FILE COPY
JUL 23 2017

DAVID Y. IGE
GOVERNOR

CRAIG K. HIRAI
EXECUTIVE DIRECTOR

In reply, refer to:

17:DEV/039

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
HAWAII HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX: (808) 587-0600

July 10, 2017

RECEIVED
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OFC. OF ENVIRONMENTAL QUALITY CONTROL

Mr. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health
235 S Beretania Street, Room 702
Honolulu, Hawaii 96813

Dear Director Glenn:

Re: Draft Environmental Assessment for Nohona Hale at 630 Cooke Street (Tax Map Key: 2-1-051:014)

With this letter, the Hawaii Housing Finance and Development Corporation (HHFDC) hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFONSI) for the Nohona Hale project situated at 630 Cooke Street, Tax Map Key: (1) 2-1-051: 014, in the Honolulu District on the island of O'ahu. A completed publication form and a summary of the proposed action is enclosed (with a copy of the same sent via electronic mail to oeqc@doh.hawaii.gov).

Included in the DEA-AFONSI are requested exemptions and deferrals from certain statutes, ordinances, and rules of government agencies relating to planning, zoning, and construction, pursuant to Section 201H-38 of the Hawaii Revised Statutes for eligible affordable housing projects.

Pursuant to the requirements of Sections 11-200-3 and 11-200-15, Hawai'i Administrative Rules, we request that you publish notice of the DEA-AFONSI in the next available periodic edition of the Environmental Notice.

We have enclosed one (1) each the following items:

- Hardcopy of the OEQC publication form and two hardcopies of the DEA-AFONSI; and
- CD including the DEA-AFONSI and OEQC publication form in .pdf format.

Please contact our consultant, Mr. Keola Cheng at (808) 946-2277 or at

18.017

kcheng@wilsonokamoto.com if you have any questions.

Sincerely,

Craig K. Hirai
Executive Director

Enclosures

APPLICANT
PUBLICATION FORM

Project Name:	Nohona Hale Affordable Rental Micro-Unit Housing
Project Short Name:	Nohona Hale Affordable Micro-Unit Housing
HRS §343-5 Trigger(s):	Use of State Lands/Funds
Island(s):	O'ahu
Judicial District(s):	Honolulu
TMK(s):	(1) 2-1-051: 014
Permit(s)/Approval(s):	Hawai'i Revised Statutes §201H-38
Approving Agency:	Hawai'i Housing Finance & Development Corporation
Contact Name, Email, Telephone, Address	Ken Takahashi, ken.t.takahashi@hawaii.gov, (808) 587-0547, 677 Queen Street Honolulu, Hawaii 96813
Applicant:	Bronx Pro Group LLC
Contact Name, Email, Telephone, Address	David Mosey, dmosey@bronxprogroup.com, (718) 294-5840 1615 Dr Martin L King Jr Blvd Bronx, NY 10453
Consultant:	Wilson Okamoto Corporation
Contact Name, Email, Telephone, Address	Keola Cheng, kcheng@wilsonokamoto.com, 808-946-2277, 1907 South Beretania Street, Suite 400 Honolulu, Hawaii 96826

Status (select one)
_X_ DEA-AFNSI

Submittal Requirements
Submit 1) the approving agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.

Project Summary
Provide a description of the proposed action and purpose and need in 200 words or less.

Nohona Hale is envisioned as a "living" prototype of new building technologies blended with a traditional Hawaiian sense of "Ohana". Encompassing approximately 111 affordable rental micro-units (approximately 300 sq. ft. each), Nohona Hale will be constructed as a 16-story tower set upon a two level podium which will house the lobby, living room, community spaces and management offices.

In keeping with the traditional Hawaiian sense of "Ohana", Nohona Hale will be home to a diverse demographic of ages and backgrounds, living under "one roof." The energy efficient micro-units will be marketed to qualified low-income individuals and couples earning 60% and below of the Area Median Income (AMI), and 10% of the project's units will be set aside to specifically serve families earning 30% AMI or less.

Nohona Hale will offer a new type of mixed-use, mixed-income affordable housing development to Hawai'i residents earning lower incomes through the creation of highly social spaces and amenities paired with modern accommodations.

Nohona Hale Affordable Rental Micro-Unit Housing
Draft Environmental Assessment

July 2017

Prepared For

BRONXPRO GROUP

Prepared By

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

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PREFACE

This Draft Environmental Assessment (EA) / Anticipated Finding of No Significant Impact (FONSI) has been prepared pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS), and Title 11, Chapter 200, Hawai‘i Administrative Rules (HAR), Department of Health, State of Hawai‘i.

This EA is required because the proposed project is an “applicant action” involving the use of state lands and funds. The applicant is the Bronx Pro Group, and the document will be processed for acceptance as a Final EA and Finding of No Significant Impact (FONSI) by the Approving Agency, the State of Hawai‘i Department of Business, Economic Development and Tourism’s (DBEDT) Hawai‘i Housing Finance and Development Corporation (HHFDC), which will also be responsible for determining if the Final EA can be filed as a Finding of No Significant Impact (FONSI).

An Archaeological Inventory Survey has been prepared in conjunction with this EA and is included herein as an Appendix.

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SUMMARY

Applicant:	Bronx Pro Group LLC
Approving Agency:	State of Hawai'i Department of Business, Economic Development, and Tourism – Hawai'i Housing Finance and Development Corporation
Location:	Kaka'ako, O'ahu, Hawai'i
Tax Map Key (TMK):	(1) 2-1-051: 014
Recorded Fee Owner:	Hawai'i Community Development Authority
Existing Use:	Surface Parking Lot / Community Garden for Na Lei Hulu Kūpuna Senior Housing.
State Land Use Classification:	Urban
Zoning:	Administered by HCDA as part of the Kaka'ako Community Development District. The project site is located in the Mauka Area Plan's "Pauahi Neighborhood" and designated "mixed-use urban village."
Proposed Action:	Nohona Hale is envisioned as a "living" prototype of new building technologies blended with a traditional Hawaiian sense of "Ohana". Encompassing approximately 111 affordable rental micro-units (approximately 300 sq. ft. each), Nohona Hale will be constructed as a 16-story tower set upon a two level podium which will house the lobby, living room, community spaces and management offices.
Impacts:	Potential soil erosion and associated water quality impacts will be mitigated by applying required best management practices to control soil erosion and siltation. No significant impacts on flora and fauna are anticipated as a result of construction or operation of the project. No historic properties will be affected by the proposed project. Air quality, noise and hazardous materials impacts will be mitigated by compliance with applicable Department of Health rules. Traffic operations in the vicinity of the project site are expected to remain similar to conditions without the proposed project. As such, the proposed project is not expected to have a significant impact on surrounding roadways. No significant impacts regarding water, wastewater, drainage, electrical and communications systems are anticipated.

Anticipated Determination: Finding of No Significant Impact (FONSI)

Parties Consulted During Pre-Assessment:

Federal Agencies
National Oceanic and Atmospheric Administration, Pacific Islands Regional Office
U.S. Department of the Interior, Fish and Wildlife Service
Federal Aviation Administration
U.S. Army Corps of Engineers

State Legislative Branch
Senator Brickwood Galuteria
Representative Scott Saiki

State Agencies
Department of Accounting and General Services
Department of Business, Economic Development and Tourism
Department of Business, Economic Development and Tourism, Energy Office
Department of Business, Economic Development and Tourism, Land Use Commission
Department of Business, Economic Development and Tourism, Office of Planning
Department of Defense
Department of Defense, State Civil Defense
Department of Health
Department of Health, Clean Water Branch
Department of Health, Environmental Management Division
Department of Health, Environmental Planning Office
Department of Land and Natural Resources
Department of Land and Natural Resources, Historic Preservation Division
Department of Transportation
Office of Environmental Quality Control
Office of Hawaiian Affairs
Office of Planning
University of Hawai‘i at Mānoa Environmental Center

City Council
Councilmember Ann Kobayashi

City and County of Honolulu Agencies
Board of Water Supply
Department of Community Services
Department of Design and Construction
Department of Environmental Services
Department of Facility Maintenance
Department of Parks and Recreation
Department of Planning and Permitting

Department of Transportation Services
Honolulu Fire Department
Honolulu Police Department

Utility Companies
Verizon Hawai‘i
Hawai‘i Gas
Hawaiian Electric Company
Hawaiian Telcom
Oceanic Time Warner Cable

Other Interested Parties and Individuals
Ala Moana/Kaka‘ako Neighborhood Board No. 11

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1. INTRODUCTION

The Bronx Pro Group LLC and EAH Housing (Development Team) is proposing to develop the Nohona Hale Affordable Rental Micro-Unit Housing project. The Development Team was selected to develop the project through a Request for Proposals (RFP) process administered by the Hawai'i Community Development Authority (HCDA), which also owns the land on which the project is proposed. The project design requires the Development Team to apply to the Hawai'i Housing Finance and Development Corporation (HHFDC) for qualification under Chapter 201H, HRS, along with exemptions from statutes, rules and ordinances pursuant to Section 201H-38, HRS. The Development Team will also seek a Rental Housing Revolving Fund loan from the HHFDC.

Since the project will involve the use of both State lands and funds, it is subject to Chapter 343, Hawai'i Revised Statutes (HRS), referred to as the Hawai'i EIS Law. In compliance with Chapter 343, HRS and implementing Hawai'i Administrative Rules (Department of Health) Title 11, Chapter 200, the HHFDC will be the approving agency responsible for processing an EA for this "applicant action" based on an anticipated Finding of No Significant Impact (FONSI).

In addition, the Draft EA documents the exemptions and deferrals requested under Chapter 201H for agency/public review and comment as Chapter 8. The complete 201H application is on file with the Hawaii Housing and Finance Development Corporation (HHFDC).

1.1 Project Location

The project site is located in the Kakaʻako area of Honolulu on the island of Oahu (See Figure 1-1). It fronts Cooke Street within a consolidated block bounded by Cooke Street to the southeast, Coral Street to the northwest, Queen Street to the northeast, and Halekauwila Street to the southwest. The project parcel is identified as Tax Map Key (TMK) parcel 2-1-051: 014, and encompasses approximately 10,450 square foot (0.24 acre) (See Figure 1-2).

1.2 Existing and Surrounding Uses

The project site is currently utilized as a paved surface parking lot and a community garden for the residents of the nearby Na Lei Hulu Kūpuna senior housing. Existing surrounding uses include 614 Cooke Street, which is adjacent to the southwest and houses businesses such as the Baby and Kids Emporium (See Figure 1-3). Further down the block is the Na Lei Hulu Kūpuna senior housing and across Halekauwila Street from that is the historic Mother Waldron Neighborhood Park. Adjacent to the northeast is Sunshine Scuba, which occupies the former Kakaʻako Theater building and across Queen Street from that is 719 Cooke Street which includes businesses such as Golden Upholstery and Daytona Auto Center. The adjacent parcel to the rear of the project site is the Lex Brodie's tire shop at 701 Queen Street. Across Cooke Street to the southeast is the Ohana Doggie Day Care and Spa, which is flanked by the Pavilion by Red to the northeast and the Cooke Street Diner to the southwest. Further southwest across Ilaniwai Street is 575 Cooke Street, which houses Leak Master Roofing.

1.3 Surrounding Planned Development

The project site is within the Mauka Area of the Kakaʻako Community Development District (KCDD), which is undergoing rapid transformation. The KCDD is located on the southern shore of the island of Oahu, and lies between Waikiki and Downtown/Capitol District. It is divided into "Mauka" and "Makai" areas, each with a governing plan and set of rules that supercede City and County of Honolulu zoning. The proposed project is located within the Mauka Area which is bounded by Punchbowl Street, South King Street, Piikoi Street, and Ala Moana Boulevard.

The KCDD Mauka Area Plan designates neighborhoods that recognize distinct variations in land use and urban form, and provides a framework for realizing unique neighborhoods with a special sense of place and identity. The project site is located on the edge of the "Pauahi" Neighborhood Zone, which is planned to be a mixed-use "urban village". The Site is surrounded by parcels similarly entitled to be developed to an allowable maximum height of 400 feet.

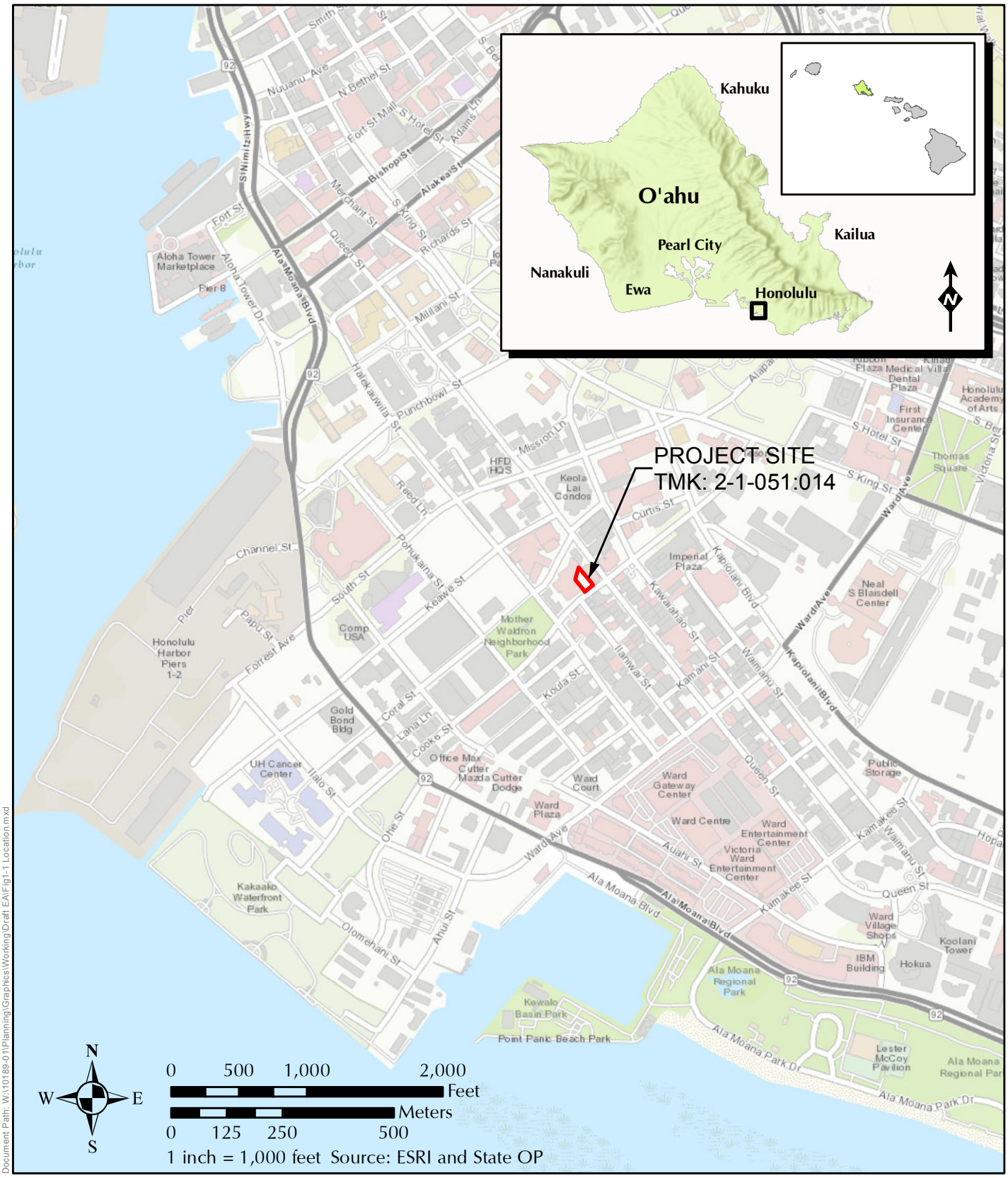
Approximately 29 acres of the Pauahi Neighborhood have been planned by landowner Kamehameha Schools' Kaiāulu ʻO Kakaʻako Master Plan ("KKMP"). The KKMP envisions Cooke Street as a landscaped corridor with pocket parks, courtyards, public gardens and playgrounds, and which will link the Mother Waldron Neighborhood Park to Makai Gateway Park across Ala Moana Boulevard, leading to Kakaʻako Waterfront Park.

The site is positioned to be transit-oriented, and will benefitting from accessibility to local transit systems including the City's bus system and the future Honolulu Authority for Rapid Transportation (HART) rail line. It is equidistant from the planned "Civic Center" and "Kaka'ako" rail stations, at approximately a quarter-mile or 5-minute walk in either direction. The elevated rail guideway will pass the site approximately a half a block away, along Halekauwila Street, and is planned to offer pedestrian and bicycle facilities beneath it. The Mauka Area Plan identifies Cooke Street as a "Pedestrian Supportive Environment" where infrastructure and land use attracts recreational walkers and joggers.

Currently, the proposed Site is utilized as a surface parking lot and a community garden for the residents of the nearby Na Lei Hulu Kūpuna senior housing.

1.4 Land Ownership

The project site is owned and administered by the HCDA.



Document Path: W:\10189-01\Planning\Graphics\Working\Draft EA\Fig1-1 Location.mxd

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FIGURE 1-1

LOCATION MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

2. PROJECT DESCRIPTION

2.1 PURPOSE AND NEED

The Hawaii State Legislature created the Hawai‘i Community Development Authority (HCDA) in 1976 to plan, regulate and implement the redevelopment of specially designated community development districts in the State of Hawaii - including 600-acres in the Kaka‘ako Community Development District (“KCDD”) located within Honolulu’s primary urban core. The KCDD is currently undergoing major redevelopment, with many projects under construction or approved to start construction, and many more proposed developments in review. This redevelopment is incrementally realizing planned goals for Smart Growth through urban infill of mixed-use neighborhoods.

The HCDA has adopted a revised Mauka Area Plan which identifies the need for a mix of housing options, including residential development that offers different densities, building types, and configuration in accordance with appropriate urban design guidelines; integration both vertically and horizontally of residents of varying incomes, ages, and family groups; and, an increased supply of housing for residents of low or moderate income. Furthermore, it is expected that residential development will provide necessary community facilities, such as open space, parks, community meeting places, child care centers, and other services, within and adjacent to residential development.

It is the HCDA’s interest to be a leader in facilitating better development, to actively promote new strategies for revitalizing neighborhoods, and to establish Kaka‘ako as the most desirable and sustainable urban place in Hawaii in which to work, live, visit, learn and play.

The proposed Nohona Hale Affordable Rental Micro-Housing project was created in response to HCDA’s request for proposal to develop an affordable low-to moderate-income “micro unit” housing project on their 630 Cooke Street parcel located in Kaka‘ako Mauka. This request for proposal addresses a recognized need for a lower-cost housing option that allows people with low to moderate income and limited housing needs to live in a desirable mixed-use neighborhood with access to transit.

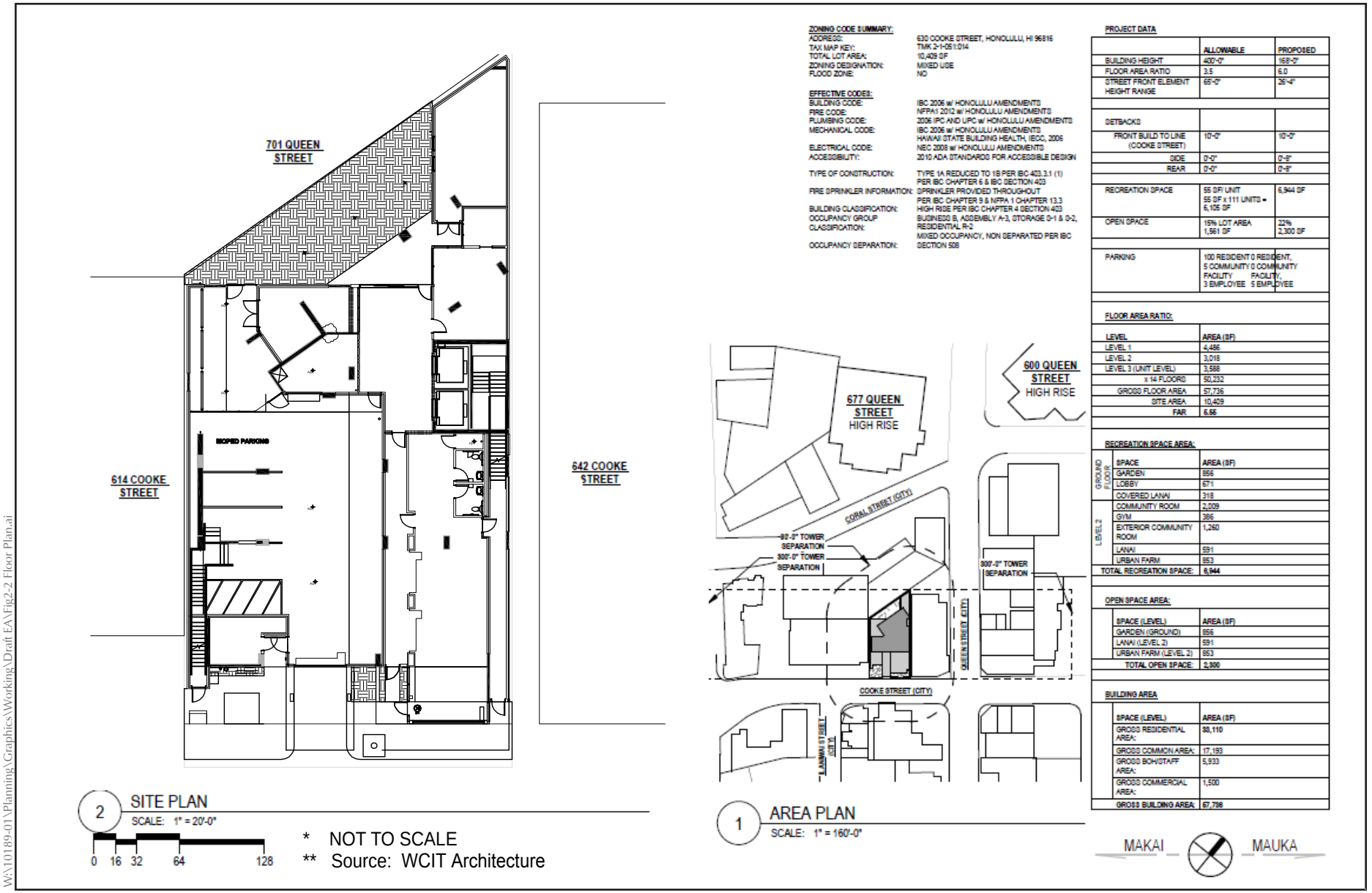
2.2 PROPOSED PROJECT

Nohona Hale is envisioned as a “living” prototype of new building technologies blended with a traditional Hawaiian sense of “Ohana”. Encompassing approximately 111 affordable rental micro-units (approximately 300 sq. ft. each), Nohona Hale will be constructed as a 16-story tower set upon a two level podium which will house the lobby, living room, community spaces and management offices. (See Figure 2-1, 2-2, 2-3, and 2-4). This configuration will allow trade-winds to breathe through and facilitate natural ventilation for residents, thereby reducing the project’s overall carbon footprint.

