mentally handicapped, children from all over O‘ahu. They were taught simple arithmetic and crafts such as basketry (Ethnic Studies Oral History Project 1978:368).

In a 1975 interview, James “Kimo” Kalua described the area near the ocean before it was filled by the city. As a child, he lived in Squattersville, near Kewalo Basin. At that time, the shoreline in Waikīkī was at Olomehani Street, and the water came up to a low stone wall. The reef was full of *limu*, and many Japanese came from Kaka‘ako to pick *ogo*. There was also a lot of *wana*, squid, and fish. They made their own goggles by carving *hau* branches and inserting pieces of glass. Strips of inner tube were utilized for the head straps. They surfed on the old redwood planks. In 1948, the city decided to make a dump for the new incinerator, and they built a boulder sea wall along the boat channel and across the reef. It surrounded a wrecked PT boat called the *La Putita*. The boat had been Kimo’s playground, but by 1956, the boat and the reef were covered over by fill (Clark 2002:146).

A 1937 guidebook of Hawai‘i describes the neighborhood around Kewalo Basin thusly:

Seaward from South King Street a few blocks Waikiki from Aloha Tower is still another Honolulu. Narrow streets curve down between walls out of King Street, bending back behind Kawaiahao churchyard into a gridiron of cross-streets, still for the most part unpaved. One loses oneself easily in confusing angles and turnings, runs into blind alleys, but eventually wanders out to the broad boulevard, that is the seaward boundary of the district—the curving Ala Moana, “Sea Way,” that leads to Waikiki. This huddle of factories,

small, dingy stores, and humble homes is Kakaako: a place not mentioned in tourist literature, hidden away behind the more ambitious thoroughfares that border it. Here, if anywhere, dwell the Hawaiians of Honolulu. . . . Here in Kakaako dwell the stevedores and the humble folk of a hundred obscure occupations. Among them are Chinese and Japanese storekeepers, Filipino laborers, and the fishermen who moor their oddly shaped craft at Kewalo Basin on the edge of the district. [Gessler 1937:180–181]

The “oddly-shaped craft” was a sampan, a traditional Japanese sailing vessel.

2.3.5 Fishing at Kukuluāe‘o and Kewalo

Sampans were first brought to Hawai‘i by Gorokichi Nakasugi, a Japanese shipwright, in 1899. By the 1930s, Kewalo Basin had become the main berthing area for the fleet of Hawaiian sampans (Krauss 2006). These traditional Japanese boats are built without ribs, with pine planks bolted to a frame, and usually painted blue. They were quickly adapted to the rougher waters of Hawai‘i to create a unique sailing vessel, the Hawaiian sampan or *aku* (skipjack tuna) boat.

Sampans, they are called, and the name sailed out of the west from the lands beyond the setting sun. The first sampan came to Hawaii under sail, from Japan. The voyager engaged in fishing and eventually became a builder of sampans for other fishermen. The sails came down; the ships were modernized with power. Gasoline engines were installed at first, and later Diesels. The bow was raised and sharpened to cut the water more smoothly under greater speed. But the design of the hull remains the same slanting off from the bow to a flattened bottom and rounding back to a low, square stern. Above water, the sides slant back downward, rakish, exotic-looking, suggesting piracy in strange seas. [Gessler 1938:182–183]

Use of the sampan created a distinctive maritime culture that was associated with the rise of Hawai‘i’s commercial fishing industry (Van Tilburg 2007). The Japanese technique of catching tuna with pole-and-line and live bait resembled the *aku* fishing method traditionally used by Hawaiians.

By 1929, the McFarlane Tuna Company (now Hawaiian Tuna Packers) had moved their shipyard from Ala Moana and Cooke Streets to Kewalo Basin. A cannery was constructed in 1933 (Clark 1977:64). Also around Kewalo Basin were a fish auction, an ice plant, a fuel dock, and other facilities.

About a third of the *aku* and *ahi* go into tins as “tuna” in a three-acre factory near Kewalo Basin a factory complete with shipyards, repair plant, and a Buddhist shrine. The sixty-five sampans belonging to the company tie up at the company wharf and unload into steel-bottom slatted cars on a narrow gauge railway. Weighed in the cars, the fish are cleaned on a concrete floor and cooked, a ton or two at a time, in steam-jacketed cookers. After three hours in the cookers, it takes them ten hours to cool before they are stripped and sliced, oiled and sterilized, and cooled again. [Gessler 1938:185]

Most of the tuna caught was canned and exported to the mainland U.S. In the 1920s and 1930s, demand for canned tuna exploded, and by 1941, the cannery had 500 employees, 300 of whom were fishermen, with a fleet of 26 sampans (Kimura 1998:110–111). The “net house,” a

structure that now sits on the east side of Kewalo Basin Park, was originally built for the repair of the nets used by the sampan fishermen.

The picturesque bright blue boats anchored at Kewalo Basin and the fishing activity became a scenic attraction. According to one resident, “Kewalo Basin is the Fishermen’s Wharf of Honolulu and is every bit as colorful in its way as are its counterparts in San Francisco, San Diego and New England” (Stroup 1950 in Schug 2001:22).

This ended with World War II, when the government, believing the Japanese owners would use the boats for spying or sabotage, confiscated the sampan fleet and turned them into white coastal watch vessels. Hawai‘i’s last remaining wooden sampan, the *Kula Kai*, built in 1947 at Kewalo, was recently broken up when it could no longer be made seaworthy.

The fish cannery was converted by the U.S. military into an assembly plant for aircraft fuel tanks (Van Tilburg 2007:44–45). After the war, the tuna industry never recovered. Construction of new boats was hampered by wood shortages, and the cannery reopened at only a quarter of its former capacity (Wisniewski 1984:93). In 1985, the cannery closed due to lack of profits (Clark 2007:5).

In the 1950s, the Honolulu office of the National Fisheries Service, a part of the U.S. Fish and Wildlife Service, rented a portion of the Kewalo peninsula and built the Kewalo Research Facility. The facility studied captive live tuna, shrimp, lobsters, and endangered marine animals to provide information on these animals to the tuna industry and government departments (Brill 1992:1). In the 1960s and 1970s, other research facilities, such as the Look Laboratory of Oceanographic Engineering and the Kewalo Marine Laboratory, were also built at the basin.

2.4 Kewalo Basin

One of Hawai‘i’s nine commercial harbors, Kewalo Basin is a medium-draft harbor. The entrance channel is at the harbor’s southwest corner. The east boundary of the entrance channel and the south boundary of the harbor form a triangular filled-land area that supports Kewalo Basin Park. A 45 m long jetty extends from the shoreline to the park.

Before dredging of Kewalo Basin began in the 1920s, maps show the entire harbor facilities, including the Charter Boat Building, in the tidal and reef zone fronting the *‘ili* of Kukuluāe‘o. Until this construction and land reclamation, there was only a natural, deep recess in the reef, which was most likely utilized for a canoe landing in pre-Contact times.

In 1919, the Hawai‘i Government set aside \$130,000 to convert the natural reef recess and shoreline into a harbor that “will be made to serve the fishing and other small craft, to the relief of Honolulu harbor proper” (Thrum 1920:147). The harbor was originally planned for lumber schooners to support the lumberyards along the Kukuluāe‘o shoreline (Figure 18 and Figure 19).

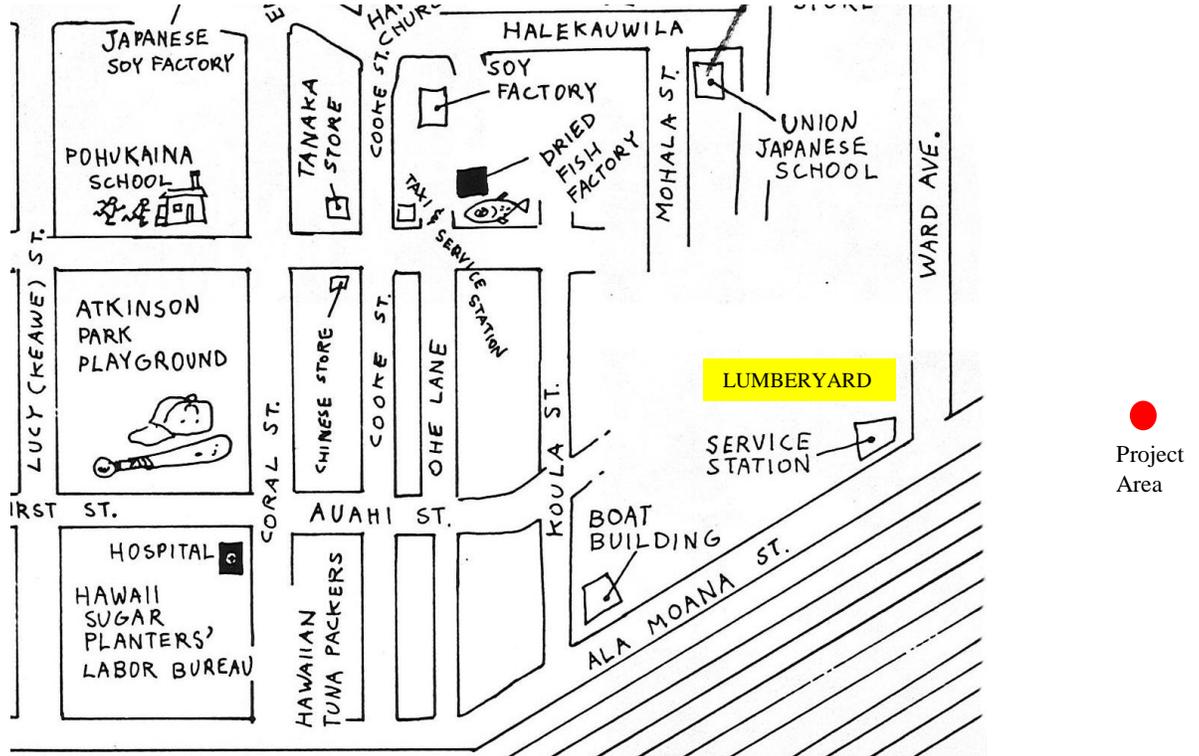


Figure 18. Schematic of Kakaako, circa 1927 (Ethnic Studies Oral History Project 1978:A2). Project Area just off map to right.



Figure 19. Fisherman mending nets in area of Kewalo Basin with lumberyard in background (Gibson 2011:71). Photograph likely taken from near project area.

However, by 1928, when Kewalo Basin was capable of supporting watercraft, the lumber import industry was no longer viable. The government of Hawai'i then ordered independent fishermen and their boats to relocate from the overcrowded Honolulu Harbor to Kewalo Basin.

The progress of dredging a channel to form the basin was summarized in a 1921 report from the Governor of Hawai'i to the U.S. Department of Interior (Hawaii, Governor of Hawaii 1921:60):

In looking ahead into the development of Kewalo Basin, the first structure to be built as funds are made available would be the lumber wharf, and it was considered best to use any available funds for performing as much dredging as possible before this wharf was actually built, so that any blasting would not injure the wharf.

The contract awarded for this work called for the removing of approximately 114,000 cubic yards of material and the dredging of a channel 175 feet wide, 13,070 feet long and 28 feet deep, beginning at the mauka end of the proposed wharf and connecting with a channel previously dredged through the reef.

The construction, renovation, and expansion of Kewalo Basin occurred over a period of almost a century. Table 3 presents a brief timeline of major construction events as detailed in the Kewalo Basin website (<http://www.kewalobasinharbor.com/home/home>). Some of these transformations are illustrated in a series of aerial photographs extending from 1952 to 1968 (Figure 20).

The Ala Wai Canal was dredged in the 1920s mainly as a health measure to reduce the mosquito population. A 1927 U.S. Geological Survey map shows the project area on the east side of Kewalo Basin to still be on partially submerged reef while the west side of the basin is in the process of being dredged (Figure 21). The material dredged was used to fill in around the Kewalo and Ala Wai basins and to make Ala Moana Beach Park, which can be seen on a map for the first time on a 1933 U.S. Geological Survey quad map (Johnson 1991:364) (Figure 22). An access channel was dredged to connect Kewalo Basin with a dredged channel fronting Ala Moana Beach Park and on to Ala Wai Harbor.

The fill material for the Kaka'ako Makai area, Fort Armstrong, and parts of Kewalo Basin were composed of relatively clean coral and sand dredge material. A 1930s photo of Kewalo shows the dredging of fill material that was used to extend the coastline (Figure 23). The fill emerges from a pipe in the left side of the photo and forms a pile on the shore. The Kewalo area still appears relatively rural when compared to the photo of the Honolulu waterfront taken at least ten years earlier. Small homes dot the shoreline and large trees are abundant. A sign of modern infrastructure is evident in the utility poles looming above the houses.

The 1943 War Department quad map shows completion of the east side of Kewalo Basin and the road construction within Ala Moana Park, but there is still little urban development of Kaka'ako Makai area or *mauka* of the study area (Figure 24). On the west side of Kewalo Basin is the City and County incinerator, built in 1930, whose incinerated products were used for landfill in

Table 3. Timeline of Major Construction Events at Kewalo Basin

Year	Construction Event
1926	Concrete wharf finished
1928	Half of bulkhead along the mauka side built
1934	Rest of <i>mauka</i> bulkhead was constructed
World War II	basin dredged and expanded
1954	Fishing gear shed and paving on the Waikīkī side of the mooring basin completed
1954/1955	Charter Boat Office and Locker Building constructed
1955	Ca. acres of fill with rock revetment deposited along the <i>makai</i> side of basin – now Kewalo Beach Park
1955	Wooden herringbone pier constructed.
1968	Extension to wharf
1969	Concrete herringbone pier and larger concrete catwalks constructed along Ala Moana Boulevard and seaward faces
1970	Another concrete-decked catwalk installed
1972	Repairs to rock wall, jetty and <i>aku</i> catwalks completed
1974	Herringbone pier renovated
1977–1978	Catwalk II 9-120 and marginal wharf's fender system replaced
1986	New 40- and 50-foot concrete catwalks and <i>aku</i> boat catwalks replaced herringbone pier and other structures
1988	Charter Boat Building renovated, surrounding area landscaped



Figure 20. 1952 (022-2403), 1959 (082-2575), and 1968 (021-2240) (top to bottom) USGS aerial photographs showing progression of land reclamation around Kewalo Basin.



Figure 21. USGS 1927 topographic map.

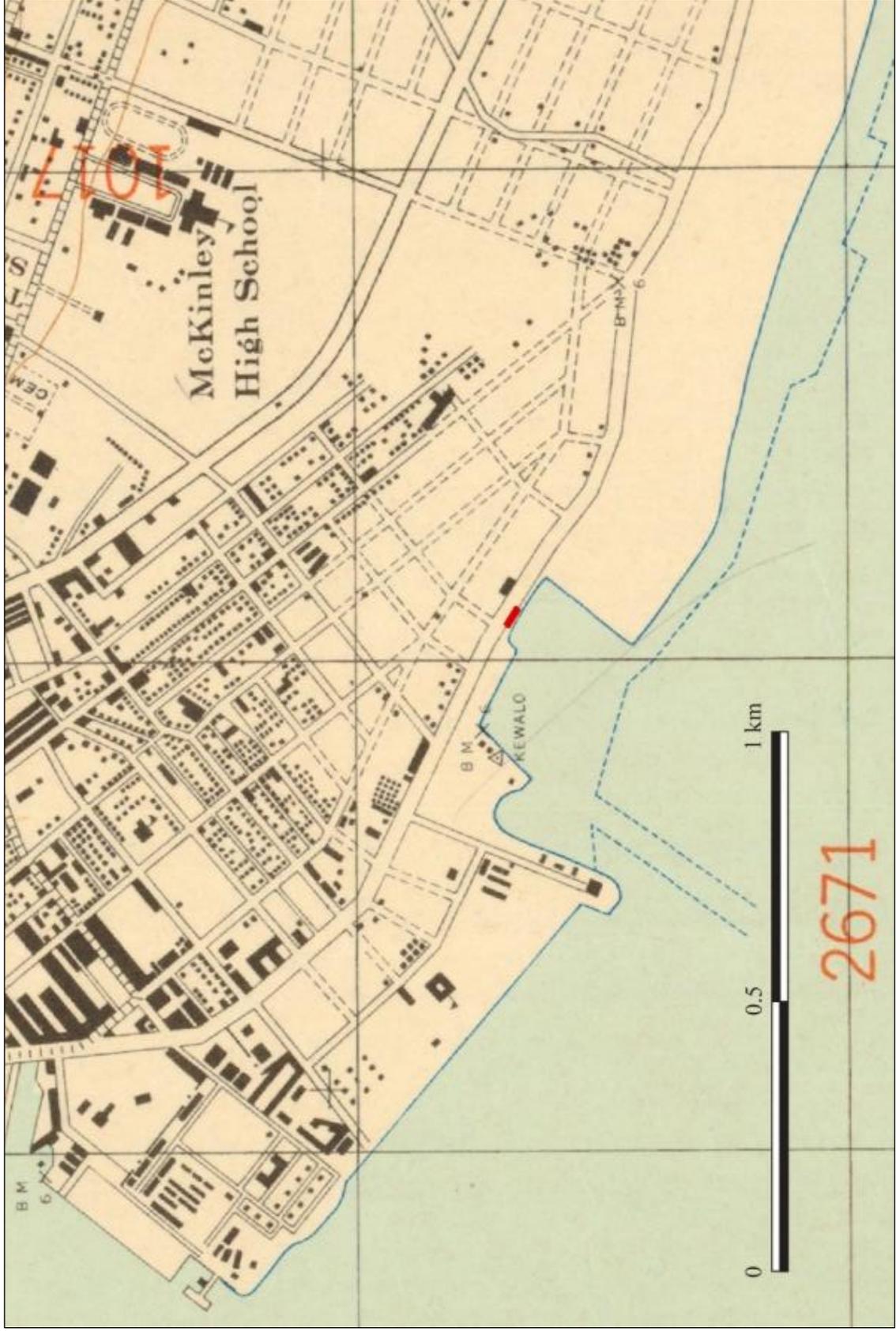


Figure 22. USGS 1933 topographic map.



Figure 23. Fill material being deposited at Kewalo in 1930 (courtesy of the Bishop Museum).

the area. This incinerator was replaced in 1946 and the surf break there is still called “Incinerators.” The map shows an access road on the west side of the basin that runs parallel to, and just seaward of, Ala Moana Boulevard. The basin was dredged and expanded to its current size by the U.S. Navy in 1941.

In 1946, the access channel was closed and turned into a swimming area. The new, and present, entrance provided more direct access to the harbor (Hawai‘i Community Development Authority 1983:III-7).

In 1948, a massive sea wall 3 m (10 ft) high and 9 m (30 ft) wide at its base was constructed on the reef near Olomehani Street. It followed Kewalo Channel to the present site of the University of Hawai‘i’s Pacific Biomedical Research Center and eventually extended west to Fort Armstrong. The shallow reef enclosed by the sea wall was used as a landfill for material from the nearby incinerator and other municipal refuse. This resulted in filling the coastline on the seaward side of Ala Moana Boulevard, between Kewalo Basin and Honolulu Harbor (Clark 2002:145).

In 1951, the bulkhead on the east side was finished and in 1954, the area was paved. The 1952 aerial photograph and 1953 quad map show the *makai* area immediately west of Kewalo Basin to be changed by extensive fill activities during the previous decade as part of a City and County landfill (Figure 25). This landfill is how the surf break “Flies”, located off the west end of Kaka‘ako Waterfront Park, got its name. Clark (2002:74) states that in 1963 Joe Kuala named this break “for all of the flies at the landfill.” It “was the home of many aggressive black flies that bit the surfers and fishermen” (Clark 2002:74). The aerial and map show a sand bar in the future location of the Kewalo Basin Park.

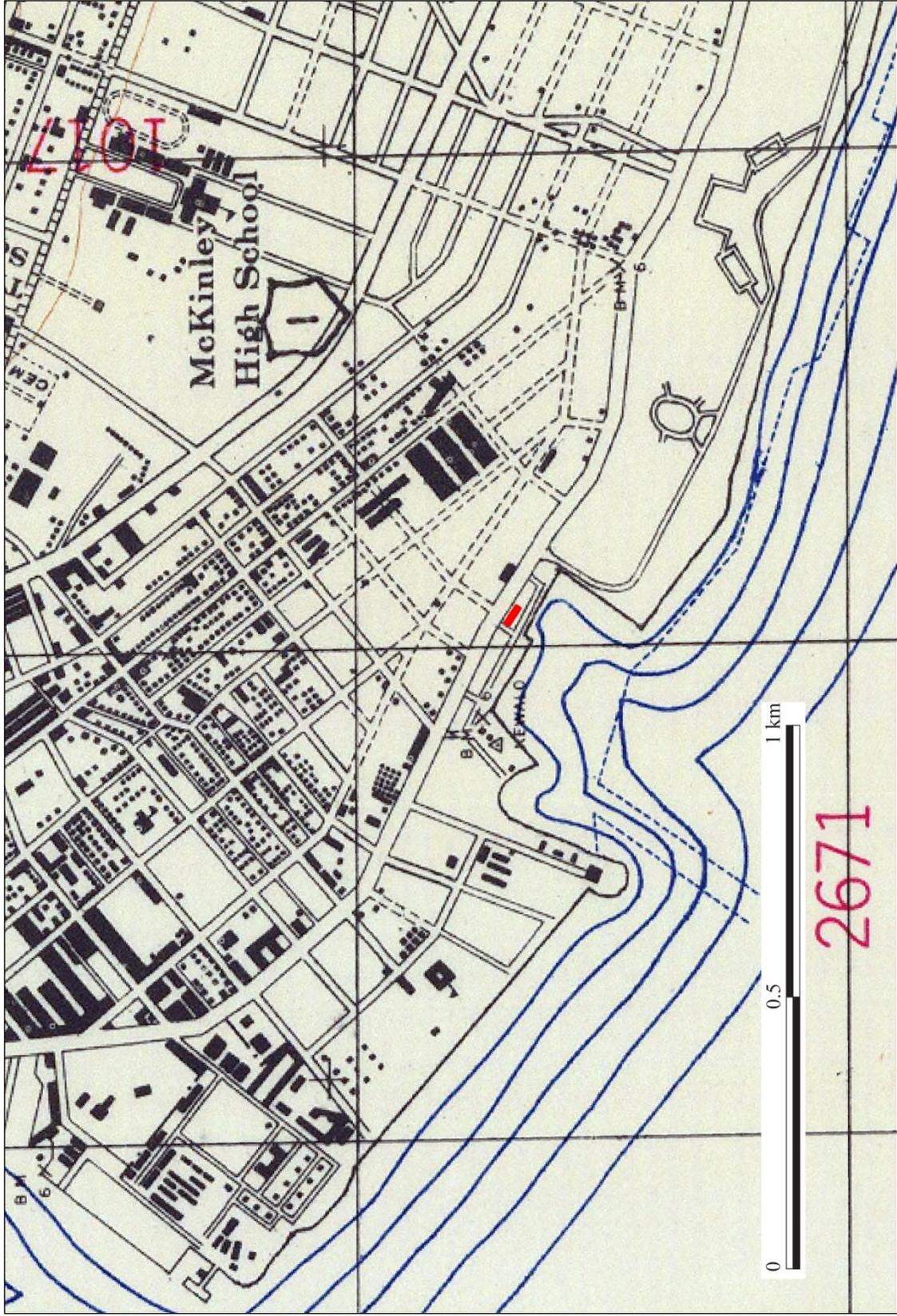


Figure 24. Kewalo in the 1940s (U.S. Army Corps of Engineers 1943).

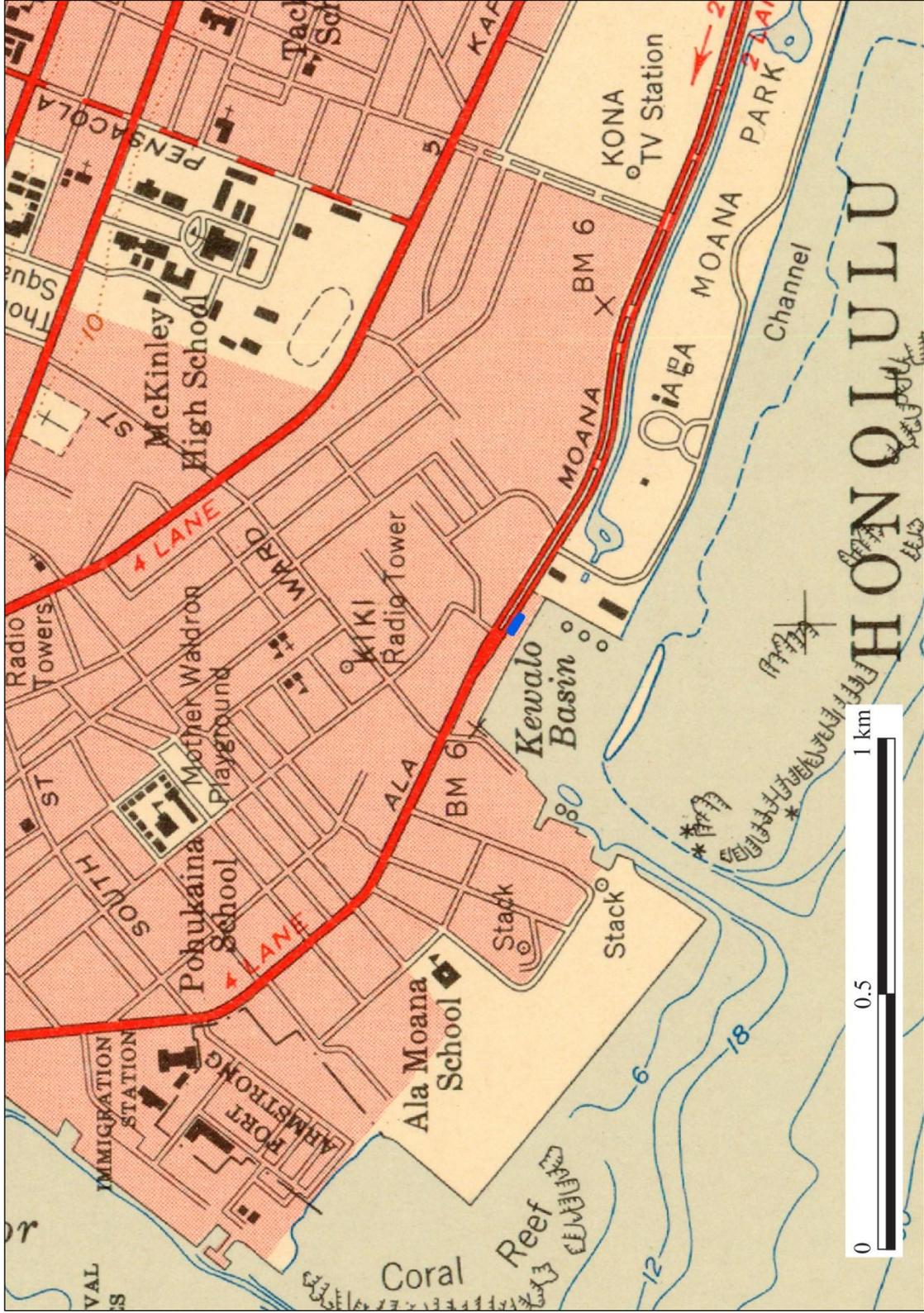


Figure 25. USGS 1953 topographic map.

Construction maps indicate the 3.7 m (12 ft) high masonry walls of the Charter Boat Building were built in 1954 to house the offices of the charter boat operators and as a locker building. The building has supported numerous tenants over the years, including a branch of the Honolulu Police Department, Dive Hawai‘i, and Hawai‘i Parasail.

In 1955, Hawaiian Dredging closed the west end of the channel with a landfill to create the Kewalo Basin Park (Clark 1977:6). A 1959 aerial photograph shows the seawall in the southeast section of Kewalo Basin was completed and infilling for the peninsula was ongoing. This 3.6 ha (9 acre) peninsula would become the Kewalo Basin Park. An access road (the current Kewalo Basin access road) had been constructed along the east and southeast sides of the basin. There is still no landfill seaward of Fort Armstrong, but infilling in the Kaka‘ako Makai area has yet to be completed. More small buildings on the east and south sides of the basin were constructed since the 1952 aerial photo. These buildings housed such institutions as McWayne’s Marine Supply, South Sea Divers, and the Sampan Inn Restaurant.