In keeping with the traditional Hawaiian sense of “Ohana”, Nohona Hale will be home to a diverse demographic of all ages and backgrounds, living under “one roof.” Nohona Hale’s low income, energy efficient micro units will be marketed to qualified low-income individuals and couples earning 60% and below of the Area Median Income (AMI), and 10% of the project’s units will be set aside to specifically serve families earning 30% AMI or less.

Nohona Hale presents a unique opportunity to redefine what a mixed‐use, mixed‐income affordable housing development can provide to the low income residents of Hawai‘i. Nohona Hale will cultivate a community living experience for residents through the creation of highly social spaces and amenities paired with modern accommodations.

Approvals for Nohona Hale will be processed under Chapter 201H, HRS, which allows for greater design flexibility and cost savings to facilitate the development of affordable housing. This is achieved by allowing exemptions from certain statutes, ordinances, charter provisions, and rules related to planning, zoning and construction.



ZONING CODE SUMMARY:

ADDRESS:	630 COOKE STREET, HONOLULU, HI 96816
TAX MAP KEY:	TMK 2-1-051:014
TOTAL LOT AREA:	10,409 SF
ZONING DESIGNATION:	MIXED USE
FLOOD ZONE:	NO

EFFECTIVE CODES:

BUILDING CODE:	IBC 2006 w/ HONOLULU AMENDMENTS
FIRE CODE:	NFPA1 2012 w/ HONOLULU AMENDMENTS
PLUMBING CODE:	2006 IPC AND UPC w/ HONOLULU AMENDMENTS
MECHANICAL CODE:	IBC 2006 w/ HONOLULU AMENDMENTS HAWAII STATE BUILDING HEALTH, IECC, 2006
ELECTRICAL CODE:	NEC 2008 w/ HONOLULU AMENDMENTS
ACCESSIBILITY:	2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
TYPE OF CONSTRUCTION:	TYPE 1A REDUCED TO 1B PER IBC 403.3.1 (1) PER IBC CHAPTER 6 & IBC SECTION 403
FIRE SPRINKLER INFORMATION:	SPRINKLER PROVIDED THROUGHOUT PER IBC CHAPTER 9 & NFPA 1 CHAPTER 13.3
BUILDING CLASSIFICATION:	HIGH RISE PER IBC CHAPTER 4 SECTION 403
OCCUPANCY GROUP CLASSIFICATION:	BUSINESS B, ASSEMBLY A-3, STORAGE S-1 & S-2, RESIDENTIAL R-2 MIXED OCCUPANCY, NON SEPARATED PER IBC
OCCUPANCY SEPARATION:	SECTION 508

PROJECT DATA

	ALLOWABLE	PROPOSED
BUILDING HEIGHT	400'-0"	168'-0"
FLOOR AREA RATIO	3.5	6.0
STREET FRONT ELEMENT HEIGHT RANGE	65'-0"	35'-4"
SETBACKS		
FRONT BUILD TO LINE (COOKE STREET)	10'-0"	10'-0"
SIDE	0'-0"	0'-8"
REAR	0'-0"	0'-8"
RECREATION SPACE	55 SF/ UNIT 55 SF x 111 UNITS = 6,105 SF	6,944 SF
OPEN SPACE	15% LOT AREA 1,561 SF	22% 2,300 SF
PARKING	100 RESIDENT 0 RESIDENT, 5 COMMUNITY FACILITY 3 EMPLOYEE	0 COMMUNITY FACILITY, 5 EMPLOYEE

FLOOR AREA RATIO:

LEVEL	AREA (SF)
LEVEL 1	4,486
LEVEL 2	3,018
LEVEL 3 (UNIT LEVEL)	3,588
x 14 FLOORS	50,232
GROSS FLOOR AREA	57,736
SITE AREA	10,409
FAR	6.55

RECREATION SPACE AREA:

	SPACE	AREA (SF)
GROUND FLOOR	GARDEN	856
	LOBBY	671
	COVERED LANAI	318
LEVEL 2	COMMUNITY ROOM	2,009
	GYM	396
	EXTERIOR COMMUNITY ROOM	1,260
	LANAI	591
	URBAN FARM	853
TOTAL RECREATION SPACE:		6,944

OPEN SPACE AREA:

SPACE (LEVEL)	AREA (SF)
GARDEN (GROUND)	856
LANAI (LEVEL 2)	591
URBAN FARM (LEVEL 2)	853
TOTAL OPEN SPACE:	2,300

BUILDING AREA

SPACE (LEVEL)	AREA (SF)
GROSS RESIDENTIAL AREA:	33,110
GROSS COMMON AREA:	17,193
GROSS BOH/STAFF AREA:	5,933
GROSS COMMERCIAL AREA:	1,500
GROSS BUILDING AREA:	57,736

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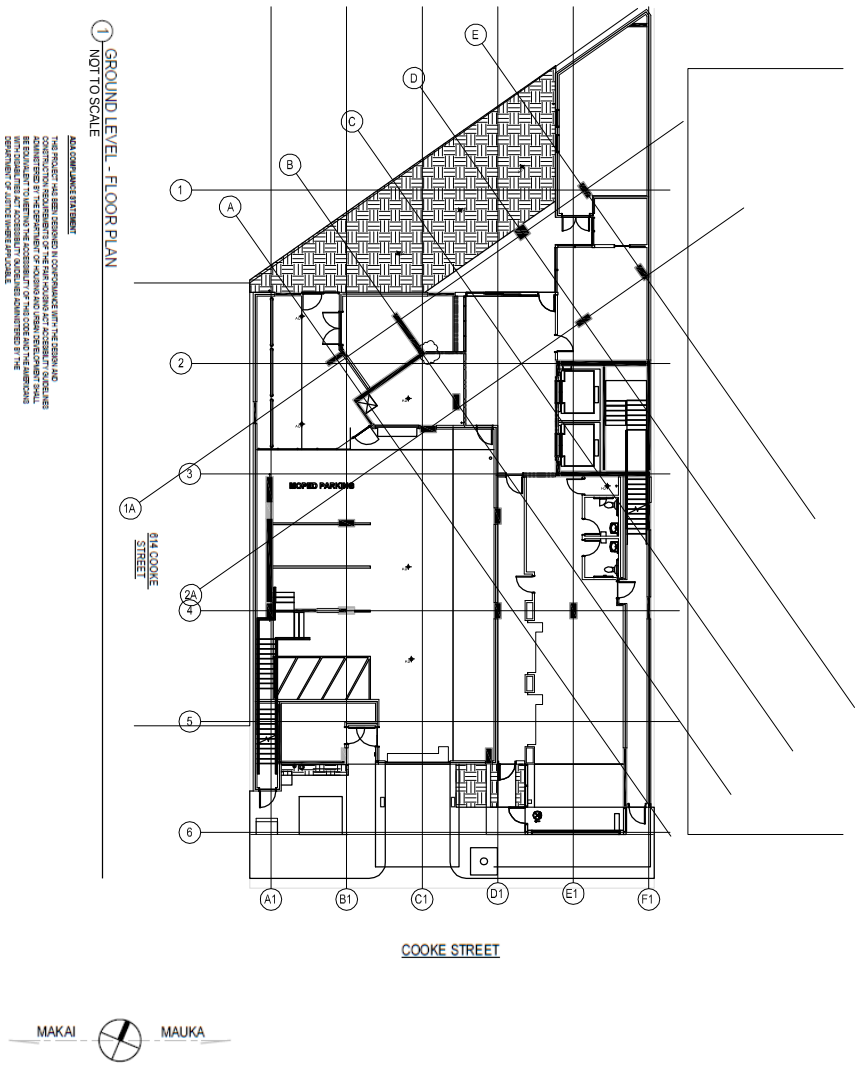
FIGURE 2-1

SITE PLAN

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING



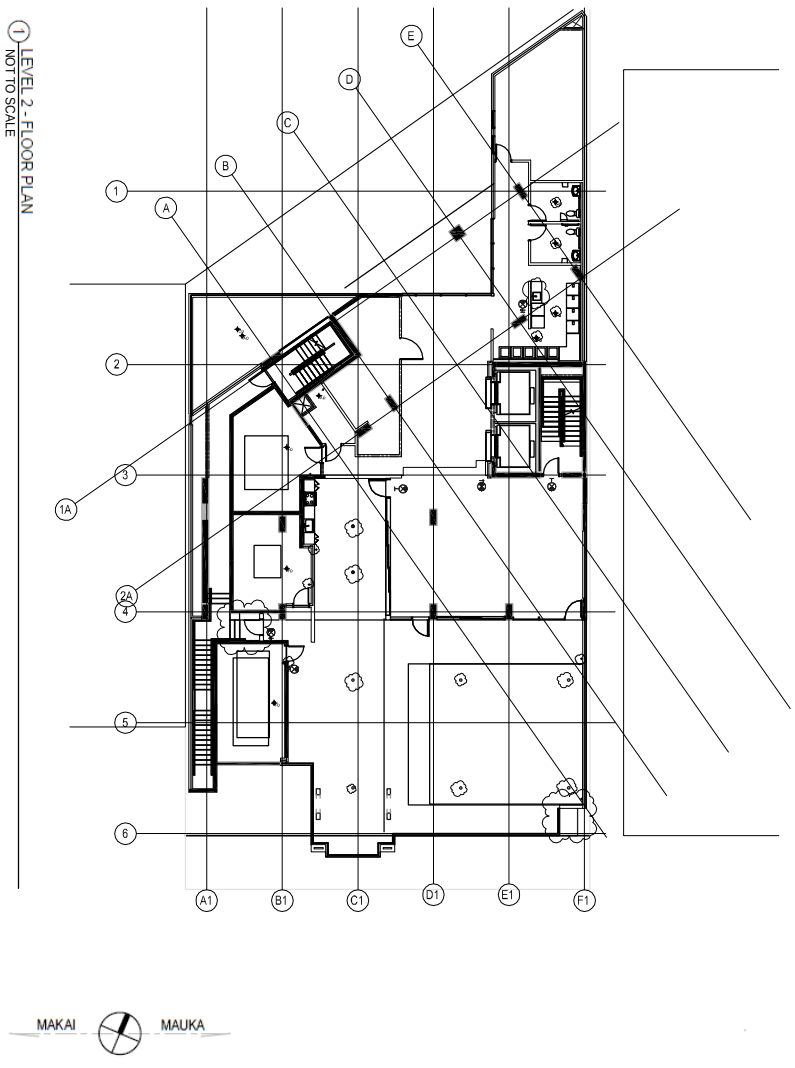


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FIGURE 2-2

FLOOR PLANS: GROUND LEVEL / LEVEL 2

* NOT TO SCALE
** Source: WCIT Architecture

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

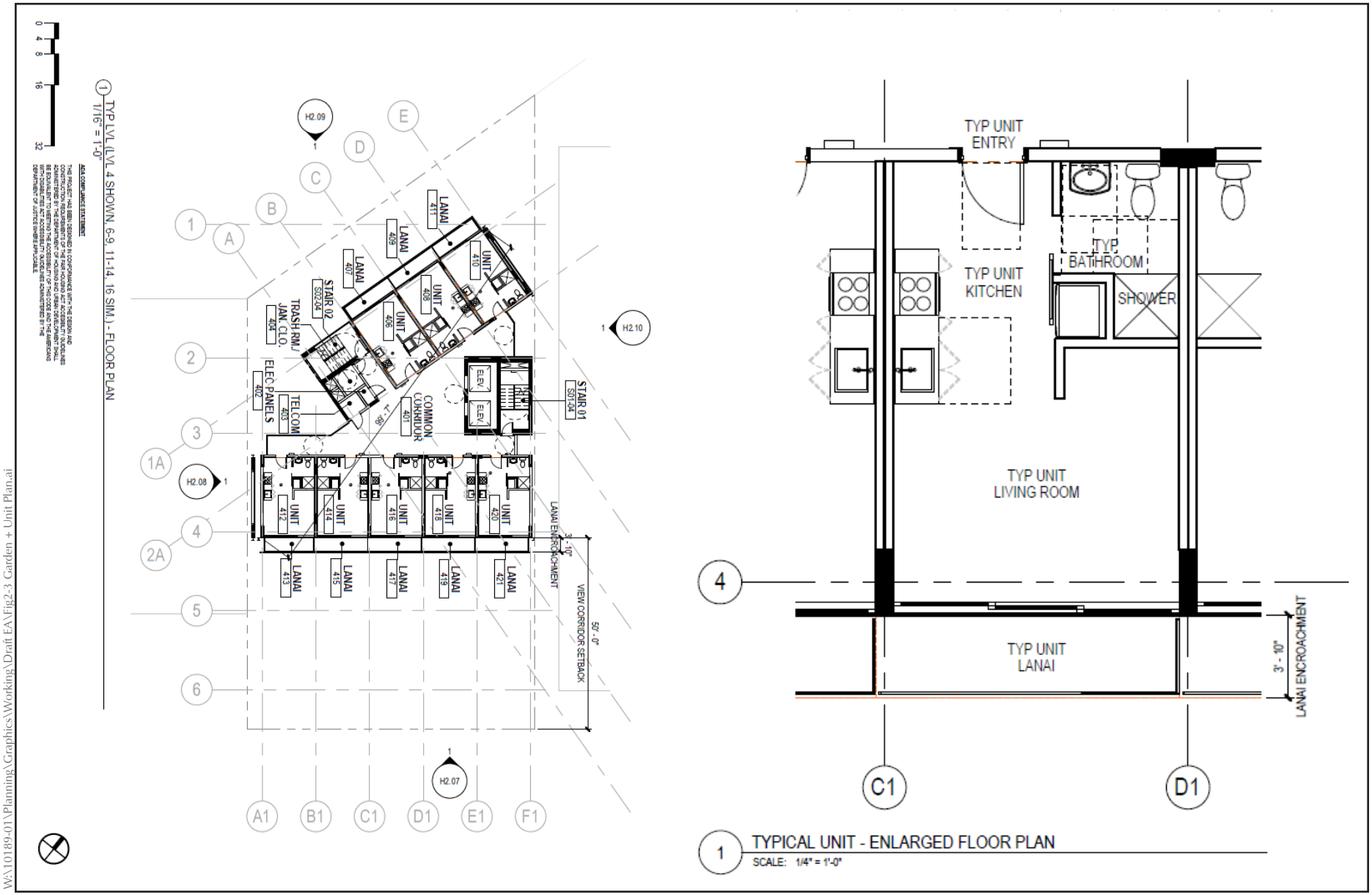

FIGURE 2-3

FLOOR PLANS: STANDARD LEVEL / TYPICAL UNIT

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

WILSON OKAMOTO CORPORATION

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FIGURE 2-4

COOKE STREET PERSPECTIVE

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

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3. DESCRIPTION OF EXISTING ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES

3.1 Climate

The climate of O‘ahu is relatively moderate throughout most of the year and is characterized as semi-tropical with two seasons. The summer period runs from May through September and is generally warm and dry, with predominantly northeast trade winds. In contrast, the winter season runs from October through April and is associated with lower temperatures, higher rainfall and less prevalent trade winds.

The project is located in the Honolulu area which has a climate typical of the leeward coastal lowlands of O‘ahu. The area is characterized by abundant sunshine, persistent trade winds, relatively constant temperatures, moderate humidity, and the infrequency of severe storms. Northeasterly trade winds prevail throughout the year although its frequency varies.

The mean temperature measured at Honolulu International Airport ranges from 70 degrees Fahrenheit in the winter to 84 degrees Fahrenheit in the summer. Average annual precipitation is measured at approximately 30 inches, with rainfall occurring mostly between October and March.

Over the 20th Century, the average temperatures of the Earth’s surface and shallow ocean have increased (Fletcher 2010). These changes are largely attributed to the release of greenhouse gases (GHGs) into the atmosphere, so-called as they absorb and “trap” solar radiation instead of reflecting it back into space. Generally speaking, GHGs include carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons.

The main sources of GHG emissions resulting from human activity are from the following sectors, in order from most emissions to least: fossil fuel power stations, industrial activity, transportation, agriculture, fossil fuel processing, residential and commercial activity, land use and biomass burning, and waste disposal and treatment. In 2007, the United States was responsible for approximately 20 percent of global carbon dioxide emissions (WRI 2010). Within Hawai‘i, the island of O‘ahu accounts for approximately 80 percent of the state’s total carbon dioxide emissions (ICF 2008). Hawai‘i’s GHG emissions encompass less than 1 percent of the national total, as of 2007 (Environmental Protection Agency [EPA] 2008).

Impacts and Mitigation Measures

No significant impacts on climate in the project area are anticipated. Construction and operation of proposed project improvements are not anticipated to affect temperatures, wind, or rainfall levels in the project area.

The implementation of the proposed action will result in the short-term irrevocable release of GHGs from construction activities associated with the development of the proposed project improvements. The quantities of GHGs released, however, will be negligible. No mitigation is required or proposed.

3.2 Physiography

3.2.1 Geology and Topography

The island of O‘ahu is a volcanic doublet formed by the Wai‘anae Range to the west and the younger Ko‘olau Range to the east. Both are remnants of shield volcanoes, but the term “range” indicates that they have lost most of their original shield outlines and are now long, narrow ridges shaped largely by erosion. Later post-erosional eruptions sent lava down the valleys and resulted in the formation of volcanic cones such as Diamond Head and Tantalus.

The project site is located on the Kaka‘ako Peninsula which lies on the Honolulu Plain, a narrow coastal plain along O‘ahu’s south central coast. The Honolulu Plain and much of the remaining southern edge of O‘ahu is underlain by a broad elevated coral reef, which is covered by alluvium carried down from the mountains. The Honolulu Plain ranges in elevation from zero to ten feet.

According to the United States Geological Survey (USGS) 7.5-Minute Honolulu, Oahu, Topographic Quadrangle Map (1998), the elevation at the subject property is between 5 and 10 feet above mean sea level (amsl). The general topography of the subject property and surrounding region slopes down to the south, toward the Pacific Ocean.

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts on geology or topography are anticipated during construction or operation of the proposed project. Construction of proposed project improvements will not involve any major land disturbing activities involving mass grading or significant revisions to site contours. Applicable best management practices and erosion control measures will be implemented.

3.2.2 Soils

According to the U.S. Department of Agriculture, Natural Resource Conservation Service, soils within the project site are classified as Fill Land, Mixed (FL) (see Figure 3-1). Soil series are classified as “man-made”, well-drained, 0-10 percent slope, with variable soil properties. Areas with this designation include those filled with material dredged from the ocean or hauled from nearby areas, garbage, or general material from other sources.

Impacts and Mitigation Measures

In the short- and long- term, no significant impacts on soils are anticipated during the construction or operation of the proposed project. The project site is a previously developed site within the urban core of Honolulu. The project would involve some fine grading for new construction activities, as well as excavation for utility lines. The construction of the proposed project, however, will not involve any major land disturbing activities involving mass grading or significant revisions to site contours. Applicable best management practices and erosion control measures will be implemented, such as temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures

will be used once construction is completed. Phased construction limit the extent of surface area disturbance during each phase.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to soils and erosion. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.

3.3 Hydrology

3.3.1 Surface Waters, Coastal Waters, and Sea Level Rise

Southern Oahu's coastal plain, which includes the Kaka'ako Peninsula, is underlain by sedimentary deposits that form caprock retarding seaward movement of fresh groundwater from the basal aquifer. The caprock extends along the coastline to about 800 to 900 feet below sea level.

The nearest surface stream in the vicinity of the project site is Nu'uanu Stream, located about one mile north of the project site, where it discharges into Honolulu Harbor. Urbanization of the Kaka'ako area and upland areas has increased runoff to the nearshore coastal waters. Although drainage improvements in the Kaka'ako area have been implemented, much of the area is still subject to localized flooding because of its flat topography and remaining inadequate drainage facilities.

The nearest coastal water to the project site is about 0.35 mile to the south at Kewalo Basin, which opens onto Mamala Bay which forms Honolulu's coastline. Pursuant to Hawaii Administrative Rules (HAR) Title 11, Chapter 54, Water Quality Standards, the coastal waters in the vicinity of the project site are classified as Class A marine waters. Class A marine waters are recognized as waters to be used for "recreational purposes and aesthetic enjoyment to be protected. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class."

Honolulu Harbor is located approximately a half mile to the east of the project site at Pier 2. These waters are also classified as Class A marine waters (See Figure 3-2).

Among the impacts associated with climate change is the threat of rising sea levels. Recent projections of global sea level rise (SLR) estimate an increase of up to 1 meter or higher above current sea levels. This is of particular concern to low-lying coastal communities and ecosystems that are exposed to a variety of coastal hazards, such as tsunamis and hurricanes. These hazards and the resulting risk to coastal areas can be exacerbated by SLR.

Impacts and Mitigation Measures

No short- or long-term significant impacts on surface and/or coastal waters in the project vicinity are anticipated during construction or operation of the proposed

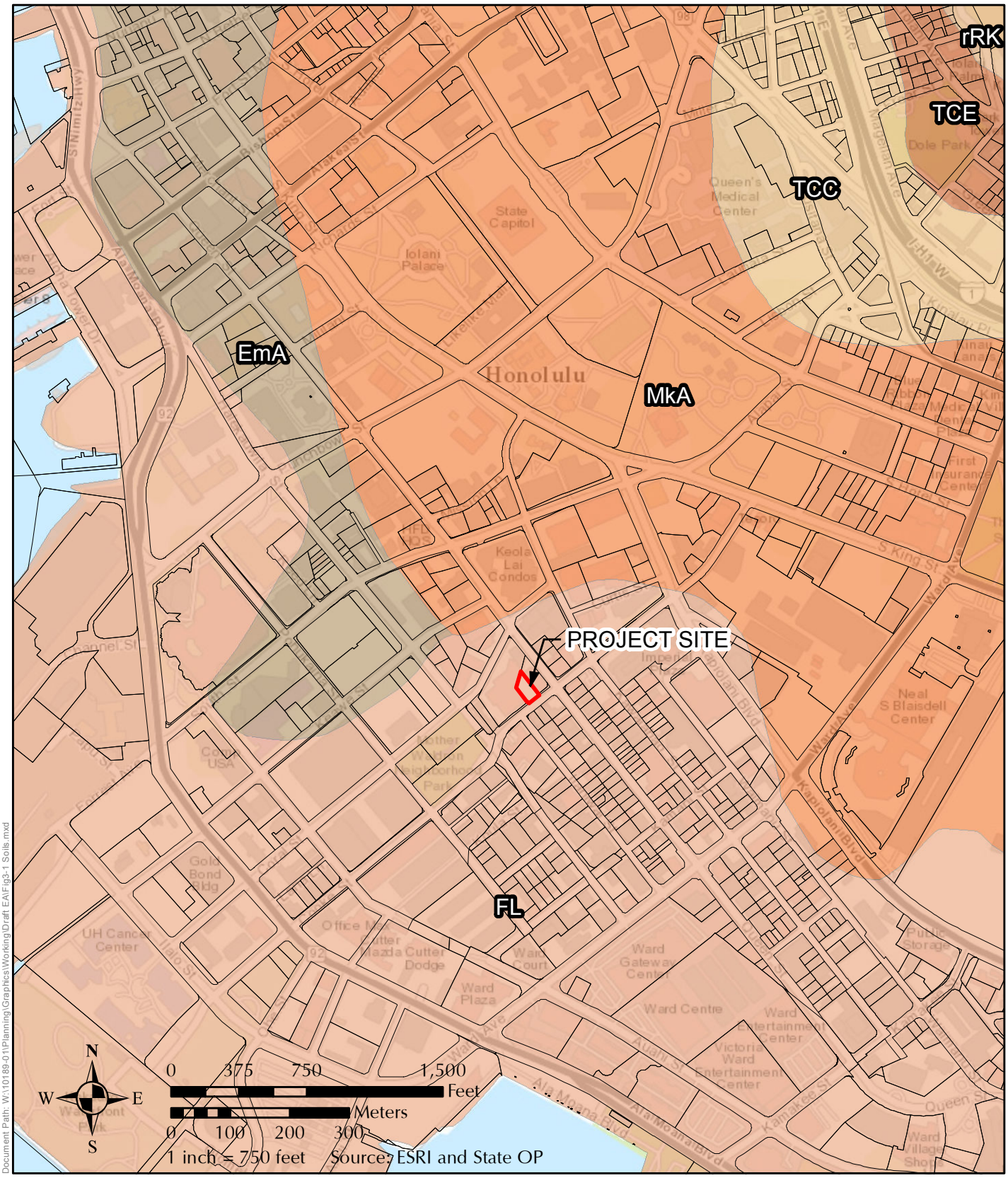

FIGURE 3-1

SOILS MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

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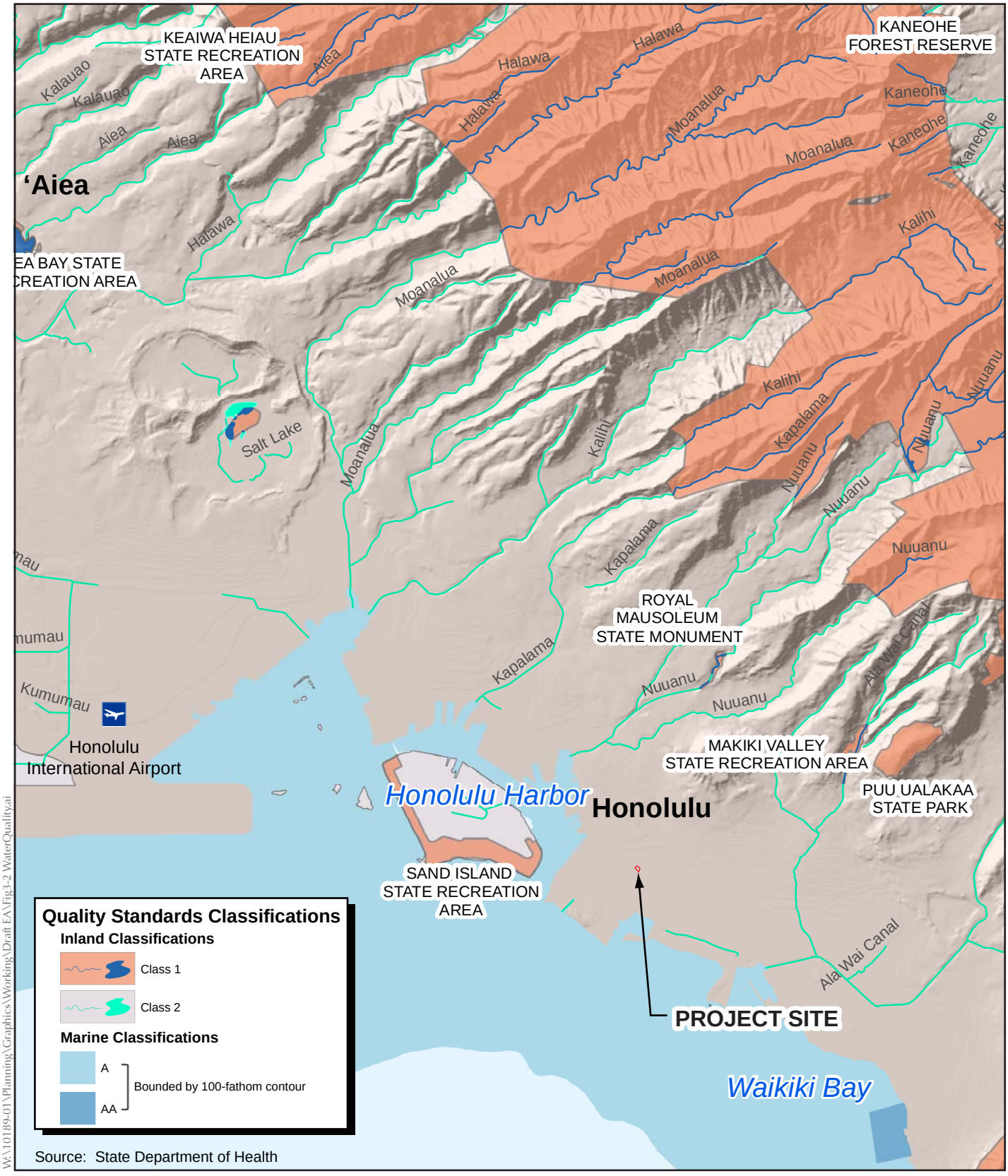

Source: State Department of Health

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FIGURE 3-2

WATER QUALITY STANDARDS MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

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project. There are no streams or wetlands on or within close proximity to the project site.

In the short-term, construction activities will involve land-disturbing activities that may result in some soil erosion, however, mitigation measures will be incorporated into the project's construction plans to minimize soil disturbances and potential stormwater runoff. Applicable best management practices and erosion control measures may include as temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed. Phased construction will limit the extent of surface area disturbance during each phase. Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to soils and erosion. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.

In planning for the impacts of climate change, the national standard for assessing the potential impacts of sea level rise on coastal projects has been developed by the United States Army Corps of Engineers (USACE). In December 2013, the USACE issued an Engineering Circular (EC 1165-2-212) which provides "guidance for incorporating the direct and indirect physical effects of projected future sea level change across the project life cycle in managing, planning, engineering, designing, constructing, operating, and maintaining USACE projects." The circular can be used as the basis for assessing the "potential relative sea level change" that might be experienced by projects in shoreline areas, and is required to be used for all USACE civil works. More recently, USACE has provided online tools which can be used to adapt the circular's guidance to reflect historic sea level rise conditions measured at the Honolulu National Oceanic and Atmospheric Administration (NOAA) tidal gauges. The online calculator utilizes two sets of historic data to estimate future scenarios: the USACE Scenarios (Low, Intermediate, and High), and the NOAA Scenarios (Low, Intermediate Low, Intermediate High, and High). This tool can be used to quickly and easily provide a range of scenarios of potential relative sea level change from the present to 2100.

The USACE/NOAA Low Scenario estimates a rise (relative to 2017 baseline levels) of just 0.03 feet (0.36 inches) by the year 2020, and 0.05 feet (0.6 inches) by 2025. Meanwhile, the USACE Intermediate/NOAA Intermediate Low Scenario estimates a rise of 0.17 feet (3.2 inches) by 2027, and 0.22 feet (5.6 inches) by 2037. The highest scenario, NOAA High, estimates a rise of .63 feet (7.6 inches) by 2027, and 0.79 feet (9.5 inches) by 2037. As the SLR is estimated to be anywhere between 5.6 inches and 9.5 inches by the year 2037, the potential impact of sea level rise on this Project site is thus predicted to be minimal.

3.3.2 Groundwater

The State Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM) has established a groundwater hydrologic unit and coding system for groundwater resource management. The proposed project site is located within the Honolulu Sector Area which is comprised of six Aquifer System Areas identified as Waiʻalae – East, Waiʻalae – West, Pālolo, Nuʻuanu, Kalihi and Moanalua. The project site is located within the Nuʻuanu Aquifer System (30102) area which has an estimated yield of 14 million gallons per day (mgd) (see Figure 3-3).

Impacts and Mitigation Measures

No short- or long-term significant impacts on groundwater in the project vicinity are anticipated during construction or operation of the proposed project. The project site lies makai of the Underground Injection Control Line and the Honolulu Board of Water Supply's No Pass Zone Line, both of which demarcate areas where wastewater disposal facilities would not affect potable water supplies (See Figure 3-3).

Infiltration of water at the project site would eventually reach seawater in the ground as opposed to the aquifers discussed above, which lie below the caprock. Construction activities are not likely to introduce to, nor release from the soils, any materials that could adversely affect the underlying groundwater. Construction material wastes will appropriately be disposed of to prevent any leachate from contaminating groundwater.

3.4 Natural Hazards

3.4.1 Flood and Tsunami Hazard

Honolulu is vulnerable to flooding from inland streams, hurricane and tropical storm surge, and seasonal high waves. Nuʻuanu stream and Honolulu, in general, have historically experienced widespread flooding (Fletcher et al. 2002).

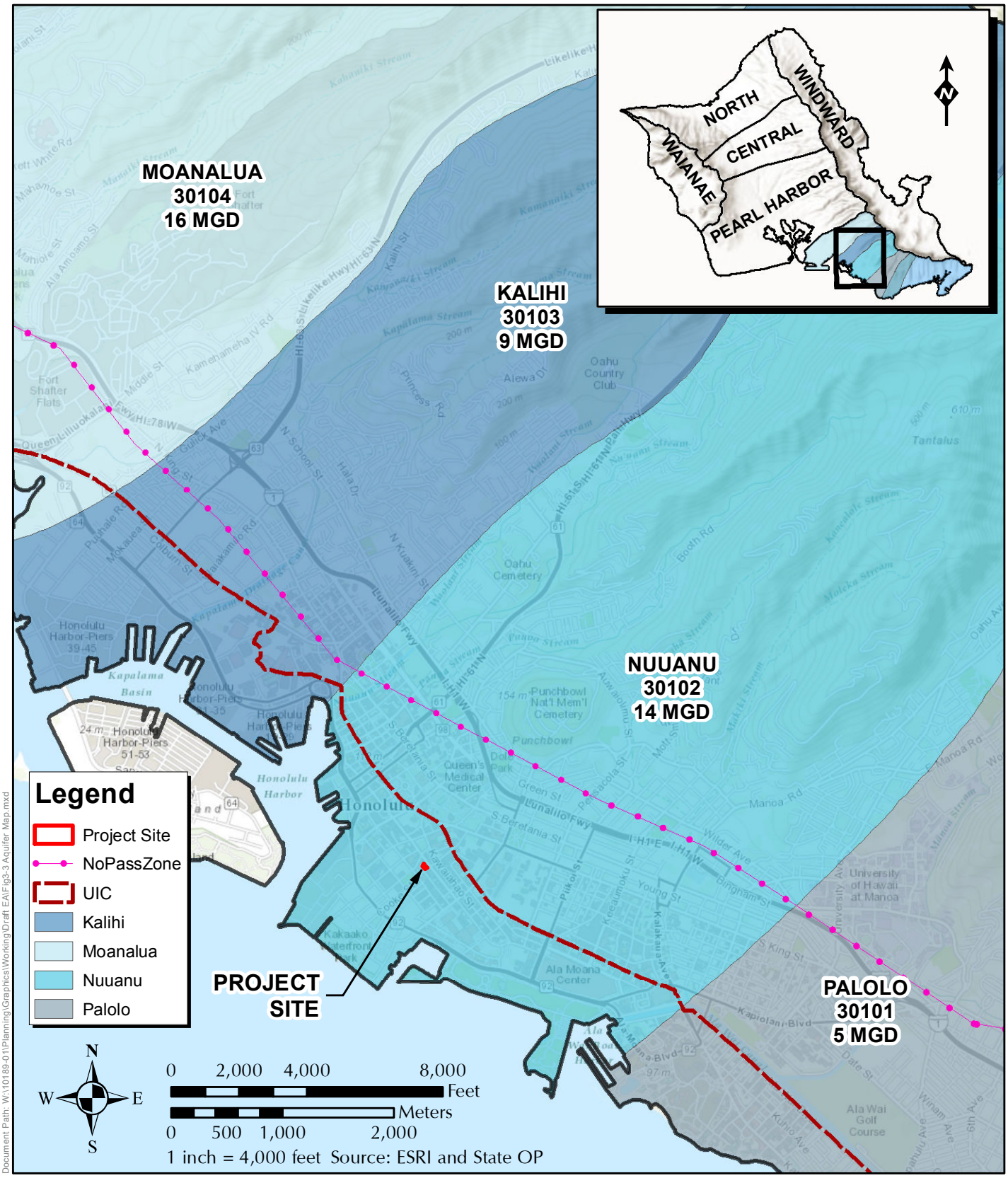

FIGURE 3-3

AQUIFERS MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

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According to the Flood Insurance Rate Map (FIRM), (Community Panel Number 1500010115 C) prepared by the Federal Emergency Management Agency (FEMA), the project site is designated Zone X, an area determined to be outside of 500 year floodplain (See Figure 3-4). There are no base flood elevations or depths shown within this zone.

The Civil Defense Tsunami Inundation Maps Panel 19 indicates that the project site is not located in an area vulnerable to tsunami inundation.

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts on flood hazards in the project area are anticipated. The proposed improvements are unlikely to increase flood risks or cause any adverse flood-related impacts at the project site or lower elevation properties. For development done in the various phases, all drainage improvements, excavation and grading will be coordinated with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts regarding flood and tsunami hazards.

3.4.2 Hurricane and Wind Hazard

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The State has been affected twice since 1982 by significant hurricanes, ʻIwa in 1982 and ʻIniki in 1992. During hurricanes and storm conditions, high winds cause strong uplift forces on structures, particularly on roofs. Wind-driven materials and debris can attain high velocity and cause devastating property damage and harm to life and limb. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The project area is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Impacts and Mitigation Measures

The potential for hurricanes, while relatively rare, is present. To safeguard against hurricane damage, project improvements will be designed in compliance with American Society of Civil Engineers and International Building Code standards for wind exposure.

3.4.3 Seismic Hazard

The southern shoreline of Oʻahu lies within the Molokaʻi Seismic Zone. This region of Oʻahu is classified as 2A Seismic Zone under the Uniform Building Code (UBC). Zone 2A is characterized as having earthquakes that may cause minor damage to structures. The Honolulu coastline is assessed to have moderately high vulnerability to earthquakes (Fletcher et al. 2002).

Impacts and Mitigation Measures

Oʻahu has not experienced significant seismic events in the modern era. The proposed project improvements would meet prevailing building codes, which incorporate specifications to reduce vulnerability to earthquakes.

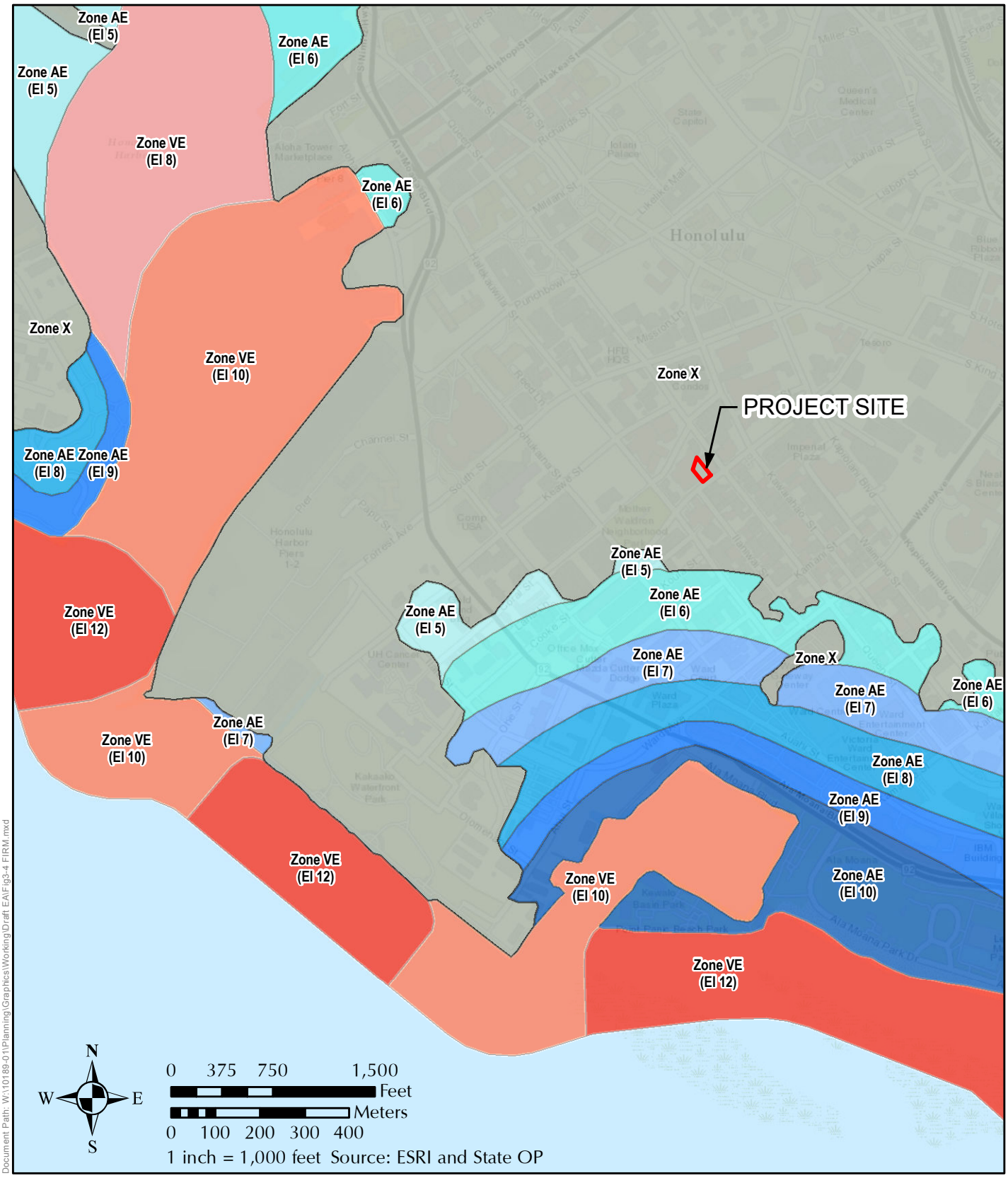

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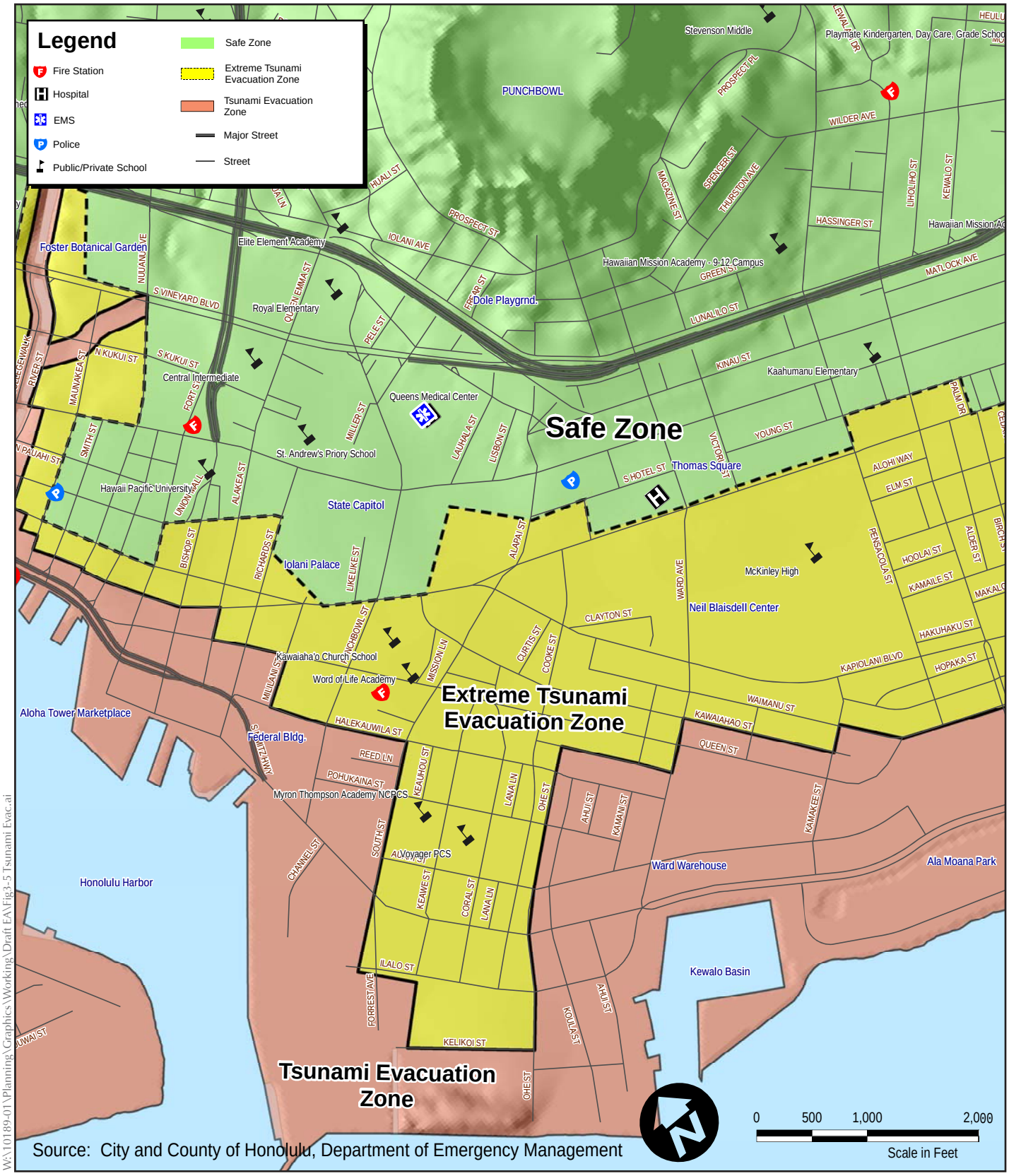
FIGURE 3-4

FLOOD INSURANCE RATE MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING



Source: City and County of Honolulu, Department of Emergency Management

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FIGURE 3-5

EXTREME TSUNAMI EVACUATION ZONE MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

3.5 Natural Environment

3.5.1 Flora and Fauna

The project site is located in a highly altered urban environment. Consequently, no rare, threatened or endangered flora or fauna species have been observed to exist at the project site. Species most commonly frequenting the site and vicinity are typical of urbanized areas and consist of common introduced flora and fauna.