A 1968 aerial photograph does not indicate much change in Kewalo Basin except for construction of more boat slips and paving of a road leading to the peninsula. More dramatic changes were made in the Kaka‘ako Makai area where most of the seaward portions, including those fronting Fort Armstrong, were filled. This landfill seaward of Fort Armstrong affected the surf (as related by Rawlins “Sonny” Kauhane, in Clark 2002:121):

there was another place to surf in Kaka‘ako that we called Armstrong’s. It was in front of Fort Armstrong. The shore there was different too – it was a shallow reef, and there were many military homes on the beach. We surfed in front of the homes. The landfill on the reef that made Piers 1 and 2 destroyed Armstrong’s.

Additional work completed at Kewalo Basin included an extension of the wharf in 1968 and the construction of a new herringbone pier and additional concrete catwalks in 1969, 1970, 1972, 1974, 1977, and 1978. In 1986, new catwalks were built to replace the old herringbone pier and other structures. In 1988, the Charter Boat Building was renovated and the surrounding area landscaped.

With its pedestrian promenade, trellised picnic areas, a net shed, and outdoor showers, the Kewalo Basin Park is heavily used by the local community. The park is home of the Friends of Kewalos, a grassroots community action group that promotes saving public oceanfront land in urban Honolulu. Their work focuses on Kaka‘ako Makai, including Kewalo Basin Park, for as expressed on their website:

Kewalo Basin Park symbolizes a way of life as many of us have been coming to the Park for the better part of our lives. It is a place where lifelong friendships have evolved and everybody knows your name. The parks’ location in the heart of Honolulu, quiet charm, low-key atmosphere, and beautiful vistas of Diamond Head and the ocean, keep all of us coming back. [<http://www.kewalo.org/about/>]

The Friends of Kewalos recently installed a Save Our Surf plaque on the pavilion at Kewalo Basin Park. The plaque honors the founders of Save Our Surf who were instrumental in preventing

offshore development around the islands and preserving over 140 surfing sites between Pearl Harbor and Koko Head that are enjoyed today. The breaks fronting Kewalo Basin Park are a recognized surfing area. Mr. Iwai states that it is this lifestyle that needs to be preserved for future generations.

The Kewalo Netshed, now near the east harbor entrance in the Kewalo Basin Park, houses CommunityU, a green training facility for Kupu, a nonprofit dedicated to help at risk youth to develop life skills to succeed in life by working with the environment. It also supports the Kewalo Basin Community Garden showcasing Native Hawaiian plants.

In 2009, jurisdiction of Kewalo Basin harbor was transferred from the Hawai'i Department of Transportation Harbors Division to the Hawai'i Community Development Authority (HCDA) (Kewalo Basin Harbor 2009). Currently, plans are underway to lease Kewalo Basin and other segments of the Kaka'ako Community Development District to the Howard Hughes Corporation. Mr. Iwami states that he feels confident in this new lease agreement as "In the past they have shown that they will reach out to the community and make the process transparent."

2.5 Discussion and Summary

Examination of historic maps and aerial photographs illustrate that before the land reclamation projects that began in the 1920s, the Kewalo Basin, including the Charter Boat Building, was in the tidal flats very close to or adjacent to the pre-Contact Period shoreline. The reef directly offshore had a natural recess that could have been used as pre-Contact canoe landing.

Coastal land adjacent to the current Kewalo Basin was the *'ili* of Kukuluāe'ō with the *'ili lele* of Kewalo just inland. *Mo'olelo* relate that Kukuluāe'ō and Kewalo contained ceremonial sites such as Pu'ukea Heiau and Kawailumaluma'i Pond, where sacrifices were made, and was noted for springs such as Kewalo Spring. Chief Huanuikalala'ila'I, born in Kewalo, is known to have cultivated the land. Kewalo was the nesting ground of the great *pueo* who was the cause of the epic battle between the armies of the *ali'i* Kākuhihewa and *pueo* from the main Hawaiian Islands. Kewalo is also the location of one of the battles in the Legend of Pumaia.

The earliest accounts of this area describe low-lying marshland that contained few houses and some salt pans and fishponds. Trails crisscrossed the rather desolate *'ili* of Kukuluāe'ō to connect the population centers of Waikīkī to the east and what would become Honolulu to the west. Cultivation was likely minimal due to the swamp environment but *mo'olelo* tell of the collection of useful wild grasses such as *pili* and *mahiki* used in thatching and exorcising evil spirits.

By the early- to mid-1800s, residents in this area appear to have been primarily employed by local *ali'i* associated with the ruling family (McElroy et al. 2008:13). Tending fishponds, producing salt for the shipping industry, farming the inland areas *mauka* of Honolulu, and tending to the subsistence and economic interests of the royal family were likely the primary pursuits of the local Hawaiian population.

The construction of roads and buildings did not begin in the Kewalo area until much later than Honolulu, most likely due to the better harbor to the west. It was not until Honolulu Harbor

became crowded that Kewalo was utilized partly due to its close proximity to the main population centers of Honolulu and Waikīkī. Although dredging of Kewalo began in the 1920s, construction of the Kewalo Basin and harbor facilities occurred in successive stages over a period of more than half a century. By 1959, the year Hawai‘i became a state, Kewalo Basin had been dredged, filled, and paved to its current 22 ha (55 acres), including ocean acreage. At least some of the fill materials for the adjacent coastline came not from clean coral and sand but from decades of open trash burning. Since the City and County of Honolulu built a new incinerator in 1930, around the same time the basin area was being filled, it was the most convenient disposal site for the incinerated products.

In the 1920s and 1930s, Squattersville, a settlement for the homeless and destitute, was centered along the shoreline around the project area. Sampans used as tuna fishing vessels, moved from crowded Honolulu Harbor to Kewalo Basin in 1928. Their use in the commercial fishing industry evolved into a distinctive Hawaiian maritime culture. The picturesque bright blue boats anchored at Kewalo Basin and the associated fishing activity became a scenic attraction.

Until the early 1940s, the north edge of the basin, bordering Ala Moana Boulevard, remained barren land in the tidal zone. By 1943, this parcel had become reclaimed land and, in 1954, the Charter Boat Building was built on it to house the offices of the charter boat operators and as a locker building. The building has housed numerous tenants over the years, including a branch of the Honolulu Police Department, and currently contains restroom facilities. In 1988, the Charter Boat Building was renovated and the surrounding area landscaped.

Kewalo Basin currently supports commercial fishing operations and some recreational vessels, as well as charter boat owners who offer sports fishing, scuba diving, whale watching, and local cruise trips. It also contains the Kewalo Basin Park, frequented by surfers, fisherman, and picnickers. Kewalo Netshed is used by Hawaiian nonprofits for public education, community training, and environmental awareness programs. Memorial statues located in the park include one to a powerful *akua*, the owl, and a commemorative stature of Saint Marianne of Moloka‘i.

3.0 PREVIOUS ARCHAEOLOGICAL AND CULTURAL IMPACT INVESTIGATIONS

Modern development projects in the Kaka‘ako/Kewalo coastal zone have triggered a large number of archaeological investigations and Environmental Impact Statements with associated cultural impact assessments. The only work generating historic properties research inside the Kewalo Basin is the archaeological literature review (Hammatt and Shideler 2010) and a cultural impact assessment (Genz and Hammatt 2010) completed for the Kewalo Basin Repairs Project. An historic evaluation of the Kewalo Basin was prepared by Mason Architects, Inc. (2010), but did not include the Charter Boat Building. There have been no archaeological subsurface investigations in the Kewalo Basin and there are no known cultural deposits.

Archaeological work completed near the project area includes archaeological monitoring associated with Kaka‘ako Improvement District 6 (Borthwick and Hammatt 2001) and District 7 (Souza et al. 2002), and the Ala Moana Boulevard resurfacing and lighting replacement project (LaChance et al. 2013) (Table 4). Archaeological inventory surveys were conducted for the Ward Village Gateway Project: Block C (Yucha et al. 2013; Pammer et al. 2014; Sroat et al. 2014). Data recovery investigations are being planned for sites encountered in the Ward Village investigations (Sroat and McDermott 2014).

A cultural impact assessment (Cruz et al. 2012) was conducted for the Ward Neighborhood Master Plan, and a substantial amount of ethnohistoric and oral history work has been conducted in Kaka‘ako (Ethnic Studies Oral History Project 1978; McElroy et al. 2008; Spearing et al. 2008; Gibson 2011) (Table 4).

These studies found that in many cases the historic fill associated with land reclamation served as a protective cap to preserve the underlying cultural and natural deposits (Griffin et al. 1987:73). In other areas, the deposition of fill truncated, mixed, or destroyed the underlying deposits. Hence, isolated layers and pockets of intact traditional and historic cultural deposits are occasionally encountered just inland of the current coastline.

Recent subsurface investigations on the seaward portion of Ward Warehouse encountered disturbed and reworked Jaucas sand and coastal marine sediments, overlain by various fill deposits and crisscrossed by utility lines (Sroat and McDermott 2014:69). These disturbed matrices are interpreted to be due to urban development such as landscaping, roadway improvements, and construction of building infrastructure. The land comprising the inland edge of Ala Moana Beach Park consists totally of fill material, since this area was seaward of the shoreline in the pre-Contact and early historic periods (Souza et al. 2002).

Archaeological sites encountered closest to the project area are located directly across Ala Moana Boulevard beneath the Ward Warehouse (Table 5). The most significant of these Ward sites are the remains of historic salt pans (SIHP #50-80-14-7655), with other sites including a burned trash layer (SIHP #50-80-14-7422), twentieth century development land surfaces (SIHP #50-80-14-7658), the concreted and rerouted Ward Estate *‘auwai* (SIHP #50-80-14-7659), and an historic trash fill deposit (SIHP #50-80-14-7660). Two isolated human cranial fragments (SIHP #50-80-14-6376 and -7656) have been documented along the seaward and east side of the Ward Warehouse complex.

Table 4. Previous Archaeological and Cultural Studies Close to the Charter Boat Building

Author and Year	Location	Work Completed	Findings
<u>Archaeological Studies</u>			
Borthwick and Hammatt 2001	Kaka‘ako Improvement District 6.	Archaeological monitoring	No findings. Fill material over old tidal flats
Souza et al. 2002	Kaka‘ako Improvement District 7	Archaeological monitoring	Three disturbed pre-Contact human remains/burials (SIHP #s -6376, -6377, 6378). Encountered historic fill close to project area.
Hammatt and Shideler 2010	Kewalo Basin Repairs Project	Archaeological literature review and field visit	No excavation
Yucha et al. 2013	Ward Village Gateway: Block C	Archaeological inventory survey	Burned trash layer (SIHP #7422) identified; majority of project area contained sand or peat A horizon and Jaucas sand beneath reclamation fill layers;
LaChance et al. 2013	Ala Moana Blvd/Nimitz Hwy Resurfacing and Hwy Lighting Replacement	Archaeological monitoring	No finds within the vicinity of the current project area.
O’Hare et al. 2012	Ward Neighborhood Master Plan	Archaeological literature review and predictive model study	No excavation
Sroat et al. 2014; Pammer et al. 2014	Ward Village Gateway: Block C		Historic Salt Pan Complex (SIHP #7655) with ‘auwai (SIHP #7659); human cranium fragment (SIHP #7656) , buried surface (SIHP #7658), trash deposit (SIHP #7660), encountered disturbed and reworked sand and fill across from project area
<u>Oral History Studies</u>			
Ethnic Studies Oral History Project 1978	Kaka‘ako	Oral History	-
McElroy et al. 2008	Kaka‘ako	Ethnohistoric	-
Spearing et al. 2008	Kaka‘ako Mauka	Cultural Impact Assessment	-
Genz and Hammatt 2010	Kewalo Basin Repairs Project	Cultural Impact Assessment	-
Gibson 2011	Kaka‘ako	Oral History	-
Cruz et al. 2012	Ward Neighborhood Master Plan	Cultural Impact Assessment	-

Table 5. Archaeological Sites near the Charter Boat Building

SHPD Site No. 50-80-14	Site Type	Time Period	Location	Reference
-6376	Human cranium fragment	Traditional	intersection of Ala Moana Boulevard and Kamake'e Street	Souza et al. 2002
-7422	Burned trash layer	Historic	near corner of Kamake'e and Auahi Streets	Yucha et al. 2013
-7655	Salt pan complex	Historic	Ward Warehouse (app.1.8 ha)	Sroat et al. 2014; Pammer et al. 2014
-7656	Human cranium fragment	Traditional	Ward Warehouse	Sroat et al. 2014; Pammer et al. 2014
-7658	Buried surface	Historic	Ward Warehouse	Sroat et al. 2014; Pammer et al. 2014
-7659	Concreted Ward Estate ' <i>auwai</i>	Historic	Ward Warehouse	Sroat et al. 2014; Pammer et al. 2014
-7660	Trash deposit	Historic	Ward Warehouse	Sroat et al. 2014; Pammer et al. 2014

The salt pan complex (SIHP #7655) is currently identified as extending from Auahi Street to the seaward edge of the Ward Warehouse (Sroat and McDermott 2014:Appendix A). It is defined by an interconnected complex of humanly constructed berms around low, level saltpan beds filled with wetland sediments overlain by thin organic laminations. Two features were documented, both associated with the salt pans. Feature 1 consists of tabular limestone boulders placed on the naturally deposited marine clays to create a level surface. Feature 2 is composed of limestone boulders integrated into a berm adjacent to a small section of peaty pond sediments.

Based on the magnitude of this structural complex and the significant earth-moving activity that would have been required to construct the berms, these buried structural features and sediments represent historic commercial salt production activity. [Sroat and McDermott 2014:92]

Historic salt production in the Ward Warehouse area is associated with the Ward Estate (Sroat and McDermott 2014:Appendix A). The concreted and rerouted '*auwai* (SIHP #7659) encountered in the central eastern portion of the commercial shop complex is also a part of the estate's commercial salt complex.

The previous twentieth century development land surfaces (SIHP #7658) lie directly beneath the modern fill layers of much of Ward Warehouse (Sroat and McDermott 2014:63). These land surfaces are found at 20–105 cm below surface and consist of asphalt, concrete, coral and tar pavement, and oil-rolled surfaces. The historic trash fill (Site #7660) is located in an abandoned storm drain box along the *makai* boundary of the Ward Warehouse (Sroat and McDermott 2014:69). Trash encountered included bottles, ceramic, metal fragments, and boat trash likely

related to the nearby fishing and tuna cannery industry. The burned trash layer (SIHP #7422) is located near the corner of Kamake'e and Auahi Streets.

Traditional burials along the Kukuluāe'o/Kaka'ako/Kewalo coastal zone are buried in natural sand layers associated with the pre-Contact intertidal shoreline (Genz and Hammatt 1910:60). Despite many of these sand deposits having been extensively disturbed during the process of urbanization some undisturbed sections remain. SIHP #50-80-14-6376 is a single human cranial vault discovered by construction personnel in the base yard backdirt pile (Souza et al. 2002). The sediments were derived from a trench close to the intersection of Ala Moana Boulevard and Kamake'e Street. The second human cranial fragment SIHP #7656 was unearthed within disturbed sand just east of the first find (Sroat and McDermott 2014:69). The presence of disturbed deposits along the boundary between Ward Warehouse and Ala Moana Boulevard suggests that neither human bone fragment derived from an intact burial.

4.0 EVALUATION, ASSESSMENT OF POTENTIAL EFFECTS, AND RECOMMENDATIONS

A single building, the Charter Boat Building, encompasses the entire lot (TMK [1] 2-1-058:0431954) being investigated in this archaeological and cultural resource assessment. The proposed project will maintain the existing structure as much as possible while renovating the interior to house a casual Italian seafood restaurant. Plans include construction of a patio seating area on the current manicured land of the seaward side of the building. This patio is not within TMK [1] 2-1-058:043 and is under different ownership. Currently, a lease has not yet been secured for this adjoining property. Ground disturbance during proposed construction would be limited to installation of new utility lines and leveling the patio seating area.

The following historic properties and cultural impact assessment is concerned with the limits of the project area including the Charter Boat Building and its underlying and immediately adjacent lands.

4.1 Historic Properties Assessment

4.1.1 Charter Boat Building

Construction maps indicate the Charter Boat Building was built in 1954. The 3.7 m (12 ft) high masonry building was constructed to house the offices of charter boat operators and as a locker building. This concrete block structure was renovated in 1988 and the surrounding area landscaped then and in 1995 (Figures 26–33). A slight rise in the landscaped lawn south of the Ala Moana Boulevard curb and west of the building is undoubtedly the result of twentieth century fill activities and likely due to the area being landscaped in 1988 and in 1995 (Figure 29).

The Charter Boat Building is currently divided into several rooms all of which open seaward, onto a concrete walkway bordering the narrow strip of manicured grass bounding the Kewalo Basin parking lot. Two restrooms, utilized by charter boat operators and their clients, are located in the center of the structure.

The Charter Boat Building has supported numerous tenants over the years, including a branch of the Honolulu Police Department, Dive Hawai‘i, and Hawai‘i Parasail. As stated by the cultural consultant, Mr. Iwai, tenants of the building, “come and go, they don’t last long.”

The Charter Boat Building was constructed in 1954 and is hence older than 50 years. It is therefore, potentially eligible for nomination to the National Register of Historic Places (NRHP) or the State of Hawai‘i Register of Historic Places (HRHP).

4.1.2 Potential for Subsurface Deposits

The Kewalo Basin was seaward of the shoreline in the pre-Contact and early post-Contact Periods, in the tidal zone and on a shallow reef enclosing a natural deep recess. Georectification of historic maps show that the Charter Boat Building property was likely in the tidal zone. Dredging of the boat channel, and creation of the jetty, rock wall, catwalks, and reclaimed land that forms the basin occurred over a period of 60 years beginning in the 1920s. Fill material for land reclamation was derived from the dredged coral reef and incinerated trash.



Figure 26. Charter Boat Building overview from parking lot; facing east.



Figure 27. Charter Boat Building; facing east.



Figure 28. Charter Boat Building; facing east.



Figure 29. Charter Boat Building with Ala Moana Boulevard on left, facing southeast. Note the slight rise in the manicured lawn compared to the roads.



Figure 30. Charter Boat Building; facing south.



Figure 31. Charter Boat Building; facing west.



Figure 32. Charter Boat Building; facing northwest.



Figure 33. Charter Boat Building; facing north-northwest.

The wall of the Charter Boat Building is parallel with, and roughly 15 m seaward, of the seaward curb of Ala Moana Boulevard. As surmised by Hammatt and Shideler (2010) in their archaeological assessment of Kewalo Basin:

It seems most likely to us that any lands seaward of the old “Beach Road” (that was later widened to create Ala Moana Boulevard) were too close to the water table and too unstable to have been used for permanent habitation or burials. Furthermore it seems most likely to us that as the Beach Road was widened in the twentieth century, to a width perhaps ten-fold the width of the beach road of the early 1800s, that this road widening was in a seaward direction taking advantage of land fill on the seaward side of the Beach Path. So it appears most likely that there are no natural sediments above the water table at all in the project area seaward of the seaward curb of Ala Moana Boulevard. At most, it would appear that natural sediments above the water table seaward of the seaward curb of Ala Moana Boulevard could only extend seaward a distance of ten meters. [Hammatt and Shideler 2010:50]

Thus, it is possible that early twentieth century human burials and other cultural resources could be located adjacent to the seaward curb of Ala Moana Boulevard. Traditional human bone fragments have been encountered in highly disturbed calcareous deposits on the opposing side of the boulevard; however, these deposits are some 50 to 80 m inland from the pre-Contact tidal zone, and roughly ≥ 100 m inland from the project area.

This land use history strongly suggests that no traditional or historic in situ deposits are in the Kewalo Basin. Indeed, as similar to the sediments unearthed in the nearby investigations in Ala Moana Beach Park (Souza et al. 2002), it is predicted that Kewalo Basin consists totally of fill material. The potential for subsurface archaeological properties under or immediately adjacent to the Charter Boat Building is considered improbable.

4.1.3 Archaeological Recommendations

Consultation with the State Historic Preservation Division (SHPD) is recommended prior to any renovations to the Charter Boat Building.

The Charter Boat Building is potentially eligible for nomination to the NRHP or the HRHP. It is recommended that preceding any renovations, the building be evaluated for significance based on the criteria set forth in federal regulations 36 CFR Part 64 and HRS Chapter 343. Should the building be evaluated as significant, consultation with the historic architect at SHPD is recommended to discuss appropriate steps to ensure renovations are in keeping with the originally constructed style of the building.

Prior to any ground disturbing activities in association with the Charter Boat Building, the SHPD should be consulted to discuss the potential requirement for an archaeological inventory survey or monitoring of earthmoving. Consultation with SHPD will require construction plans showing the location of planned ground disturbance. Since the foundation of the Charter Boat Building encompasses the entirety of TMK (1) 2-1-058:043, any subsurface archaeological testing would also have to occur in the surrounding TMK, which is under different land ownership.

4.2 Cultural Impact Assessment Results

Two cultural consultants, Ron Iwami, president of Friends of Kewalos and Thomas Iwai, Jr., also a member of Friends of Kewalos, agreed to be interviewed. Their comments are incorporated into the body of this work with more particular remarks included in this section.

The Friends of Kewalos would like to see responsible development that relies on holistic planning that incorporates a cultural component. They view construction of an Italian seafood restaurant in the Charter Boat Building as piecemeal planning and not culturally sensitive.

Mr. Iwai commented that, “nobody really sees that building [Charter Boat Building] as they don’t have a use for it.” Although, the cultural consultants knew of no traditional Hawaiian resources, sites, or practices directly associated with the Charter Boat Building, it is the *mana* of the Kewalo Basin as a whole that is their concern. The Charter Boat Building is not divorced from the remainder of the harbor area and cannot be treated as a separate entity. Mr. Iwami relates that the Kewalo Basin is a “place of breath” that should be kept open like a, “little country in the city.”

The cultural consultants stressed that it is perpetuation of Hawaiian use and enjoyment of an open and undeveloped shoreline that is the key point. Without an open shoreline, the cultural practices of surfing, fishing, and picnicking along the island’s coastline cannot continue for future generations.

Kewalo Basin Park symbolizes a way of life as many of us have been coming to the Park for the better part of our lives. It is a place where lifelong friendships have evolved and everybody knows your name. The parks’ location in the heart of Honolulu, quiet charm, low-key atmosphere, and beautiful vistas of Diamond Head and the ocean, keep all of us coming back.
[Friends of Kewalos website]

When asked about cultural properties particular to the Kewalo Basin, Mr. Iwami and Mr. Iwai mentioned the historic *aku* fishing; the statue at the harbor entrance that enshrines the *pueo* as the protector of Kaka’ako/Kewalo; and the honorific statue of the Blessed Mother Marianne Cope for her historic efforts in battling Hansen’s disease.

4.2.1 Cultural Resources, Practices, and Beliefs Identified—Location and Significance

All data analyzed during this assessment indicate that the combination of the project area being in the tidal zone during the pre-Contact Period and being part of a heavily urbanized landscape during the post-Contact Period resulted in no known past or current traditional activities occurring in the area. There is no tangible or intangible evidence of any former or ongoing cultural beliefs in the immediate area of the Charter Boat Building.

Regardless, the consultants stressed that placement of a commercial Italian-style restaurant in the building does not fit into the cultural nature or the *mana* of Kewalo Basin.

4.2.2 Effects of the Proposed Project

Based on the above findings, this study concludes that there will be no direct adverse impact to cultural resources, cultural practices, and traditional beliefs by the proposed renovations to the

Charter Boat Building. As the study area was in the tidal zone until the landfill efforts of the early twentieth century, and then it became part of the heavily urbanized landscape, traditional Hawaiian land use was always very limited. Any *mo'olelo* about the immediate area that may have once been held by traditional community members have been forgotten.

However, renovation of the Charter Boat Building does have indirect impacts to the local community enjoying Kewalo Basin Park. The transformation of the Charter Boat Building into a commercial enterprise would result in customers parking in lots currently used by the community enjoying the park facilities. This is viewed as a negative impact by the local consultants. Hence, the restaurant needs to provide its own parking so their patrons do not impact public access to the park.

4.2.3 Confidential Information Withheld

During the course of conducting the ethnographic survey for the Charter Boat Building renovations, no sensitive or confidential information was discovered in the background literature or communicated by consultants. All results of this effort are therefore presented in an unrestricted manner and no data was withheld.

4.2.4 Conflicting Information

No conflicting information was identified in the consultation process or in the archival research.

4.2.5 Proposed/Potential Physical Alterations and Isolation/Alteration of Resources

With no known tangible or intangible cultural resources or practices in the project area, the Charter Boat Building renovations present very little potential to physically alter or isolate any cultural resources.

4.2.6 Recommendations

It is recommended that the project developers include the Friends of Kewalos in their planning process. Looking after the long-term interests of the community use and enjoyment of Kewalo Basin Park and shoreline, this powerful grassroots group should be consulted prior to any development that has the potential to alter the *mana* of the park and the surrounding harbor.

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APPENDIX A: AGREEMENT TO PARTICIPATE FORM

Agreement to Participate in the Cultural Impact Assessment for an EA, Charter Boat Building Renovation at Kewalo Basin *Jolie Liston, Garcia and Associates*

You are invited to participate in the Cultural Impact Assessment for an Environmental Assessment (EA) of the Charter Boat Building Renovation at Kewalo Basin on O'ahu (herein referred to as "Project"). The Project is being conducted by Garcia & Associates, a cultural resource management firm, on behalf of Bellavita, Inc., who is having an EA conducted for the project area. The ethnographer will explain the purpose of the Project, the procedures that will be followed, and the potential benefits and risks of participating. A brief description of the Project is written below. Feel free to ask the ethnographer questions if the Project or procedures need further clarification. If you decide to participate in the Project, please sign the attached Consent Form. A copy of this form will be provided for you to keep.

Description of the Project

This ethno-historic study is being conducted to collect information about the long-term land use in and around the project area through interviews with individuals who are knowledgeable about this area, and/or about information including cultural practices, legends, songs, or chants. The goal of this Project is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources, places, or traditional cultural practices in these properties.

Procedures

After agreeing to participate in the Project and signing the Consent Form, the ethnographer will record your interview on audio tape and have it transcribed. The transcript will be sent to you for editing and final approval. Data from the interview will be used as part of the Cultural Impact Assessment for this EA and transcripts may be included in part or in full as an appendix to the report. The ethnographer may take notes and photographs and ask you to spell out names or unfamiliar words.

Discomforts and Risks

Possible risks and/or discomforts resulting from participation in this Project may include, but are not limited to the following: being interviewed and recorded; having to speak loudly for the recorder; providing information for reports which may be used in the future as a public reference; your uncompensated dedication of time; possible misunderstanding in the transcribing of information; loss of privacy; and worry that your comments may not be understood in the same way you understand them. It is not possible to identify all potential risks, although reasonable safeguards have been taken to minimize them.

Benefits

This Project will give you the opportunity to express your thoughts and opinions and share your knowledge, which will be considered, shared, and documented for future generations. Your sharing of knowledge may be instrumental in the preservation of cultural resources, practices, and information.

Confidentiality

Your rights of privacy, confidentiality and/or anonymity will be protected upon request. You may request, for example, that your name and/or sex not be mentioned in Project material, such as in written notes, on tape, and in reports; or you may request that some of the information you provide remain off-the-record and not be recorded in any way. To ensure protection of your privacy, confidentiality and/or anonymity, you should immediately inform the ethnographer of your requests. The ethnographer will ask you to specify the method of protection, and note it on the attached Consent Form.

Refusal/Withdrawal

At any time during the interview process, you may choose to not participate any further and ask the ethnographer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

Consent Form

I, _____, am a participant in the Cultural Impact Assessment Environmental Assessment for the Charter Boat Building Renovation at Kewalo Basin on O‘ahu (herein referred to as “Project”). I understand that the purpose of the Project is to conduct oral history interviews with individuals knowledgeable about the lands the project will impact. I understand that Garcia and Associates and/or Bellavita, Inc., will retain the product of my participation (audio tapes, transcripts of interviews, etc.) as part of their permanent collection and that the materials may be used for scholarly, educational, land management, and other purposes.