Impacts and Mitigation Measures

Potential adverse impacts on flora and fauna are not anticipated. The project site is located within a highly altered urban environment. No listed or protected plant species are known from the project area. Rare, threatened, or endangered fauna are not known to utilize the site for either habitat or foraging purposes. Construction activities may temporarily disrupt routine behavior of common faunal species in the immediate project area, but will not result in permanent displacement, or adversely affect regional distribution of affected fauna. Once project activities are complete, faunal activity in the vicinity of the work site is expected to return to pre-existing conditions.

No adverse impacts resulting from the project are anticipated. However, measures to prevent adverse effects to protected seabirds from night lighting will include the following:

- During construction activities, all nighttime lighting will be shielded and angled downward to reduce glare and disruption of bird flight.
- Following construction, permanent light sources will be shielded and angled downward to eliminate glare that could disturb or disorient birds in flight.

3.6 Historic and Archaeological Resources

An Archaeological Inventory Survey (AIS) of the project site was conducted by Cultural Surveys Hawai‘i, Inc. in June 2016 to fulfill the requirements of HAR §13-13-276 and was conducted to identify, document, and assess the significance of any historic properties present on site. The subject AIS report is included herein as Appendix A and is summarized below.

The fieldwork component of this AIS was conducted in April 2016, and consisted of an initial 100% coverage pedestrian survey followed by a subsurface testing program. The pedestrian survey concluded that no surface historic properties were present and that the entire surface of the project area had previously been modified as a result of development of commercial buildings. As there were no surface historic properties, the archaeological inventory survey focused on the program of subsurface testing to locate any buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area.

A total of three backhoe-assisted test excavations were completed in the open parking lot comprising the majority of the project area. The test excavations measured 6.0 m (20 ft) long by 0.7 m (2.3 ft) wide and terminated at the water table or coral shelf, depending on which was encountered first. One historic property was identified within the project area (State Inventory of Historic Places [SIHP] # 50-80-14-7942) that represents an historic burnt trash

fill layer (Feature 1) and historic structural remains (Feature 2). The burnt trash fill (Feature 1) is likely associated with open air burning of urban refuse during the early 1900s and use of the processed fill in unwanted wetlands within the project area. The historic structural remains (Feature 2) represent probable building foundations and a floor associated with early and mid-twentieth century settlement and commercial development in the project area.

Under Hawai'i State historic preservation review legislation, the project's effect recommendation is "effect, with proposed mitigation commitments." The recommended mitigation measures of the subject AIS will reduce the project's effect on the identified archaeological cultural resources.

Impacts and Mitigation Measures

Results of the current AIS investigation indicate the proposed Nohona Hale project contains one historic property (SIHP # -7942). In order to mitigate potential adverse impacts to any archaeological cultural resources within the project area, it is recommended that project construction proceed under appropriate mitigation measures.

This inventory survey investigation determined the project area contains significant subsurface deposits and historic structural remains. Due to the inherent limitations of any sampling strategy, however, it is possible additional historic properties or features, potentially including human burials and non-burial archaeological deposits, may be uncovered during construction activities. The inventory survey's recommended mitigation measures for SIHP #-7942 is archaeological monitoring.

3.7 Cultural Resources and Practices

A Cultural Impact Assessment for the Kaka'ako Community Development District Mauka Area Plan, Waikiki Ahupua'a, Honolulu (Kona) District, O'ahu Island was prepared as part of the Environmental Impact Statement for the Hawaii Community Development Authority's Kaka'ako Community District Mauka Area Plan. The proposed Nohona Hale project site falls within the Area of Potential Effect (APE) of this study. The study found that the general area of Kaka'ako Makai was characterized by fishponds, salt ponds, occasional taro loi, and trails connecting Honolulu and Waikiki and also noted that the Kewalo, Kaakaukui, and Kukuluaeo districts were traditionally noted for fishponds, salt pans, and marshlands.

Currently, a portion of the project site is used by residents of the Na Lei Hulu Kūpuna senior housing facility as a community garden. Undoubtedly, some of the gardening practices and crops grown are associated with the cultural backgrounds of the residents. Hence, while this is a form of cultural practice, it is based on a recent opportunity offered at the site that is unconnected with historic cultural resources or activities in the vicinity.

Impacts and Mitigation Measures

None of the cultural resources, practices or accesses identified in the Cultural Impact Assessment are currently associated with or evident in the project vicinity, which has been completely urbanized.

Based on the above, the potential for adverse effects on traditional and cultural practices is not anticipated. Construction of the proposed project improvements will

not disturb traditional sacred sites or traditional cultural objects; will not result in the degradation of resources used by native Hawaiians for subsistence or traditional cultural practices; will not obstruct culturally significant landforms or way-finding features; and, will not result in loss of access to the shoreline or other areas customarily used by Native Hawaiians or others for resource gathering or traditional cultural practices. No mitigation measures are proposed.

3.8 Air Quality

The State of Hawai'i Department of Health (DOH), Clean Air Branch, monitors the ambient air quality in the State for various gaseous and particulate air pollutants. The U.S. Environmental Protection Agency (EPA) has set national ambient air quality standards (NAAQS) for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), ozone (O_3), and particulate matter (PM_{10} and PM_2). Hawai'i has also established a state ambient air standard for hydrogen sulfide (H_2S) related to volcanic activity on Hawai'i Island. The primary purpose of the statewide monitoring network is to measure ambient air concentrations of these pollutants and ensure that these air quality standards are met.

Air pollution in Hawai'i is caused by many different man-made and natural sources. There are industrial sources of pollution, such as power plants and petroleum refineries; mobile sources, such as cars, trucks and buses; agricultural sources, such as dust from fields, and natural sources, such as windblown particulates and volcanic activity. The DOH Clean Air Branch is responsible for regulating and monitoring pollution sources to ensure that the levels of criteria pollutants remain well below the State and federal ambient air quality standards.

The State maintains six air monitoring stations on the island of Oahu, where most commercial, industrial and transportation activities and their associated air quality effects occur. Hawaiian Electric Company's downtown power plant is the primary stationary source, while vehicular traffic represents the principal mobile contributor. Emissions from the power plant are in compliance with State and Federal air pollution control regulations.

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts on air quality are anticipated as a result of the construction and operation of the proposed project. A portion of the construction for the proposed project will involve fine grading as well as limited excavation for utility lines. Fugitive dust will be controlled, as required, by methods such as dust fences, water spraying and sprinkling of loose or exposed soil or ground surface areas. As deemed appropriate, planting of landscaping will be done as soon as possible on completed areas to also help control dust. Respective contractors will be responsible for minimizing air quality impacts during the various phases of construction.

Exhaust emissions from construction vehicles are anticipated to have negligible impact on air quality in the project vicinity as the emissions would be relatively small and readily dissipated. In the long-term, some vehicular emissions related to operations at the project site are expected, however, due to the generally prevailing trade winds, the emissions would be readily dissipated.

3.8 Noise

The existing noise environment at the project site is characteristic of an urban setting. Ambient noise in the project area is predominantly attributed to vehicular traffic traveling along Ala Moana Boulevard and adjacent roadways and aircraft overflights.

Impacts and Mitigation Measures

In the short-term, noise from construction activities such as excavation, grading, cutting, and paving will be unavoidable. The increase in noise level will vary according to the particular phase of construction. Noise may also increase as a result of operation of heavy vehicles and other power equipment during the construction period.

Construction noise impacts will be mitigated by compliance with provisions of the State DOH Administrative Rules, Title 11, Chapter 46, "Community Noise Control" regulations. These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels stated in the DOH Administrative Rules. It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. Also, the guidelines for heavy equipment operation and noise curfew times, as set forth by the DOH noise control rules, will be adhered to; or, if necessary, a noise permit shall be obtained.

In the long-term, no significant noise impacts are anticipated once the construction of the proposed project has been completed. Ambient noise levels in the vicinity will increase slightly as a result of the associated increase in vehicular traffic generated by the proposed project.

3.9 Traffic

Vehicular traffic in the vicinity of the project site varies throughout the day with significant peaks associated with weekday morning and afternoon

The proposed Nohona Hale project and the Honolulu High-Capacity Transit Corridor Project are mutually beneficial. A reliable high capacity transit system along with a range of housing choices will encourage residents to reduce their dependence on individual automobiles. The Nohona Hale project also supports Transit Oriented Development (TOD) by providing relatively high-density housing in a convenient location near proposed transit stations. TOD is designed to maximize access to public transportation and often incorporates features to encourage transit ridership. A TOD neighborhood will typically have transit station surrounded by relatively high-density development within a 10-minute walk surrounding the station. Features of TOD include mixed-use development that will use transit at all times of the day, excellent pedestrian facilities, collector support from other modes of transportation (buses and shuttles) and reduced amount of parking for personal vehicles.

Impacts and Mitigation Measures

The proposed action is not anticipated to result in significant impacts to area traffic. Designed as a TOD, Nohona Hale will offer minimal parking below the minimum

requirements of a conventional development. Ample public street parking is available along Cooke Street, which is metered and enforced from 6:30 am to 5:30 pm which is similar to other surrounding commercial and residential areas. As is in other areas in Honolulu, those returning home from work can park on the street for free from 5:30 pm until 6:30 am the next morning.

There is also metered parking surrounding the Mother Waldron Playground site, which is off of Cooke Street. One block Makai of Nohona Hale there is a public parking structure that some residents may choose to park if street parking is not available.

The rationale for a lower parking ratio considers the presence of public transportation within walking distance to Nohona Hale. Residents will be encouraged to ride bicycles or walk, since Nohona Hale is located centrally between downtown and major shopping centers and is also close to several major event venues.

3.10 Hazardous Materials

WESTON, under contract with the EPA conducted a Targeted Brownfields Assessment (TBA) consisting of a Phase I Environmental Site Assessment (ESA) for the subject project site at 630 Cooke Street. The objective of this TBA was to identify existing or potential environmental liabilities in order to facilitate redevelopment of the Site. This investigation was conducted in accordance with the scope and limitations of ASTM E1527-13.

The findings, conclusions and recommendations for the Site are based on a review of environmental databases and documents, Site reconnaissance, interviews, and a review of historical documents. The subject TBA / Phase I ESA is summarized below.

Based on the review of historical documentation, the Site has generally been utilized for mixed commercial and residential purposes, including a storage warehouse (northern portion only), a dry cleaner (west-central area), a multifamily apartment building (east-central and northern areas) and commercial storefronts, including a restaurant (along Cooke Street).

The Site has been developed with the current configuration since the late 1980s to early 1990s. Site observations for the Site are discussed below:

- No previous investigations were conducted at the Site that included the collection of environmental samples.
- Observations made during the site reconnaissance did not identify any potential Recognized Environmental Conditions (RECs).
- The Site was not listed on any of the federal, state, or local regulatory databases reviewed.
- No surrounding properties were identified in the regulatory database review or Tier 1 VEC assessment as likely RECs.

Impacts and Mitigation Measures

Based upon the results of the TBA / Phase I ESA, the collection of soil, groundwater, and/or vapor samples will be required to further investigate the potential subsurface impacts from the historical use of the Site.

3.11 Visual Resources

Hawai'i's visual resources are important to the state's tourism industry and the quality of life enjoyed by the State's residents. The State's visual resources include a broad range of natural and developed areas and a tremendous variety of land uses, water bodies, and vegetation types. These visual resources also include urbanized areas that range from small rural towns to the metropolitan center of Honolulu.

The *Coastal View Study* prepared by the City and County of Honolulu identifies significant views within the SMA of O'ahu. Significant views identified in the Downtown and Ala Moana study areas include:

- Continuous and intermittent views of Honolulu Harbor from Nimitz Highway
- Stationary views from Sand Island Park looking east, west and towards the mountain.
- Continuous makai views across Kewalo Basin and Ala Moana Park

Impacts and Mitigation Measures

No short- and long-term significant impacts are anticipated on visual resources.

3.12 Socio-Economic Characteristics

The project site is located within the Urban Honolulu Census Designated Place. Demographic and other information was reviewed from the U.S. Census 2010 for the Urban Honolulu CDP and the City and County of Honolulu and is shown in on Table 3-1.

Based upon the data shown on the table, the Urban Honolulu CDP has a slightly older population than the City and County of Honolulu. The median age of the population for the Urban Honolulu CDP was 41.3 versus 37.8 for the County.

Native Hawaiian and other Pacific Islanders comprise a slightly lower By racial mix, the Urban Honolulu CDP has a higher percentage of Asians (54.8%) than the County (43.9%). The Urban Honolulu CDP has a lower percentage of Whites (17.9%) and those of two or more races (16.3%) than the County (20.8% and 22.3%, respectively). These three races (Asian, Whites, and those with two or more races) make up the majority of proportion than the County as a whole, with 8.4% and 9.5%, respectively.

According to the 2010 Census, the Urban Honolulu CDP has a slightly lower occupancy rate, 90.4%, than the County, 92.3%. Housing units in this region are largely occupied by renters at 56.2%. The County data is slightly different than that of the Urban Honolulu CDP in that a larger proportion of housing units are occupied with owners.

Impacts and Mitigation Measures

In the short- term, construction expenditures related to the project will provide positive benefits to the local economy. This would include creation of construction and construction support jobs, and the purchase of materials from local suppliers, as well as indirect benefits to local retail businesses resulting from construction activities.

Table 3-1
Demographic Characteristics

Subject	Urban Honolulu CDP		City and County of Honolulu	
	Number	Percent	Number	Percent
Total Population	**337,256**	**100**	**953,207**	**100**
AGE				
Under 5 years	16,677	4.9	61,261	6.4
5-19 years	50,395	15	174,309	18.3
20-64 years	210,022	62.3	579,147	60.8
65 years and over	60,162	17.8	138,490	14.5
Median age (years)	41.3	--	37.8	--
RACE				
White	60,409	17.9	198,732	20.8
Black or African American	4,974	1.5	19,256	2.0
American Indian and Alaskan Native	743	0.2	2,438	0.3
Asian	184,950	54.8	418,410	43.9
Native Hawaiian and other Pacific Islander	28,260	8.4	90,878	9.5
Two or more races	55,080	16.3	213,036	22.3
Other	2,840	0.8	10,457	1.1
HOUSEHOLD (BY TYPE)				
Total households	**129,408**	**100**	**311,047**	**100**
Family households (families)	74,688	57.7	328,953	70.0
Married-couple family	52,431	40.5	161,172	51.8
With own children under 18 years	2,062	1.6	65,995	21.2
Female householder, no husband present	15,689	12.1	39,435	12.7
With own children under 18 years	5,321	4.1	15,027	4.8
Nonfamily household	54,720	42.3	93,205	30.0
Average household size	2.51	--	2.95	--
HOUSING OCCUPANCY AND TENURE				
Total housing Units	**143,173**	**100**	**336,889**	**100**
Occupied Units	129,408	90.4	311,047	92.3
By owner	56,742	43.8	174,387	56.1
By renter	72,666	56.2	136,660	43.9
Vacant Units	13,765	9.6	25,852	7.7

Notably, the proposed project improvements are geared towards the promotion of the high technology industry in Hawaii. As result, even more jobs in this sector could be created on the site and in the State as a whole.

3.13 Public Services and Facilities

3.13.1 Police Fire, and Medical Services

Police protection is provided by the City's Honolulu Police Department. The project area is a part of District 1 – Central Honolulu, Sector 3, which covers the downtown Honolulu area from the State Capitol area to Ala Moana Beach Park and is served by the Downtown Substation located at 79 North Hotel Street. Response time is less than 5 minutes.

Fire protection is provided by the City's Honolulu Fire Department. The project area is served by the Kaka'ako Fire Station located at 555 Queen Street, approximately two blocks from the project site.
The closest hospital to the project site is The Queen's Medical Center located approximately 1 mile northeast of the project site. The Queen's Medical Center is the largest private hospital in Hawaii, with more than 3,000 employees and over 1,200 physicians on staff. Queen's offers a comprehensive range of primary and specialized care services.

Emergency medical service is provided by the City's Emergency Services Department, Emergency Medical Services (EMS) Division. The Department has 22 ambulance units under two districts. All ambulance units are designated as advanced life support units, meaning they are staffed by at least two people. The project area is served by District 2, which includes the southeast region of Oahu. The Honolulu Fire Department also co-responds to medical emergencies, providing first aid in coordination with EMS.

Impacts and Mitigation Measures

In the short-term, the project may have adverse impacts such as temporary disturbance of traffic, which could affect emergency vehicle access through the project area. During the construction period, flagmen or off-duty police officers will be present to direct traffic and emergency vehicles.

In the long-term, the proposed project my require occasional police and fire protection, as well as medical services, however it would likely not represent a significant amount relative to the overall regional demand.

The proposed project will be designed and built in compliance with the applicable County fire code requirements.

3.13.2 Education

The project site is located within the State Department of Education's (DOE) Kaimuki-McKinley-Roosevelt complex area which includes Lincoln, Ma'ema'e, Mānoa, Noelani, Nu'uanu, and Pauoa Elementary Schools; and, Kawananakoa and Stevenson Middle Schools, which feed into either Roosevelt High School or McKinley High School. The native Hawaiian emersion school 'Ānuenue, the Education Laboratory Public Charter School, and Halau Ku Mana Public Charter School are also a part of this complex. DOE records indicate that the complex has served approximately 14,500 students on an annual basis for the past

several years. Generally speaking, statewide total enrollment numbers in DOE schools has remained virtually flat over the course of the past decade, fluctuating less than 2% in growth/decline on an annual basis.

The closest DOE operated High School is McKinley High School, located approximately a mile away from the project site, and the closest DOE operated Elementary School is Lincoln Elementary School, located approximately 1.3 miles away from the project site.

The project is also located near to a possible future elementary school site (adjacent to Halekauwila Place). The school was included in a conceptual planning process in 1998 but no commitments to the development of the school have been made.

Impacts and Mitigation Measures

As the proposed project will effectively increase the region's housing inventory, it will result in an increase in demand for school facilities. Nonetheless, this increase in demand is not anticipated to be significant under the context of statewide enrollment trends over the past decade.

3.13.3 Recreational Facilities

The primary recreational resource in the vicinity of the project site is Ala Moana Park, located to the south and provides opportunities for surfing, bodyboarding, fishing, walking, bicycling, sightseeing, and picnicking. Amenities provided at the park include comfort stations, picnic areas, an amphitheater, and observation areas. Also nearby is the six-acre Kaka'ako Makai Gateway Park which provides a large landscaped lawn for recreation and social activities. The Gateway Park is divided into two sections; a two-acre passive park and a four-acre playing field with a comfort station. In addition, the Children's Discovery Center is located southeast from the project site and offers interactive educational exhibits for children and their families.

The Mauka Area Plan for Kaka'ako also proposes to improve four "green" streets to enhance their existing links to adjoining parks and open space outside of the Mauka Area. Street Conditions, as well as landscaping on these streets will be improved with the ultimate goal of promoting walking and bicycling not just as environmentally friendly and cost effective modes of travel, but also as a form of outdoor recreation and exercise that promotes a healthy lifestyle. One of the "green" streets proposed is Cooke Street, which borders the project site.

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts to recreational facilities are anticipated as a result of the construction and operation of the proposed project. As the proposed project will contribute to the region's housing inventory, future residents will likely contribute to an increase in demand for regional recreational.

3.13.4 Solid Waste Collection and Disposal

Solid waste collection and disposal service is provided by the City and County of Honolulu's Department of Environmental Services (ENV) and numerous private companies. Solid waste collected in the Honolulu area is hauled to the Campbell Industrial Park H-POWER Plant for incineration that generates electricity, followed by disposal of ash and non-combustibles at

the Waimanalo Gulch Sanitary Landfill. Construction and demolition material is disposed of at the privately-owned PVT landfill in Waianae.

Impacts and Mitigation Measures

No short- or long-term significant impacts to municipal solid waste collection and disposal facilities are anticipated as a result of the construction and operation of the proposed project.

3.14 Infrastructure and Utilities

3.14.1 Water System

The project site is bordered on its south-eastern face by an 20-inch buried waterline along Cooke Street that connects to a 12-inch line running along Queen Street. The nearest Board of Water Supply potable water source in the vicinity of the project site is the Beretania Station. The water system serving the project area is shown in Figure 3-6.

Impacts and Mitigation Measures

No short- or long-term significant impacts are anticipated to result from the development and operation of the proposed project improvements.

Water service will be provided from the 8-inch waterline. The HCDA will be required to obtain a water supply allocation from the State Department of Land and Natural Resources and to pay the Board of Water Supply's Water System Facilities charges.

3.14.2 Wastewater System

A 8-inch municipal sewer line lies beneath Cooke Street fronting the project site (See Figure 3-7). That line discharges into a 10-inch line near the intersection of Cooke Street and Queen Street. The 10-inch line carries the combined flows to the City & County of Honolulu's Ala Moana (wastewater) Pump Station.

Impacts and Mitigation Measures

Wastewater service will be provided by the City and County of Honolulu's Department of Environmental Services (ENV). Wastewater from the proposed project will be conveyed to the existing 9-inch sewer line along Cooke Street. All wastewater flows generated at the project site will continue to be conveyed to the Ala Moana Pump Station.

No significant impacts are anticipated on the existing wastewater system as a result of the construction and operation of the proposed improvements as the collection, treatment and disposal system is adequate to serve the proposed development.

3.14.3 Drainage System

Stormwater runoff at the project is conveyed to a system of box culverts located on the south-eastern edge of the project site. Those culverts empty into a series of reinforced concrete pipes that run along Halekauwila Street (See Figure 3-8).

Impacts and Mitigation Measures

No short- or long-term significant impacts on the quantity or quality of drainage in the project vicinity are anticipated during construction or operation of the proposed project. There are no streams or wetlands on or within close proximity to the project site. Construction of the proposed project will not involve major land disturbing activities. Applicable erosion control measures and best management practices will be implemented in order to mitigate any possible adverse effects relating to runoff. As applicable for each phase, these may include but are not be limited to: temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to surface and coastal waters. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.

As a portion of the project site is used by residents of the Na Lei Hulu Kūpuna senior housing facility as a community garden, in the long-term, construction of the proposed project will constitute an increase in impermeable surface area w would reduce the area available on the project site for runoff to percolate into the ground. The drainage system for the proposed project will be designed to receive and detain or retain flows to allow percolation to occur within the project site such that no additional volume of discharge from the property would occur.

3.14.4 Electrical and Communications Systems

Electrical power on the island of O'ahu is provided by Hawaiian Electric Company (HECO). A significant electrical source for the project area is the Downtown Power Plant.

Telephone service in the area is provided by Hawaiian Telcom.

Oceanic Time Warner Cable of Hawai'i is the island's primary CATV provider.

Impacts and Mitigation Measures

In the short- and long-term, the proposed project is not anticipated to impact or increase overall demand on electrical and communication systems in the area.

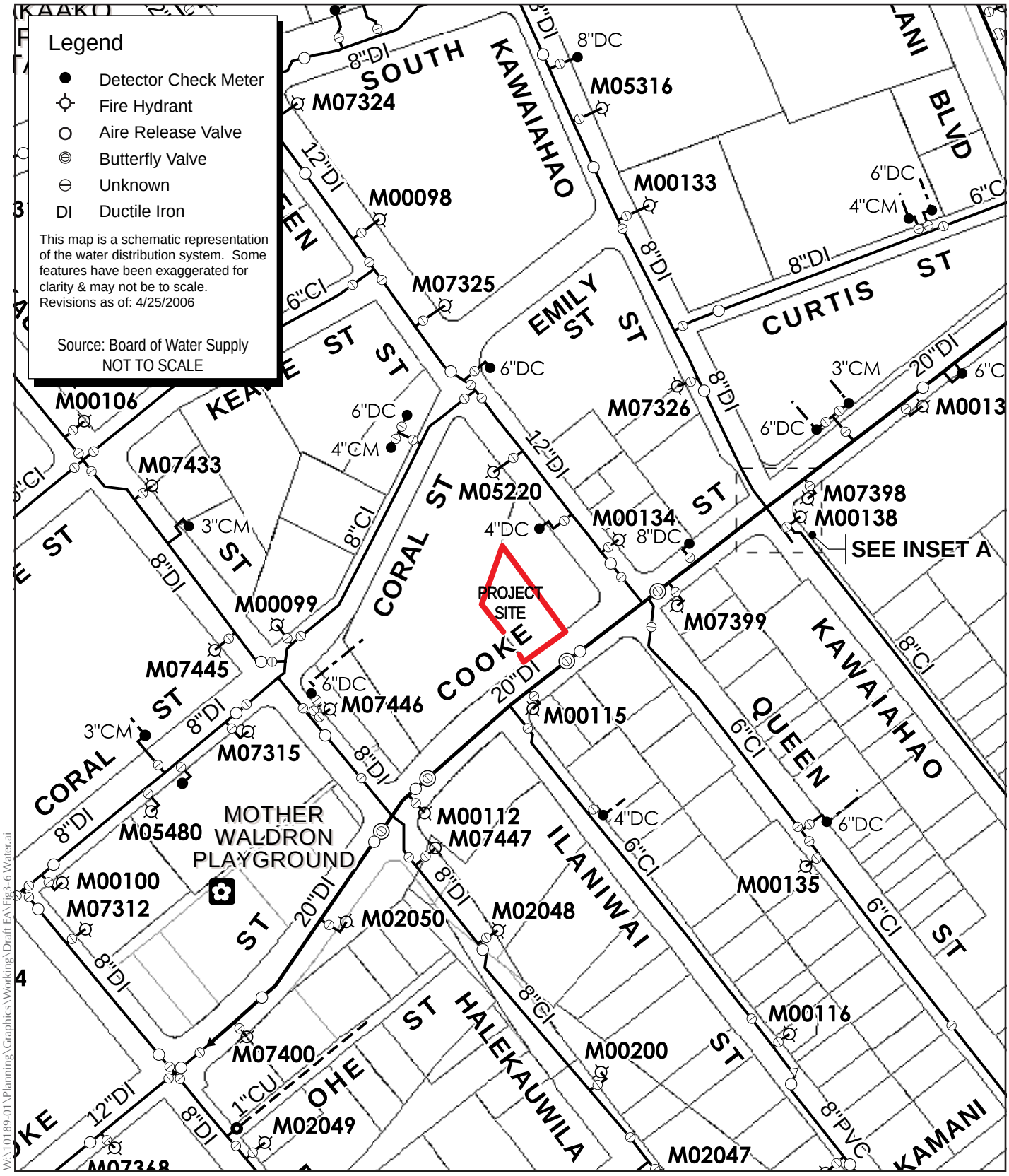
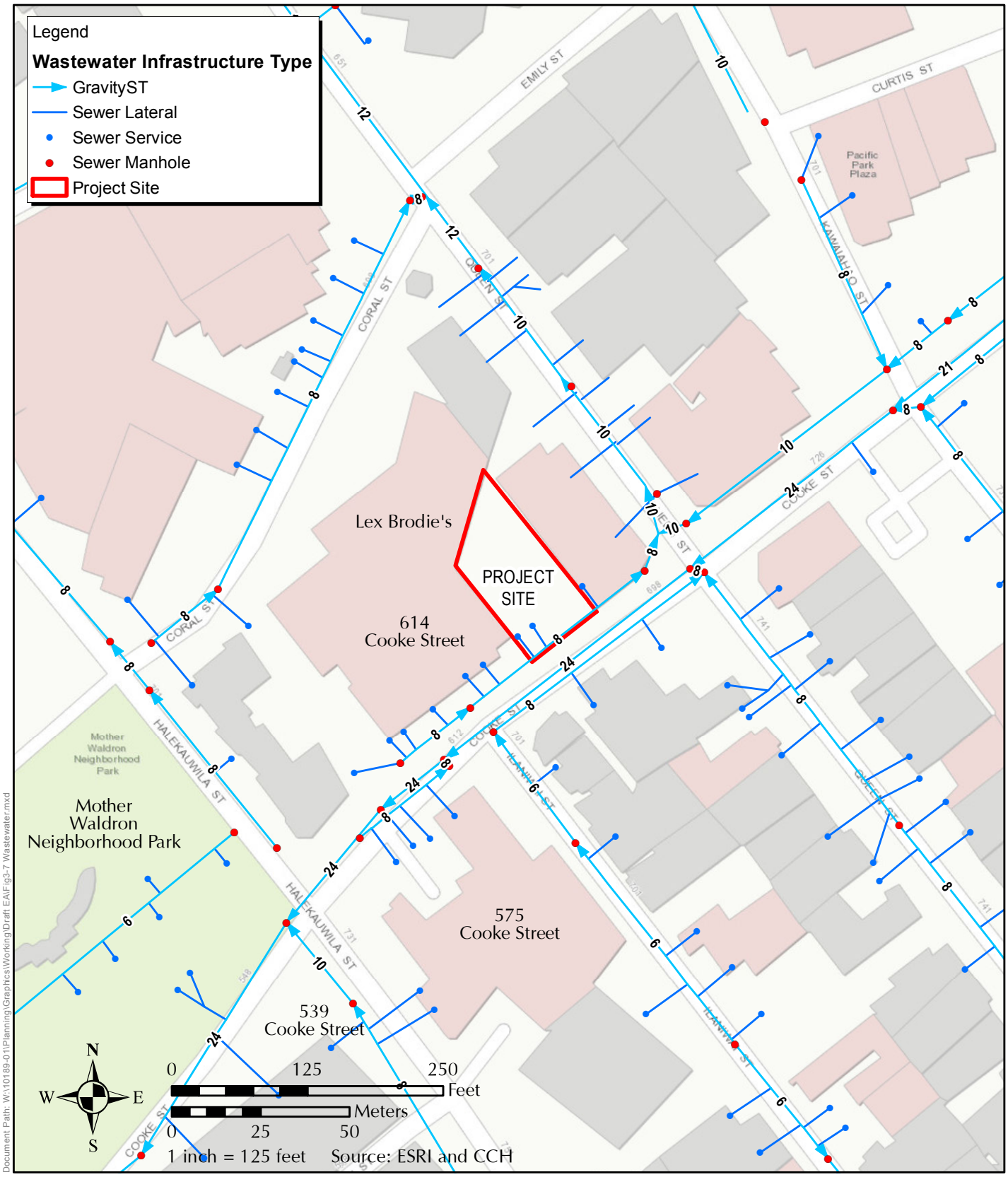


FIGURE 3-6

WATER INFRASTRUCTURE

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

WILSON OKAMOTO CORPORATION

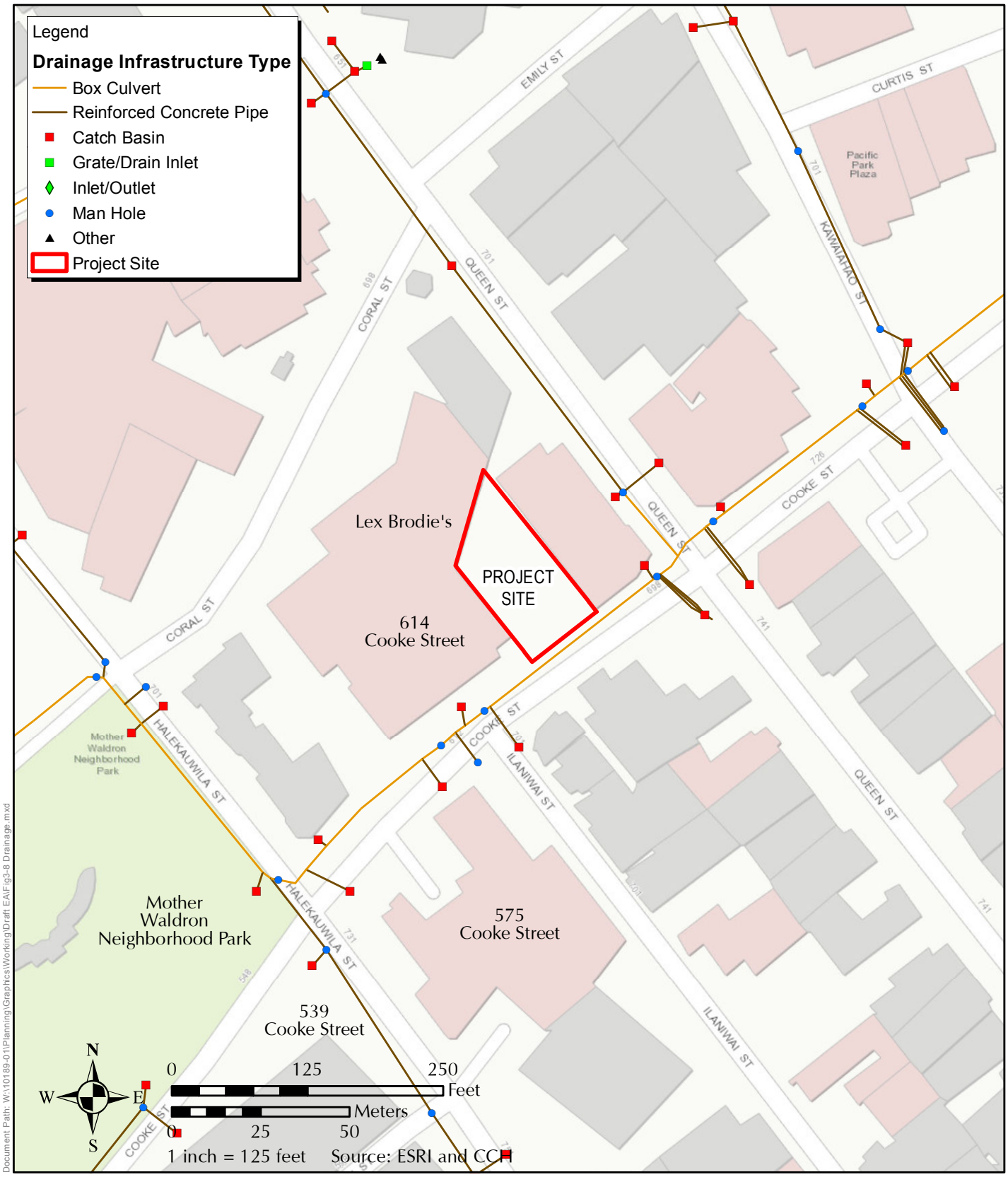


WILSON OKAMOTO CORPORATION

FIGURE 3-7

WASTEWATER INFRASTRUCTURE

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING



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WILSON OKAMOTO CORPORATION

FIGURE 3-8

DRAINAGE INFRASTRUCTURE

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

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4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

This section discusses the State and City and County of Honolulu land use plans, policies and controls relating to the proposed project.

4.1 State Land Use Plans and Policies

4.1.1 Hawai‘i State Plan

The Hawai‘i State Plan, Chapter 226, HRS, provides goals, objectives, policies, and priorities for the State. The Hawai‘i State Plan also provides a basis for determining priorities, allocating limited resources, and improving coordination of State and County Plans, policies, programs, projects, and regulatory activities. It establishes a set of themes, goals, objectives, and policies that are meant to guide the State's long-range growth and development activities. The proposed project is consistent with the following applicable objectives and policies:

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

(a) Planning for the State's physical environment with regard to land-based shoreline, and marine resources shall be directed towards achievement of the following objectives:

(1) Prudent use of Hawai‘i's land-based, shoreline, and marine resources.

(2) Effective protection of Hawai‘i's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

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

(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.

(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai‘i.

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

Discussion:
No short- or long-term significant impacts on surface and/or coastal waters in the project vicinity are anticipated to result from the construction and operation of the proposed project. There are no streams or wetlands on or within close proximity to

the project site. Construction of the proposed project will not involve major land disturbing activities. Applicable erosion control measures and best management practices will be implemented in order to mitigate any possible adverse effects relating to runoff. As applicable for each phase, these may include but are not be limited to: temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to surface and coastal waters. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.

No listed or protected plant species are known from the project area. Rare, threatened, or endangered fauna are not known to utilize the site for either habitat or foraging purposes. However, measures to prevent adverse effects to protected seabirds from night lighting will include the following:

(1) During construction activities, all nighttime lighting will be shielded and angled downward to reduce glare and disruption of bird flight.

(2) Following construction, permanent light sources will be shielded and angled downward to eliminate glare that could disturb or disorient seabirds in flight.

Sec. 226-106 Priority Guidelines for the provision of affordable housing:

(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.

(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.

(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's low- and moderate-income households, gap-group households, and residents with special needs.

(6) Encourage public and private sector cooperation in the development of rental housing alternatives.

(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.

Discussion:
The proposed Nohona Hale Affordable Rental Micro-Housing project is in conformance with the priority guidelines set forth by Sec. 226-106 relating to Affordable Housing, and was created in response to HCDA's request for proposal to cooperatively develop an affordable low-to moderate-income "micro unit" housing project on their 630 Cooke Street parcel located in Kaka'ako Makai. The proposed action will address a recognized need for affordable housing opportunities that will allow low to moderate income households with limited housing prospects to live in a desirable mixed-use neighborhood with access to transit.

4.1.2 State Land Use District

The State Land Use Law, Chapter 205, HRS, is intended to preserve, protect and encourage the development of lands in the State for uses that are best suited to the public health and welfare of Hawai'i's people. Under Chapter 205, HRS, all lands in the State of Hawai'i are classified by the State Land Use Commission (LUC) into one of four major categories of State Land Use Districts. These districts are identified as the Urban District, Agricultural District, Conservation District, and Rural District. Permitted uses within the districts are prescribed under Title 12, Chapter 205 (Land Use Commission), HRS, and the State Land Use Commission's Administrative Rules prescribed under Title 15, Subtitle 3, Chapter 15 HAR.

Discussion:
The project site is located within the State Urban District (See Figure 4-1). Land uses in the Urban districts throughout the State are administered by the respective Counties in which they are located through their zoning codes. On Oahu, the City & County of Honolulu, Department of Planning and Permitting would generally administer zoning regulations under its Land Use Ordinance. The project site, however, is located within the jurisdiction of the HCDA, a State of Hawai'i agency which regulates land within the Kaka'ako Mauka and Makai areas (for further discussion see Section 4.1.4).

4.1.3 Hawai'i Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program was created through passage of the Coastal Zone Management Act of 1972. Hawai'i's Coastal Zone Management (CZM) Program, established pursuant to Chapter 205A, HRS, as amended, is administered by the State Office of Planning (OP) and provides for the beneficial use, protection and development of the State's coastal zone. 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. The Hawai'i CZM area includes all lands within the State and the areas seaward to the extent of the State's management jurisdiction. Hence, the proposed project site is located in the CZM area. A discussion of the project's consistency with the objectives and policies of the CZM Program is provided below.

(1) Recreational Resources

Objective:
Provide coastal recreational opportunities accessible to the public.

Policies:

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

(i) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by: Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

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

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources; Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.

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

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

Discussion:

The nearest public shoreline access is located at the Kakaʻako Waterfront Park, located approximately 0.35 miles to the south of the proposed project site.

No short- or long-term significant impacts on surface and/or coastal waters in the project vicinity are anticipated during construction or operation of the proposed project. There are no streams or wetlands on or within close proximity to the project site. Applicable erosion control measures and best management practices will be implemented in order to mitigate any possible adverse effects relating to runoff. As applicable for each phase, these may include but are not be limited to: temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate

inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to surface and coastal waters. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.

(2) Historic Resources

Objective:

(A) Protect, preserve and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

(A) Identify and analyze significant archaeological resources;
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Discussion:

An Archaeological Inventory Survey for the project site was conducted for the property in 2016.

Under Hawai'i State historic preservation review legislation, the project's effect recommendation is "effect, with proposed mitigation commitments." The recommended mitigation measures of the subject AIS will reduce the project's effect on the archaeological cultural resources identified.

(3) Scenic and Open Space Resources

Objective:

(A) Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

(A) Identify valued scenic resources in the coastal zone management area;
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

(D) Encourage those developments which are not coastal dependent to locate in inland areas.

Discussion:

The proposed improvements are not anticipated to have significant impacts on notable view planes nor adversely affect important public viewing points or visual resources, as identified in the Mauka Area Plan.

(4) Coastal Ecosystems

Objective:

(A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

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

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

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

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

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

Discussion:

The nearest coastal water offshore of the project site is Kewalo Basin, located approximately 0.35-miles to the south of the project site.

During construction of the various improvements, storm water runoff may carry increased amounts of sediment into the storm drain system due to erosion from soils exposed during excavation and grading activities. This runoff could potentially impact the water quality of coastal waters in the area. However, excavation and grading activities associated with the construction of the proposed project will be regulated by the County's grading ordinance. Mitigation measures will be instituted in accordance with site-specific assessments, incorporating appropriate structural and/or non-structural BMPs such as minimizing time of exposure between construction and landscaping, and implementing erosion control measures such as silt fences and sediment basins. Following the associated construction activity, the excavated areas will be paved over or backfilled to its graded contours or re-vegetated to control erosion.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to surface and coastal waters. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai'i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County's grading ordinance.

(5) Economic Uses

Objective:

(A) Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

(A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent developments such as harbors and ports, and coastal related development such as visitor facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

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

Discussion:

In the short-term, construction expenditures will provide positive benefits to the local economy. This would include creation of some construction and construction support jobs, and the purchase of materials from local suppliers, as well as indirect benefits to local retail businesses resulting from construction activities.

In the long-term, the proposed Nohona Hale Affordable Rental Micro-Unit Housing project will expand Honolulu's housing inventory and provide significant, in-demand housing opportunities for Honolulu's urban workforce.

(6) Coastal Hazards

Objectives:

(A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies:

(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

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

Discussion:
According to the *Flood Insurance Rate Maps* prepared by the Federal Emergency Management Agency, the project site is designated Zone X. Zone X includes areas subject to 500-year floods, areas of 100-year floods with average depths of less than 1-foot, or areas with drainage areas less than 1 square mile.

According to the Tsunami Evacuation Zone maps for Oahu, the project site lies entirely within the extreme tsunami evacuation zone.

Construction and operation of the proposed improvements are not anticipated to increase flood risks or cause any adverse flood-related impacts at the project site or lower elevation properties.

(7) Managing Development

Objective:
(A) Improve the development review process, communication, and public participation in the management of coastal resource and hazards.

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

Discussion:
The Hawai‘i State environmental review process, HRS 343, requires project review by government agencies and affords the public the opportunity to provide comments on the proposed project. Applicable State and County requirements will be adhered to in the design and construction phases of the proposed improvements.

In addition, the project design requires the Development Team to apply to the Hawai‘i Housing Finance and Development Corporation (HHFDC) for qualification under Chapter 201H, HRS, along with exemptions from statutes, rules and ordinances pursuant to Section 201H-38, HRS.

(8) Public Participation

Objective:

(A) Stimulate public awareness, education, and participation in coastal management.

Policies:

(A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion:

The Hawai'i State environmental review process, Chapter 343, HRS, provides opportunities for project review by government agencies and affords the public the opportunity to provide comments on the proposed project.

(9) Beach Protection

Objective:

(A) Protect beaches for public use and recreation.

Policies:

(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion:

The proposed improvements do not involve the construction of improvements in the shoreline setback nor require any shoreline erosion-protection structures.

(10) Marine Resources

Objective:

(A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

(D) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(E) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

(F) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(G) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

(H) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion:

The proposed improvements do not involve construction or development within coastal waters and are, therefore, not anticipated to have any direct impacts on marine and coastal resources.

No short- or long-term significant impacts on surface and/or coastal waters in the project vicinity are anticipated during construction or operation of the proposed project. There are no streams or wetlands on or within close proximity to the project site. Construction of the proposed project will not involve major land disturbing activities. Applicable erosion control measures and best management practices will be implemented in order to mitigate any possible adverse effects relating to runoff. As applicable for each phase, these may include but are not be limited to: temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to surface and coastal waters. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai‘i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County’s grading ordinance.

No listed or protected plant species are known from the project area. Rare, threatened, or endangered fauna are not known to utilize the site for either habitat or foraging purposes. However, measures to prevent adverse effects to protected seabirds from night lighting will include the following:

(1) During construction activities, all nighttime lighting will be shielded and angled downward to reduce glare and disruption of bird flight.