_____ I hereby grant to Garcia and Associates and Bellavita, Inc. ownership of the physical property delivered to the institution and the right to use the property that is the product of my participation (e.g., my interview, photographs, and written materials) as stated above. By giving permission, I understand that I do not give up any copyright or performance rights that I may hold.

_____ I also grant to Garcia and Associates and Bellavita, Inc. my consent for any photographs provided by me or taken of me in the course of my participation in the Project to be used, published, and copied by Garcia and Associates and Bellavita, Inc. and its assignees in any medium for purposes of the Project.

_____ I agree that Garcia and Associates and Bellavita, Inc. may use my name, photographic image, biographical information, statements, and voice reproduction for this Project without further approval on my part.

_____ I understand that I will have the opportunity to review my transcripts to ensure that they accurately depict what I meant to convey. I also understand that if I do not return the revised transcripts after one week from the date of receipt, my signature below will indicate my release of information for the draft report, although I will still have the opportunity to make revisions during the draft review process.

By signing this permission form, I am acknowledging that I have been informed about the purpose of this Project, the procedure, how the data will be gathered, and how the data will be analyzed. I understand that my participation is strictly voluntary, and that I may withdraw from participation at any time without consequence.

Consultant Signature

Date

Print Name

Phone

Address

Thank you for participating in this valuable study.

APPENDIX B: LEGEND OF PUMAIA

This version of the Legend of Pumaia is from the *Fornander Collection of Hawaiian Antiquities and Folklore*, 1916, Volume 4:470–477.

On the land of Pukoula which adjoins Waiahao⁵ in the district of Kona, Oahu, was the home of Pumaia. His chief occupation with that of his wife, was hog raising. They at one time had as many as ten hog pens; but amongst his whole herd [of hogs] there was one he thought a good deal more of than all the others; one that measured over a fathom in length which he had vowed he would never part from. This hog was to be kept until the death of Pumaia when it was to be killed.

Kualii who was king at this time, was building the temple called Kapua, which was situated to the east of Leahi Hill overlooking Mamala. At the completion of the temple, Kualii ordered that a hog be brought from Pumaia. Upon the arrival of the messengers, Pumaia asked them: “What is the object of your call?” “We have been sent by Kualii to you for a hog for the temple. You give us one.” “Yes, you can have one,” said Pumaia. “There is the pig pen.” This request was kept up until all the ten hog pens were exhausted and there remained but the one hog he thought so much of. After a time Kualii sent his men for another hog. Upon their arrival in the presence of Pumaia, they were asked: “What has brought you here?” “We have been sent by Kualii to come for the hog that is left.” “You shall not have it. He is only seeking trouble. I thought he was really in need of swine, but no.” The men then grabbed the hog and fought with Pumaia for its possession, many against one. In this fight sometimes Pumaia would get possession of the pig and again the others would get it. This was kept up for some time when at last a regular fight was had. Pumaia then struck out one blow on the right and one on the left with his fists, killing all the men except one, who ran to the king, Kualii, and reported to him, saying: “We have all been killed by Pumaia and I alone am left to bring the tidings to you.” Kualii then ordered his soldiers and officers to arm themselves with their spears and other implements of war and to dress in their war helmets and feather capes and when ready to go and make war on Pumaia.

After this fight Pumaia left Pukoula and moved on to **Kewalo** where he was met by the soldiers and a regular battle was fought in which Pumaia slew all of Kualii’s warriors and officers. One of the men, however, managed to escape and carried the result to Kualii. When Kualii heard that his warriors and officers had all been killed, he called all his chiefs and warriors to come together, with his god, Kanemuka. Pumaia in the meantime had moved on to Pawaa, where he was met by Kualii and his men, and another battle was fought in which Pumaia again slew all the chiefs and warriors, with the exception of Kualii and his god. When Kualii saw that his men and chiefs were all slain he prayed to his god to capture Pumaia, and so through the power of this god Pumaia was caught and bound. Kualii was so incensed at

⁵ This part of Honolulu is now known as Kawaiahae.

Pumaia that he was immediately killed and was dragged to Kapua where his dead body was thrown into the pit with the men he had killed. In the course of the ill treatment given his body, the jaws were crushed and cut up into fragments.

Pumaia's wife and young daughter in the meantime were at home where they were awaiting for his return, from early in the afternoon until midnight. At this long absence of Pumaia the mother remarked to the daughter: "Your father perhaps is dead. In all his travels before this he generally returned home before dark." While the two were talking they heard a shaking noise outside the house and an indistinct call to open the door. The mother then rose and opened the door, and lo it was the spirit of Pumaia.

Relating to the spirit of Pumaia: It is told in this legend that the spirit is always much stronger than the living body and that several people have been killed by spirits; the following narrative will show this.

As the jaw bones of Pumaia were so crushed his words were indistinctly heard, so the spirit had to resort to whisyers and gesticulations of the hands, like a deaf and dumb person, in order to be understood. Pumaia then said to his wife: "I struck out right and left and killed them all." The wife asked: "You killed them all?" "Yes, yes," at the same time bringing the hands together and making the negative motion to indicate that nothing was left. Pumaia then said to the wife: "Let us go and get my body." The wife assented and took a piece of kapa cloth in which to wrap the body. The blazing spirit⁶ then went ahead, the wife following until they reached Kapua, the temple of Kualii and the pit where the body had been thrown. The spirit of Pumaia then flew and landed right in the center of the pit and flamed; the night guards were fast asleep, as it was then well on towards midnight,⁷ the Milky Way being plainly seen. The wife then approached the hole and felt of the dead bodies. The spirit then whispered and at the same time making motions with the hands to remove the dead bodies and pointed down in the bottom of the hole. The wife followed the instructions until she found the body of Pumaia beneath, all ragged and torn. She then collected the pieces and put them in the kapa cloth, in the form of a bundle, put it on her back and returned home. Upon her arrival at the house Pumaia's spirit told the wife, at the same time pointing at the floor of the house, to remove the mats, dig a bole and conceal the body, before the arrival of the people who would search for the body the next day. The wife did as she was told. On the next day a searching party arrived looking for the body of Pumaia. The searchers asked Pumaia's wife: "Did you not go and remove the body of your husband last night?" "I do not know anything about it nor have I removed it. Is Pumaia then dead? This is the first that I have heard of his death." When the searchers heard this they were certain that the wife could not have removed the body, so they returned [to the king].

On the second night, the spirit of Pumaia again came to the wife. The reason for this coming was this: The wife that day looked at her daughter and said:

⁶ Lapalapa, as used here is to indicate the blazing nature of Pumaia's spirit in its directing movements.

⁷ *Huli ka ia*, the turning fish, was the appearance of the Milky Way.

“Yes, I am grieving at our fate as our bones still need blood, not your father as his bones have no blood.” At this Pumaia’s spirit asked: “What are you two talking low about?” The wife replied: “Nothing, we are just talking about death, not of you of the bloodless bones.” Pumaia’s spirit then spoke to the wife: “Let us get away from this place. Take me out and take me along.” After the body had been dug up, they left Pukoula and walked toward the mountains along the road leading to the junction of Pauoa and the road that leads to the Alekoki pool. They then continued on up toward Maemae, and by dawn of [the next day] they reached Nuuanu.

On the top of the left hand peak of the Nuuanu Pali where you come down toward Hoowahapohaku and look towards the eastern peaks of the pali and right at the top of this left hand peak is a cave. The spirit of Pumaia flew to this cave and lit there flaming. The wife with the bones of Pumaia and the daughter then climbed up the cliff⁸ until they arrived at the cave, where they made their dwelling. At the end of the fourth day, the last finger⁹ of food for the daughter was eaten up when the mother said: “I am distressed at your fate, the one having bones that need blood. Here we are following after the bones that have no blood, and have left food and meat.” When they woke up the next morning they saw food, meat and other articles such as kapas, skirts and various other things. All these things had been brought by the spirit of Pumaia from Waikiki. In that one night the spirit had traveled over the whole district. This was carried on for several nights and the food and animals, the fish in the ponds and the growing food were brought to the cave. The spirit of Pumaia kept up these raids until at last it began to raid Kualii’s own lands. All the different properties were taken, even the canoes, mats, war helmets, feather capes, calabashes, water gourds and various other things of the house and the land. At night, while the people were asleep, Pumaia’s spirit would enter the house, carry out the sleepers and then empty the house of their valuables. Upon waking up in the morning the people would find themselves out of doors and their houses robbed of all the things of value; even the growing crops in the field were stolen by Pumaia’s spirit. By these raids the wife and daughter were able to have all they wanted and far more than their needs. One day the wife sighed and said: “Yes, we have all we need, but there is one thing lacking, we have no servant to do our work for us.” When Pumaia’s spirit heard this, it went off and brought back a servant for the wife and daughter.

Kualii in the meantime was being puzzled and often asked who this unknown thief could be. A priest who was living with him at the time then told Kualii who the thief was in the following manner: “This thief is no other person than your enemy Pumaia; his body is dead, but his spirit is at large and is much stronger than when the body was alive. You will soon be killed; if you act rightly you will then be saved.” “What must I do to be saved?” asked Kualii. The priest replied: “You must build three houses; one house for the wife and daughter; one house for the property and servants; and one house for the bones of Pumaia. After the houses are completed go and bring your enemy back and take good care of his bones; he may then take compassion

⁸ Illustrative of the ancient custom of hiding dead bodies, despite hardships and difficulties.

⁹ *Mikiai*, the term for the last fingerful of poi from the calabash.

on you and you will then be saved.” Kualii then consented to do all the things advised by the priest.

While this conversation was being carried between the priest and Kualii, Pumaia was amused as he heard the advice of the priest and the consent given by Kualii. He then advised his wife and daughter to return to the shore. The wife in obedience to the instructions made ready for their return. While on their way back to the old home they met Kualii’s men who had been sent to bring them to the king. Upon their arrival at the king’s house, they found everything prepared for their reception and they lived with the king ever after this.

APPENDIX C: LCA 387 DOCUMENTATION

Original and transcribed LCA 387 documentation was downloaded from AVA Konohiki (www.avakonohiki.org). The transcriptions were accomplished by AVA Konohiki staff and volunteers.

510

Cl. N. 387. Part 1 of Honolulu Claims of Sandwich
Islands Mission
Oahu Part 1. Honolulu Sec. 1

This is a claim made by the "Sandwich Isl^d Mission" on behalf of the American Board of Commissioners for Foreign Missions, to a house lot situated in Honolulu, Island of Oahu, and now occupied by Henry Demond.

From the Evidence submitted to the Commission, upon this claim, it appears, that this lot was originally given to the Rev^d W^m Ellis of the London Missionary Society - A. D. 1823, by Karamoku; that Mr. Ellis built upon and occupied the same for a few months, and then left the Islands; that some four or five years after his departure, the L. M. Society through Mr. Ellis, relinquished all their rights in this lot, in favor of the present claimants; and that the "Sandwich Islands Mission" have been in the quiet possession of the same ever since the departure of Mr. Ellis.

It further appears, that the whole district of Kawaiakoo, of which this lot is a part was given to the "Sandwich Islands Mission", not in fee simple, but for the use of said mission, so long as they pursue the object for which they came here, and for which the lands were given, namely, the Christianizing of the Hawaiian Nation.

The Commission therefore, view this title as a feehold contingent upon the existence and pursuits of the Sandwich Islands Mission: that is to say, so long as the aforesaid mission continues to exist, and labor to promote the Christian faith they profess, so long this land shall be theirs to possess in peace and quiet. But if they should cease to exist, or to pursue the objects of their profession, that then the land will revert to the King and Chiefs who gave it; or in other words, to the "Sandwich Islands Government." The Commission adopt the view expressed by Mr. Levi Chamberlain, in giving his evidence in

relation to the nature of the Mission claims: namely, that it would be a breach of good faith for the Mission to lease, sell, or otherwise dispose, of this, or any other Mission lands, without first obtaining the consent of this Government, and that it would be equally a breach of good faith for this Government to dispose of this or any other Mission lands, without the consent of the Mission while they continue their appropriate work.

Holding these views, we do hereby award to the American Board of Commissioners for Foreign Missions the before named lot, according to the metes and bounds set forth in the annexed survey, to have and to hold to them, and their Successors, during the Existence of the "Sandwich Islands Mission." The Commission view this Award, as parallel to an award of a freehold or fee simple in land to an Individual.

"Notes of the lot occupied by Mr. Semons"
 "Commencing at corner of Church and Kawaiahao St. at South corner of this lot; and running N. 11° 45' E. 1 Ch. 38 $\frac{3}{2}$ ft. along Kawaiahao St. to lot claimed by Chut Wanaia at East corner of this. Thence N. 53° W. 1 Ch. 56 $\frac{7}{2}$ ft. along Wanaia's to slight angle. Thence N. 50° 45' W. 25 $\frac{3}{2}$ ft. to Mauna N. corner of this. Thence S. 41° W. 2 Ch. 8 $\frac{3}{2}$ ft. always along Chut Wanaia's land to Church St. at W. corner of this. Thence S. 67° E. 2 Ch. 22 $\frac{3}{2}$ ft. along Church St. to place of Commencement. Including an area of Sections 501 That cont. Br.
 March 1. 1848.

"For diagram see General Map of Honolulu claims. 1843"
 Costs. Part 1 of No. 387. P. S. Mission Sect - 5"
 Survey by S. Atot-cath
 Commission general charge

5
3
8

Honolulu
 State Kawaiahao
 1 February 1849

William L. Lee
 W. Smith
 W. Kanae
 J. W. Hamakua
 L. L. L.

599

Costs. Adjudication of Cl. No. 197 Henry Wecker

To	Incidental expenses of Commission & Action of Com ^o on 26 May 1847		1
	Citation		1
	Draft deposition of Cl. rec ^d	\$1	50
	Draft testimony reduced & Eng ^d 26 May 47	\$1	75
	Survey by Yellekoff		10
	Exgross & Copy of do	\$2	1 50
	Report of Commission this day rendered on the above claim		5
			<hr/>
			20 25

Wale Kauiwila
7 April 1849

Wm L Lee
J. H. Smith
J. H. Kramm
J. H. Kramm & Co
Lawers

Cl. No. 387 (Sec 2) S. Sandwich Islands Mission
Punahou

This is a claim made by the Sandwich Islands Mission, on behalf of the American Board of Commissioners for foreign Missions, for a certain land situated in the district of Waikiki, Island of Oahu, called "Punahou", and consisting of two distinct pieces: one, known by the name of Punahou proper, and the other, a sea-land, called "Kuhuluares."

From the Evidence submitted to the Board, it appears, that this land was given by Governor Boki about the Year 1829 to William Bingham for the use of the Sandwich Islands Mission, and that the same, with the exception of certain portions occupied by Kaui, Wahineins, and other Natives, has been in the peaceable possession of the said Mission, from the date of such Gift up

600

to the present time.

We consider the Title of the "American Board of Commissioners for Foreign Missions" to "Punahou proper", and to the "Sea land Kukuikuaeo", to be the same in its nature as that set forth in the Award of February 1st 1819 of the Lot now occupied by Henry Simond, and designated as Claim "N^o 384 - part of Honolulu Claims".

We do therefore award to the "American Board of Commissioners for Foreign Missions" the aforesaid lands of "Punahou proper" and "Kukuikuaeo"; with the exception of those portions occupied by Natives: - to have and to hold to them, and to their Successors, during the existence of the "Sandwich Island Mission": - that is to say - so long as the "Sandwich Islands Mission" shall continue to exist, and labor to promote the Christian faith they profess. But if they should cease to exist, or to pursue the object of their profession, these lands will then revert to the Sandwich Islands Government.

The above Award, however, is made upon the express understanding, that if the "American Board of Commissioners for Foreign Missions" shall desire to lease, ~~sell~~, or otherwise dispose of these lands, or any portion thereof, they shall be at liberty to do so, by first obtaining the consent of the Sandwich Island Government, to such lease, sale, or other disposition.

The correct metes and bounds of the above awarded lands, are contained in the following surveys, made by T. Metcalf on the 6th and 9th days of May 1818.

"Notes of Survey of Punahou premises"
"Commencing at Mauka N. corner of enclosed

601

premises by Road leading to Manoa valley - and running S. 20° W. 1 Ch. $5\frac{3}{4}$ ft. along wall to slight angle. thence S. 35° W. 15 Ch. $26\frac{1}{2}$ ft. along Road to W. corner of enclosed Premises. thence S. 26° W. $16\frac{3}{4}$ Ch. along Road to makai W. Corner of this land. ($9\frac{3}{4}$ Ch. on to new Road) thence S. $63^{\circ} 15'$ E. 22 Ch. 29 ft. along Pausa to Stake, at makai S. corner of this land. thence N. $58^{\circ} 45'$ E. 7 Ch. $8\frac{1}{2}$ ft. along Keauhau to Rock marked + angle. thence N. $64^{\circ} 45'$ E. 26 Ch. 47 ft. along Halepaha to Rock marked + on stoney rise - angle. Thence N. 55° E. 11 Ch. $59\frac{1}{2}$ ft. along Piliipili to pile of stones by path - angle. thence N. $15^{\circ} 30'$ E. $6\frac{1}{2}$ Ch. along Piliipili to Rock on makai side of stone wall by Path N. $1^{\circ} 15'$ W. 7 Ch. $54\frac{1}{2}$ ft. to E. angle of this lot. thence N. $37^{\circ} 45'$ W. 13 Ch. $13\frac{1}{2}$ ft. along Mauka side of this land to Wastele Path - angle. thence N. $37^{\circ} 15'$ W. 9 Ch. $19\frac{1}{2}$ ft. to stake at intersection of Roads leading up Manoa valley. thence N. 27° W. 20 Ch. 13 ft. to point on Pulumala - the mauka N. corner of this land - then direct down Malakaa to place of commencement. Including an area of Acres $22\frac{1}{100}$

May 6. 1848. J. Metcalf Per.

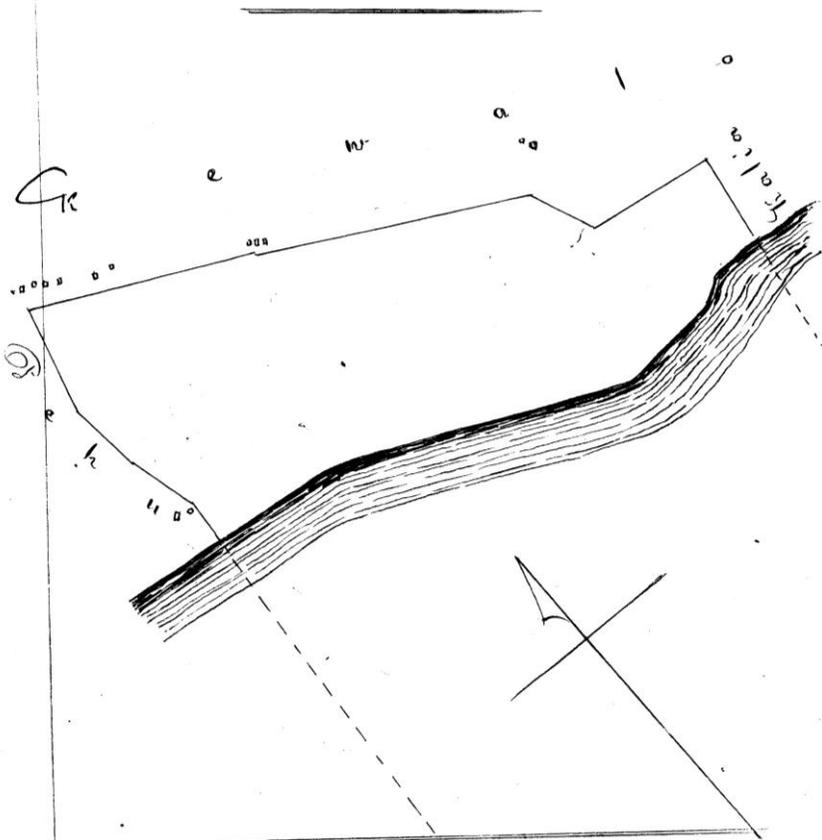
See diagram Page 603.

"Notes of Survey of 'Kukuluao' the sea-land belonging to Punahou"

"Commencing at buried Stone at Mauka N. corner of this land - joining 'Kewalo' on Mauka and Pehu on N. W. side, and running S. 16° W. 8 Ch. 41 ft. along Pehu to angle - thence S. $5^{\circ} 45'$ E. 5 Ch. $19\frac{1}{2}$ ft. along and to E. corner of large fish Pond, thence S. $12^{\circ} 15'$ E. 6 Ch. $23\frac{1}{2}$ ft. to E. corner of Lagoka's house angle - thence S. $5^{\circ} 45'$ W. $2\frac{3}{4}$ Ch. to, and indefinitely into Sea. Then from point of commencement and running S. $61^{\circ} 45'$ E. 17 Ch. $19\frac{1}{2}$ ft. along Kewalo to post in front of Onewa's house - angle. thence S. 60° E. 21 Ch. $6\frac{1}{2}$ ft. along Kewalo to angle (about 4 Ch. makai of Samuel Toddy's house) thence S. 21° E.

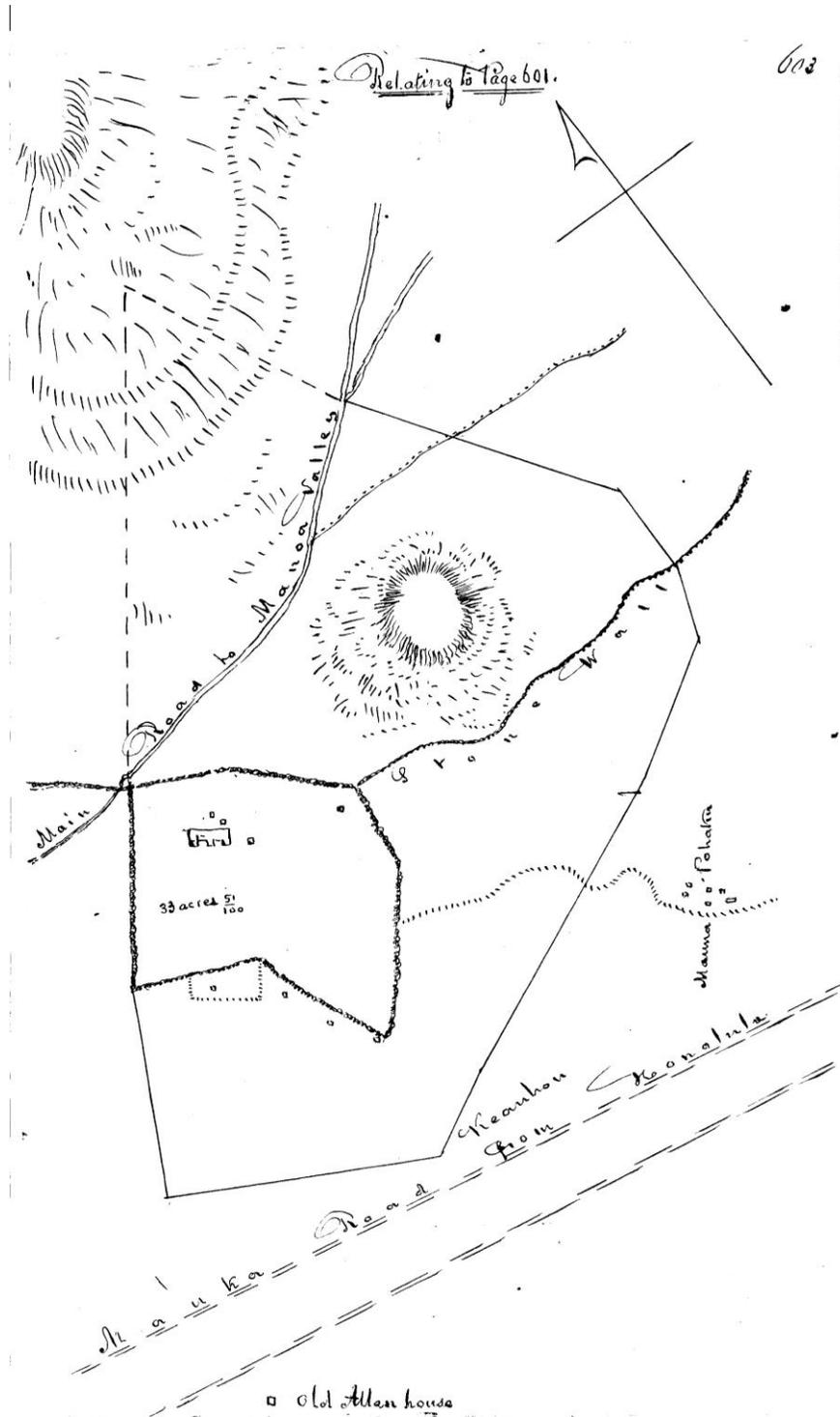
602

5 1/2 Ch. along Keowale to angle - thence S. 81° E.
 9 Ch. 59 5/2 Ft. along Keowale to Maunua E. corner
 of this Land - thence S. 11° W. 7 Ch. 9 3/2 Ft.
 along land called Kalia, to, and Indefinitely
 into Sea - Containing an Area of dry land of
 Acres 77
 J. Metcalf Sur.
 May 9 1848.



Costs Part 2 of No 387. P. J. Mission Dr
 To Bill of Survey of J. Metcalf
 Commission Wm L. Lee
 J. H. Smith
 P. Kaunwai
 M. C. am Kau
 J. amaki
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Kale Kaniwela
 7 April 1849



This is a claim made by the “Sandwich Isl^d Mission.” on behalf of the American Board of Commissioners for foreign Missions, to a house lot situated in Honolulu [Honolulu] Island of Oahu, and now occupied by Henry Dimond.

From the Evidence submitted to the Commission, upon this claim, it appears, that this lot was originally [originally] given to the Rev^d W^m Ellis of the London Missionary Society AD 1823 by Karaimoku [Kalanimoku]: that M^r Ellis build upon and occupied the same for a few months and then left the islands, that some four or five years after his departure, the L.M. Society through M^r Ellis, relinquished all their Rights in this lot in favor of the present Claimants and that the Sandwich Islands Mission have been in the quiet possession of the same ever since the departure of M^r Ellis.

It further appears that the whole district of Kawaiahae of which this lot is a part was given to the “Sandwich Islands Mission” not in fee simple, but for the use of said Mission, so long as they pursued the object for which they came here and for which the lands were given, namely, the Christianizing of the Hawaiian Nation.

The commission therefore view this title as a freehold contingent upon the Existence and pursuits of the “Sandwich [Sandwich] Islands Mission” that is to say, so long as the aforesaid Mission continues to exist and labor to promote the Christian faith they profess, so long this land shall be theirs to possess in peace and quiet. But if they should cease to exist or to pursue the object of their profession, that then the land will revert to the King and Chiefs who gave it or in other words to the “Sandwich Islands Government [Government]. The commission adopt the view expressed by Mr. Levi Chamberlain, in giving his evidence in

relation to the nature of the Mission claims: namely, that it would be a breach of good faith for the Mission to lease, sell, or otherwise dispose of this, or any other mission lands, without first obtaining the consent of this Government [Government], and that it would be equally a breach of good faith for this Government to dispose of this or any other Mission lands, without the consent of the Mission while they continue their appropriate work.

holding these views, we do hereby award to the American board of Commissioners for foreign missions the before named lot, according to the metes and bounds set forth in the annexed survey, to have and to hold to them, and their Successors, during the Existence of the "Sandwich Islands Mission." The Commission view this award as parallel to an award of a freehold or life estate in land to an Individual.

"Notes of the lot occupied by M^r Dimond"
 "Commencing at corner of Church and Kawaiahao St. at South corner of this lot, and running N. 41° 45' E. 1 Ch. 38 3/12 ft. along Kawaiahao St. to lot claimed by Chas Kanaina at East corner of this. Thence N. 53° W. 1 Ch. 56 7/12 ft. along Kanaina's to slight angle. Thence N. 50° 45' W. 25 8/12 ft. to mauka N. corner of this. Thence S. 41° W. 2 Ch. 8 3/12 ft. always along Chas Kanaina's land to Church St. at W. corner of this. Thence S. 67° E 2 Ch. 22 2/12 ft. along Church St. to place of Commencement. Including an area of Fathoms 504 T. Metcalf Sur.