(2) Following construction, permanent light sources will be shielded and angled downward to eliminate glare that could disturb or disorient seabirds in flight.

4.1.4 Kaka'ako Mauka Area Plan

The HCDA was created by the 1976 State Legislature to bring about the timely planning, regulation and development of underutilized areas in the State. The 670-acre Kaka'ako District was designated as the HCDA's first "Community Development District." Separate plans specifying desired land uses, urban design guidelines, infrastructure improvements, and phasing have been prepared for the Mauka area and Makai area. The latest plan for the Kaka'ako Mauka Area was adopted by the HCDA in 2011.

The principles of the Mauka Area Plan are: (1) develop urban village neighborhoods where people can live, work, shop and recreate; (2) create great places, such as venues for performance and entertainment, or quiet places to sit and read; and (3) make the connection, which is to find balance between modes of transportation in addition to vehicular traffic.

Objectives of the Mauka Area Plan relate to: (1) urban design; (2) parks, open space and views; (3) transportation; (4) reserved housing; (5) historic and cultural resource plan; (6) social and safety plan; (7) relocation plan; (8) public facilities program; and (9) infrastructure and improvement district program.

The proposed project is being designed to conform to the Mauka Area Plan and Rules. The Mauka Area Plan identifies the project site as being within the "Pauahi Neighborhood" of the Mauka Area which is designated as a "mixed-use urban village" (See Figure 4-1).

4.1.5 Kaka'ako Transit Oriented Development Overlay Plan

In 2012, the Honolulu City Council approved an elevated fixed rail system to extend from East Kapolei to Ala Moana Center in Honolulu. Of the 21 transit stations in this segment, three of the stations are located in the Kaka'ako Community Development District (KCDD). This prompted the HCDA to develop its Transit-Oriented Development (TOD) Overlay Plan and Rules for the KCDD. The new plan and rules would be enacted as an "overlay" to the existing Mauka and Makai district rules.

The TOD Overlay Plan represents a comprehensive analysis of the issues and opportunities associated with TOD in Kaka`ako. The Plan and Rules enhance the policies and direction set forth in the previously established district plans and rules by maximizing development through the use of smart growth principles, multi-modal transportation, and walkable neighborhood design. The intent of the TOD Overlay Plan is to foster development that creates well-used and well-loved urban places that are safe, comfortable, diverse, attractive and representative of the diverse character in the Kaka`ako community, while providing safe and comfortable streets and convenient access to the district's three future Honolulu Authority for Rapid Transit (HART) stations.

The KCDD has nine neighborhoods each with their own emerging character predominant land use. The TOD Overlay plan identifies the subject project as located within the Pauahi neighborhood (see Figure 4-2). The TOD Overlay Plan envisions the integration of the Complete Streets concept throughout the Mauka and Makai Districts.

The proposed project is consistent with the vision for Complete Streets set forth by the TOD Overlay plan, which embraces a multimodal approach to street design and operation to simultaneously address congestion, maximize use of existing rights-of-way, help build a transit-oriented community, and facilitate district access. Cooke Street is classified as a "Commercial / Industrial Street" by the TOD Overlay Plan (see Figure 4-2).

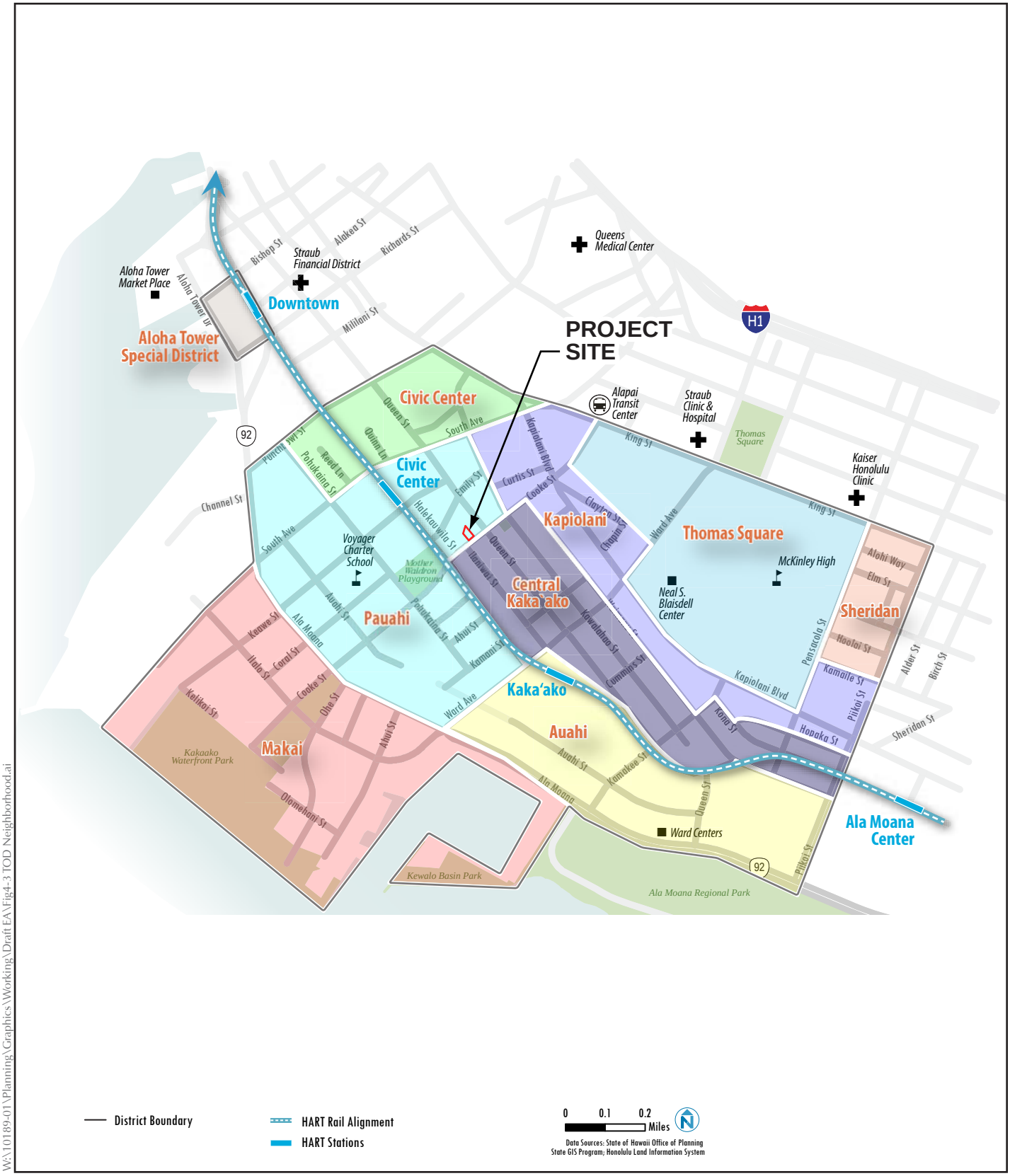

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FIGURE 4-1

TOD NEIGHBORHOOD MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

WILSON OKAMOTO CORPORATION

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FIGURE 4-2

TOD STREET TOPOLOGY CLASSIFICATION MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

WILSON OKAMOTO CORPORATION

4.1.6 Special Management Area Designation

Pursuant to the Hawai‘i CZM Program, Chapter 205A, HRS, the counties have enacted ordinances establishing their respective Special Management Areas (SMA). The City and County of Honolulu enacted its SMA ordinance as Chapter 25, Revised Ordinances of Honolulu. Any “development” within its geographically defined SMA (See Figure 4-3) requires an SMA Use Permit. Administration of the SMA Use permit process within the Kaka‘ako Community Development District, however, lies with the State Office of Planning (OP). The project site is not located within the SMA.

4.2 City and County of Honolulu Land Use Plans and Policies

4.2.1 City and County of Honolulu General Plan

The City and County of Honolulu last updated its General Plan in October of 2002. The General Plan for the City and County of Honolulu is a written commitment by the City and County government to a future for the Island of O‘ahu that it considers desirable and attainable. The Plan is a two-fold document: First, it is a statement of the long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of O‘ahu. These objectives contain both statements of desirable conditions to be sought over the long run and statements of desirable conditions that can be achieved within an approximately 20-year time horizon. Second, the General Plan is a statement of broad policies that facilitate the attainment of the objectives of the Plan.

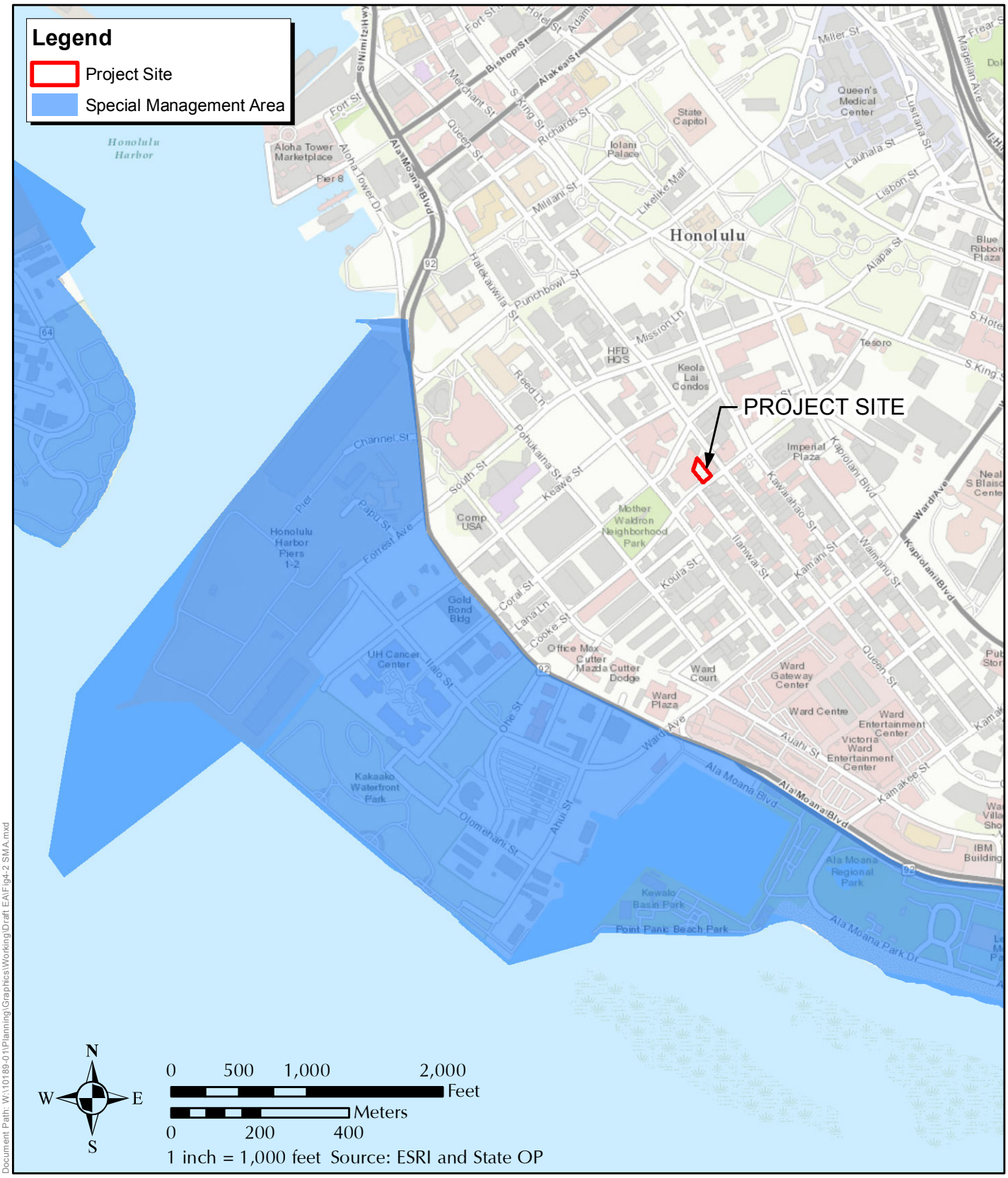
The General Plan is a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens in eleven areas of concern:

(1) Population;
(2) Economic activity;
(3) 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; and
(11) Government operations and fiscal management.

The proposed project is relevant and consistent with the following applicable goals, objectives, policies, and actions of the *City and County of Honolulu General Plan*:

IV. Housing

Objective A
To provide decent housing for all the people of O‘ahu at prices they can afford.



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WILSON OKAMOTO CORPORATION

FIGURE 4-3

SPECIAL MANAGEMENT AREA MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

Policy 1
Develop programs and controls which will provide decent homes at the least possible cost.

Policy 3
Encourage innovative residential development which will result in lower costs, added convenience and privacy, and the more efficient use of streets and utilities.

Policy 7
Provide financial and other incentives to encourage the private sector to build homes for low and moderate-income residents.

Policy 8
Encourage and participate in joint public- private development of low- and moderate-income housing.

Policy 12
Encourage the production and maintenance of affordable rental housing.

Policy 13
Encourage the provision of affordable housing designed for the elderly and the handicapped.

Discussion:
The proposed Nohona Hale Affordable Rental Micro-Housing project is in conformance with the objectives and policies set forth by the City and County of Honolulu's General Plan, and was created in response to HCDA's request for proposal to cooperatively develop an affordable low-to moderate-income "micro unit" housing project on their 630 Cooke Street parcel located in Kaka'ako Makai. The proposed action will address a recognized need for affordable housing opportunities that will allow low to moderate income households with limited housing prospects to live in a desirable mixed-use neighborhood with access to transit.

4.2.2 Primary Urban Center Development Plan

The project site is located within the Primary Urban Center (PUC) Development Plan (DP) area, which extends from downtown Honolulu to Pearl City in the west to Wai'alae-Kahala in the east. The PUC is home to almost half of Oahu's population and three quarters of all jobs. The *Primary Urban Center Development Plan* (June 2004) provides a vision for the PUC in the areas of land use, transportation, infrastructure, and public facilities. It also provides policies and guidelines for achieving that vision. The proposed project is consistent with the following guidelines, policies and principles contained in the PUC Development Plan:

Cultivating Livable Neighborhoods

- *Cultivate existing and new "neighborhood centers"*
- *Promote mixed land uses*
- *Make streets "pedestrian-friendly"*

In-Town Housing Choices

- *Promote people-scaled apartment and townhouse dwellings in low-or mid-rise buildings oriented to the street*
- *Improve the feasibility of redeveloping small lots*
- *Reduce costs for apartment homes*
- *Preserve and expand the current inventory of affordable rental housing units*
- *Provide incentives and cost savings for affordable housing*
- *Provide for high-density housing options in mixed-use developments around transit stations.*

Discussion:
In the long-term, the proposed Nohona Hale project will expand the inventory of affordable rental housing inventory in Honolulu's urban core. As a high-density, mid-rise development constructed on a relatively small lot, the proposed project will serve as a template for the future development of other small-lot type projects in Hawai'i. By providing housing options to Honolulu's urban workforce, Nohona Hale will serve to solidify a neighborhood center in the rapidly changing Kaka'ako Mauka area. Due to its proximity to planned transit stations, the subject project will have significantly increased potential for high utilization of the Honolulu-High-Capacity Transit Corridor project. Overall, the relationship between in-town housing and rail is mutually supportive and consistent with the objectives of Transit-Oriented Development.

4.2.3 City and County of Honolulu Zoning

The purpose and intent of the City and County of Honolulu Land Use Ordinance is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the O'ahu General Plan and development plans, and to promote and protect the public health, safety, and welfare.

Discussion:
According to the City and County of Honolulu Department of Planning and Permitting (DPP), the project site is zoned General Preservation (P-2). See Figure 4-4. On Oahu, the City & County of Honolulu, Department of Planning and Permitting would generally administer zoning regulations under its Land Use Ordinance. The project site, however, it located within the jurisdiction of the HCDA, a State of Hawai'i agency which regulates land within the Kaka'ako Mauka and Makai areas (for further discussion see Section 4.1.4).

4.3 Permits and Approvals

The 201H application process requires routing of requested exemptions under HRS 201H to all departments and agencies with authority over the exemptions, for comment and/or approval. The following is a list of permits, approvals, and reviews that may be required prior to construction and operation of the proposed project.

This Draft EA will be routed to agencies (with a master list of agencies included in Appendix G) for official comment on the 201H application and requested exemptions. After receiving comments from all involved agencies and making any necessary revisions, Applicant will proceed with the 201H approval process.

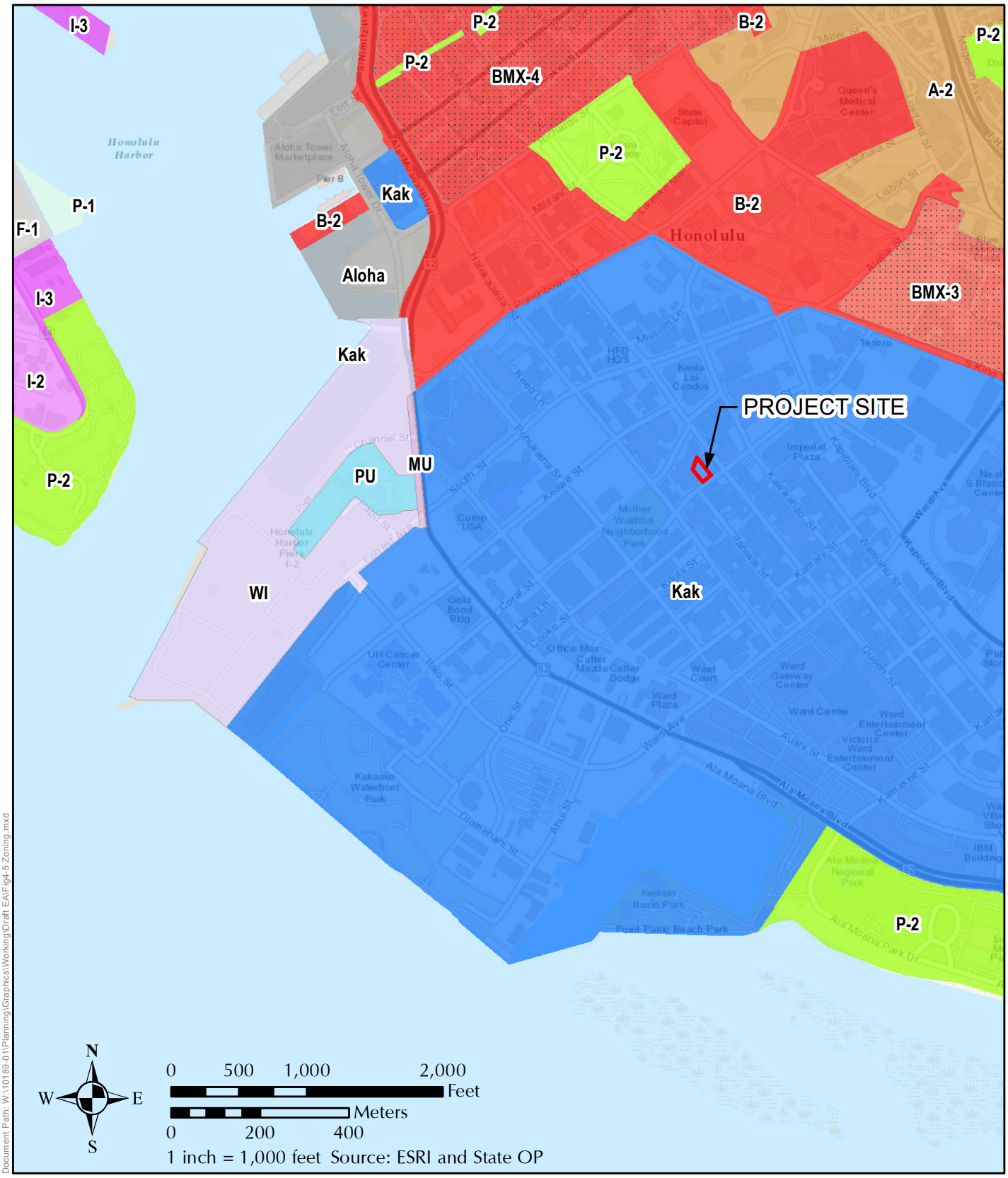

FIGURE 4-4

CITY AND COUNTY OF HONOLULU ZONING MAP

NOHONA HALE
AFFORDABLE RENTAL MICRO-UNIT HOUSING

WILSON OKAMOTO CORPORATION

The project will seek exemptions from statutes, ordinances and rules pursuant to HRS Chapter 201H which is a discretionary approval by the Hawaii Housing Finance and Development Corporation (HHFDC).

Federal

- Federal Aviation Administration (FAA) Form 7460-1, "Notice of Proposed Construction or Alteration"

State of Hawai'i

Department of Land and Natural Resources

- Conservation District Use Permit
- Chapter 6E, HRS, State Historic Preservation Law

Department of Health

- National Pollutant Discharge Elimination System
- Disability and Communication Access Board
- Pollution Control - Noise Permit

State of Hawai'i (continued)

Hawai'i Community Development Authority

- Development Permit

City and County of Honolulu

- Chapter 201H, HRS Exemptions from statutes, ordinances and rules

Department of Planning and Permitting

- Building Permit
- Grading Permit/Trenching Permit
- Certificate of Occupancy
- Construction Dewatering
- Wastewater Sewer Connection
- Stormwater Drain Connection
- Excavation and Repair of Streets and Sidewalks

Board of Water Supply

- Water Connection

Department of Transportation

- Street Usage Permit

Honolulu Fire Department

- Plan Review

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5. ALTERNATIVES ELIMINATED FROM CONSIDERATION

Hawai'i Administrative Rules (HAR) § 11-200-10 (1996) requires an environmental assessment to identify and consider alternative means to realize the purpose and need of the proposed action.

5.1 No Action Alternative

Under the No Action Alternative, the proposed Nohona Hale project would not be constructed, and the project site would remain in its present condition as a surface parking lot.

The no-action alternative would preclude permit approvals, as well as costs for design and construction which would otherwise be required for the proposed project improvements.

This alternative would fail to satisfy the purpose and need of the proposed action, and thus is not a feasible alternative.

5.2 Other Alternatives

Other alternatives beyond the non-action alternative were not considered for this project.

Alternative density and design configurations were considered under the scope of the proposed action, however, the proposed design scheme density was selected to serve as the basis of impact assessment.

Alternative locations were not considered because no other suitable State owned lands in the vicinity are available. Privately owned lands in the project area could accommodate the proposed project however acquisition costs would be prohibitive and would be counterproductive to the RFP process which initiated this project.

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6. ANTICIPATED DETERMINATION OF FONSI

The proposed project involves the following improvements:

Potential impacts of the proposed improvements have been evaluated in accordance with the significance criteria of §11-200-12 of the Department of Health's Administrative Rules. Discussion of the project's conformance to the criteria is presented as follows:

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

No natural or cultural resources of significance were identified on the proposed project site, where is comprised of fill land. Given the project's scope, project activities are unlikely to result in the loss or destruction of any natural or cultural resource. In the event of unexpected discovery of historic or archaeological resources, the SHPD will be immediately notified for appropriate response and action.

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

The proposed project will not curtail the range of beneficial uses of the environment.

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

The proposed project does not conflict with the long-term environmental policies, goals, and guidelines of the State of Hawai'i. As presented in this EA, any potential temporary impacts associated with short-term construction-related activities will be mitigated through adherence to standard construction impact mitigation practices.

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

In the short term, construction expenditures will provide positive benefits to the local economy. This would include creation of some construction and construction support jobs, and the purchase of materials from local suppliers, as well as indirect benefits to local retail businesses resulting from construction activities, but not at a level that would generate any significant population expansion.

In the long-term, the proposed project will provide in-demand housing opportunities for Honolulu's urban workforce.

(5) Substantially affects public health;

No identifiable adverse short- or long-term impacts on public-health are anticipated to result from the construction and operation of the proposed project. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated, however, they will be temporary in nature and will comply with State and County regulations.

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

Substantial impacts to public facilities are not anticipated to result from the construction and operation of the proposed project. Moreover, the proposed project is not anticipated to induce population growth in the area or region. Existing public water, wastewater, drainage, and utility infrastructure are expected to have sufficient capacity to serve project demands. Agencies with jurisdiction over their respective infrastructure systems will be consulted as the project proceeds to assure that it can be accommodated.

(7) Involves a substantial degradation of environmental quality;

The proposed project is not anticipated to substantially degrade environmental quality. Long-term impacts to air and water quality, noise levels and natural resources will be minimal. Typical short-term construction-related impacts (e.g., noise and air quality) are anticipated, but will be temporary and will comply with State and County regulations.

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

The proposed action does not have a considerable effect upon the environment. There are no commitments for further action beyond the scope presented within this EA.

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

No listed or protected plant species are known from the project area. Rare, threatened, or endangered fauna are not known to utilize the site for either habitat or foraging purposes.

Although there is no evidence of migratory seabirds and native waterfowl species using the project site for breeding or habitation, some are known to visit areas within the wider project study area. No adverse impacts resulting from the project are anticipated. However, measures to prevent adverse effects to avifauna from night lighting will include the following:

- During construction activities, all nighttime lighting will be shielded and angled downward to reduce glare and disruption of bird flight.
- Following construction, permanent light sources will be shielded and angled downward to eliminate glare that could disturb or disorient animals.

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

No long-term significant impacts to air quality, water quality, or noise levels within the project site are anticipated as a result of the construction and operation of the proposed project.

In the short- and long-term, no significant impacts on air quality are anticipated as a result of the construction and operation of the proposed project. A portion of the construction for the proposed project will involve fine grading as well as limited excavation for utility lines and fencing. Fugitive dust will be controlled, as required, by

methods such as dust fences, water spraying and sprinkling of loose or exposed soil or ground surface areas. As deemed appropriate, planting of landscaping will be done as soon as possible on completed areas to also help control dust. Respective contractors will be responsible to minimize air quality impacts during the various phases of construction.

Exhaust emissions from construction vehicles are anticipated to have negligible impact on air quality in the project vicinity as the emissions would be relatively small and readily dissipated. In the long-term, some vehicular emissions related to operations at the project site are expected, however, due to the generally prevailing tradewinds, the emissions would be readily dissipated.

No short- or long-term significant impacts on surface and/or coastal waters in the project vicinity are anticipated during construction or operation of the proposed project. There are no streams or wetlands on or within close proximity to the project site. Construction of the proposed project will not involve major land disturbing activities. Applicable erosion control measures and best management practices will be implemented in order to mitigate any possible adverse effects relating to runoff. As applicable for each phase, these may include but are not be limited to: temporary sediment basins, temporary diversion berms and swales to intercept runoff, silt fences, dust fences, slope protection, stabilized construction vehicle entrance, grate inlet protection, truck wash down areas, and use of compost filter socks. Planting of landscaping also will be done as soon as possible on completed areas to help control erosion. Permanent sediment control measures will be used once construction is completed.

Coordination will be undertaken with the appropriate agencies during permitting and construction in order to ensure that the proposed project will not result in significant impacts with regard to surface and coastal waters. A National Pollutant Discharge Elimination System (NPDES) permit for storm water runoff from construction activities would be required as individual and/or cumulative soil disturbances on the project site will exceed one acre of land area. Any discharges related to project construction or operation activities will comply with applicable State Water Quality Standards as specified in Hawai‘i Administrative Rules, Chapter 11-54 and 11-55 Water Pollution Control, Department of Health. Excavation and grading activities will be regulated by applicable provisions of the County’s grading ordinance.

In the short- and long-term, no significant impacts on air quality are anticipated as a result of the construction and operation of the proposed project. A portion of the construction for the proposed project will involve fine grading as well as limited excavation for utility lines and fencing. Fugitive dust will be controlled, as required, by methods such as dust fences, water spraying and sprinkling of loose or exposed soil or ground surface areas. As deemed appropriate, planting of landscaping will be done as soon as possible on completed areas to also help control dust. Respective contractors will be responsible to minimize air quality impacts during the various phases of construction.

Exhaust emissions from construction vehicles are anticipated to have negligible impact on air quality in the project vicinity as the emissions would be relatively small and readily dissipated. In the long-term, some vehicular emissions related to operations at the project site are expected, however, due to the generally prevailing tradewinds, the emissions would be readily dissipated.

Land disturbing activities include demolition, foundation work, utility repairs, and utility upgrades.

(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, fresh water, or coastal waters;

No short- or long-term significant impacts are anticipated as the project site is not located within an environmentally sensitive area.

According to the FIRM, the project site is designated Zone X, an area determined to be outside of the 0.2% annual chance floodplain. There are no base flood elevations or depths shown within this zone.

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

The proposed project will not result in significant impacts to view planes identified in county or state plans or studies. Moreover, the proposed project is not expected to adversely affect scenic and visual resources in the project area. The proposed Nohona Hale project will not degrade lateral coastal views or mauka-makai views from areas in the vicinity of the site.

(13) Requires substantial energy consumption.

The construction and operation of the proposed project will not require a significant level of energy consumption.

7. CONSULTATION

7.1 Pre-Assessment Consultation

The following agencies and organizations were consulted during the Draft EA Pre-Assessment Consultation process that took place in 2016. Of the parties that formally replied during the pre-assessment period, some had no comments while others provide substantive comments as indicated by the ✓ and ✓✓, respectively. All written comments are reproduced in Appendix D.

Federal Agencies

National Oceanic and Atmospheric Administration, Pacific Islands Regional Office
U.S. Army Corps of Engineers
U.S. Department of the Interior, Fish and Wildlife Service
Federal Aviation Administration
Department of Homeland Security

State Legislative Branch

Senator Brickwood Galuteria
Representative Kyle Yamashita

State Agencies

✓ Department of Accounting and General Services
Department of Business, Economic Development and Tourism
Department of Business, Economic Development and Tourism, Energy Office
Department of Business, Economic Development and Tourism, Land Use Commission
Department of Business, Economic Development and Tourism, Office of Planning
Department of Defense
Department of Defense, State Civil Defense
✓✓ Department of Health
✓✓ Department of Health, Clean Water Branch
Department of Health, Environmental Management Division
✓✓ Department of Health, Environmental Planning Office
Department of Land and Natural Resources
Department of Land and Natural Resources, Historic Preservation Division
Department of Transportation
Office of Environmental Quality Control
Office of Hawaiian Affairs
Office of Planning
Hawai‘i Community Development Authority
University of Hawai‘i at Mānoa Environmental Center

City Council

Councilmember Ann Kobayashi

City and County of Honolulu Agencies

✓ Board of Water Supply
Department of Community Services

Department of Design and Construction
Department of Environmental Services
Department of Facility Maintenance
✓ Department of Parks and Recreation
Department of Planning and Permitting
Department of Transportation Services
✓✓ Honolulu Fire Department
✓✓ Honolulu Police Department

Utility Companies

Verizon Hawai'i
Hawai'i Gas
Hawaiian Electric Company
Hawaiian Telcom
✓ Oceanic Time Warner Cable

Other Interested Parties and Individuals

Ala Moana – Kaka'ako Neighborhood Board No. 11

7.2 Draft EA Consultation

The following agencies and organizations will be consulted as part of the Draft EA process.

Federal Agencies

- National Oceanic and Atmospheric Administration, Pacific Islands Regional Office
- U.S. Army Corps of Engineers
- U.S. Department of the Interior, Fish and Wildlife Service
- U.S. Geological Survey
- U.S. Environmental Protection Agency

State Legislative Branch

- Senator Brickwood Galuteria
- Representative Scott Saiki
- Representative Tom Brower

State Agencies

- Department of Accounting and General Services
- Department of Business, Economic Development and Tourism
- Department of Business, Economic Development and Tourism - Energy Division
- Department of Business, Economic Development and Tourism - Office of Planning
- Department of Health, Environmental Management
- Department of Health, Office of Environmental Quality Control
- Department of Health, Disability and Communications Access Board
- Department of Land and Natural Resources
- Department of Land and Natural Resources, Historic Preservation Division

- Department of Transportation
- Department of Transportation - Airports
- Office of Hawaiian Affairs
- Hawaii Community Development Authority
- Department of Education
- University of Hawaii at Manoa Environmental Center
- Hawaii Public Housing Authority

City Council

- Chair, Ron Menor
- Councilmember Carol Fukunaga

City and County of Honolulu Agencies

- Board of Water Supply
- Department of Community Services
- Department of Design and Construction
- Department of Environmental Services
- Department of Facility Maintenance
- Department of Parks and Recreation
- Department of Planning and Permitting
- Department of Transportation Services
- Honolulu Fire Department
- Honolulu Police Department
- Honolulu Authority for Rapid Transportation
- Department of Emergency Services
- Office of Housing

Utility Companies

- Verizon Hawai‘i
- Hawai‘i Gas
- Hawaiian Electric Company
- Oceanic Cable
- Hawaiian Telcom

Other Interested Parties and Individuals

- Ala Moana/Kaka‘ako Neighborhood Board No. 11
- Friends of Kewalo
- Howard Hughes Corporation
- Kakaako Improvement Association
- Kamehameha Schools

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8. HAWAIʻI REVISED STATUTES §201H-38

Hawaii Revised Statutes (HRS) Section 201H-38, "Housing development; exemption from statutes, ordinances, charter provision, and rules" allows for eligible 201H projects to seek exemptions from all statutes, ordinances, and rules of any governmental agency relating to planning, zoning, and construction standards that do not negatively affect the health and safety of the general public in exchange for providing affordable housing.

Nohona Hale proposes 111 affordable rental housing units that will offer 90% (99 units) to households earning 60% of the Area Median Income (AMI) and 10% (11 units) to households earning 30% AMI, and one manager's unit.

The project is located in the Pauahi Neighborhood Zone within the Kakaako Community Development District of Central Honolulu, on public land owned by the Hawaii Community Development Authority. This property is also located within the Kakaako Transit-oriented development (TOD) plan. The project will be financed, in part, from public funds made available through the Hawaii Housing Finance and Development Corporation. With contributions of land and financial assistance from these public agencies, the project will be able to provide much needed affordable rental housing, and in turn will help to address critical affordable housing needs identified by the State. There is projected demand for more than 12,000 new rental housing units on Oahu to be built between 2015 and 2025 to meet current and future housing needs, with some of the greatest demand by lower income groups (Hawaii Housing Planning Study, 2016 p.32-34). The exemption and deferral requests which follow are necessary to maximize the public contributions made available to produce much needed affordable rental housing.

The following is a description of the exemptions and deferrals being requested for Nohona Hale, as an eligible 201H affordable rental housing project. A summary of these exemptions and deferrals, presented in tabular form, follows as Table 8-1.

REQUESTED EXEMPTIONS AND DEFERRALS

<u>Exemptions From Kakaako Community Development District Mauka Area Rules – Applicable agency is HCDA</u>

- An exemption is sought from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-54(f) "Building Form", as well as corresponding Figure 1.3-D "Development Standards" and Figure NZ.6-D "Building Form". The project proposes a roughly 5.6 floor area ratio (FAR) (approximately 57,736 square feet) on a 10,409 square foot site, which exceeds the current allowable maximum 3.5 FAR. However, the TOD Overlay Plan considers an allowable density of 5.0 FAR for the project site, and would grant extending up to 10.5 FAR with provision of affordable reserved housing as community benefit. (TOD Overlay Plan, 2016 p.3-13) The increased density directly translates to more affordable rental housing to be developed as community benefit. The proposed additional tower floors and overall tower height of 157 feet is within the maximum 400 foot height allowed for the project site.

  Additionally, the project does not meet building form requirements that a "street front element" be between 40 feet and 65 feet in height. Instead, the project proposes a

two-story podium that is only approximately 26 feet in height. Also, it is more efficient to allocate floor area within the tower element, and not within the podium street front element, by providing additional residential floors in the tower using a typical floorplate. • An exemption is sought from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-54(d) as well as corresponding Figure 1.6A "View Corridors". The project tower, which fronts Cooke Street and extends over 65 feet in height does not meet the setback requirement of 50 feet from the parcel line because the three foot depth of residential lanais facing Cooke Street encroach into the designated view corridor. Due to the extreme site constraints, the tower can not be feasibly shifted further away from the view corridor, and the tower floorplate could not be reduced without sacrificing additional affordable rental units. The lanais are critical for the proposed "micro" unit types, offering benefit to residents as both additional spillover exterior private space and enhancing perceptions of a larger extended unit. The lanais are not enclosed and so do not totally impede mauka-makai views along Cooke Street

• An exemption is sought from Mauka Area Rules, Hawaii Administrative Rules An exemption is sought from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-54(d) as well as corresponding Figure 1.6A "View Corridors". The project tower, which fronts Cooke Street and extends over 65 feet in height does not meet the setback requirement of 50 feet from the parcel line because the five foot depth of residential lanais facing Cooke Street encroach into the designated view corridor. Due to the extreme site constraints, the tower cannot be feasibly shifted further away from the view corridor, and the tower floorplate could not be reduced without sacrificing additional affordable rental units. The lanais are critical for the proposed "micro" unit types, offering benefit to residents as both additional spillover exterior private space and enhancing perceptions of a larger extended unit.

• An exemption is sought from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-55(b) "Architectural Design", Section 15-217-60 "Encroaching Elements", Figure 1.13-C "Building Placement and Encroachments", Figure NZ.6-1 "Allowed Height, Build To Line, and Parking Access", Figure FT.5-A 2-3, and Figure NZ.6-C "Building Placement" The project proposes a "Podium High Rise" building typology with a "Shopfront" frontage typology along Cooke Street, located within the Pauahi Neighborhood Zone. Given the extreme site constraints of a small infill parcel, the project does not conform to several related form-based requirements for a high rise project along Cooke Street in the Pauahi neighborhood zone.

The project does not conform to build to line requirements. The project site has a build to line of 10 feet along Cooke Street, and the parcel line extends into the right of way. Consequently, some of the project frontage comes up to the 10 foot build to line and is flush with adjacent structures, while remainder of the project frontage is setback further to allow for placement and access of utilities. Additionally, the project does not conform to requirements that 60% or more of the building frontage be along the 10 foot build to line. Due to extreme site constraints, with very limited frontage, necessary siting and access only allow approximately 32% frontage occupancy.

Also, the project does not meet requirements for balconies, with a proposed second floor lanai that, as an architectural feature providing exterior community gathering space, encroaches beyond the build to line.

Additionally, the project does not conform to the shopfront frontage requirements that 65% of the first floor wall area be fenestration. Also, the project frontage is setback in some places up to approximately 14 feet, in order to make space and access for utilities, which exceeds the shopfront frontage maximum of eight feet.

• An exemption is sought from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-63 "Parking and Loading", as well as corresponding Figure BT.10 (C) "Podium High Rise, Parking Design and Location" and Figure 1.10-B "Parking Placement". The project proposes to provide less than the minimum required off-street parking spaces and not within the allowed parking zone setback.

The Mauka Area Rules would require the project to provide a total of 105 parking stalls, with 100 stalls for residential use (111 units X 0.9 stalls per unit) and 3 stalls for commercial use (1,216 square feet X 1 stall per 450 square feet) and 1 loading stall (required for multi-family developments with floor area between 20,000 - 150,000 square feet). However, the Nohona Hale project proposes 3 parking stalls, less than the minimum required, but is consistent with the HCDA's Final Draft Transit Oriented Development Overlay Plan that recognized "minimum parking requirements...limit the ability to do urban "infill" projects…[and]…make development projects more expensive" (TOD Overlay Plan, 2016 p. 7-2). Goals for the project include both demonstrating infill development potential of small lots within Kakaako, and maintaining affordability by unbundling parking costs. The TOD Overlay Plan recommends to remove parking minimums, and encourages best practices for efficient and shared parking, as well as other multi-modal options such as bike parking, bike share, car share, bus, rail, etc. (TOD Overlay Plan, 2016 p. 3-10) The project is centrally located, within close distance to a numerous transportation options, including the planned Civic Center Station, as well as surrounding bus stops, and bike share stations.

Additionally, the project does not conform to requirements for parking placement. Due to extreme site constraints, the proposed ground floor parking necessarily encroaches within the required 40 foot setback from the parcel line along Cooke Street. However, consistent with the intent of this rule, the parking is not immediately visible from the street and is screened with a roll down door.

• An exemption from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-65 is sought for public facilities dedication for the proposed 1,216 square feet of commercial area. For a minimum 3% requirement for commercial uses, public facility dedication would total approximately $9,180 based on current land value of $255 per square foot (3% X 1,216 square feet commercial = 36 square feet; 36 square feet X $255 per square foot land value = $9,180). Meeting this requirement is not feasible, given the extremely restrictive site size and limited public financing available to develop the project. Numerous nearby parks and other public facilities are available to project residents. In addition, Nohona Hale proposes to provide diverse assortment of amenities, including lobby/gathering area (671 square feet), garden

(856 square feet), urban farm (853 square feet), community room (2,009 square feet), gym (386 square feet), exterior and interior community rooms (1,260 and 2,009 square feet), community lanai (591 square feet).

The proposed residential use, which is entirely affordable reserved housing, is excluded from Public Facilities Dedication, according to Section 15-217-65(d)(2) which imposes requirement on "residential floor area ***exclusive of floor area devoted to reserved housing units***".

• An exemption from Mauka Area Rules, Hawaii Administrative Rules Section 15-217-93 is sought for development permit fees and costs related to public hearings (including publishing of hearing notices and court reporter), estimated to be approximately $6,400, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project.

Exemption from Disability and Communication Access Board – Applicable agency is Department of Health

• An exemption and/or deferral from Section 103-50, HRS, and Hawaii Administrative Rules Section 15-216-15.5 is sought for Disability and Communication Access Board plan review fees, estimated to be approximately $11,477, until closing of construction loan, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project.

Exemption From Revised Ordinances of Honolulu – Various applicable City and County agencies (as noted)

• An exemption from Revised Ordinances of Honolulu, Sections 18-6.1 and 18-6.2 is sought for building permit and plan review fees, estimated to be approximately $221,367, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP)

• An exemption from Revised Ordinances of Honolulu, Sections 20-1.1 and 1.12.8 (10) is sought for fire department plan review fees, estimated to be approximately $2,500, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is Honolulu Fire Department)

• An exemption and/or deferral from Hawaii Revised Statutes Section 302A-1601-1612 is sought for proposed Kalihi-Ala Moana District school impact fees, estimated as approximately $1,040,514, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. Unlike a for-sale development, the proposed school impact fees cannot be effectively passed on to individual tenants of an affordable rental project, but would instead be absorbed into the overall development costs. The project is receiving generous contributions of both public land and financing assistance, so assessing further impact fees by the State Department of Education would be counterproductive to the objectives of other State agencies, such as the HCDA and HHFDC. (Applicable Agency is Hawaii Department of Education)

• An exemption and/or deferral from Revised Ordinances of Honolulu, Section 14-3.2 is sought for payment of sewer installation charges, estimated to be approximately $224,944, until closing of construction loan, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP

• An exemption and/or deferral from Revised Ordinances of Honolulu, Sections 14-6.1 and 14-6.4 is sought for payment of sewer service charges, estimated to be approximately $507,477, until closing of construction loan, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP)

• An exemption and/or deferral from Revised Ordinances of Honolulu, Sections 14-10.1, 14-10.2, 14-10.3, and 14-10.6 is sought for payment of wastewater system facility charges, estimated to be approximately $472,164, until closing of construction loan, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP)

• An exemption from Revised Ordinances of Honolulu, Section 14-12.12 is sought for payment of storm drain connection fee, estimated to be approximately $1,000, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP)

• An exemption from Revised Ordinances of Honolulu, Section 14-14.4 is sought for payment of grading and grubbing fees, estimated to be approximately $180, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP)

• An exemption from Revised Ordinances of Honolulu, Section 14-17.1 is sought for payment of excavation and repair of streets and sidewalk permit fees, estimated to be approximately $5,000, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is DPP)

• An exemption and/or deferral from Revised Ordinances of Honolulu, Section 1-102 is sought for payment of water system facilities charges, estimated to be approximately $135,498, until closing of construction loan, in order to facilitate the economic feasibility of Nohona Hale as a 201H affordable rental housing project. (Applicable Agency is Board of Water Supply)

Table 9-1: “Summary of Requested Exemptions and Deferrals” which follows on the next several pages summarizes these requested exemptions and deferrals.