March 1. 1848

"for diagram see General map of Honolulu claims. Page 139 V3

Costs. Part 1 of N^o 387 S.I. Mission Sect. D^r

Honolulu Hale Kauwila 1 February 1849	Survey by T. Metcalf	5	
	Commission general charge	3	
		8	
	William L. Lee		
	J.H. Smith		
	Z. Kaauwai		
	S.M. Kamakau		
	Ioane Ii		

Costs Adjudication of Cl. N ^o . 197 Henry Weeks		
To Incidental expences [expenses] of Commission [?]	D ^r	1
Action of Com ⁿ . on 26 May 1847		1
Citation		50
draft deposition of Cl. red ^d	f1	50
draft testimony Reduced of Eng ^d 26 May	f1	75
Survey by T. Metcalf		10
Engross ^o copy of do	f3	1 50
Report of Commission this day rendered on the above Claim.		5
	\$	20 25

Hale Kauwila
7 April 1849

Wm. L. Lee
J.H. Smith
Z. Kaauwai
S.M. Kamakau
Ioane Ii

Cl. No 387 (Sec 2) P. Sandwich Islands Mission

Punahou

This is a claim made by the P. Sandwich Islands Mission, on behalf of the American Board of Commissioners for foreign affairs Missions, for a certain land situated in the district of Waikiki, Island of Oahu, called Punahou, and consisting of two distinct pieces: one, known by the name of Punahou [Punahou] proper, and the other, sea-land, called "Kukuluaeo."

From the evidence submitted to the Board, it appears, that this land was given by Governor Boki about the Year 1829 to Hiram Bingham for the use of the Sandwich Islands Mission, and that the same, with the exception of certain portions [portions] occupied by Kauhi, Wahineino, and other Natives, has been in the peaceable possessions of the said Mission, from the date of such gift up

600

to the present time.

We consider the title of the "American Board of Commissioners for Foreign Missions" to "Punahou proper"; and to the Sea land "Kukuluaeo", to be the same in its nature as that set forth in the Award of February 1st 1849 of the Lot now occupied by Henry Dimond, and designated as Claim "No. 387 part of Honolulu Claims."

We do therefore Award to the "American Board of Commissioners for foreign Missions" the aforesaid lands of "Punahou proper" and "Kukuluaeo"; with the exception of whose portions occupied by Natives: _ to have and to hold to them, and to their Successor, during the existence of the " Sandwich Islands Missions": _ that is to say _ so long as the "Sandwich Islands Mission" shall continue to exist, and labor to promote the Christian faith they profess. But if they should cease to exist, or pursue the object of their profession, these lands will then revert to the Sandwich Islands Government.

The above Award, however, is made upon the express understanding, that if the "American Board of Commissioners for foreign Missions", shall desire to lease, on otherwise [otherwise] dispose of these lands, on any portion thereof, they shall be at liberty to do so, by first obtaining the consent of the Sandwich Island Government, to such lease, sale, or other disposition.

The correct mete and bounds of the above awarded lands, are contained in the following [following] surveys, made by T. Metcalf on the 6th and 9th days of May 1848.

"Notes of Survey of Punahou premises"

"Commencing at Mauka N. corner of enclosed

premises by Road leading to Manoa Valley_ and running [running] S. 40°. W. 1 ch. 5 3/12 ft. along wall to slight angle. thence S. 35°. W. 15' ch. 26 4/12 ft. along Road to W. corners of enclosed Premises. thence S. 26° W. 16 3/4 ch. along road to makai W. corner of this land. (9 3/4 on lo new road) thence S. 63° 15' E. 22 Ch. 29 ft. along Pauoa to Stake at makai S. corner of this land. thence N. 58° 45' E. 7 ch. 8 7/12 ft. along Keauhou to Rock marked (x) angle. thence N. 64° 45' E. 26 ch. 47 ft. along Halepaha to Rock marked (x) on stoney [stony] rise_ angle_ Thence N. 55°E. 11 ch. 59 5/12 ft. along Pilipili to pile of stones by path. angle. thence N. 15° 30' E. 6 1/4 ch. along Pilipili to Rock on makai side of stone wall by path N. 1° 15' W. 7 ch. 54 7/12 ft. to E. angle of this lot_ thence N. 37° 45' W. 13 ch. 13 2/12 ft. along Mauka side of this land to Wailele Path_ angle_ thence N. 37° 15' W. 9 Ch. 19 10/12 ft. to stake at intersection of Roads leading up Manoa Valley. thence N. 27° W. 20 ch. 13 ft. to point on Puluuala the mauka N. corner of this land. then direct down Ualakaa to place of commencement. Including an area of Acres 224 68/100 May 6, 1848 T. Metcalf Sur.

[See diagram Page 603]

“Notes of Survey of “Kukuluaeo” the sea-land belonging to Punahou.”

“Commencing at buried stone at Mauka N. corner of this land_ joining “Kewalo” on mauka and Pehu on N.W. side, and running S. 16° W. 8ch. 41 ft. along Pehu to angle_ thence S. 5°. 45' E. 5 ch. 19 10/12 ft. along and to E. corner of large Fish Pond, thence S. 12° 15' E. 6 ch. 23 9/12 ft. to E. corner of Laeoha's house angle_ thence S. 5° 45' W. 2 3/4 ch. to, and indefinitely into Sea. Then from point of commencement and running S. 61° 45' E. 17 ch. 19 10/12 ft. along Kewalo to post in front of Onewa's house- angle thence S. 60° E. 21 ch. 6 7/12 ft. along Kewalo to angle (about 4 ch. makai of Samuel Toddys house) thence S. 21 E.

602

5 ½ ch. along Kewalo to angle_ thence S. 81° E.
9 ch. 59 5/12 ft. along Kewalo to Mauka E. corner
of this land_ thence S. 11° W. 7 ch. 9 3/12 ft.
along land called Kalia, to , and Indefinitely
into Sea_ Containing an Area of dry land of
Acres 77

May 9 1848 T. Metcalf Sur.

[Diagram in Original]
[Text in Diagram: Kewalo, Pehu, Kalia]

Costs Part 2 of N° 387. S. I. Mission

To Bill of Survey of T. Metcalf commission	D ^r	15
		5
	\$	<u>20</u>

Hale Kauwila
7 April 1849

Wm. L. Lee
J.H. Smith
Z. Kaauwai
S.M. Kamakau
Ioane Ii

Relating to Page 601.

[Diagram in Original]

[Text in Diagram: Main Road to Manoa Valley, Stone Wall, 33 acres 51/100, Mama Pohaku, Keauhou, Mauka Road from Honolulu, old Allan house]

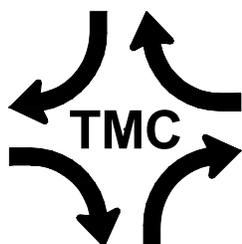


APPENDIX B
TRAFFIC STUDY

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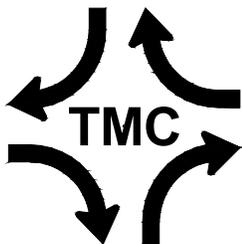
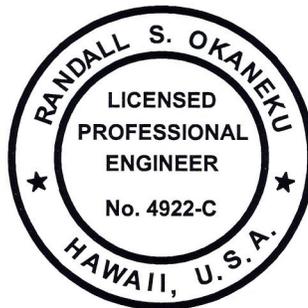
**TRAFFIC ASSESSMENT REPORT
FOR THE PROPOSED
NAPULE RESTAURANT
HONOLULU, HAWAII
TAX MAP KEY: (1) 2-1-058:043**

**PREPARED FOR
BELLAVITA INC.
NOVEMBER 6, 2014**



**PREPARED BY
THE TRAFFIC MANAGEMENT CONSULTANT**

**TRAFFIC ASSESSMENT REPORT
FOR THE PROPOSED
NAPULE RESTAURANT
HONOLULU, HAWAII
TAX MAP KEY: (1) 2-1-058:043**



THE TRAFFIC MANAGEMENT CONSULTANT

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I. Introduction

A. Project Description

Bellavita, Inc. proposes to redevelop the existing charter boat building at Kewalo Basin Harbor into the Napule Restaurant. The existing building will be redeveloped into an Italian restaurant with a building floor area of 6,000 square feet of gross floor area (SFGFA) and outdoor seating, for a total seating capacity of about 260 patrons. The proposed restaurant is expected to be open during the first quarter of the Year 2016.

The project site is identified as Tax Map Key: (1) 2-1-058:043. The proposed restaurant will be located on the mauka-Koko Head (northeast) corner of the Kewalo Basin Harbor parking lot. Existing access is provided on Ala Moana Boulevard by a signalized intersection (East Driveway) immediately to the east of the project site; an exit-only driveway (Middle Driveway) immediately to the west of the project site; and an entry-only driveway (West Driveway), which is located to the east of the intersection of Ala Moana Boulevard and Ward Avenue. The East Driveway is expected to provide the primary access to the proposed restaurant.

The proposed restaurant will require a minimum of 24 parking stalls, which will be allocated in a proposed 250-stall parking structure. The new parking structure is proposed to be constructed as part of the Kewalo Basin Restaurant and Retail Project. The Kewalo Basin Restaurant and Retail Project is proposed at the Koko Head (east) end of the Kewalo Basin Harbor. The East Driveway will provide the primary access for both the Kewalo Basin Restaurant and Retail Project and the Napule Restaurant. Figure 1 depicts the existing site and the proposed Napule Restaurant location. The proposed floor plan is depicted on Figure 2.



Figure 1. Existing Site Plan and Proposed Project Location

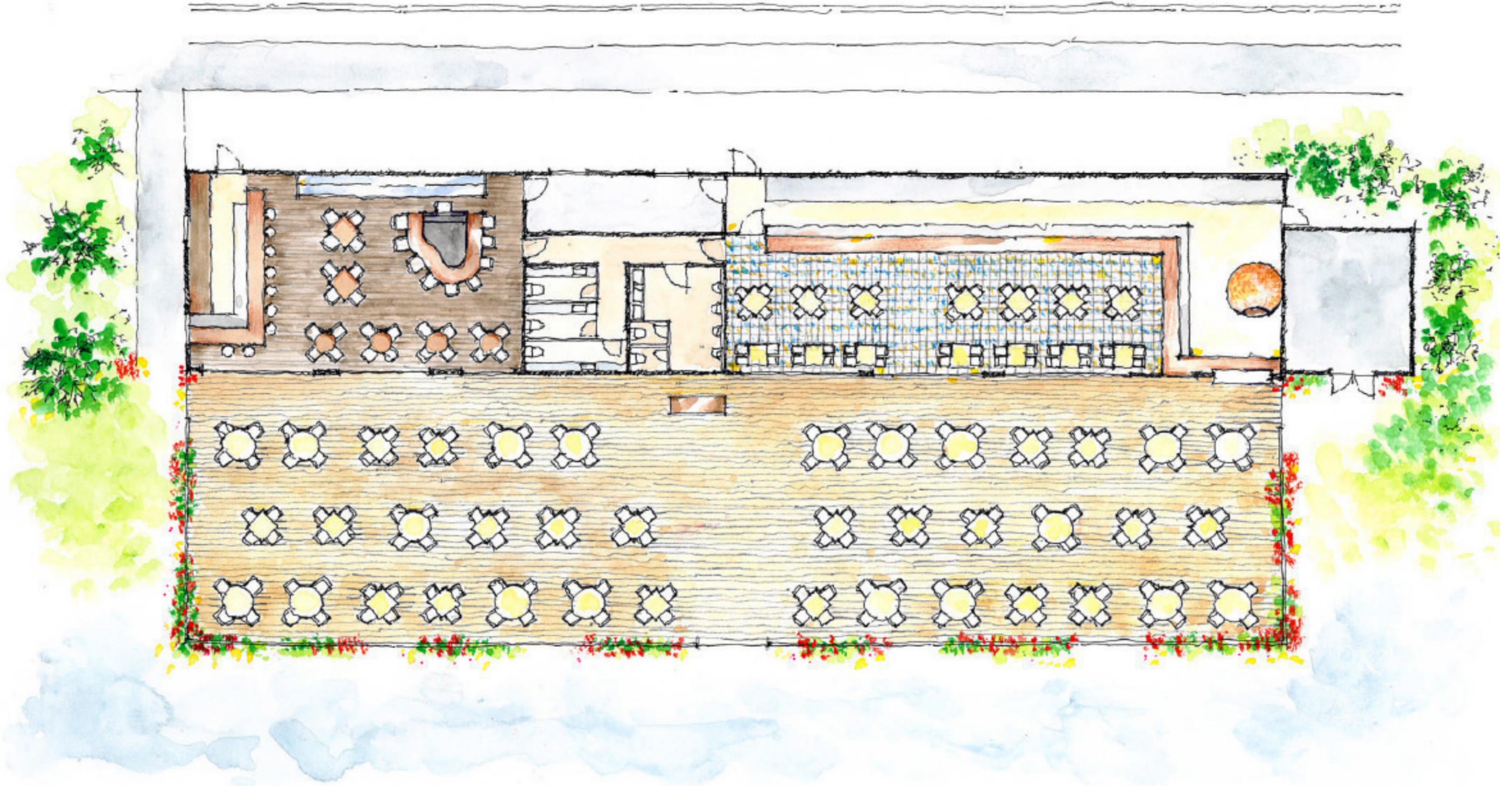


Figure 2. Proposed Project Floor Plan



B. Purpose and Scope of the Study

The purpose of this study is to analyze the traffic impacts resulting from the proposed Napule Restaurant. This report presents the findings and recommendations of the study. The scope of this study includes:

1. An evaluation of the existing roadway and traffic conditions.
2. An analysis of the future traffic conditions without the proposed project.
3. The development of the trip generation characteristics of the proposed project.
4. The identification and analysis of traffic access impacts resulting from the development of the proposed project.
5. The development and evaluation of traffic improvements, which would mitigate the traffic impacts identified in this study.

C. Methodologies

1. Capacity Analysis Methodology

The highway capacity analysis, performed for this study, is based upon procedures presented in the Highway Capacity Manual (HCM), which was published by the Transportation Research Board, 2010. HCM defines the Level of Service (LOS) as "a quality measure describing operational conditions within a traffic stream". Several factors may be included in determining LOS, such as: speed, travel time, freedom to maneuver, traffic interruptions, driver comfort, and convenience. LOS's "A", "B", and "C" are considered satisfactory Levels of Service. LOS "D" is generally considered a "desirable minimum" operating level of service. LOS "E" is an undesirable condition, and LOS "F" is an unacceptable condition. Intersection LOS is primarily based upon average delay per vehicle, which is expressed in seconds per vehicle (sec/veh). Table 1 summarizes the LOS criteria.



Table 1. Intersection Level of Service Criteria (HCM)				
LOS	Signalized Intersections		Unsignalized Intersections	
	Delay d (sec/veh)	Description	Delay d (sec/veh)	Description
A	$d \leq 10$	Few stops, little or no delay	$d \leq 10$	Little or no delays
B	$10 < d \leq 20$	Good progression, short cycle lengths	$10 < d \leq 15$	Short delays
C	$20 < d \leq 35$	Cycle failures begin to occur, i.e., vehicles stop at more than one red phase	$15 < d \leq 25$	Average delays
D	$35 < d \leq 55$	Noticeable number of cycle failures, unfavorable progression	$25 < d \leq 35$	Long delays
E	$55 < d \leq 80$	Frequent cycle failures, poor progression, long delays	$35 < d \leq 50$	Very long delays
F	$d > 80$	Over saturation, many cycle failures, high delays	$d > 50$	Extreme delays

Worksheets for the capacity analysis, performed throughout this report, are compiled in the Appendix.

2. Trip Generation Methodology

The trip generation methodology is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in Trip Generation, 8th Edition, 2008. ITE trip rates are developed by correlating the vehicle trip generation data with various activity/land use characteristics of a quality restaurant, such as the vehicle trips per hour (vph) per seat.

II. Existing Conditions

A. Roadways

Ala Moana Boulevard is a two-way, six-lane, east-west arterial highway between Downtown Honolulu and Waikiki. Ala Moana Boulevard is signalized at Ward Avenue and at the East Driveway. The posted speed on Ala Moana Boulevard is 35 miles per hour (mph). Exclusive left-turn signal phases and left-turn storage lanes are provided in both directions on Ala Moana Boulevard at Ward Avenue. The Ewa bound left-turn lane also permits the U-turn movement to head in the Koko Head bound direction on Ala Moana Boulevard.



Ward Avenue is a two-way, four-lane, mauka-makai collector street, between Lunalilo Freeway and Ala Moana Boulevard. Ward Avenue is controlled by split traffic signal phases at Ala Moana Boulevard, i.e., the mauka bound and makai bound movements have separate "green" signal phases.

Access to Kewalo Basin Harbor is provided by three driveways on Ala Moana Boulevard. Entering traffic from Koko Head bound Ala Moana Boulevard can turn right at the West Driveway, the Middle Driveway, and at the East Driveway. The left-turn movements from Ewa bound Ala Moana Boulevard are prohibited at the East and Middle Driveways. Ewa bound traffic on Ala Moana Boulevard must make a U-turn at Ward Avenue before turning right at Kewalo Basin Driveways. Egress from the Kewalo Basin Harbor is provided at the Middle and East Driveways in the Koko Head bound direction. Ewa bound traffic, exiting the Kewalo Basin Harbor, can only turn left from the East Driveway. An internal roadway connects all three Kewalo Basin Driveways.

B. Existing Peak Hour Traffic Volumes and Operating Conditions

1. Field Investigation and Data Collection

Turning movement count traffic surveys were conducted at the intersection of Ala Moana Boulevard and Ward Avenue, and at the West Driveway on August 27, 2014, during the PM peak period of traffic – from 3:00 PM to 6:00 PM. Turning movement count traffic surveys also were conducted at the intersection of Ala Moana Boulevard and the East Driveway and at the Middle Driveway on September 11, 2014, during the PM peak period of traffic – from 3:00 PM to 6:00 PM. The vehicular traffic data were separated into light vehicles, buses, and trucks. The traffic surveys also included pedestrian traffic crossing at the intersections. The traffic signal timing and phasing were observed during the field investigation. The PM peak period traffic data are presented in the Appendix.

2. Existing PM Peak Hour Traffic

The PM peak hour of traffic occurred between 4:00 PM and 5:00 PM. During the existing PM peak hour of traffic, Ala Moana Boulevard carried over 3,600 vehicles per hour (vph), total for both directions. The peak direction of traffic on Ala Moana Boulevard was in the Koko Head bound direction (60 percent). The mauka leg of Ward Avenue carried over 1,100 vph, total for both directions. The three Kewalo Basin driveways carried a total of about 170 vph, total for both directions.

The intersection of Ala Moana Boulevard and Ward Avenue operated at an overall LOS "D", during the existing PM peak hour of traffic. The left-turn movements in both directions on Ala Moana Boulevard operated at LOS "F". The left-turn movement on makai bound Ward Avenue and the left-turn/through movement on mauka bound Ward Avenue operated at LOS "E". The intersection of Ala Moana Boulevard and the East Driveway operated at an overall LOS "A". The left-turn and right-turn movements from the East Driveway operated at LOS "E" and LOS "D", respectively. The existing PM peak hour traffic is depicted on Figure 3.

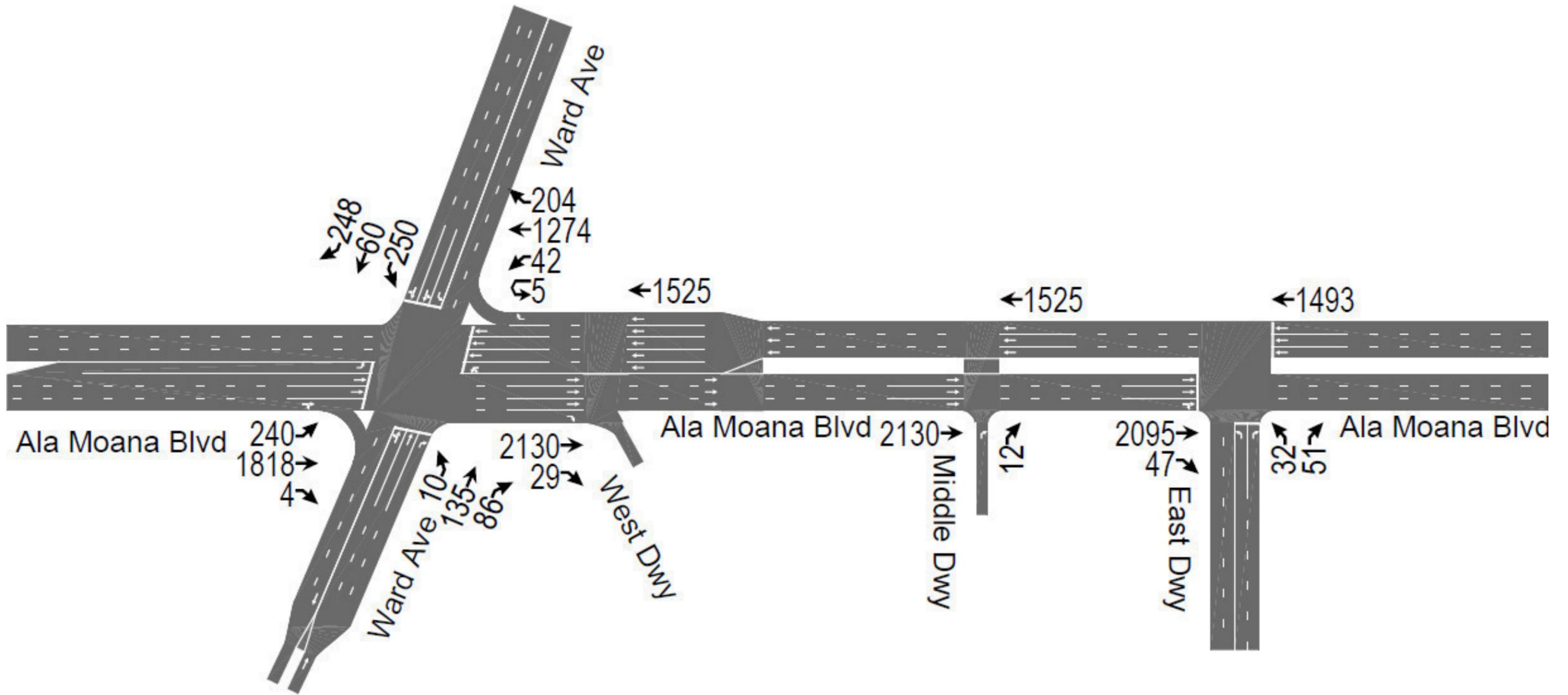


Figure 3. Existing PM Peak Hour Traffic



III. Future Traffic Conditions

A. Background Growth in Traffic

The future PM peak hour traffic is based upon the Year 2030 projected traffic demands on Ala Moana Boulevard, presented in the Transportation Technical Report for the Honolulu High-Capacity Transit Corridor Project, dated August 15, 2008. The background traffic forecast is based upon an interpolation of a straight-line growth pattern for the Year 2016. The purpose of estimating the future peak hour traffic without the proposed project is to establish the baseline conditions from which to measure the project's traffic impacts. Table 2 summarizes the PM peak hour traffic volumes (vph) at the Ward Avenue screenline.

Table 2. PM Peak Hour Volumes on Ala Moana Boulevard at Ward Avenue				
Direction	Base Year	Without Rail Scenario		
	2005	2030	Change	Annual Increase
Ewa Bound	1,650	2,020	22.4%	0.90%
Koko Head Bound	2,120	2,330	9.9%	0.40%
Totals	3,770	4,350	15.4%	0.62%

For the purpose of this analysis, a background growth in traffic of 1.0 percent per year was assumed. A growth factor of 1.02 was uniformly applied to the existing PM peak hour traffic demands to estimate the Year 2016 PM peak hour traffic demands without the proposed project.

B. Other Proposed Projects

1. Kewalo Basin Retail and Restaurant Project

The proposed Kewalo Basin Restaurant and Retail Project will include a total of about 35,000 SFGFA of retail and restaurant spaces and a 250-stall parking structure. The project site is located on the existing 109-stall surface parking lot along the Koko Head boundary of Kewalo Basin Harbor. The transportation impact analysis for the Kewalo project was presented in the Draft Kewalo Basin Restaurant and Retail Project Transportation Impact Analysis Report, prepared by Fehr + Peers, dated October, 2014. The planning horizon for the Kewalo project is the Year 2017. The PM peak hour site traffic assignment on Ala Moana Boulevard, which was developed in the Kewalo project traffic study, was added to the background growth in traffic for this traffic assessment.



2. Victoria Ward Development Phase 1A

Victoria Ward, Ltd. is proposing to redevelop three parcels as part of Phase 1A of the Victoria Ward Master Plan. "Block C" is the former surface parking lot across the Ward Theaters, bounded by Auahi Street, Kamakee Street, Ala Moana Boulevard and Ward Warehouse. "Block K" is the former Pier 1 Imports, which was located on the northeast corner of the intersection of Kamakee Street and Auahi Street. "Block O" is located on the northwest corner of the intersection of Ward Avenue and Halekauwila Street. The three parcels are proposed to be redeveloped into at total of 810 multi-family dwelling units, and 110,000 SFGFA of commercial/retail space.

The traffic impact analysis for the first phase of the Victoria Ward Master Plan was presented in the Traffic Impact Report for the Victoria Ward Development Phase 1A (VW Phase 1A), prepared by Wilson Okamoto Corporation, dated October, 2012. The planning horizon for the VW Phase 1A is the Year 2016. The PM peak hour site traffic assignment on Ala Moana Boulevard, which was developed in the VW Phase 1A traffic study, was added to the background growth in traffic for this traffic assessment.

3. Vida at 888 Ala Moana

Vida at 888 Ala Moana is a proposed 265-unit multi-family residential project, which is planned to include about 20,000 SFGFA of commercial space. The project site is located on the mauka side of Ala Moana Boulevard, and is bounded by Ala Moana Boulevard, Koula Street, and Auahi Street.

The traffic impact analysis for the Vida project was presented in the Traffic Impact Report for Vida at 888 Ala Moana, prepared by Wilson Okamoto Corporation, dated June, 2014. The planning horizon for the Vida project is the Year 2017. The PM peak hour site traffic assignment on Ala Moana Boulevard, which was developed in the Vida traffic study, was added to the background growth in traffic for this traffic assessment.

C. Year 2016 PM Peak Hour Traffic Analysis Without Project

During the PM peak hour of traffic without the proposed project, the intersection of Ala Moana Boulevard and Ward Avenue is expected to continue to operate at LOS "D". The left-turn movements in both directions on Ala Moana Boulevard and on makai bound Ward Avenue are expected to operate at LOS "F". The through movements on Ala Moana Boulevard are expected to operate at LOS "D" and LOS "E" in the Koko Head bound and Ewa bound directions, respectively. The left-turn/through movement on mauka bound Ward Avenue is expected to continue to operate at LOS "E".

The intersection of Ala Moana Boulevard and the East Driveway is expected to continue to operate at LOS "A", during the PM peak hour of traffic without the proposed project. The left-turn and right turn movements from the East Driveway are expected to operate at LOS "E" at Ala Moana Boulevard. Figure 4 depicts the PM peak hour traffic without the proposed project.

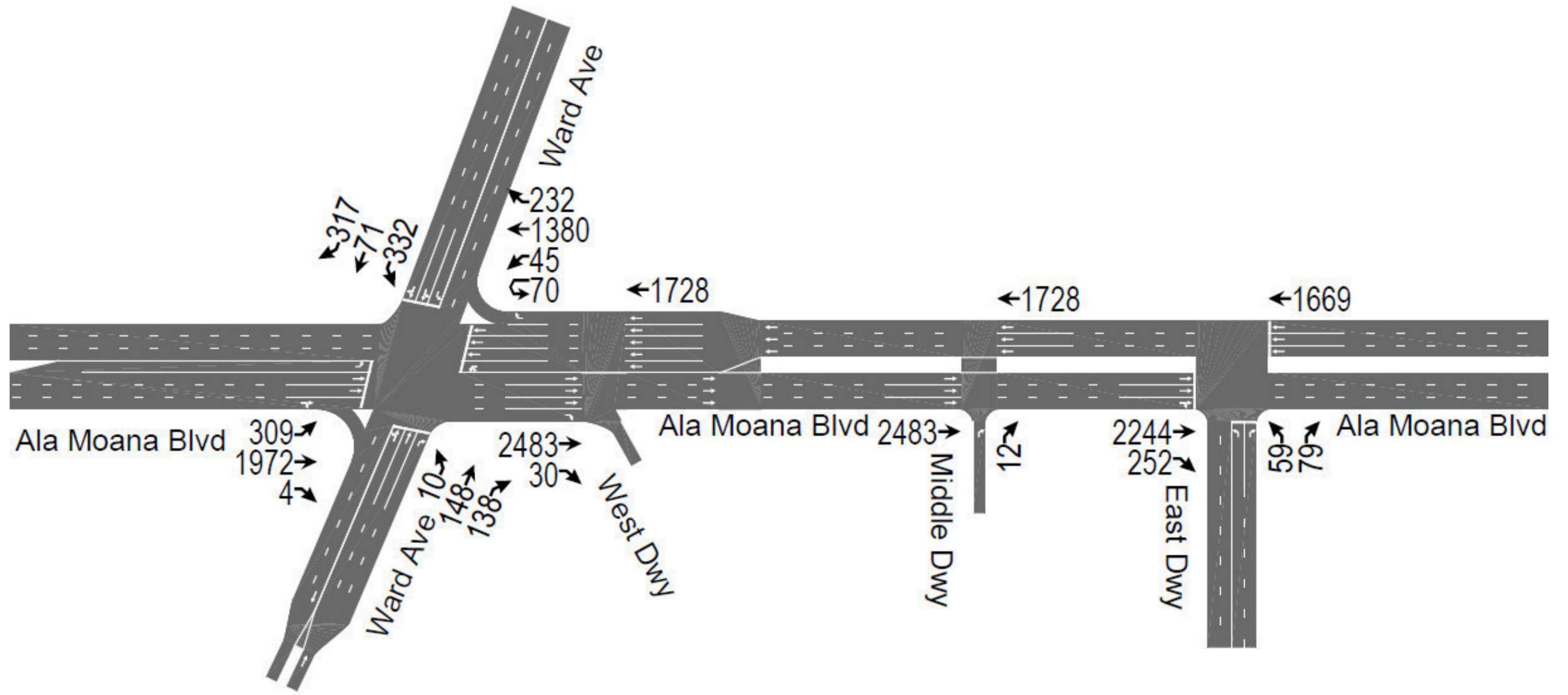


Figure 4. PM Peak Hour Traffic Without Project



IV. Traffic Impact Analysis

A. Trip Generation Characteristics

Table 3 summarizes the ITE trip generation characteristics for a quality restaurant (ITE Land Use Code 931).

Table 3. Trip Generation Summary						
Quality Restaurant (260 Seats)	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Trip Rate (vph/seat)	0.02	0.01	0.03	0.17	0.09	0.26
Trips (vph)	5	3	8	45	22	67

The AM peak hour trip generation from the proposed project is not expected to be significant, i.e., less than 0.5 percent of the existing AM peak hour traffic on Ala Moana Boulevard. Therefore, this traffic assessment will only analyze the PM peak hour traffic. Furthermore, since the PM peak hour trip generation represents less than 2 percent of the existing PM peak hour traffic, the traffic impact analysis will be limited to Ala Moana Boulevard between Ward Avenue and the East Driveway.

The traffic assignment for the project's trip generation is based upon the existing traffic circulation patterns. Figure 5 depicts the PM peak hour site traffic assignment (vph).

B. PM Peak Hour Traffic Impact Analysis With Project

The intersection of Ala Moana Boulevard and Ward Avenue is expected to operate at an overall LOS "E", during the PM peak hour of traffic with the proposed project. The through movement on Koko Head bound Ala Moana Boulevard is expected to operate at LOS "E". The LOS "E" conditions on Koko Head bound Ala Moana Boulevard are a result of the increase in traffic demand on the U-turn movement on Ewa bound Ala Moana Boulevard, which will require an increase in "green time" on the left-turn signal phase, and a corresponding reduction in "green time" on the opposing Koko Head bound through signal phase. The other traffic movements are expected to operate at the same Levels of Service as during the PM peak hour of traffic without the proposed project.

During the PM peak hour of traffic with the proposed project, the intersection of Ala Moana Boulevard and the East Driveway is expected to operate at an overall LOS "B". The traffic movements at the intersection are expected to operate at the same Levels of Service as during the PM peak hour of traffic without the proposed project. The PM peak hour traffic with the proposed project is depicted on Figure 6.

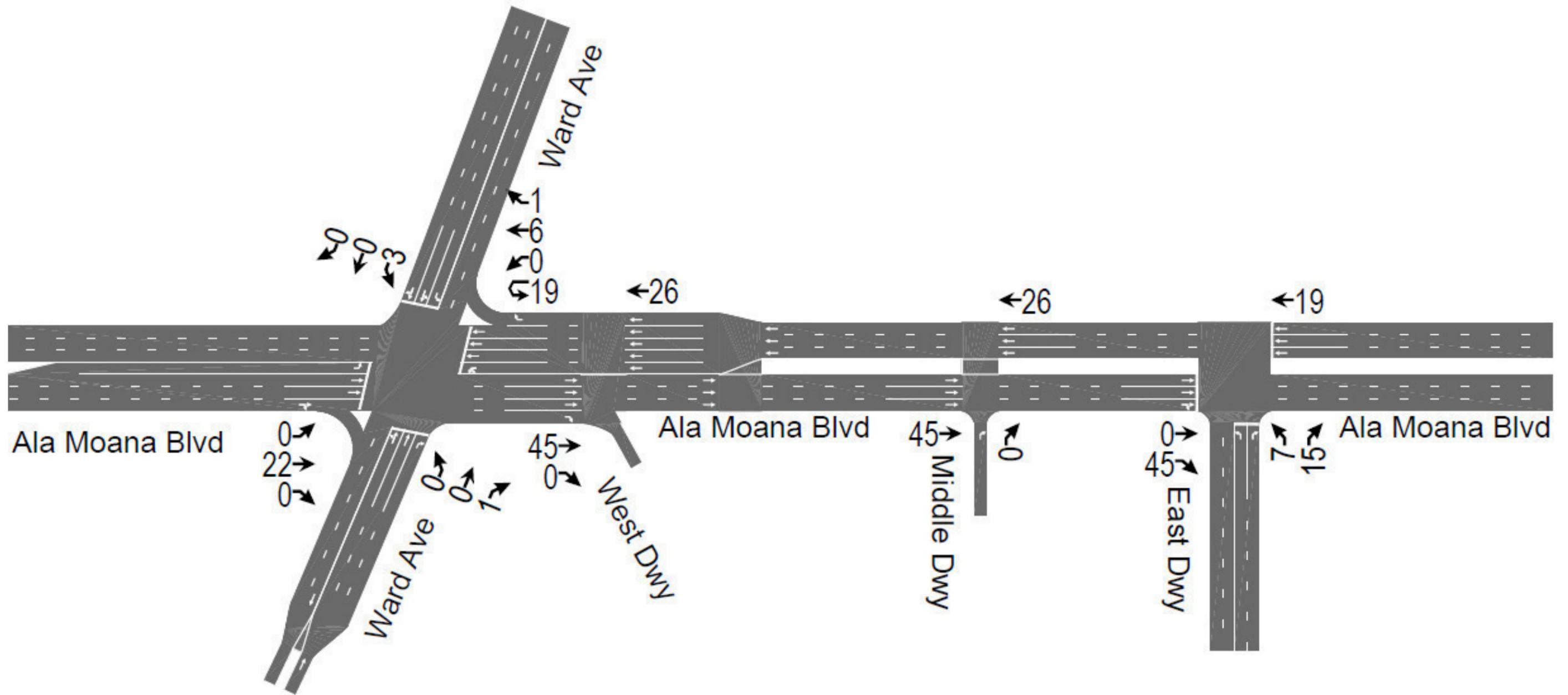


Figure 5. PM Peak Hour Site Traffic Assignment

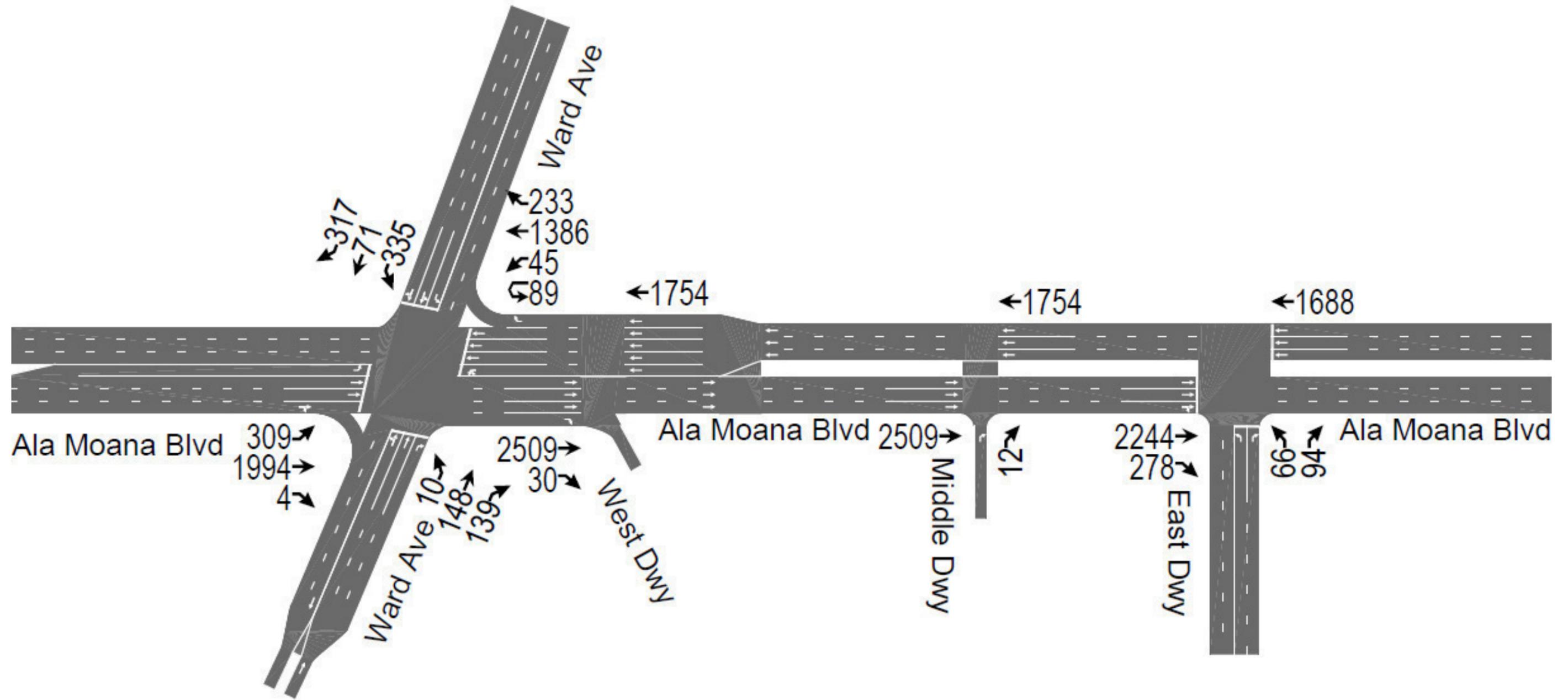


Figure 6. PM Peak Hour Traffic With Project



V. Conclusions

Direct ingress to Kewalo Basin Harbor from the Ewa bound direction on Ala Moana Boulevard is prohibited. Ewa bound traffic must make a U-turn at Ward Avenue to enter the Kewalo Basin Driveways from Koko Head bound direction. The left-turn restriction at the East Driveway is due to its proximity with the Kamakee Street/Ala Moana Park Drive intersection. The closely spaced intersections limit the left-turn storage lengths available between the Koko Head bound direction at Kamakee Street and the Ewa bound direction at the East Driveway. As result, the increase in Ewa bound traffic, entering any new development at the Kewalo Basin Harbor, can be expected to impact the intersection of Ala Moana Boulevard and Ward Avenue.

Consideration should be given to modifying the traffic signal phasing at the intersection of Ala Moana Boulevard and Ward Avenue to mitigate the traffic impacts of the new development at Kewalo Basin Harbor. The traffic signal phasing should be modified from the existing split-phase operation on Ward Avenue to a more efficient 8-phase operation, with separate left-turn phases in both directions on Ward Avenue, followed by the through phases. The PM peak hour analysis of an 8-phase signal operation at the intersection of Ala Moana Boulevard and Ward Avenue is included in the Appendix.

Table 4 summarizes the capacity analysis for the Ala Moana Boulevard intersections at Ward Avenue and at the East Driveway in terms of the measures of effectiveness (MOE): Level of Service (LOS), delay (seconds per vehicle), and volume-to-capacity ratio (v/c).

The proposed Napule Restaurant is expected to increase the PM peak hour traffic at the Ward Avenue and at the East Driveway intersections on Ala Moana Boulevard by 1.0 percent and 2.0 percent, respectively.



Table 4. Summary of Capacity Analysis

Scenario	Intersection	MOE	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Intersection	
Existing PM Peak Hour	Ward Ave & Ala Moana Blvd	LOS	F	C		F	D	B	E		A	E	C		Intersection LOS: D	
		Delay	80.3	32.4		105.7	44.2	10.9	58.0		4.7	79.0	20.4		Intersection Signal Delay: 39.6	
		v/c	0.85	0.78		0.66	0.78	0.32	0.39		0.33	0.80	0.57		Maximum v/c Ratio: 0.85	
	Kewalo East Dwy & Ala Moana Blvd	LOS	N/A	A			A		E	N/A		D	N/A		Intersection LOS: A	
		Delay	N/A	4.5			3.5		75.3	N/A		47.3	N/A		Intersection Signal Delay: 5.3	
		v/c	N/A	0.56			0.40		0.26	N/A		0.39	N/A		Maximum v/c Ratio: 0.56	
PM Peak Hour Without Project	Ward Ave & Ala Moana Blvd	LOS	F	D		F	E	B	E		B	F	C		Intersection LOS: D	
		Delay	100.3	51.5		126.9	57.1	13.5	60.3		16.7	90.6	23.4		Intersection Signal Delay: 54.7	
		v/c	0.98	0.97		0.93	0.93	0.39	0.42		0.53	0.91	0.63		Maximum v/c Ratio: 0.98	
	Kewalo East Dwy & Ala Moana Blvd	LOS	N/A	A			A		E	N/A		E	N/A		Intersection LOS: A	
		Delay	N/A	8.8			5.9		68.7	N/A		59.4	N/A		Intersection Signal Delay: 9.4	
		v/c	N/A	0.69			0.47		0.30	N/A		0.43	N/A		Maximum v/c Ratio: 0.69	
PM Peak Hour With Project	Ward Ave & Ala Moana Blvd	LOS	F	E		F	E	B	E		B	F	C		Intersection LOS: E	
		Delay	100.3	57.7		137.9	57.5	13.6	60.3		17.0	90.6	25.0		Intersection Signal Delay: 57.9	
		v/c	0.98	0.99		0.99	0.93	0.39	0.42		0.53	0.91	0.65		Maximum v/c Ratio: 0.99	
	Kewalo East Dwy & Ala Moana Blvd	LOS	N/A	B			A		E	N/A		E	N/A		Intersection LOS: B	
		Delay	N/A	10.7			7.0		65.7	N/A		60.9	N/A		Intersection Signal Delay: 11.2	
		v/c	N/A	0.73			0.48		0.29	N/A		0.45	N/A		Maximum v/c Ratio: 0.73	
	Ward Ave & Ala Moana Blvd (8-Phase Operation)	LOS	F	D		F	D	A	F	E		B	F	D		Intersection LOS: D
		Delay	89.6	40.1		111.3	43.6	9.9	93.0	72.4		13.9	88.0	47.0		Intersection Signal Delay: 48.6
		v/c	0.94	0.90		0.89	0.80	0.35	0.31	0.66		0.49	0.90	0.83		Maximum v/c Ratio: 0.94

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**APPENDIX A
TRAFFIC COUNT DATA**

Study Name Ala Moana Blvd Ward Ave 1500-1800
 Start Date 8/27/2014
 Start Time 3:00 PM

Vehicles

		Koko Head Bound				Ewa Bound				Mauka Bound				Makai Bound				Totals
		Ala Moana Blvd (West Dwy)				(West Dwy) Ala Moana Blvd				Ward Ave (West Dwy)				Ward Ave (West Dwy)				
Start Time	End Time	Left-Turn	Through	Bear Right	Right-Turn	Hard Left	Left-Turn	Through	Right-Turn	Left-Turn	Through	Right-Turn	Hard Right	Left-Turn	Bear Left	Through	Right-Turn	15-min
3:00 PM	3:15 PM	69	405	1	1	1	16	347	44	0	20	9	0	35	3	11	92	1054
3:15 PM	3:30 PM	50	370	4	3	4	14	349	51	3	25	18	3	52	3	19	81	1049
3:30 PM	3:45 PM	67	461	4	2	2	6	382	53	2	22	21	3	41	3	18	64	1151
3:45 PM	4:00 PM	71	377	2	0	7	4	372	43	2	27	14	0	63	1	15	73	1071
4:00 PM	4:15 PM	54	439	4	2	1	7	333	52	1	23	15	0	62	3	20	75	1091
4:15 PM	4:30 PM	62	486	1	1	3	12	329	52	2	28	16	1	49	5	15	48	1110
4:30 PM	4:45 PM	67	401	0	1	0	8	281	42	5	41	28	0	64	5	12	66	1021
4:45 PM	5:00 PM	57	483	4	0	1	15	331	58	2	43	26	0	61	1	13	59	1154
5:00 PM	5:15 PM	54	446	0	0	0	7	273	38	2	27	33	2	64	0	23	72	1041
5:15 PM	5:30 PM	54	406	2	0	0	6	302	57	0	25	35	1	66	0	7	68	1029
5:30 PM	5:45 PM	65	438	0	0	0	19	290	44	4	36	27	0	57	0	12	57	1049
5:45 PM	6:00 PM	72	454	0	0	0	14	266	58	2	18	26	2	60	0	13	62	1047
4:00 PM 5:00 PM		240	1809	9	4	5	42	1274	204	10	135	85	1	236	14	60	248	4376
PHF		0.90	0.93	0.56	0.50	0.42	0.70	0.96	0.88	0.50	0.78	0.76	0.25	0.92	0.70	0.75	0.83	0.95
T		0.4%	3.3%	0.0%	25.0%	20.0%	4.8%	4.9%	1.0%	0.0%	2.2%	8.2%	0.0%	0.8%	0.0%	3.3%	0.4%	

Lights

		Koko Head Bound Ala Moana Blvd				Ewa Bound Ala Moana Blvd				Mauka Bound Ward Ave				Makai Bound Ward Ave			
Start Time	End Time	Left-Turn	Through	Bear Right	Right-Turn	Hard Left	Left-Turn	Through	Right-Turn	Left-Turn	Through	Right-Turn	Hard Right	Left-Turn	Bear Left	Through	Right-Turn
3:00 PM	3:15 PM	68	380	1	1	1	16	327	42	0	19	9	0	35	3	11	92
3:15 PM	3:30 PM	50	350	4	3	4	13	336	51	3	25	17	3	50	3	18	80
3:30 PM	3:45 PM	67	444	4	2	2	5	361	50	2	22	17	3	41	3	18	62
3:45 PM	4:00 PM	71	353	2	0	7	4	355	43	2	27	10	0	63	1	14	72
4:00 PM	4:15 PM	54	425	4	1	0	7	311	51	1	21	12	0	61	3	19	75
4:15 PM	4:30 PM	61	465	1	1	3	12	321	52	2	28	14	1	49	5	15	47
4:30 PM	4:45 PM	67	391	0	1	0	8	272	41	5	40	26	0	63	5	12	66
4:45 PM	5:00 PM	57	469	4	0	1	13	307	58	2	43	26	0	61	1	12	59
5:00 PM	5:15 PM	54	432	0	0	0	6	248	37	2	26	33	2	64	0	22	71
5:15 PM	5:30 PM	53	397	2	0	0	4	290	57	0	25	35	1	66	0	7	68
5:30 PM	5:45 PM	64	426	0	0	0	18	284	42	3	35	26	0	57	0	12	57
5:45 PM	6:00 PM	72	444	0	0	0	12	255	58	2	17	26	2	60	0	13	61
4:00 PM	5:00 PM	239	1750	9	3	4	40	1211	202	10	132	78	1	234	14	58	247

Buses

		Koko Head Bound Ala Moana Blvd				Ewa Bound Ala Moana Blvd				Mauka Bound Ward Ave				Makai Bound Ward Ave			
Start Time	End Time	Left-Turn	Through	Bear Right	Right-Turn	Hard Left	Left-Turn	Through	Right-Turn	Left-Turn	Through	Right-Turn	Hard Right	Left-Turn	Bear Left	Through	Right-Turn
3:00 PM	3:15 PM	0	17	0	0	0	0	9	1	0	0	0	0	0	0	0	0
3:15 PM	3:30 PM	0	14	0	0	0	1	4	0	0	0	1	0	1	0	0	0
3:30 PM	3:45 PM	0	8	0	0	0	1	8	0	0	0	4	0	0	0	0	0
3:45 PM	4:00 PM	0	20	0	0	0	0	12	0	0	0	4	0	0	0	0	0
4:00 PM	4:15 PM	0	10	0	0	1	0	13	1	0	1	2	0	0	0	0	0
4:15 PM	4:30 PM	0	11	0	0	0	0	7	0	0	0	1	0	0	0	0	0
4:30 PM	4:45 PM	0	4	0	0	0	0	7	1	0	0	0	0	1	0	0	0
4:45 PM	5:00 PM	0	10	0	0	0	2	17	0	0	0	0	0	0	0	1	0
5:00 PM	5:15 PM	0	12	0	0	0	0	14	0	0	1	0	0	0	0	1	1
5:15 PM	5:30 PM	0	8	0	0	0	1	4	0	0	0	0	0	0	0	0	0
5:30 PM	5:45 PM	0	7	0	0	0	1	6	2	1	1	1	0	0	0	0	0
5:45 PM	6:00 PM	0	6	0	0	0	2	8	0	0	1	0	0	0	0	0	1
4:00 PM	5:00 PM	0	35	0	0	1	2	44	2	0	1	3	0	1	0	1	0

Study Name Ala Moana Blvd Ward Ave 1500-1800

Trucks

Start Time	End Time	Koko Head Bound Ala Moana Blvd				Ewa Bound Ala Moana Blvd			Mauka Bound Ward Ave			Makai Bound Ward Ave					
		Left-Turn	Through	Bear Right	Right-Turn	Hard Left	Left-Turn	Through	Right-Turn	Left-Turn	Through	Right-Turn	Hard Right	Left-Turn	Bear Left	Through	Right-Turn
3:00 PM	3:15 PM	1	8	0	0	0	0	11	1	0	1	0	0	0	0	0	0
3:15 PM	3:30 PM	0	6	0	0	0	0	9	0	0	0	0	0	1	0	1	1
3:30 PM	3:45 PM	0	9	0	0	0	0	13	3	0	0	0	0	0	0	0	2
3:45 PM	4:00 PM	0	4	0	0	0	0	5	0	0	0	0	0	0	0	1	1
4:00 PM	4:15 PM	0	4	0	1	0	0	9	0	0	1	1	0	1	0	1	0
4:15 PM	4:30 PM	1	10	0	0	0	0	1	0	0	0	1	0	0	0	0	1
4:30 PM	4:45 PM	0	6	0	0	0	0	2	0	0	1	2	0	0	0	0	0
4:45 PM	5:00 PM	0	4	0	0	0	0	7	0	0	0	0	0	0	0	0	0
5:00 PM	5:15 PM	0	2	0	0	0	1	11	1	0	0	0	0	0	0	0	0
5:15 PM	5:30 PM	1	1	0	0	0	1	8	0	0	0	0	0	0	0	0	0
5:30 PM	5:45 PM	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	6:00 PM	0	4	0	0	0	0	3	0	0	0	0	0	0	0	0	0
4:00 PM	5:00 PM	1	24	0	1	0	0	19	0	0	2	4	0	1	0	1	1

Pedestrians

Start Time	End Time	Koko Head Bound Ala Moana Blvd		Ewa Bound Ala Moana Blvd		Mauka Bound Ward Ave		Makai Bound Ward Ave		Mauka-Ewa Bnd Kewalo Dwy		CW = clockwise CCW = counterclockwise
		Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	
3:00 PM	3:15 PM	2	2	6	0	1	2	0	0	0	6	
3:15 PM	3:30 PM	0	2	3	1	2	2	1	1	4	2	
3:30 PM	3:45 PM	2	1	7	0	3	3	2	2	5	8	
3:45 PM	4:00 PM	2	2	6	0	5	2	3	6	3	7	
4:00 PM	4:15 PM	2	3	5	2	7	1	1	5	0	0	
4:15 PM	4:30 PM	3	4	5	5	13	3	5	4	0	0	
4:30 PM	4:45 PM	4	5	7	3	11	3	0	3	0	0	
4:45 PM	5:00 PM	1	7	7	3	10	1	5	5	0	0	
5:00 PM	5:15 PM	5	4	14	1	10	4	1	5	0	0	
5:15 PM	5:30 PM	2	4	2	12	6	1	0	4	0	0	
5:30 PM	5:45 PM	5	2	6	3	4	7	2	4	0	0	
5:45 PM	6:00 PM	0	1	2	2	2	4	1	3	0	0	
4:00 PM	5:00 PM	10	19	24	13	41	8	11	17	0	0	

Study Name Ala Moana Blvd Kewalo E Dwy
Start Date 9/11/2014
Start Time 3:00 PM

Vehicles

Start Time	End Time	Koko Head Bound		Ewa Bound		Mauka Bound		Totals 15-min
		Ala Moana Blvd		Ala Moana Blvd		Kewalo E Dwy		
		Through	Right-Turn	Left-Turn	Through	Left-Turn	Right-Turn	
3:00 PM	3:15 PM	393	5	0	384	5	10	797
3:15 PM	3:30 PM	411	2	0	385	7	3	808
3:30 PM	3:45 PM	458	5	0	366	8	6	843
3:45 PM	4:00 PM	407	9	0	336	5	8	765
4:00 PM	4:15 PM	469	11	0	353	7	12	852
4:15 PM	4:30 PM	520	16	1	405	7	9	958
4:30 PM	4:45 PM	525	7	0	341	11	18	902
4:45 PM	5:00 PM	581	13	0	349	7	12	962
5:00 PM	5:15 PM	482	6	0	337	13	12	850
5:15 PM	5:30 PM	551	10	0	366	2	12	941
5:30 PM	5:45 PM	507	6	0	370	8	5	896
5:45 PM	6:00 PM	456	8	0	329	12	13	818
Confl Peds			26					
4:00 PM	5:00 PM	2095	47	1	1448	32	51	3674
	PHF	0.90	0.73	0.25	0.89	0.73	0.71	0.95
	T	3.2%	0.0%	0.0%	5.7%	0.0%	3.9%	

Lights

Start Time	End Time	Koko Head Bound		Ewa Bound		Mauka Bound	
		Ala Moana Blvd		Ala Moana Blvd		Kewalo E Dwy	
		Through	Right-Turn	Left-Turn	Through	Left-Turn	Right-Turn
3:00 PM	3:15 PM	374	5	0	352	4	10
3:15 PM	3:30 PM	394	2	0	369	7	3
3:30 PM	3:45 PM	441	5	0	347	8	5
3:45 PM	4:00 PM	378	9	0	318	5	8
4:00 PM	4:15 PM	452	11	0	338	7	12
4:15 PM	4:30 PM	511	16	1	386	7	9
4:30 PM	4:45 PM	502	7	0	324	11	16
4:45 PM	5:00 PM	564	13	0	317	7	12
5:00 PM	5:15 PM	471	6	0	313	13	11
5:15 PM	5:30 PM	538	10	0	353	2	12
5:30 PM	5:45 PM	489	6	0	357	8	4
5:45 PM	6:00 PM	446	8	0	314	12	13
4:00 PM	5:00 PM	2029	47	1	1365	32	49

Study Name Ala Moana Blvd Kewalo E Dwy

Buses

Start Time	End Time	Koko Head Bound Ala Moana Blvd		Ewa Bound Ala Moana Blvd		Mauka Bound Kewalo E Dwy		
		Through	Right-Turn	Left-Turn	Through	Left-Turn	Right-Turn	
3:00 PM	3:15 PM	18	0	0	0	14	1	0
3:15 PM	3:30 PM	11	0	0	0	5	0	0
3:30 PM	3:45 PM	13	0	0	0	12	0	1
3:45 PM	4:00 PM	21	0	0	0	12	0	0
4:00 PM	4:15 PM	16	0	0	0	10	0	0
4:15 PM	4:30 PM	7	0	0	0	12	0	0
4:30 PM	4:45 PM	16	0	0	0	10	0	2
4:45 PM	5:00 PM	13	0	0	0	29	0	0
5:00 PM	5:15 PM	5	0	0	0	15	0	0
5:15 PM	5:30 PM	11	0	0	0	10	0	0
5:30 PM	5:45 PM	11	0	0	0	11	0	1
5:45 PM	6:00 PM	5	0	0	0	12	0	0
4:00 PM	5:00 PM	52	0	0	0	61	0	2

Trucks

Start Time	End Time	Koko Head Bound Ala Moana Blvd		Ewa Bound Ala Moana Blvd		Mauka Bound Kewalo E Dwy		
		Through	Right-Turn	Left-Turn	Through	Left-Turn	Right-Turn	
3:00 PM	3:15 PM	1	0	0	0	18	0	0
3:15 PM	3:30 PM	6	0	0	0	11	0	0
3:30 PM	3:45 PM	4	0	0	0	7	0	0
3:45 PM	4:00 PM	8	0	0	0	6	0	0
4:00 PM	4:15 PM	1	0	0	0	5	0	0
4:15 PM	4:30 PM	2	0	0	0	7	0	0
4:30 PM	4:45 PM	7	0	0	0	7	0	0
4:45 PM	5:00 PM	4	0	0	0	3	0	0
5:00 PM	5:15 PM	6	0	0	0	9	0	1
5:15 PM	5:30 PM	2	0	0	0	3	0	0
5:30 PM	5:45 PM	7	0	0	0	2	0	0
5:45 PM	6:00 PM	5	0	0	0	3	0	0
4:00 PM	5:00 PM	14	0	0	0	22	0	0

Pedestrians

Start Time	End Time	Koko Head Bound Ala Moana Blvd		Ewa Bound Ala Moana Blvd		Mauka Bound Kewalo E Dwy		
		Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	
3:00 PM	3:15 PM	0	1	0	0	0	3	0
3:15 PM	3:30 PM	0	0	0	0	0	0	0
3:30 PM	3:45 PM	0	0	0	0	0	3	2
3:45 PM	4:00 PM	0	0	0	0	0	4	2
4:00 PM	4:15 PM	0	0	0	0	0	7	1
4:15 PM	4:30 PM	0	0	0	0	0	4	4
4:30 PM	4:45 PM	0	0	0	0	0	2	2
4:45 PM	5:00 PM	0	0	0	0	0	4	2
5:00 PM	5:15 PM	0	0	0	0	0	9	5
5:15 PM	5:30 PM	0	0	0	0	0	5	0
5:30 PM	5:45 PM	0	0	0	0	1	7	12
5:45 PM	6:00 PM	0	0	0	0	0	4	5
4:00 PM	5:00 PM	0	0	0	0	0	17	9

Study Name Kewalo Middle Dwy Ala Moana Blvd
Start Date 9/11/2014
Start Time 3:00 PM

Vehicles

Start Time	End Time	Koko Head Bound		Ewa Bound		Mauka Bound		Totals 15-min
		Ala Moana Blvd	Ala Moana Blvd	Ala Moana Blvd	Ala Moana Blvd	Kewalo Middle Dwy	Kewalo Middle Dwy	
		Through	Right-Turn	Left-Turn	Through	Left-Turn	Right-Turn	
3:00 PM	3:15 PM	387	0	0	389	0	11	787
3:15 PM	3:30 PM	411	0	0	392	0	2	805
3:30 PM	3:45 PM	462	0	0	374	0	1	837
3:45 PM	4:00 PM	415	0	0	341	0	1	757
4:00 PM	4:15 PM	476	0	0	360	0	4	840
4:15 PM	4:30 PM	532	0	0	412	0	4	948
4:30 PM	4:45 PM	529	0	0	352	0	3	884
4:45 PM	5:00 PM	593	0	0	356	0	1	950
5:00 PM	5:15 PM	488	0	0	350	0	0	838
5:15 PM	5:30 PM	559	0	0	368	0	2	929
5:30 PM	5:45 PM	512	0	0	378	0	1	891
5:45 PM	6:00 PM	463	0	0	341	0	1	805
4:00 PM	5:00 PM	2130	0	0	1480	0	12	3622
	PHF	0.90			0.90		0.75	0.95

**TRAFFIC ASSESSMENT REPORT
FOR THE PROPOSED
NAPULE RESTAURANT
HONOLULU, HAWAII
TAX MAP KEY: (1) 2-1-058:043**

**APPENDIX B
CAPACITY ANALYSIS WORKSHEETS
EXISTING TRAFFIC CONDITIONS**



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Volume (vph)	240	1818	4	5	42	1274	204	10	135	86	250	60	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0		0		0	0		0	300		0
Storage Lanes	1		0		1		1	0		1	1		0
Taper Length (ft)	100				100			100			100		
Satd. Flow (prot)	1728	4866	0	0	1638	4775	1546	0	3412	1446	1572	2816	0
Flt Permitted	0.950				0.950				0.996		0.950	0.992	
Satd. Flow (perm)	1728	4866	0	0	1638	4775	1546	0	3412	1337	1572	2816	0
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)							167			138		261	
Link Speed (mph)		35				35			25			25	
Link Distance (ft)		496				128			376			654	
Travel Time (s)		9.7				2.5			10.3			17.8	
Confl. Peds. (#/hr)										37			29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	3%	25%	20%	5%	5%	1%	0%	2%	8%	1%	3%	1%
Shared Lane Traffic (%)											22%		
Lane Group Flow (vph)	253	1918	0	0	49	1341	215	0	153	91	205	382	0
Turn Type	Prot	NA		Prot	Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	1	6		4	4		8	8	
Permitted Phases							6			4			
Detector Phase	5	2		1	1	6	6	4	4	4	8	8	
Switch Phase													
Minimum Initial (s)	3.0	7.0		3.0	3.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	7.0	33.0		7.0	7.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	
Total Split (s)	31.0	73.0		11.0	11.0	53.0	53.0	33.0	33.0	33.0	33.0	33.0	
Total Split (%)	20.7%	48.7%		7.3%	7.3%	35.3%	35.3%	22.0%	22.0%	22.0%	22.0%	22.0%	



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	5.0		3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	1.0	2.0		1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0			4.0	7.0	7.0		7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?													
Recall Mode	None	Max		None									
Act Effct Green (s)	23.2	66.9			6.9	48.1	48.1		15.6	15.6	22.0	22.0	
Actuated g/C Ratio	0.17	0.50			0.05	0.36	0.36		0.12	0.12	0.16	0.16	
v/c Ratio	0.85	0.79			0.58	0.78	0.33		0.39	0.33	0.80	0.56	
Control Delay	80.1	33.4			93.5	44.6	11.2		58.0	4.7	78.1	20.3	
Queue Delay	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	80.1	33.4			93.5	44.6	11.2		58.0	4.7	78.1	20.3	
LOS	F	C			F	D	B		E	A	E	C	
Approach Delay		38.9				41.6			38.1			40.5	
Approach LOS		D				D			D			D	
Queue Length 50th (ft)	212	501			43	383	28		68	0	185	50	
Queue Length 95th (ft)	#380	699			#115	#534	104		105	11	#338	115	
Internal Link Dist (ft)		416				48			296			574	
Turn Bay Length (ft)	400										300		
Base Capacity (vph)	352	2425			86	1710	660		670	373	308	762	
Starvation Cap Reductn	0	0			0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0			0	0	0		0	0	0	0	
Storage Cap Reductn	0	0			0	0	0		0	0	0	0	
Reduced v/c Ratio	0.72	0.79			0.57	0.78	0.33		0.23	0.24	0.67	0.50	

Intersection Summary

Area Type: Other



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	2095	47	0	1493	32	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4847	0	0	4730	1745	1501
Flt Permitted					0.950	
Satd. Flow (perm)	4847	0	0	4730	1745	1501
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	9					28
Link Speed (mph)	35			35	25	
Link Distance (ft)	405			308	374	
Travel Time (s)	7.9			6.0	10.2	
Confl. Peds. (#/hr)		26				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	0%	0%	6%	0%	4%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2254	0	0	1572	34	54
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	7.0			7.0	7.0	7.0
Minimum Split (s)	23.0			23.0	14.0	14.0
Total Split (s)	141.0			141.0	19.0	19.0
Total Split (%)	88.1%			88.1%	11.9%	11.9%
Yellow Time (s)	5.0			5.0	5.0	5.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.0			7.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	Max	Max
Act Effct Green (s)	134.0			134.0	12.0	12.0
Actuated g/C Ratio	0.84			0.84	0.08	0.08
v/c Ratio	0.56			0.40	0.26	0.39
Control Delay	4.5			3.5	75.3	47.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	4.5			3.5	75.3	47.3
LOS	A			A	E	D
Approach Delay	4.5			3.5	58.1	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach LOS	A			A	E	
Queue Length 50th (ft)	213			119	34	26
Queue Length 95th (ft)	233			134	73	75
Internal Link Dist (ft)	325			228	294	
Turn Bay Length (ft)						
Base Capacity (vph)	4060			3961	130	138
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.56			0.40	0.26	0.39

Intersection Summary

Area Type:	Other
Cycle Length:	160
Actuated Cycle Length:	160
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	5.3
Intersection LOS:	A
Intersection Capacity Utilization	59.1%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 2: Kewalo E Dwy & Ala Moana Blvd



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2130	0	0	1525	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	5	0	25
Mvmt Flow	2242	0	0	1605	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2884
Stage 1	-	-	2242
Stage 2	-	-	642
Critical Hdwy	-	5.3	5.7
Critical Hdwy Stg 1	-	-	6.6
Critical Hdwy Stg 2	-	-	6
Follow-up Hdwy	-	3.1	3.8
Pot Cap-1 Maneuver	-	97	31
Stage 1	-	-	41
Stage 2	-	-	447
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	97	31
Mov Cap-2 Maneuver	-	-	37
Stage 1	-	-	41
Stage 2	-	-	447

Approach	EB	WB	NB
HCM Control Delay, s	0	0	32.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	145	-	-	97	-
HCM Lane V/C Ratio	0.087	-	-	-	-
HCM Control Delay (s)	32.2	-	-	0	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

**TRAFFIC ASSESSMENT REPORT
FOR THE PROPOSED
NAPULE RESTAURANT
HONOLULU, HAWAII
TAX MAP KEY: (1) 2-1-058:043**

**APPENDIX C
CAPACITY ANALYSIS WORKSHEETS
PEAK HOUR TRAFFIC WITHOUT PROJECT**

Napule
1: Ward Ave & Ala Moana Blvd

Lanes, Volumes, Timings
PM Peak Hour Traffic Without Project



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Volume (vph)	309	1972	4	70	45	1380	232	10	148	138	332	71	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0		0		0	0		0	300		0
Storage Lanes	1		0		1		1	0		1	1		0
Taper Length (ft)	100				100			100			100		
Satd. Flow (prot)	1728	4866	0	0	1662	4775	1546	0	3415	1446	1572	2818	0
Flt Permitted	0.950				0.950				0.997		0.950	0.992	
Satd. Flow (perm)	1728	4866	0	0	1662	4775	1546	0	3415	1337	1572	2818	0
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)							175			138		313	
Link Speed (mph)		35				35			25			25	
Link Distance (ft)		496				128			376			654	
Travel Time (s)		9.7				2.5			10.3			17.8	
Confl. Peds. (#/hr)										37			29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	3%	25%	5%	5%	5%	1%	0%	2%	8%	1%	3%	1%
Shared Lane Traffic (%)											24%		
Lane Group Flow (vph)	325	2080	0	0	121	1453	244	0	167	145	265	493	0
Turn Type	Prot	NA		Prot	Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	1	6		4	4		8	8	
Permitted Phases							6			4			
Detector Phase	5	2		1	1	6	6	4	4	4	8	8	
Switch Phase													
Minimum Initial (s)	3.0	7.0		3.0	3.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	7.0	33.0		7.0	7.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	
Total Split (s)	31.0	69.0		15.0	15.0	53.0	53.0	33.0	33.0	33.0	33.0	33.0	
Total Split (%)	20.7%	46.0%		10.0%	10.0%	35.3%	35.3%	22.0%	22.0%	22.0%	22.0%	22.0%	



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	5.0		3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	1.0	2.0		1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0			4.0	7.0	7.0		7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?													
Recall Mode	None	Max		None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	27.1	62.2			11.0	46.1	46.1		16.3	16.3	26.1	26.1	
Actuated g/C Ratio	0.19	0.44			0.08	0.33	0.33		0.12	0.12	0.19	0.19	
v/c Ratio	0.98	0.97			0.93	0.93	0.39		0.42	0.53	0.91	0.63	
Control Delay	100.3	51.5			126.9	57.1	13.5		60.3	16.7	90.6	23.4	
Queue Delay	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	100.3	51.5			126.9	57.1	13.5		60.3	16.7	90.6	23.4	
LOS	F	D			F	E	B		E	B	F	C	
Approach Delay		58.1				55.9			40.0			46.9	
Approach LOS		E				E			D			D	
Queue Length 50th (ft)	286	628			108	446	42		75	6	252	78	
Queue Length 95th (ft)	#543	#889			#260	#632	128		113	71	#490	158	
Internal Link Dist (ft)		416				48			296			574	
Turn Bay Length (ft)	400										300		
Base Capacity (vph)	332	2151			130	1566	624		632	360	291	777	
Starvation Cap Reductn	0	0			0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0			0	0	0		0	0	0	0	
Storage Cap Reductn	0	0			0	0	0		0	0	0	0	
Reduced v/c Ratio	0.98	0.97			0.93	0.93	0.39		0.26	0.40	0.91	0.63	

Intersection Summary

Area Type: Other



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	2244	252	0	1669	59	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4766	0	0	4730	1745	1501
Flt Permitted					0.950	
Satd. Flow (perm)	4766	0	0	4730	1745	1501
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	41					17
Link Speed (mph)	35			35	25	
Link Distance (ft)	405			308	374	
Travel Time (s)	7.9			6.0	10.2	
Confl. Peds. (#/hr)		26				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	0%	0%	6%	0%	4%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2627	0	0	1757	62	83
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	7.0			7.0	7.0	7.0
Minimum Split (s)	23.0			23.0	14.0	14.0
Total Split (s)	134.0			134.0	26.0	26.0
Total Split (%)	83.8%			83.8%	16.3%	16.3%
Yellow Time (s)	5.0			5.0	5.0	5.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.0			7.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	Max	Max
Act Effct Green (s)	127.0			127.0	19.0	19.0
Actuated g/C Ratio	0.79			0.79	0.12	0.12
v/c Ratio	0.69			0.47	0.30	0.43
Control Delay	8.6			5.9	68.7	59.4
Queue Delay	0.2			0.0	0.0	0.0
Total Delay	8.8			5.9	68.7	59.4
LOS	A			A	E	E
Approach Delay	8.8			5.9	63.4	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach LOS	A			A	E	
Queue Length 50th (ft)	394			192	60	65
Queue Length 95th (ft)	429			213	111	125
Internal Link Dist (ft)	325			228	294	
Turn Bay Length (ft)						
Base Capacity (vph)	3791			3754	207	193
Starvation Cap Reductn	376			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.77			0.47	0.30	0.43

Intersection Summary

Area Type:	Other
Cycle Length:	160
Actuated Cycle Length:	160
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	9.4
Intersection LOS:	A
Intersection Capacity Utilization	66.7%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 2: Kewalo E Dwy & Ala Moana Blvd



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2483	0	0	1728	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	5	0	25
Mvmt Flow	2614	0	0	1819	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	3342
Stage 1	-	-	2614
Stage 2	-	-	728
Critical Hdwy	-	5.3	5.7
Critical Hdwy Stg 1	-	-	6.6
Critical Hdwy Stg 2	-	-	6
Follow-up Hdwy	-	3.1	3.8
Pot Cap-1 Maneuver	-	62	17
Stage 1	-	-	23
Stage 2	-	-	403
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	62	17
Mov Cap-2 Maneuver	-	-	21
Stage 1	-	-	23
Stage 2	-	-	403

Approach	EB	WB	NB
HCM Control Delay, s	0	0	43.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	106	-	-	62	-
HCM Lane V/C Ratio	0.119	-	-	-	-
HCM Control Delay (s)	43.5	-	-	0	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

**TRAFFIC ASSESSMENT REPORT
FOR THE PROPOSED
NAPULE RESTAURANT
HONOLULU, HAWAII
TAX MAP KEY: (1) 2-1-058:043**

**APPENDIX D
CAPACITY ANALYSIS WORKSHEETS
PEAK HOUR TRAFFIC WITH PROJECT**

Napule
1: Ward Ave & Ala Moana Blvd

Lanes, Volumes, Timings
PM Peak Hour Traffic With Project



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Volume (vph)	309	1994	4	89	45	1386	233	10	148	139	335	71	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0		0		0	0		0	300		0
Storage Lanes	1		0		1		1	0		1	1		0
Taper Length (ft)	100				100			100			100		
Satd. Flow (prot)	1728	4866	0	0	1662	4775	1546	0	3415	1446	1572	2819	0
Flt Permitted	0.950				0.950				0.997		0.950	0.991	
Satd. Flow (perm)	1728	4866	0	0	1662	4775	1546	0	3415	1337	1572	2819	0
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)							175			138		303	
Link Speed (mph)		35				35			25			25	
Link Distance (ft)		496				128			376			654	
Travel Time (s)		9.7				2.5			10.3			17.8	
Confl. Peds. (#/hr)										37			29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	3%	25%	5%	5%	5%	1%	0%	2%	8%	1%	3%	1%
Shared Lane Traffic (%)											25%		
Lane Group Flow (vph)	325	2103	0	0	141	1459	245	0	167	146	265	497	0
Turn Type	Prot	NA		Prot	Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	1	6		4	4		8	8	
Permitted Phases							6			4			
Detector Phase	5	2		1	1	6	6	4	4	4	8	8	
Switch Phase													
Minimum Initial (s)	3.0	7.0		3.0	3.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	7.0	33.0		7.0	7.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	
Total Split (s)	31.0	68.0		16.0	16.0	53.0	53.0	33.0	33.0	33.0	33.0	33.0	
Total Split (%)	20.7%	45.3%		10.7%	10.7%	35.3%	35.3%	22.0%	22.0%	22.0%	22.0%	22.0%	



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	5.0		3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	2.0		1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.0			4.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?													
Recall Mode	None	Max		None	None	None	None	None	None	None	None	None	None
Act Effct Green (s)	27.1	61.2			12.0	46.1	46.1		16.3	16.3	26.1	26.1	
Actuated g/C Ratio	0.19	0.43			0.09	0.33	0.33		0.12	0.12	0.19	0.19	
v/c Ratio	0.98	0.99			0.99	0.93	0.39		0.42	0.53	0.91	0.65	
Control Delay	100.3	57.7			137.9	57.5	13.6		60.3	17.0	90.6	25.0	
Queue Delay	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Total Delay	100.3	57.7			137.9	57.5	13.6		60.3	17.0	90.6	25.0	
LOS	F	E			F	E	B		E	B	F	C	
Approach Delay		63.4				57.8			40.1			47.8	
Approach LOS		E				E			D			D	
Queue Length 50th (ft)	286	650			126	448	43		75	7	252	85	
Queue Length 95th (ft)	#543	#918			#297	#637	129		113	72	#490	167	
Internal Link Dist (ft)		416				48			296			574	
Turn Bay Length (ft)	400										300		
Base Capacity (vph)	332	2116			142	1566	624		632	360	291	769	
Starvation Cap Reductn	0	0			0	0	0		0	0	0	0	
Spillback Cap Reductn	0	0			0	0	0		0	0	0	0	
Storage Cap Reductn	0	0			0	0	0		0	0	0	0	
Reduced v/c Ratio	0.98	0.99			0.99	0.93	0.39		0.26	0.41	0.91	0.65	

Intersection Summary

Area Type: Other



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↘	↗
Volume (vph)	2244	297	0	1688	66	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	4747	0	0	4730	1745	1501
Flt Permitted					0.950	
Satd. Flow (perm)	4747	0	0	4730	1745	1501
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	47					15
Link Speed (mph)	35			35	25	
Link Distance (ft)	405			308	374	
Travel Time (s)	7.9			6.0	10.2	
Confl. Peds. (#/hr)		26				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	0%	0%	6%	0%	4%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2675	0	0	1777	69	99
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Detector Phase	2			2	4	4
Switch Phase						
Minimum Initial (s)	7.0			7.0	7.0	7.0
Minimum Split (s)	23.0			23.0	14.0	14.0
Total Split (s)	131.0			131.0	29.0	29.0
Total Split (%)	81.9%			81.9%	18.1%	18.1%
Yellow Time (s)	5.0			5.0	5.0	5.0
All-Red Time (s)	2.0			2.0	2.0	2.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	7.0			7.0	7.0	7.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	Max	Max
Act Effct Green (s)	124.0			124.0	22.0	22.0
Actuated g/C Ratio	0.78			0.78	0.14	0.14
v/c Ratio	0.73			0.48	0.29	0.45
Control Delay	10.5			7.0	65.7	60.9
Queue Delay	0.2			0.0	0.0	0.0
Total Delay	10.7			7.0	65.7	60.9
LOS	B			A	E	E
Approach Delay	10.7			7.0	62.9	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach LOS	B			A		E
Queue Length 50th (ft)	458			217	66	82
Queue Length 95th (ft)	498			241	119	147
Internal Link Dist (ft)	325			228	294	
Turn Bay Length (ft)						
Base Capacity (vph)	3689			3665	239	219
Starvation Cap Reductn	321			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.79			0.48	0.29	0.45

Intersection Summary

Area Type:	Other
Cycle Length:	160
Actuated Cycle Length:	160
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.73
Intersection Signal Delay:	11.2
Intersection LOS:	B
Intersection Capacity Utilization:	67.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 2: Kewalo E Dwy & Ala Moana Blvd



Intersection

Int Delay, s/veh 0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2528	0	0	1754	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	0	5	0	25
Mvmt Flow	2661	0	0	1846	0	13

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	2661
Stage 1	-	-	2661
Stage 2	-	-	739
Critical Hdwy	-	-	5.3
Critical Hdwy Stg 1	-	-	5.7
Critical Hdwy Stg 2	-	-	7.6
Follow-up Hdwy	-	-	6
Pot Cap-1 Maneuver	-	-	3.1
Stage 1	-	-	3.8
Stage 2	-	-	4.15
Platoon blocked, %	-	-	59
Mov Cap-1 Maneuver	-	-	16
Mov Cap-2 Maneuver	-	-	102
Stage 1	-	-	22
Stage 2	-	-	398

Approach	EB	WB	NB
HCM Control Delay, s	0	0	45.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	102	-	-	59	-
HCM Lane V/C Ratio	0.124	-	-	-	-
HCM Control Delay (s)	45.2	-	-	0	-
HCM Lane LOS	E	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Volume (vph)	314	2031	4	89	46	1412	237	10	150	140	340	72	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0		0		0	0		0	300		0
Storage Lanes	1		0		1		1	1		1	2		0
Taper Length (ft)	100				100			100			100		
Satd. Flow (prot)	1728	4866	0	0	1518	4775	1546	1745	1801	1446	3351	1510	0
Flt Permitted	0.950				0.950			0.950			0.950		
Satd. Flow (perm)	1728	4866	0	0	1518	4775	1546	1745	1801	1337	3351	1510	0
Right Turn on Red			Yes				Yes			Yes			Yes
Satd. Flow (RTOR)							191			167		141	
Link Speed (mph)		30				30			30			30	
Link Distance (ft)		496				128			376			654	
Travel Time (s)		11.3				2.9			8.5			14.9	
Confl. Peds. (#/hr)										37			29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	3%	25%	20%	5%	5%	1%	0%	2%	8%	1%	3%	1%
Shared Lane Traffic (%)													
Lane Group Flow (vph)	331	2142	0	0	142	1486	249	11	158	147	358	415	0
Turn Type	Prot	NA		Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	1	6		7	4		3	8	
Permitted Phases							6			4			
Detector Phase	5	2		1	1	6	6	7	4	4	3	8	
Switch Phase													
Minimum Initial (s)	3.0	7.0		3.0	3.0	7.0	7.0	4.0	7.0	7.0	3.0	7.0	
Minimum Split (s)	7.0	33.0		7.0	7.0	33.0	33.0	11.0	33.0	33.0	7.0	33.0	
Total Split (s)	34.0	77.0		19.0	19.0	62.0	62.0	11.0	33.0	33.0	21.0	43.0	
Total Split (%)	22.7%	51.3%		12.7%	12.7%	41.3%	41.3%	7.3%	22.0%	22.0%	14.0%	28.7%	



Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Yellow Time (s)	3.0	5.0		3.0	3.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	
All-Red Time (s)	1.0	2.0		1.0	1.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0			4.0	7.0	7.0	7.0	7.0	7.0	4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes												
Recall Mode	None	Max		None	None	None	None	None	None	None	None	None	
Act Effct Green (s)	29.4	70.1			15.0	55.7	55.7	4.0	19.0	19.0	17.0	35.8	
Actuated g/C Ratio	0.21	0.49			0.10	0.39	0.39	0.03	0.13	0.13	0.12	0.25	
v/c Ratio	0.94	0.90			0.89	0.80	0.35	0.23	0.66	0.46	0.90	0.86	
Control Delay	89.6	40.1			111.3	43.6	9.9	81.8	72.4	9.5	88.0	51.9	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	89.6	40.1			111.3	43.6	9.9	81.8	72.4	9.5	88.0	51.9	
LOS	F	D			F	D	A	F	E	A	F	D	
Approach Delay		46.8				44.3			43.5			68.7	
Approach LOS		D				D			D			E	
Queue Length 50th (ft)	300	639			131	442	34	10	142	0	170	247	
Queue Length 95th (ft)	#522	797			#280	553	106	34	219	46	#281	#470	
Internal Link Dist (ft)		416				48			296			574	
Turn Bay Length (ft)	400										300		
Base Capacity (vph)	362	2382			159	1858	718	48	327	379	398	490	
Starvation Cap Reductn	0	0			0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0			0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0			0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.91	0.90			0.89	0.80	0.35	0.23	0.48	0.39	0.90	0.85	

Intersection Summary

Area Type: Other

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APPENDIX C
PRELIMINARY ENGINEERING REPORT

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BELLAVITA RESTAURANT PRELIMINARY ENGINEERING REPORT

Kaka'ako, Oahu, Hawaii
TMK:2-1-058: 128, Lot 1

September 2014

PREPARED FOR:

Bellavita, Inc.
107-0062 Tokyo-to
Minato-ku
Minamiaoyama, 2
Chome-2-8
Japan

PREPARED BY:



MITSUNAGA & ASSOCIATES, INC.

747 Amana Street, Suite 216
Honolulu, Hawaii 96814
(808) 945-7882 • Fax: (808) 946-2563

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Preliminary Engineering Report

I. EXECUTIVE SUMMARY

Bellavita Restaurant is planned to be located at Kewalo Basin, which is a sub area within Kaka'ako Makai Area. The entire Kewalo Basin is owed by the Hawaii Community Development Authority (HCDA), and is part of the Kaka'ako District. The Bellavita Restaurant project will occupy approximately 13,000-sqaure feet between Kewalo Basin Harbor and Ala Moana Boulevard in what is now the Charter Boat Building serving Kewalo Basin Harbor. Bellavita, Inc. is proposing to convert the Charter Boat Building into a full service restaurant as shown in Figure 2, which is further referred to as the "proposed project". The proposed project within TMK 2-1-058:128, Lot 1, designated as urban by the State of Hawaii Land Use Commission. Mitsunaga & Associates (MAI) has initiated discussions with the City and County of Honolulu Wastewater Branch, Board of Water Supply and Hawaiian Electric Company to identify agency required improvements to the existing infrastructure. As the project progresses, it is recommended that the City and County of Honolulu Department of Transportation Services and State of Hawaii Department of Transportation Highways Division are also engaged to offer their input on the proposed project.

Sewer: Discussions with the City & County of Honolulu Wastewater Branch have indicated that the 69-inch trunk sewer line in Ala Moana Blvd has the capacity to accommodate the estimated wastewater flow from the project.

Water: Preliminary discussions with the Board of Water Supply (BWS) have indicated that BWS has the appropriate water allocation for the demands of the proposed project.

Grading and Drainage: The essentially flat site will require minimal grading. Grading and erosion control measures will be designed and implemented in accordance with City and County guidelines and the recommendations of the project's geotechnical engineer. Drainage patterns will be maintained and storm water retention and detention will be designed in accordance with City and County Storm Drainage Standards.

Roadways and Traffic: Access to the proposed project is from existing driveways for east bound traffic off Ala Moana Blvd. The proposed project should not require any modifications to existing driveways or intersections.

Preliminary Engineering Report

II. PROJECT INFORMATION

A. Site Description

The proposed project is located in Kaka'ako, Honolulu on the island of Oahu. The Kaka'ako Community Development District is overseen by the Hawaii Community Development Authority (HCDA), a State agency created to assist in the redevelopment of underutilized areas by streamlining public and private partnerships.

The Kaka'ako Community Development District consists of two major areas, Mauka and Makai divided by Ala Moana Blvd. The proposed project is located within Kewalo Basin which is a sub-area of the Makai District, bounded by Ala Moana Park to the east and Ahui Street to the west.

Bellavita Restaurant serves HCDA's vision to establish new commercial spaces that provide economic opportunities for both public and private interests.

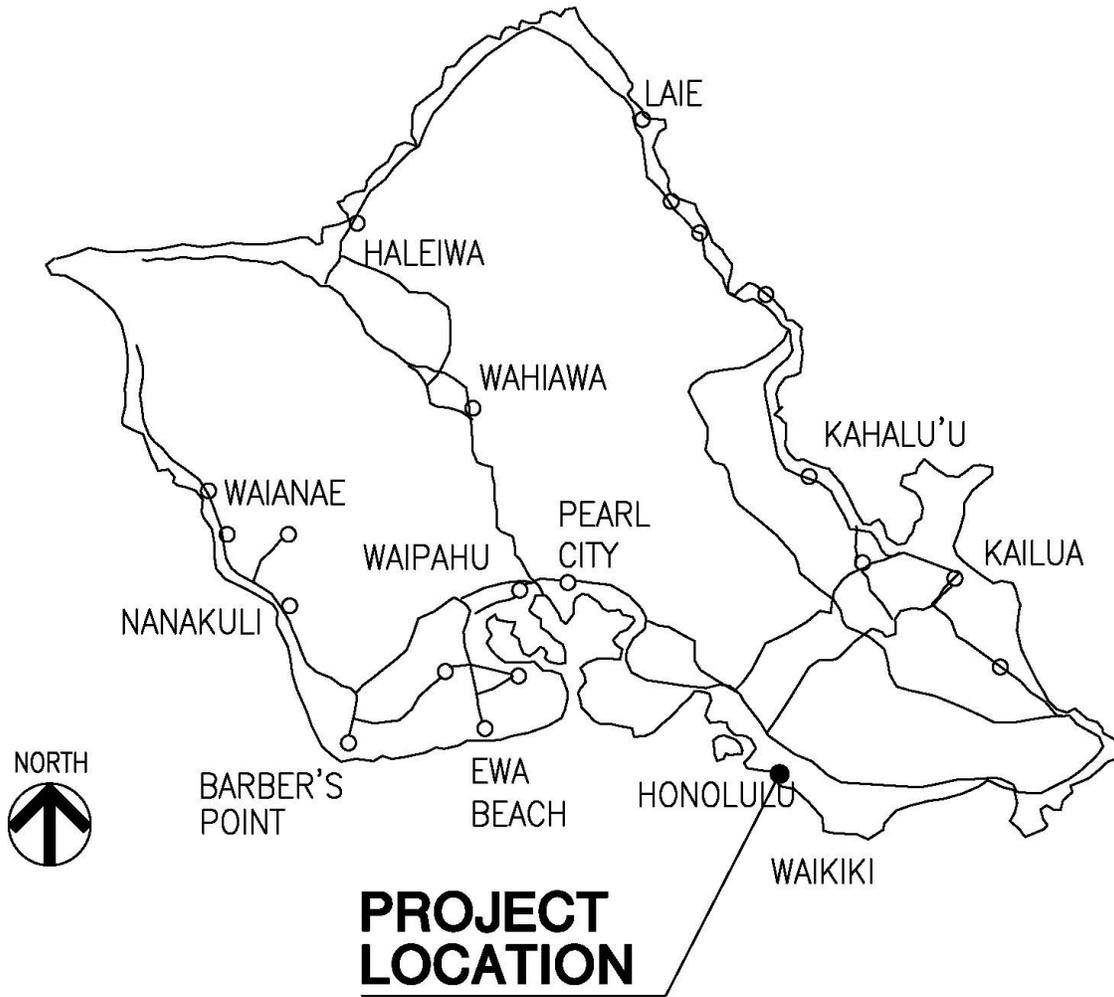


Figure 1 Vicinity Map (Island of Oahu)

The proposed project is approximately 13,000 square feet and sits on the northeastern side of Kewalo Basin in what is now the Charter Boat Building.

The elevation of the site is approximately 10 feet above sea level. The project site is generally flat with storm water runoff sheet flowing in a southerly direction towards Kewalo Basin.



Figure 2 Location Map (Kaka'ako, Honolulu, Oahu)

B. Project Description

Bellavita Inc. in partnership with HCDA is proposing to develop a restaurant at the existing Charter Boat Building at Kewalo Basin. The project is planned to be constructed in one phase.

The proposed project aims to meet the Kaka'ako Community Development District Makai Area Land Use goals and intent. The construction of Bellavita Restaurant provides a restaurant which is an objective of the HCDA.

Preliminary Engineering Report

C. Land Use and Zoning

The proposed project includes the redevelopment of the existing Charter Boat Building within Kewalo Basin. Table 1 provides the land use and zoning for the parcel studied. The State Land Use Map, Zoning Map and Kaka’ako Community Development District Land Use Zone Maps are provided in Figure 3, 4 and 5.

Table 1 Land Use and Zoning

TMK	Acres	State Land Use	Zoning (LUO)	Land Use Zone	Proposed Use
1-2-058:128, Lot 1	0.30	Urban District	Kaka’ako Community Development District	WC – Waterfront Commercial	Commercial Uses



Figure 3 State Land Use



Figure 4 Zoning Map

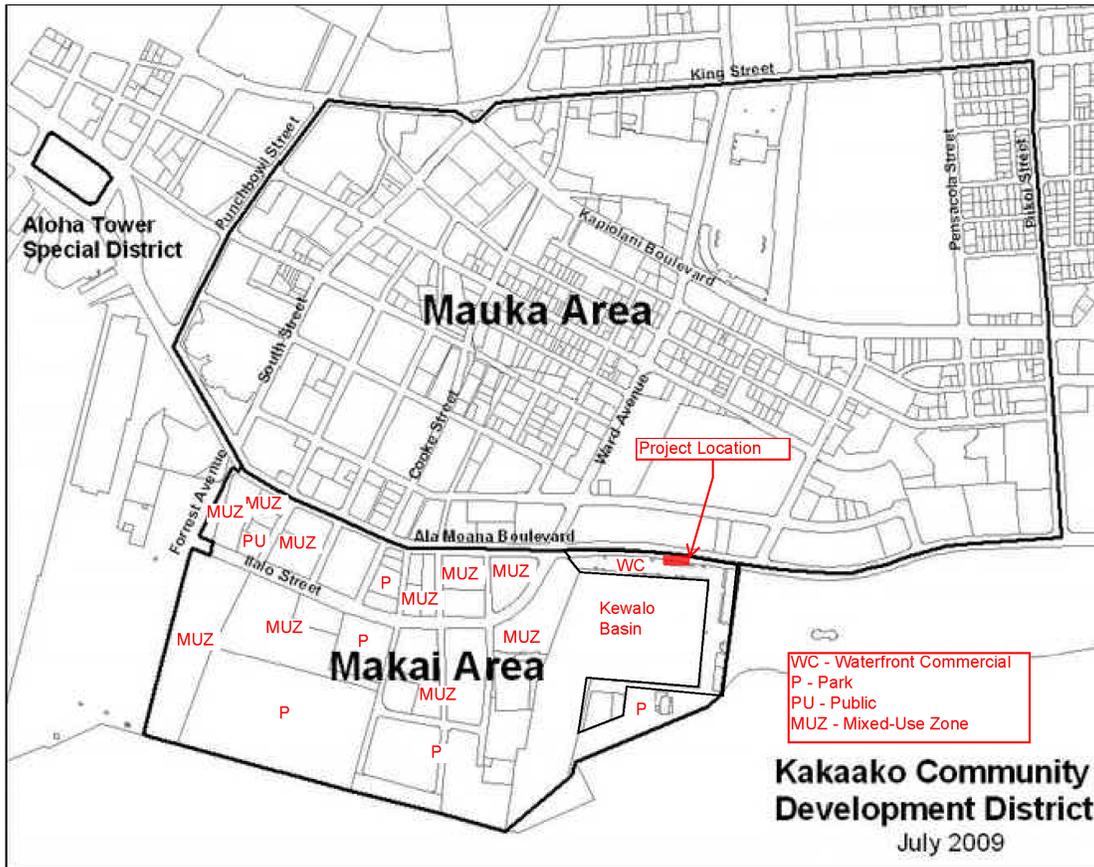


Figure 5 Kaka'ako Community Development District Land Use Zone Map

D. Soils

Based on the 1972 USDA Soils Classification Survey, identified in Figure 6, the soils within the project included:

- **Fill land, mixed** – This land is filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources.

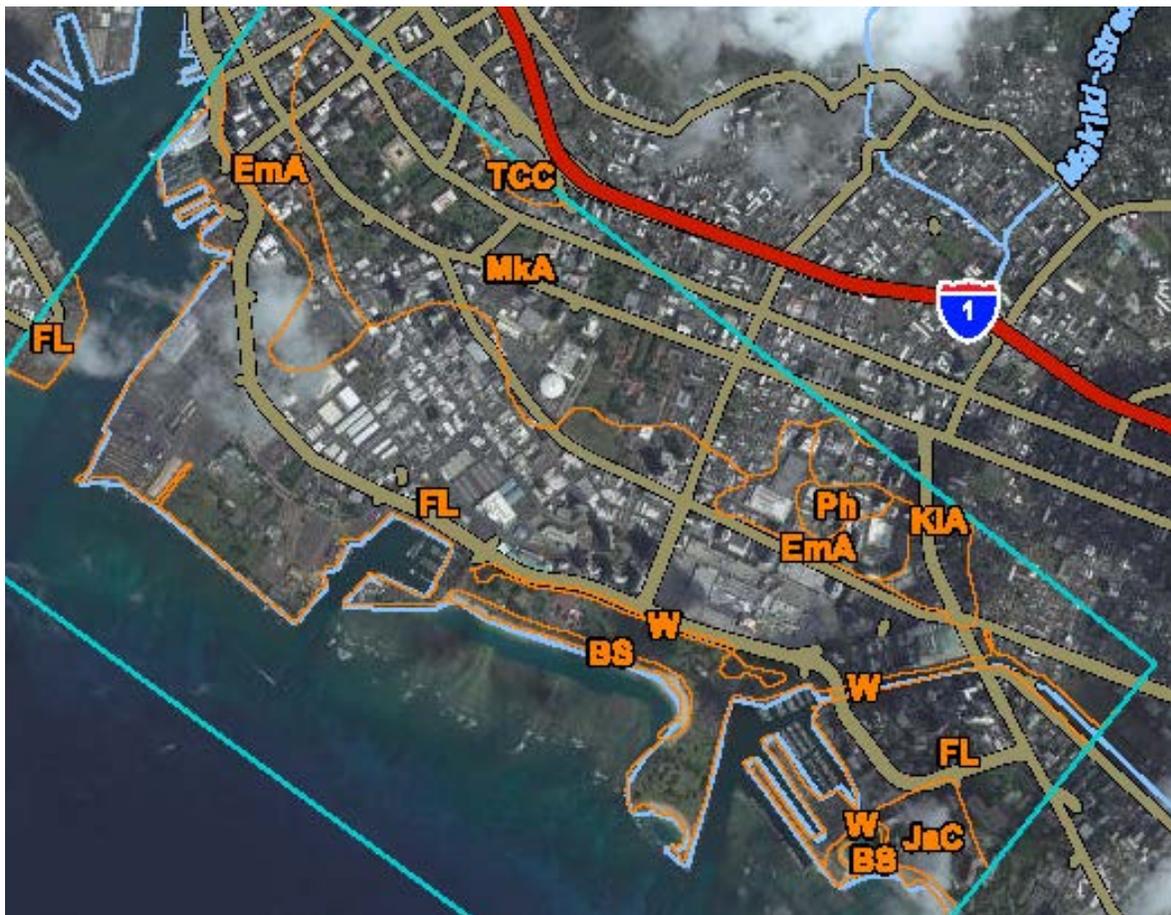


Figure 6 USDA Soils Classification Map

III. SITE ACCESS & PARKING

The proposed project currently does not allow left turn access off Ala Moana Blvd. Traffic traveling in the Ewa direction must make a u-turn at Ward Avenue and enter at the Ewa entrance driveway near Ward Avenue. The Diamond Head entrance driveway is signalized and provides protected left and right turn movements onto Ala Moana Blvd. Traffic leaving the project can exit just west of the Bellavita Restaurant and head Diamond Head on Ala Moana Blvd or exit from the signalized driveway, see Figure 7. Construction of the proposed project should not require any modifications to the intersection at Ala Moana Blvd.

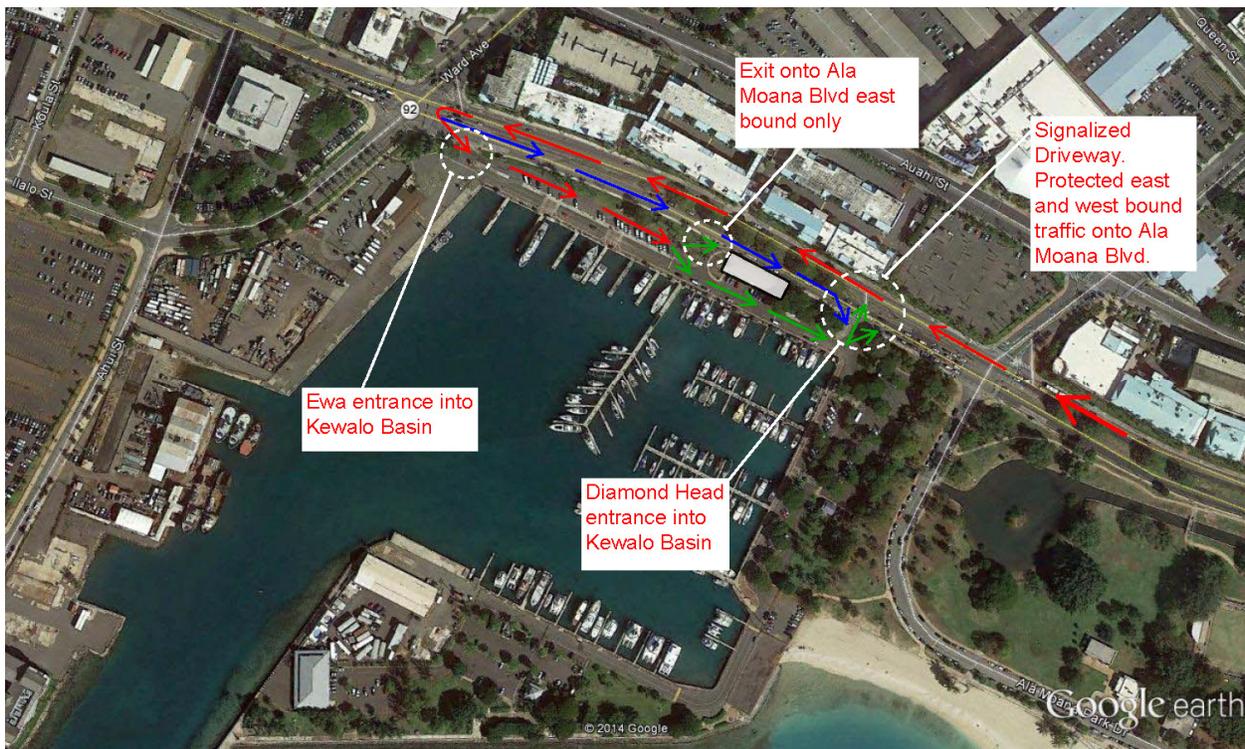


Figure 7 Traffic Circulation

The total gross building floor area for the proposed project is estimated to be approximately 7,600 square feet. According to the Hawaii Administrative Rules for the Department of Business, Economic Development and Tourism, HCDA, The Kaka'ako Community Development District Rules for the Makai Area, the proposed project should provide one (1) off-street parking stall for every 300 square feet of eating and drinking area, plus one (1) per every 400 square feet of kitchen or other area. Therefore 24 parking stalls would be required for the proposed project. In addition, one (1) loading stall at 12ft wide x 35 ft long x 14 ft vertical clearance is also required.

Preliminary Engineering Report

IV. DRAINAGE SYSTEM

The proposed project site sheet flows in a southerly direction towards Kewalo Basin. The surface runoff is then collected by a series of sidewalk culverts, which then drain into Kewalo Basin.

There are existing concrete box culverts on either side of the proposed project. There is a 36-inch by 48-inch box culvert to the west and a 28-inch by 45-inch box culvert to the east, see Figure 8.

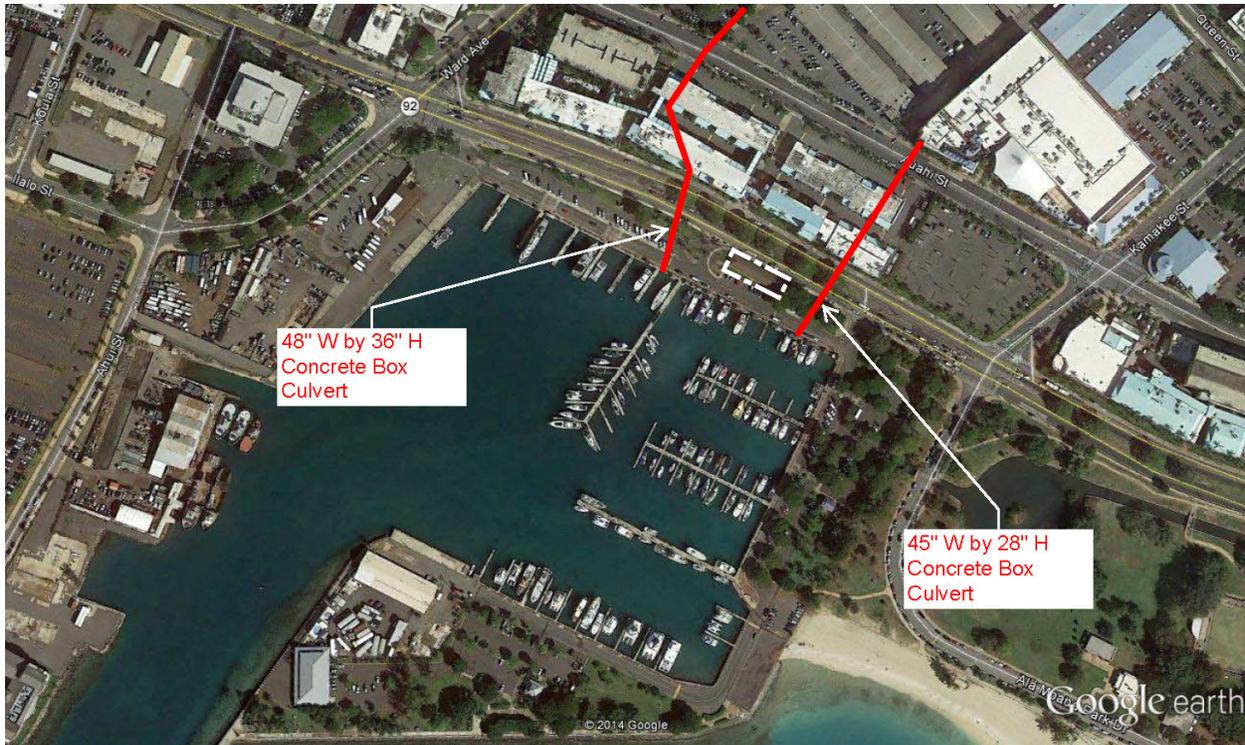


Figure 8 Existing Drainage Facilities

According to the Flood Insurance Rate Map (FM15003C0362G) by the Federal Emergency Management Agency (FEMA), the project site is in the Special Flood Hazard Area defined as Flood Zone AE (areas where base flood elevations are determined) with a base flood elevation of 10, see Figure 9. Building floor elevations will be designed to be above the 10-foot elevation.

Preliminary Engineering Report



Figure 9 FIRM Map, FM15003C0362G

The proposed project will maintain existing drainage patterns and detain additional run-off if an increase in impervious area occurs due to the re-development of the project site. The project should consider sustainable design practices to limit the increase in runoff volume and address storm water quality. Proposed water quality swales may be utilized to help minimize the discharge from the project site to be equal to or less than the existing run-off quantity. In addition, the quality of storm water being discharged from the site will be addressed by implementing City and County approved BMPs.

V. SITE GRADING

The proposed project site is generally flat with gentle slopes towards Kewalo Basin. Grading will be limited and will closely match existing conditions. Grading and erosion control measures will be designed and implemented in accordance with City and County guidelines and the recommendations of the project’s geotechnical engineer.

VI. WATER SYSTEM

The proposed project is within the Primary Urban Center Service Area of the Board of Water Supply’s (BWS) Development Plan for the island of Oahu. The Primary Urban Center Service Area (potable supply) is estimated to have a water demand of 78.5 million gallons a day (MGD). The wells in the Primary Urban Center Service Area contribute approximately 85.5 MGD (Figure 10).

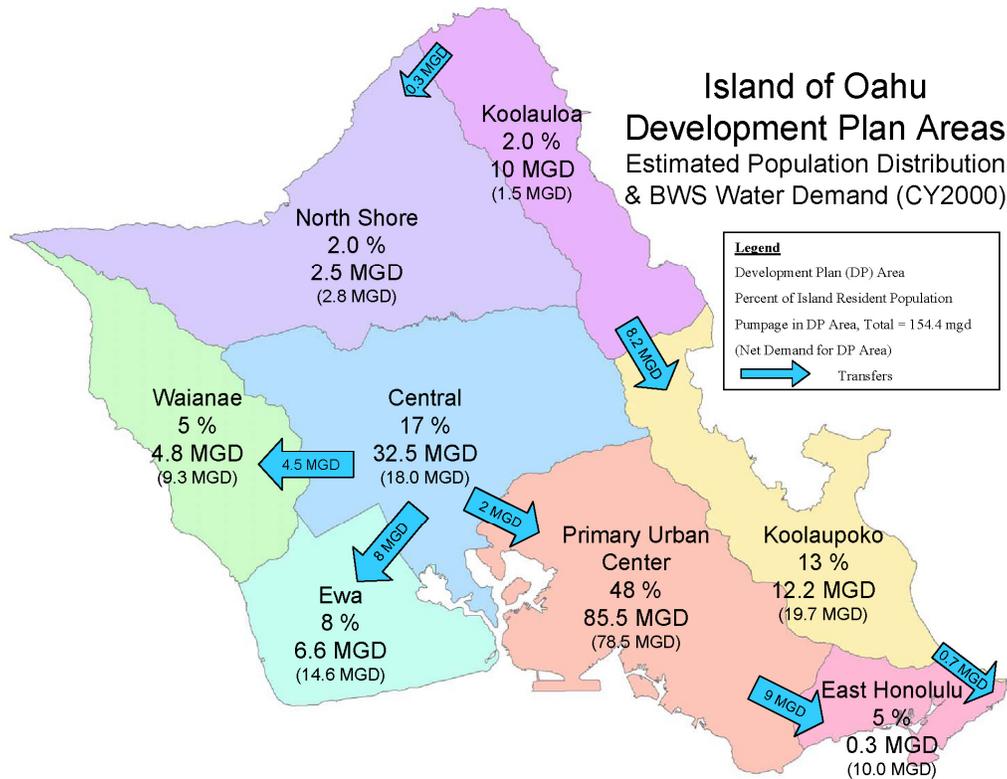


Figure 10 Island of Oahu Development Plan Areas

There is an existing 12-inch main line in Ala Moana Blvd, and a 6-inch lateral that runs adjacent to the proposed project site.

The proposed project will connect to the existing 6-inch lateral, see Figure 11. The water system shall be designed in conformance with the Board of Water Supply Water System Standards and Standard Details.

Preliminary discussions with the BWS have indicated that BWS has the appropriate water allocation for the demands of the proposed project.

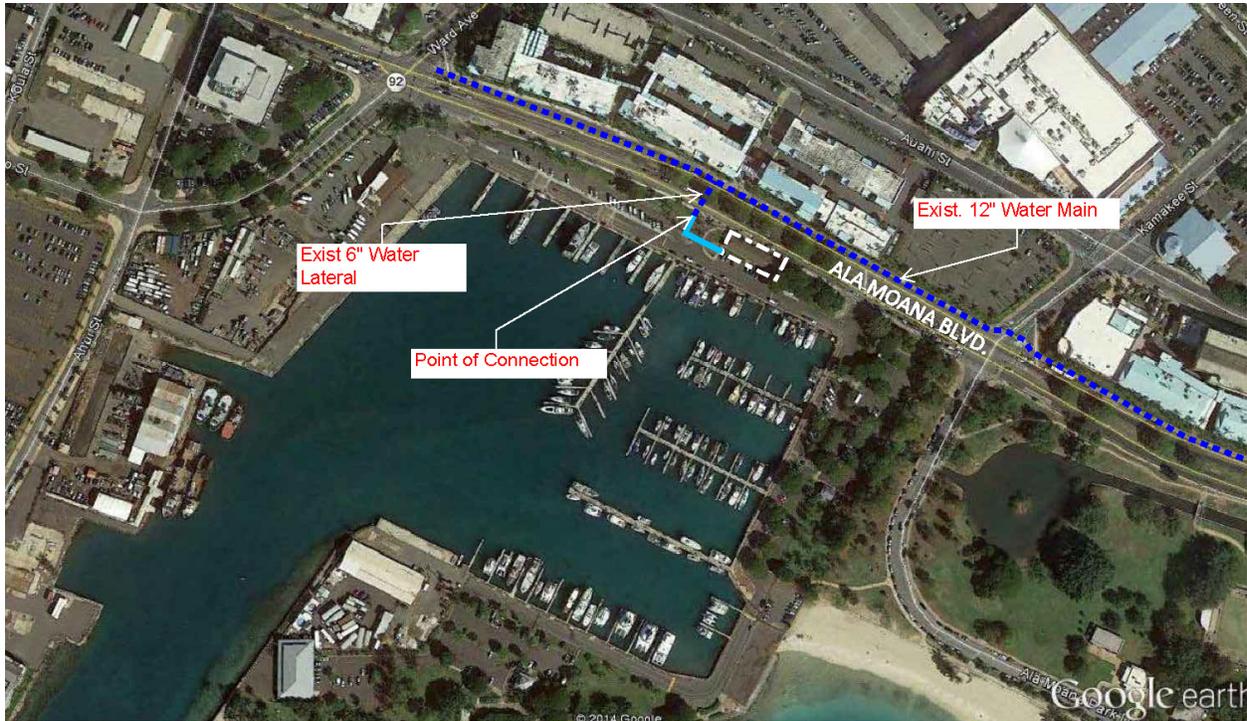


Figure 11 Water System

VII. WASTEWATER SYSTEM

The proposed project will utilize the existing 6-inch sewer lateral currently serving the Charter Boat Building. The lateral drains to the existing 69-inch trunk sewer in Ala Moana Blvd, see Figure 12.

Discussions with the City and County of Honolulu Wastewater Branch have indicated that the 69-inch sewer line in Ala Moana Blvd has capacity to accommodate the estimated wastewater flow from the project. Wastewater from the project will be conveyed to Sand Island Wastewater Treatment Plant.

The wastewater system shall be designed in conformance with the City and County of Honolulu Wastewater Standards and Standard Details.

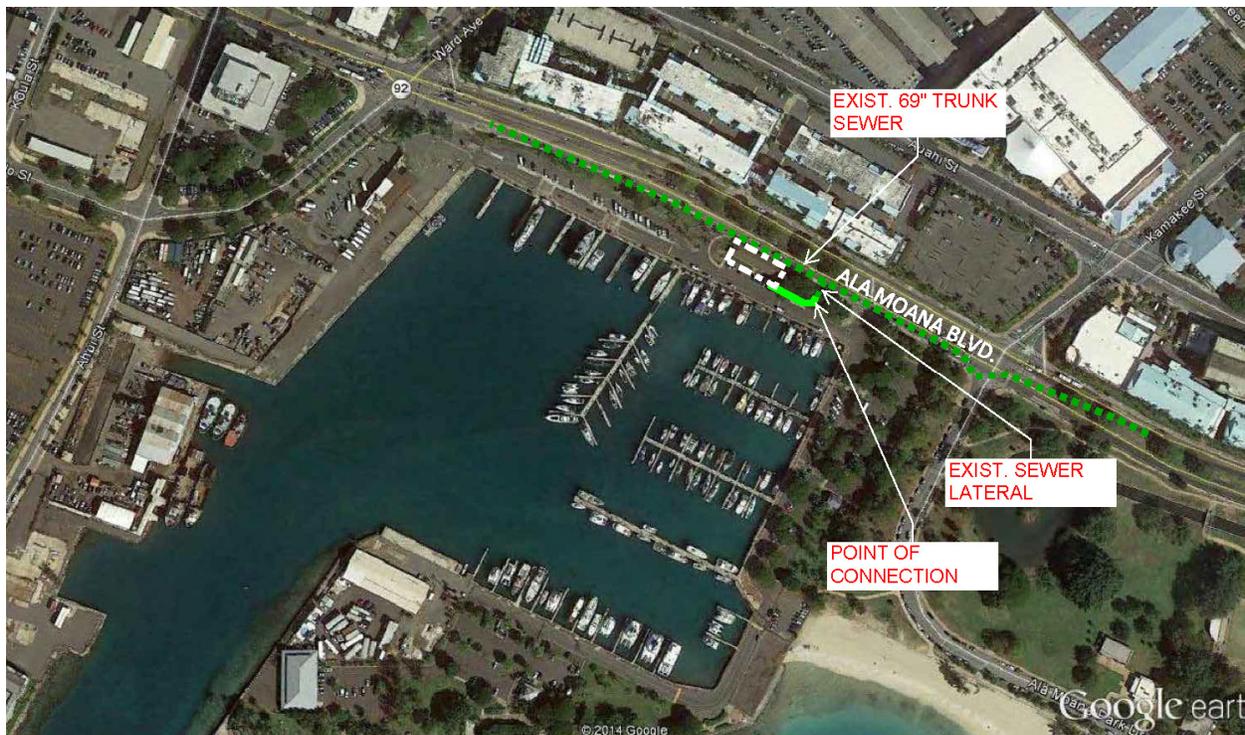


Figure 12 Sewer System

VIII. GAS SYSTEM

On the Mauka Side of Ala Moana Blvd there is an existing 2-inch gas line, which primarily serves the businesses at Ward Warehouse. Preliminary discussions with Hawaii Gas have indicated that the existing gas system can accommodate the needs of the project.

Connection to the existing 2-inch line will require trenching across Ala Moana Blvd.

Preliminary Engineering Report

IX. SOLID WASTE

The project site is currently owned by HCDA, which has contracted Almar Management to manage all harbor operations which includes refuse service. The proposed project will most likely contract a private refuse service separate from Kewalo Basin Harbor.

The proposed project will generate solid waste during construction and after development. Construction wastes will include vegetation, rocks and debris from the clearing and grubbing of the project site. The typical per capita solid waste from a commercial retail source is 1 lb/seat/day for restaurant. It is estimated the proposed project will generate 250 lbs/day (US EPA 2009). The composition of the solid waste is expected to be typical for a municipal source, and will be hauled to Waimanalo Gulch Sanitary Landfill.

X. PERMITS/APPROVALS

The construction of new facilities and accesses will require multiple permits. Below is a list of potential permits:

- i. Building Permit – City and County of Honolulu, Department of Planning and Permitting
- ii. Environmental Assessment – State Office of Environmental Quality Control
- iii. Flood Determination Approval – City and County of Honolulu, Department of Planning and Permitting
- iv. Development Permit – HCDA
- v. Special Management Area Permit (SMA) – State of Hawaii Office of Planning
- vi. Site Development Approval - City and County of Honolulu, Department of Planning and Permitting (Civil Engineering Branch, Traffic Review Branch, Subdivision Branch), and Board of Water Supply
- vii. Sewer Connection Application - City and County of Honolulu, Department of Planning and Permitting, Wastewater Branch

Preliminary Engineering Report

REFERENCES

1. Rules Relating to Storm Drainage Standards. Department of Planning and Permitting, City and County of Honolulu, January 2000.
2. Rules Relating to Soil Erosion Standards and Guidelines. Department of Planning and Permitting, City and County of Honolulu, April 1999.
3. Water System Standards, Volume I. Board of Water Supply, City and County of Honolulu, 1985.
4. Soils Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii. US Department of Agriculture, Soils Conservation Service, August 1972.
5. Hawaii Administrative Rules Title 15, Department of Business, Economic Development and Tourism, Subtitle 4, Hawaii Community Development Authority, Chapter 23 The Kakaako Community Development District Rules for the Makai Area, September 7, 2005.
6. Kakaako Community Development District, Makai Area Plan Amendment, Final Environmental Assessment, July 2005.

APPENDICES

Preliminary Engineering Report

APPENDIX A Water System Calculations

PROJECT: Bellavita Restaurant
Kaka'ako, Honolulu, Oahu, Hawaii

Water System CalculationsCommercial - Neighborhood Businesses

3000 gallons/acre (Table 100-18)

Area = 0.2

Average Daily Demand = 3000 gpd/acre x 0.2 acres 600 gpd

Maximum Daily Demand = 1.5 x 600 gpd = 900 gpd (Table 100-20)

Peak Hour Demand = 3.0 x 600 gpd = 1,800 gpd (Table 100-20)

Fire Flow Requirement: 2000 gallons per minute (gpm) for neighborhood businesses (Table 100-19)

Duration: 2 hours for neighborhood businesses

Total Fire Flow = 240,000 gallons

Fire Flow for neighborhood businesses 2000 gpm x 2 hours x 60 min./hour 240,000 gallons

Pipeline Sizing (Fire Line): Provide required fire flow at a minimum of 20 psi residual pressure at fire hydrants

Fire Hydrant Spacing: 250 feet maximum for neighborhood businesses

References: 1. *Water System Standards, Volume I. Board of Water Supply, City and County of Honolulu*

BOARD OF WATER SUPPLY

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



September 5, 2014

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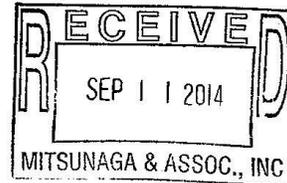
ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

Ms. Christina Hawk
Mitsunaga & Associates, Inc.
747 Amana Street, Suite 216
Honolulu, Hawaii 96814

Dear Ms. Hawk:



Subject: Your Email Dated August 29, 2014 Requesting the Availability
of Water to the Proposed Bellavita Restaurant at Kewalo Basin
in Kaka'ako Makai Area – Tax Map Key: 2-1-058: 043

Thank you for your letter regarding the proposed restaurant at Kewalo Basin in the Kaka'ako Makai Area.

The existing water system is adequate to accommodate the proposed restaurant. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Preliminary Engineering Report

APPENDIX B Wastewater System Calculations

PROJECT:	Bellavita Restaurant		
	Kaka'ako, Oahu, Hawaii		
Population =	0.2 acres x 40 cpa (Neighborhood Business)	8	persons
Average Daily Flow =	8 persons x 80 gpcd =	640	gpd
Dry Weather I/I =	8 persons x 5 gpcd =	40	gpd
	DESIGN AVERAGE FLOW =	680	gpd
Maximum Rate of Flow =	$5/0.008^{0.2} =$	13.16	
Maximum Flow =	680 gpd x 13.16	8948.8	gpd
Dry Weather I/I =		40	gpd
	DESIGN MAXIMUM FLOW	8988.8	gpd
Wet Weather I/I =	0.2 acres x 1250 gpad	250	gpd
Design Maximum Flow		8988.8	gpd
	PEAK FLOW =	9238.8	gpd
Peak Flow of the Multiuse Facility =		6.42	gpm
Minimum Slope for an 8" PVC sewer pipe to carry peak flow of 9239 gpd =		0.01	cfs
$Q = (1.486/n)(\pi/4)(D^2)(D/4)^{2/3}(s^{1/2})$			
$0.36 \text{ cfs} = (1.486/0.015)(\pi/4)(8/12)^2(8/48)^{2/3}(s^{1/2})$			
s =		0.0000	ft/ft
Minimum Slope for an 6" PVC sewer pipe to carry peak flow of 9239 gpd =		0.01	cfs
$Q = (1.486/n)(\pi/4)(D^2)(D/4)^{2/3}(s^{1/2})$			
$0.36 \text{ cfs} = (1.486/0.015)(\pi/4)(6/12)^2(6/48)^{2/3}(s^{1/2})$			
s =		0.0000	ft/ft
Full Flow Capacity for 8" PVC sewer pipe =	6.42 gpm @ 0.00%		
Full Flow Capacity for 10" PVC sewer pipe =	6.42 gpm @ 0.00%		



DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET * HONOLULU, HAWAII 96813
Phone: (808) 768-8209 * Fax: (808) 768-4210

SEWER CONNECTION APPLICATION

APPLICATION NO.: **2014/SCA-0622** STATUS: **Approved**
DATE RECEIVED: **08/20/2014** IWDP APP. NO.:
PROJECT NAME: **2014/SCA-0622 Bellavita Restaurant**

LOCATION:

Zone	Section	Plat	Parcel
2	1	058	128

1,873,080 Sq. Ft.

SPECIFIC LOCATION: **Kewalo Basin between Kewalo Basin Harbor and Ala Moana Blvd.**

APPLICANT: **MITSunAGA & ASSOCIATES INC.**
Attn: Christina Hawk
747 AMANA 216
HONOLULU, HAWAII 96814

DEVELOPMENT TYPE: **Restaurant** SEWER CONNECTION WORK DESIRED: **Existing**
OTHER USES: **250 seats/day**
NON-RESIDENTIAL AREA: s.f. APPROXIMATE DATE OF CONNECTION: **01/05/2016**

<u>PROPOSED UNITS</u>	<u>EXISTING UNITS</u>	<u>UNITS TO BE DEMOLISHED</u>
No. of New Units: 0	No. of Existing Units: 0	No. of Units to be Demolished: 0
Studios:	Studios:	Studios:
1-Bedroom:	1-Bedroom:	1-Bedroom:
2-Bedroom:	2-Bedroom:	2-Bedroom:
3-Bedroom:	3-Bedroom:	3-Bedroom:
4-Bedroom:	4-Bedroom:	4-Bedroom:
5-Bedroom:	5-Bedroom:	5-Bedroom:
6-Bedroom:	6-Bedroom:	6-Bedroom:

REMARKS **IWDP may be required.**

APPROVAL DATE: **09/02/2014**

*Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.
* Applicable WSFC shall be collected at the prevailing rate in accordance with ROH 1990, Chapter 14, Sections 14-10.3, 14-10.4, 14-10.5 and Appendix 14-D.*

EXPIRATION DATE: **09/01/2016**

REVIEWED BY: **Mindy Yoneshige**

Site Development Division, Wastewater Branch

ExternalID: **053239887-001**

JobId: **53239887**

Initial Print Date: **Tuesday September 2, 2014 11:45 :**

Page 1 of 1

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APPENDIX D
PRE-ASSESSMENT CONSULTATION LETTERS

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NEIL ABERCROMBIE
GOVERNOR



JESSICA E. WOOLEY
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Department of Health
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Email: oeqchawaii@doh.hawaii.gov

October 6, 2014

Ms. Rachel Okoji, Principal
Environmental Risk Analysis LLC
P.O. Box 240606
Honolulu, Hawai'i 96824

SUBJECT: Draft Environmental Assessment: Pre-Consultation, Proposed Multi-Use Facility, Kewalo Basin, Honolulu, Hawai'i; and
Draft Environmental Assessment: Pre-Consultation, Proposed Restaurant with Outdoor Seating, Kewalo Basin, Honolulu, Hawai'i

Aloha Ms. Okoji,

The Office of Environmental Quality Control is in receipt of two pre-consultation letters, dated September 10, 2014, for the proposed Multi-Use Facility Draft Environmental Assessment and the proposed Restaurant with Outdoor Seating, both located at Kewalo Basin. Environmental Risk Analysis (ERA) LLC is conducting environmental assessment pre-consultation on behalf of Good Luck International Corporation and Hinamari Hawai'i, Inc., for a proposed Multi-Use Facility and also on behalf of Bellavita, Inc., for a proposed Restaurant with Outdoor Seating. After review of the proposed project, OEQC offers these comments:

1. Please review the Kewalo Basin Repairs Final Environmental Impact Statement published in The Environmental Notice on March 23, 2011 and the Final Supplemental Environmental Impact Statement for the Kaka'ako Makai Area Plan published on June 23, 1998.

Chapter 343, Hawai'i Revised Statutes, allows the incorporation of relevant information from existing environmental studies by reference, for new proposed projects. Therefore, OEQC advises that you review and incorporate relevant information from existing Chapter 343, HRS studies for the proposed environmental assessments.

2. Your letters state that EAs are required for both projects because of the Special Management Area and identify the Department of Business, Economic Development & Tourism as the agency in charge. We advise that you coordinate

with the Office of Planning and the Hawai'i Community Development Authority to clarify which agency will make the Chapter 343, HRS determination for the two proposed projects.

3. Please evaluate the traffic circulation within the Kewalo Basin Area and pedestrian linkage to the proposed developments on the mauka side of Ala Moana Boulevard.
4. We recommend that you evaluate the sewage discharge and system capacity, and discuss the solid waste management for both projects.
5. The site is in the tsunami inundation zone. Please provide plans to address flooding from tsunami or storm surge.
6. The content requirements for an environmental assessment are listed in Section 11-200-10, Hawai'i Administrative Rules.
7. Thank you for the opportunity to comment on the proposals for a multi-use facility and a restaurant with outdoor seating at Kewalo Basin. Please feel free to contact me at (808) 586-4185 if you have further questions.

Sincerely,


Herman Tuiolosega
Senior Planner

NEIL ABERCROMBIE
GOVERNOR



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

FORD N. FUCHIGAMI
INTERIM DIRECTOR

Deputy Directors
RANDY GRUNE
AUDREY HIDANO
ROSS M. HIGASHI
JADINE URASAKI

IN REPLY REFER TO:

STP 8.1675

September 30, 2014

Ms. Rachel Okoji
Principal
Environmental Risk Analysis LLC
820 West Hind Drive #240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

Subject: Proposed Restaurant (Napule)
Pre- Consultation for Draft Environmental Assessment
TMK: (1) 2-1-058:043

Our Department of Transportation's (DOT) comments on the subject project are as follows:

The Draft Environmental Assessment (DEA) should discuss and evaluate the project's contribution to the cumulative traffic impacts on State highways facilities in the area.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

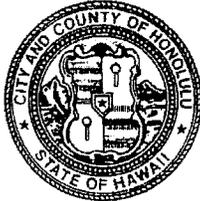
Very truly yours,


FORD N. FUCHIGAMI
Interim Director of Transportation

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR



MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

September 26, 2014

Rachel Okoji, Principal
Environmental Risk Analysis LLC
820 W. Hind Drive #240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

**SUBJECT: Draft Environmental Assessment: Pre-Consultation
Proposed Restaurant with Outdoor Seating
Kewalo Basin, Honolulu, Hawaii**

Thank you for the opportunity to review and comment at the Pre-Consultation stage of the subject draft environmental assessment.

The Department of Parks and Recreation has no comment. As the proposed project will have no impact on any program or facility of the Department, you may remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 768-3017.

Sincerely,

A handwritten signature in black ink, appearing to read "Michele K. Nekota", is written over a faint circular stamp.

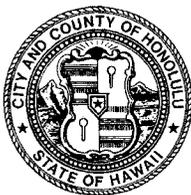
Michele K Nekota
Director

MKN:jr
(581141)

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulu.gov



PETER B. CARLISLE
MAYOR

LOUIS M. KEALOHA
CHIEF

DAVE M. KAJIHIRO
MARIE A. McCAULEY
DEPUTY CHIEFS

OUR REFERENCE EO-WS

October 2, 2014

Ms. Rachel Okoji, Principal
Environmental Risk Analysis LLC
820 West Hind Drive, No. 240606
Honolulu, Hawaii 96821

Dear Ms. Okoji:

This is in response to your letter dated September 10, 2014, requesting comments on the Pre-Consultation, Draft Environmental Assessment, for the proposed restaurant with outdoor seating project in Kewalo Basin.

The Honolulu Police Department anticipates possible short-term impacts to traffic around the area during the construction phase of the project. We recommend scheduling construction vehicles and supply deliveries from Ala Moana Boulevard to Kewalo Basin during off-peak traffic hours. We also advise informing the public of any potential delays in and around the project area.

If there are any questions, please contact Major Roy Sugimoto of District 1 (Central Honolulu) at 723-3327 or via e-mail at rsugimoto1@honolulu.gov.

Sincerely,

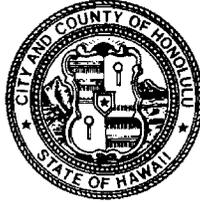
LOUIS M. KEALOHA
Chief of Police

By 
RANDAL K. MACADANGDANG
Assistant Chief
Support Services Bureau

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Ulu'ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR



ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 14-877

October 1, 2014

Ms. Rachel Okoji, Principal
Environmental Risk Analysis, LLC.
820 W. Hind Drive, #240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

**SUBJECT: Draft Environmental Assessment: Pre-Consultation
Proposed Restaurant with Outdoor Seating
Kewalo Basin, Honolulu, Hawaii**

Thank you for the opportunity to review and comment on the subject project. We have no comments. The City does not have any facilities or easements on the subject property.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

A handwritten signature in black ink, appearing to read "Ross S. Sasamura".

Ross S. Sasamura, P.E.
Director and Chief Engineer

BOARD OF WATER SUPPLY

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



October 6, 2014

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair
ADAM C. WONG, Vice Chair
MAHEALANI CYPHER
THERESIA C. McMURDO
DAVID C. HULIHEE

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

Ms. Rachel Okoji, Principal
Environmental Risk Analysis LLC
820 West Hind Drive #240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

Subject: Your Letter Dated September 10, 2014 on the Draft Environmental Assessment: Pre-Consultation for the Proposed Bellavita Restaurant at Kewalo Basin – Tax Map Key: 2-1-58: 043

Thank you for the opportunity to comment on the proposed restaurant development.

The existing water system is adequate to accommodate the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer



United States Department of the Interior



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

In Reply Refer To:
2014-TA-0442

OCT 09 2014

Ms. Rachel Okoji, Principle
Environmental Risk Analysis, LLC
820 West Hind Drive # 240606
Honolulu, Hawaii 96824

Subject: Technical Assistance for Proposed Restaurant with Outdoor Seating in Kewalo Basin, Oahu

Dear Ms. Okoji:

The U.S. Fish and Wildlife Service (Service) received your letter, dated September 10, 2014, in which you requested our comments on the proposed restaurant with outdoor seating in Kewalo Basin, Oahu, as a pre-consultation for the associated Draft Environmental Assessment (DEA). The proposed project involves the renovation of an existing structure (charter boat building) to accommodate a restaurant facility, including the installation of wood fired oven, and the addition of an outdoor seating patio which will require some soil removal. This response is in accordance with sect 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*); the Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661 *et seq.*; 48 Stat. 401); and the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712), as amended (MBTA).

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity Mapping Program. There is no federally designated or proposed critical habitat, or National Wildlife Refuges, wilderness areas, or wildlife preserves in the vicinity of the proposed project. Species documented within the project vicinity include the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*, 'ope'ape'a). Additionally, Hawaiian seabirds (e.g., White fairy Terns (*Gygis alba*)), protected under the MBTA, may occur in the project area. We offer the following recommendations to assist you with your project.

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, will leave young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the breeding season, there is a risk that young bats could inadvertently be harmed or killed. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area.

**TAKE PRIDE[®]
IN AMERICA** 

White fairy terns often nest in urban parks and residential areas from Hawaii Kai to Hickam Air Force Base. White fairy terns do not build nests, instead they lay a single egg directly on a ledge, tree branch, or other suitable location. The egg will hatch after approximately 35 days, after which it takes 45 days for the chick to be mature enough to leave the nest on its own. If tree trimming becomes part of your project, please examine all trees slated to be cut to determine if there are white fairy terns nesting in them. Similarly, we recommend examining any structures slated for demolition. Signs that white fairy terns are present include accumulation of white feathers or white droppings underneath the tree or structure.

In addition, we recommend that you include a Stormwater Pollution Prevention Plan to address stormwater runoff into your Environmental Assessment. In addition, due to the close proximity of the proposed structure to the ocean, grading and landscaping should be implemented to minimize runoff.

Because the proposed activities may cause soil erosion and sedimentation into the marine environment, we are attaching the Service's recommended Best Management Practices regarding sedimentation and erosion in aquatic environments. We encourage you to incorporate the relevant practices into your project design.

We appreciate your efforts to conserve endangered species. If you have any questions concerning these recommendations please contact Carrie Harrington, Fish and Wildlife Biologist (phone: 808-792-9400; fax: 808-792-9581).

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Nadig', with a stylized flourish at the end.

Aaron Nadig
Assistant Field Supervisor
Oahu, Kauai, NWHI, and American Samoa

Enclosure: Service BMPs for erosion and sediment control

U.S. Fish and Wildlife Service Recommended Standard Best Management Practices

The U.S. Fish and Wildlife Service (USFWS) recommends the following measures to be incorporated into project planning to avoid or minimize impacts to fish and wildlife resources. Best Management Practices (BMPs) include the incorporation of procedures or materials that may be used to reduce either direct or indirect negative impacts to aquatic habitats that result from project construction-related activities. These BMPs are recommended in addition to, and do not over-ride any terms, conditions, or other recommendations prepared by the USFWS, other federal, state or local agencies. If you have questions concerning these BMPs, please contact the USFWS Aquatic Ecosystems Conservation Program at 808-792-9400.

1. Authorized dredging and filling-related activities that may result in the temporary or permanent loss of aquatic habitats should be designed to avoid indirect, negative impacts to aquatic habitats beyond the planned project area.
2. Dredging/filling in the marine environment should be scheduled to avoid coral spawning and recruitment periods, and sea turtle nesting and hatching periods. Because these periods are variable throughout the Pacific islands, we recommend contacting the relevant local, state, or federal fish and wildlife resource agency for site specific guidance.
3. Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.
4. All project construction-related materials and equipment (dredges, vessels, backhoes, silt curtains, etc.) to be placed in an aquatic environment should be inspected for pollutants including, but not limited to; marine fouling organisms, grease, oil, etc., and cleaned to remove pollutants prior to use. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to the affected or adjacent aquatic or terrestrial habitats. Implementing both a litter-control plan and a Hazard Analysis and Critical Control Point plan (HACCP – see <http://www.haccp-nrm.org/Wizard/default.asp>) can help to prevent attraction and introduction of non-native species.
5. Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to aquatic habitats and should be protected from erosion (*e.g.*, with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.
6. Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.
7. All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.



HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR



MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

October 9, 2014

Ms. Rachel Okoji, Principal
Environmental Risk Analysis LLC
P.O. Box 240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

Subject: Preconsultation for Draft Environmental Assessment
Proposed Restaurant with Outdoor Seating
Kewalo Basin
Honolulu, Hawaii

In response to your letter dated September 10, 2014, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1, Uniform Fire Code [UFC]TM, 2006 Edition, Section 18.2.3.2.2.)

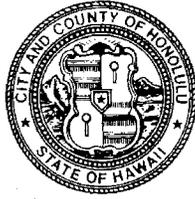
A fire department access road shall extend to within 50 ft of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1, UFCTM, 2006 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet from a water supply on a

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluluapp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR



GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2014/ELOG-1771(rns4)

October 21, 2014

Ms. Rachel Okoji
Principal
Environmental Risk Analysis LLC
820 West Hind Drive, No. 240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

SUBJECT: Draft Environmental Assessment for
Proposed Restaurant with Outdoor Seating,
Kewalo Basin, Tax Map Key: 2-10-043

Thank you for your letter dated September 10, 2014, regarding a request for comments in anticipation of preparation of a Draft Environmental Assessment (DEA) for the project listed above.

We have the following comments:

1. The DEA should include a discussion of the consistency of the project with the Oahu General Plan and the Primary Urban Center Development Plan.
2. The DEA should address drainage and storm water quality impacts.
3. The DEA should list all permits required from the City and County.
4. A connection to the City sewer system was approved under 2014/SCA-0595 and 2014/SCA-0622. An Industrial Wastewater Discharge Permit may be required.
5. The DEA should address how the project satisfies the urban design guidance of Hawaii Community Development Authority's Makai Area Plan (Section 4.0) and the guiding principles and objectives of the Draft Kakaako Community Development District Transit Oriented Development Overlay Plan (Chapter 2).
6. The DEA should include a discussion of how the risk of flooding due to sea level rise will be incorporated in the design of the project and proposed operations at the project site.

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR



MICHAEL D. FORMBY
DIRECTOR

MARK N. GARRITY, AICP
DEPUTY DIRECTOR

TP9/14-581045R

October 17, 2014

Ms. Rachel Okoji
Principal
Environmental Risk Analysis, LLC
820 West Hind Drive, No. 240606
Honolulu, Hawaii 96824

Dear Ms. Okoji:

SUBJECT: Pre-Consultation for Draft Environmental Assessment (DEA)
Proposed Restaurant with Outdoor Seating; Kewalo Basin,
Honolulu, Hawaii

In response to your letter dated September 10, 2014, we have the following comments:

1. The DEA should discuss transportation and parking impacts on the surrounding City streets and regional transportation systems as a result of the project, including the short-term impacts during construction. The DEA should also develop short- and long-term proposed transportation mitigating measures.
2. The Hawaii State Department of Transportation (HDOT) has jurisdiction over Ala Moana Boulevard and should also be consulted.
3. The Ala Moana/Kakaako Neighborhood Board No. 11, as well as the area residents, businesses, etc., should be kept apprised of the details of the proposed project and the impacts, particularly during construction, the project may have on the adjoining local street area network.
4. Should the makai right-hand lane of Ala Moana Boulevard be closed, it may impact our bus transit circulation Diamond Head-bound on Ala Moana Boulevard. There are several bus routes and stops on Ala Moana Boulevard in this vicinity. In the event of any closures, please contact our Public Transit Division at 768-8370 to coordinate your planned activities.

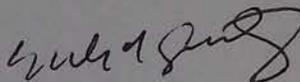
Ms. Rachel Okoji
October 17, 2014
Page 2

5. Any construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m., or after 7:30 p.m.) to minimize any possible disruption to traffic on the local streets.

We reserve further comment pending submission of the DEA.

Thank you for the opportunity to review this matter. Should you have any further questions, please contact Michael Murphy of my staff at 768-8359.

Very truly yours,



for Michael D. Formby
Director

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR



ROBERT J. KRONING, P.E.
DIRECTOR DESIGNATE

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

October 21, 2014

Environmental Risk Analysis LLC
820 W. Hind Drive #240606
Honolulu, Hawaii 96824

Attn: Rachel Okoji

Dear Ms. Okoji:

Subject: Draft Environmental Assessment: Pre-Consultation
Proposed Restaurant with Outdoor Seating
Kewalo Basin, Honolulu, Hawaii

The Department of Design and Construction does not have comments to offer on the draft environmental assessment.

Thank you for the opportunity to review and comment. Should there be any questions, please contact me at 768-8480.

Sincerely,

A handwritten signature in black ink, appearing to read "for M. Yonamine", is written over the typed name of the Director Designate.

Robert J. Kroning, P.E.
Director Designate

RJK: cf (581122)

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