TABLE 8-1 SUMMARY OF REQUESTED EXEMPTIONS AND DEFERRALS				
Requested Exemptions and Deferrals				
Development Standard or Requirement	**Relevant Section/ Requirement**	**Proposed Project Development Standard**	**Applicable Agency**	**Rationale for Request & Estimated Value**
Building Form, Maximum Density (FAR)	Mauka Area Rules, Sec. 15-217-54(f) Figure 1.3-D "Development Standards" Figure NZ.6-D	Modification from maximum 3.5 FAR in Pauahi Neighborhood Zone.	Hawaii Community Development Authority (HCDA)	The Project requires 5.6 FAR, (approximately 21,300 square feet of additional floor area). It is likely that additional FAR would be made available with adopted Transit-Oriented Development plans.
Building Form, View Corridor	Mauka Area Rules, Sec. 15-217-54(d) Figure 1.6A "View Corridors"	Modification from view corridor requirement.	Hawaii Community Development Authority (HCDA)	To maintain structural economy of the housing tower plan layout.
Architectural Design, Encroaching Elements, Balconies, Build to Line	Mauka Area Rules, Sec. 15-217-55(b) & 15-217-60 Figure 1.13-C Figure NZ.6-C Figure NZ.6-1 Figure FT.5-A 2-3	Modification from architectural features to encroach beyond required build to line, and from minimum depth and enclosure requirements.	Hawaii Community Development Authority (HCDA)	Design provides 2-story podium engaging street front and for less than 5 ft deep residential lanais.

Requested Exemptions and Deferrals				
Development Standard or Requirement	**Relevant Section/ Requirement**	**Proposed Project Development Standard**	**Applicable Agency**	**Rationale for Request & Estimated Value**
Off-street Parking & Loading, Maneuvering, Location	Mauka Area Rules Sec. 15-217-63 Figure BT.10 (C) Figure 1.10-B	Modification from off-street minimum parking requirements, and 40-foot parking setback	Hawaii Community Development Authority (HCDA)	As an affordable rental project, it is planned residents will take advantage of the nearby transit stations, car share, biking and bus terminals. Parking provision is considerate of reduced ratios proposed in the Ala Moana TOD Plan.
Public Facilities Dedication	Mauka Area Rules Sec. 15-217-65	Exemption from Public Facilities Dedication	Hawaii Community Development Authority (HCDA)	Mauka Area Rules Sec. 15-217-65 (a) provides exception in calculating PFD requirement to exclude floor area related to reserved (affordable) housing **3% X 1,216 sf commercial space = 36 X $255/sf land value = $9,180** ($2,654,300 assessed land value / 10,409 land area = $255/sf) **4% X 0 sf** non-affordable residential space **=$0** (excluding floor area devoted to reserved housing units and associated common areas) **Estimated Fee: $9,180**

Requested Exemptions and Deferrals				
Development Standard or Requirement	**Relevant Section/ Requirement**	**Proposed Project Development Standard**	**Applicable Agency**	**Rationale for Request & Estimated Value**
Development Permit Fees	Mauka Area Rules Sec. 15-217-93	Exemption from payment of Development Permit fees and costs related to public hearings, including publishing of hearing notices and the costs of a court reporter.	Hawaii Community Development Authority (HCDA)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $6,400**
Plan Review Fees	Hawaii Administrative Rules Sec. 11-216-15.5	Exemption from payment of DCAB Plan Review fees	Hawaii Department of Health (DOH)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $11,477**
Building Permit and Plan Review Fees	ROH, Sec. 18-6.1 & 18-6.2	Exemption from payment of Building Permit Fees and Plan Review Fees	Honolulu Department of Planning and Permitting (DPP)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $221,367**
Fire Department Review Fees	ROH Sec. 20-1.1 Sec. 1.12.8 (10)	Exemption from payment of Fire Department Plan Review Fees	Honolulu Fire Department (HFD)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $2,500**

Requested Exemptions and Deferrals				
Development Standard or Requirement	**Relevant Section/ Requirement**	**Proposed Project Development Standard**	**Applicable Agency**	**Rationale for Request & Estimated Value**
School Impact Fees	Hawaii Revised Statutes, Sec. 302A-1601-1612	Exemption from proposed impact fees for Kalihi-Ala Moana District	Hawaii Department of Education (HDOE)	To facilitate the economic feasibility as a 201H affordable housing project. $9,374/unit X 111 units **Estimated Fee: $1,040,514**
Sewer Installation Charges	ROH Sec. 14-3.2	Exemption and/or deferred payment of Sewer Installation Charges until closing of construction loan	Honolulu Department of Planning and Permitting (DPP)	To facilitate the financial capability in proceeding with the project through the construction period. **Estimated Fee: $224,944**
Sewer Service Charges	ROH Sec. 14-6.1 & 14-6.4	Exemption and/or deferred payment of Sewer Service Charges until closing of construction loan	Honolulu Department of Planning and Permitting (DPP)	To facilitate the financial capability in proceeding with the project through the construction period. **Estimated Fee: $507,477**
Wastewater System Facility Charge	ROH Sec. 14-10.1, 14-10.2, 14-10.3, & 14-10.6	Exemption and/or deferred payment of Wastewater System Facility Charge until closing of construction loan	Honolulu Department of Planning and Permitting (DPP)	To facilitate the financial capability in proceeding with the project through the construction period. **Estimated Fee: $472,164**
Storm Drain Connection Fees	ROH Sec. 14-12.12	Exemption from payment of Storm Drain Connection Fees	Honolulu Department of Planning and Permitting (DPP)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $1,000**

Requested Exemptions and Deferrals				
Development Standard or Requirement	**Relevant Section/ Requirement**	**Proposed Project Development Standard**	**Applicable Agency**	**Rationale for Request & Estimated Value**
Grading and Grubbing Fees	ROH Sec. 14-14.4	Exemption from payment of Grading and Grubbing Fees	Honolulu Department of Planning and Permitting (DPP)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $180**
Streets and Sidewalks Permit Fees	ROH Sec. 14-17.1	Exemption from payment of Excavation and Repair of Streets and Sidewalks Permit Fees	Honolulu Department of Planning and Permitting (DPP)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $5,000**
Water System Facilities Charges	ROH Sec. 1-102	Exemption and/or deferred payment of Water System Facilities Charges until closing of construction loan	Board of Water Supply (BWS)	To facilitate the economic feasibility as a 201H affordable housing project. **Estimated Fee: $135,498**

9. REFERENCES

Federal Emergency Management Agency, *Flood Insurance Rate Map Panel No. 0353G*. gis.hawaiinfip.org/

City and County of Honolulu, *General Plan, Objectives and Policies* Amended October 3, 2002.

City and County of Honolulu, Department of Planning and Permitting, *Primary Urban Center Development Plan,* June 2004.

State of Hawai'i Department of Health, *Hawai'i Ambient Air Quality Data*, Clean Air Branch. Internet. Available at: http://health.hawaii.gov/cab/Hawai'i-ambient-air-quality-data/

State of Hawai'i Department of Health, *Hawai'i Administrative Rules Title 11 Department of Health Chapter 54, Water Quality Standards*, amended and compiled May 27, 2009.

State of Hawai'i Department of Health, *Hawai'i Administrative Rules Title 11 Department of Health Chapter 60.1, Air Pollution Control*, amended and compiled September 16, 2003.

U.S. Census Bureau American Fact Finder, Profile of General Population and Housing Characteristics: 2010. http://factfinder2.census.gov

U.S. Census Bureau, Honolulu County – Quick Facts from the U.S. Census Bureau: http://quickfacts.census.gov/qfd/states

U.S. Fish and Wildlife Service, National Wetlands Inventory http://www.fws.gov/wetlands/Data/Mapper.html

United States Department of Agriculture Natural Resource Conservation Service. *Soil Classification*. Internet. Available at: http://soils.usda.gov/technical/classification/

University of Hawai'i at Hilo, Department of Geography, Atlas of Hawai'i, Third Edition, Edited by Sonia P. Juvik and James O. Juvik, University of Hawai'i Press, Honolulu, 1998.

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APPENDIX A:

Archaeological Inventory Survey
Cultural Surveys Hawai‘i, 2016

Draft

Archaeological Inventory Survey Report for the Nohona Hale Project, Kaka‘ako, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu TMK: [1] 2-1-051:014

Prepared for
Wilson Okamoto Corporation

Prepared by
Jennifer Robins, B.A.
and
Hallett H. Hammatt, Ph.D
Principal Investigator

Cultural Surveys Hawai‘i, Inc.
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Management Summary

Reference	Archaeological Inventory Survey Report for the Nohona Hale Project, Kaka‘ako, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMK: [1] 2-1-51:014 (Robins and Hammatt 2016)
Date	June 2016
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KAKAAKO 187
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological fieldwork permit number 16-26, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	SHPD
Project Location	The Hale Nohona project is located at 630 Cooke Street, Honolulu O‘ahu Island. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Funding and Land Jurisdiction	State; the project area is owned by Hawaii Community Development Authority (HCDA)
Project Description and Related Ground Disturbance	The project area is a trapezoid-shaped property located on Cooke Street, two lots *makai* (seaward) of Queen Street. The southeast portion of property consists of an asphalt parking and the northwest portion is a fenced garden. Ground disturbance associated with this project will include construction of approximately 107 affordable rental micro units contained within two 12-story towers atop a two-level podium; the lower podiums will consist of a lobby, community lounge and multipurpose room that will include a small kitchen, community space, central laundry and management offices. Outdoor amenities will include both covered and uncovered lanai areas for recreational use, and an outdoor podium garden.
Project Acreage	0.24 acres
Area of Potential Effect (APE)[i] and Survey Area Acreage	The APE for this project area is defined as the entire 0.24-acre project area.
Historic Preservation Regulatory Context[ii]	This AIS fulfills the requirements of HAR §13-13-276 and was conducted to identify, document, and assess significance of any historic properties. This document is intended to support the proposed project’s historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-8 and HAR §13-13-275. It is also intended to support any project-related historic preservation consultation with stakeholders such as state

	and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. No previous archaeological investigations were conducted within the project area.
Fieldwork Effort	CSH completed the fieldwork component of the AIS under archaeological fieldwork permit number 16-26, issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was conducted on 4 and 5 April 2016 by CSH archaeologists Megan Hawkins, M.A., Project Director Michelle Pammer, B.A., Jennifer Robins, B.A., and Karl Van Ryzin, B.A. under the general supervision of Hallett H. Hammatt, Ph.D., Principal Investigator, and Project Manager Douglas Borthwick, B.A. This work required approximately 6 person-days to complete and included 100% pedestrian inspection of the project area, GPS data collection, and subsurface testing.
Historic Properties Identified	One historic property was identified within the project area (State Inventory of Historic Places [SIHP] # 50-80-14-7942) that represents an historic burnt trash fill layer (Feature 1) and historic structural remains (Feature 2). The burnt trash fill (Feature 1) is likely associated with open air burning of urban refuse during the early 1900s and use of the processed fill in unwanted wetlands within the project area. The historic structural remains (Feature 2) represent probable building foundations and a floor associated with early and mid-twentieth century settlement and commercial development in the project area.
Historic Property Significance[4]	CSH recommends that the single historic property with multiple buried deposits (SIHP # -7942, Feature 1 and 2) maintain the integrity to support their historic significance under Criterion d (has yielded, or may be likely to yield information important in prehistory or history).
Effect Recommendation[5]	CSH’s project specific effect recommendation is “effect, with proposed mitigation commitments.” CSH recommends a program of on-site archaeological monitoring be implemented for all project subsurface construction activities. The recommended mitigation measures will reduce the project’s effect on the two identified historic properties within the project area.

[i] “Project Area” is defined (HAR §13-275-2) as “the area the proposed project may potentially affect, either directly or indirectly. It includes not only the area where the proposed project will take place, but also the proposed project’s area of potential effect.” “Effects include, but are not limited to, partial or total destruction or alteration of the historic property, detrimental alteration of the properties’ surrounding environment, detrimental visual, spatial, noise or atmospheric impingement, increasing access with the chances of resulting damage, and neglect resulting in deterioration” (HAR §13-275-7(b). Based on these definitions of “project area” and “effects” there is potential for project effects to historic properties to extend outside the footprint of project construction. Accordingly a definition and justification of the “project area” and “area of potential effect” employed in the AIS study is required.

[ii] The State of Hawai‘i historic preservation review process is designed to identify and mitigate a project’s impacts to significant historic properties. Historic properties are defined as “any building, structure, object, district, area, or site, including *heiau* [temple] and underwater site, which is over fifty years old” (HAR §13-275-2). The six potential historic preservation review steps include the following: 1) identification and inventory, to determine if historic properties are present in the project’s area and, if so, to identify and document (inventory) them; 2) evaluation of historic property significance; 3) determination of project effect (impact) on significant historic properties; 4) mitigation commitments that commit to acceptable forms of mitigation in order to properly handle or minimize impacts to significant historic properties; 5) detailed mitigation plan, scope of work to properly carry out the general mitigation commitments; and 6) verification of completion of detailed mitigation plan (HAR §13-275-3). A project’s effect and potential mitigation measures are evaluated based on the project’s potential impact to “significant” historic properties (those historic properties determined significant following their evaluation of significance [HAR §13-275-6]).

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Section 1 Introduction

1.1 Project Background

At the request of Wilson Okamoto Corporation, and on behalf of the Hawaii Community Development Authority (HCDA), Cultural Surveys Hawai‘i, Inc. (CSH) completed an archaeological inventory survey (AIS) for the Nohona Hale project, Kaka‘ako, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMK: [1] 2-1-51:014. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2013 aerial photograph (Figure 3).

The purpose of the Nohona Hale project is to build approximately 107 affordable rental micro units contained within two 12-story towers atop a two-level podium; the lower podiums will consist of a lobby, community lounge and multipurpose room that will include a small kitchen, community space, central laundry and management offices. Outdoor amenities will include both covered and uncovered lanai areas for recreational use, and an outdoor podium garden.

The project area is a trapezoid-shaped property located at 630 Cooke Street, two lots *makai* (seaward) of Queen Street. The southeast portion of property consists of an asphalt parking lot utilized by residents of the nearby Na-Lei Hulu Kupuna residential building and Kathy’s Kitchen restaurant. The northwest portion of the project area is a fenced community garden reserved for the Na-Lei Hulu Kupuna residences. Three sides of the project area is bordered by two-story buildings currently occupied by Sunshine Scuba on the northeast, Baby Emporium on the southwest, and an unidentified building on the northwest side.

1.2 Historic Preservation Regulatory Context and Document Purpose

This AIS fulfills the requirements of Hawai‘i Administrative Rules (HAR) §13-13-276 and was conducted to identify, document, and assess significance of any historic properties. This document is intended to support the proposed project’s historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-8 and HAR §13-13-275. It is also intended to support any project-related historic preservation consultation with stakeholders such as state and county agencies, interested Native Hawaiian Organizations (NHOs), and community groups. The low-income Nohono Hale project is federally funded and, as defined in 36 CFR 800.16, requires compliance with Section 106 of the National Historic Preservation Act (NHPA).

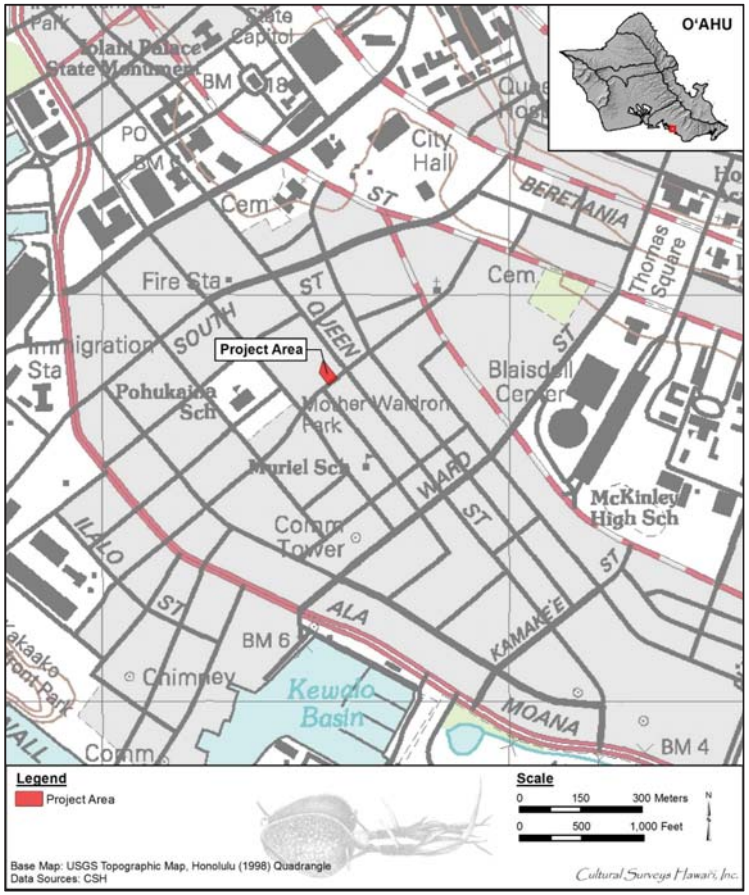

Figure 1. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle showing the location of the project area

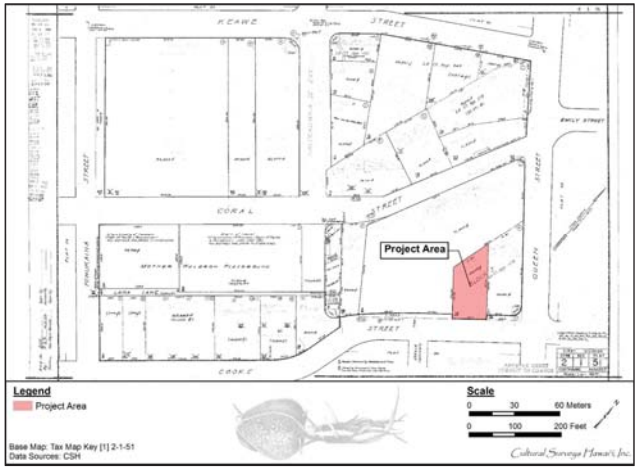

Figure 2. Tax Map Key (TMK) [1] 2-1-51 showing the project area (Hawai‘i TMK Service 2014)

Figure 3. Aerial photograph of the project area (Google Earth 2013)

1.3 Scope of Work

The following archaeological inventory scope of work was designed to satisfy the Hawai‘i state requirements for archaeological inventory surveys (HAR §13-276 and §13-275/284):

1) Historic and archaeological background research, including a search of historic maps, written records, Land Commission Award documents, and the reports from prior archaeological investigations. This research focused on the specific project area's past land use, with general background on the pre-Contact and historic settlement patterns of the *ahupua‘a* (traditional land division) and district. This background information was used to compile a predictive model for the types and locations of historic properties that could be expected within the project area.

2) A complete (100%) systematic pedestrian inspection of the project area to identify any potential surface historic properties. Surface historic properties were recorded with an evaluation of age, function, interrelationships, and significance. Documentation included photographs, scale drawings, and, if warranted, limited controlled excavation of select sites and/or features.

3) Based on the project area's environment and the results of the background research, subsurface testing with a combination of hand and backhoe excavation was used to identify and document subsurface historic properties not located by surface pedestrian inspection. Appropriate samples from these excavations were analyzed for cultural and chronological information. All subsurface historic properties identified were documented to the extent possible, including geographic extent, content, function/derivation, age, interrelationships, and significance.

4) As appropriate, consultation with knowledgeable individuals regarding the project area's history, past land use, and the function and age of the historic properties documented within the project area.

5) As appropriate, laboratory work to process and gather relevant environmental and/or archaeological information from collected samples.

6) Preparation of the inventory survey report, including the following:

   a) A project description;

   b) A section of a USGS topographic map showing the project area boundaries and the location of all recorded historic properties;

   c) Historical and archaeological background sections summarizing prehistoric and historic land use of the project area and its vicinity;

   d) Descriptions of all historic properties, including selected photographs, scale drawings, and discussions of age, function, laboratory results, and significance, per the requirements of HAR §13-276. Each historic property will be assigned a SIHP number;

   e) If appropriate, a section concerning cultural consultations (per the requirements of HAR §13-276-5[g] and HAR §13-275/284-8[a][2]).

   f) A summary of historic property categories, integrity, and significance based upon the State of Hawai‘i historic property significance criteria;

   g) A project effect recommendation;

   h) Treatment recommendations to mitigate the project's adverse effect on any significant historic properties identified in the project area.

If historic properties and/or cultural deposits were located, there were specific requirements for documentation including written descriptions and recording their geographic location with a GPS on project area maps. Documentation may include, as appropriate, section drawings and stratigraphic profiles, plan views, and photographs. If historic properties had been found, required analysis of located historic properties (or potential historic properties) included any or all of the following:

- analysis of recovered artifacts and midden from traditional Hawaiian deposits,
- analysis of historic artifacts from historic-era deposits, and
- radiocarbon dating of samples from cultural contexts.

The scope of work includes coordination with the State Historic Preservation Division (SHPD) relating to archaeological matters. This coordination takes place after consent of the owner and/or project proponents.

1.4 Environmental Setting

1.4.1 Natural Environment

The current project area is within a portion of O‘ahu called the Honolulu Plain, an area generally less than 4.5 m, or 15 feet (ft) above sea level (Davis 1989:5). The Honolulu Plain is stratified with late-Pleistocene coral reef substrate overlaid with calcareous marine sand or terrigenous sediments, and stream fed alluvial deposits (Armstrong 1983:36). The top soil stratum consists of Fill land (FL), containing areas filled with material dredged from the ocean and hauled from nearby areas (Foote et al. 1972).

The modern Hawaiian shoreline configuration is primarily the result of 1) rising sea level following the end of the Pleistocene (Macdonald et al. 1983; Stearns 1978); 2) the mid- to late Holocene approximately 1.5-2.0 m highstand of the sea (see summary in Dye and Athens 2000:18–19); and 3) pre-Contact and post-Contact human landscape modification.

At the end of the Pleistocene, between approximately 20,000 and 5,000–6,000 years ago, water previously locked in glacial ice returned to the world's oceans, and the sea level rose over 100 m to approximately its current level. In the vicinity of the project area, rising sea levels flooded the previously dry, earlier Pleistocene reef deposits, which had formed hundreds of thousands of years previously when sea level was comparable to modern levels. When sea levels reached approximately modern levels, the now coastal regions became depositional environments, where

for tens of thousands of years previously, during the lower sea levels, they had been erosional environments.

A highstand of the sea for the Hawaiian Islands, approximately 1.5 to 2.0 m above present sea level, has been well documented between 4,500 and 2,000 years ago (Athens and Ward 1991; Fletcher and Jones 1996; Grossman and Fletcher 1998; Grossman et al. 1998; Harney et al. 2000; Stearns 1978). During this highstand, there appears to have been an increase in coral reef production and the production of detrital reef sediments. Littoral environments appear to have been augmented substantially by the deposition of marine sediments. “What this means is that the great shoreline sand berms must have developed around the islands at this time because this was when calcareous sand was being produced and delivered to the shorelines in large quantities” (Dye and Athens 2000:19).

The Honolulu coastline was likely greatly affected by the deposition of marine sediments during this elevated sea level. The subsequent drop in sea level to its present level, ca. 2,000 years ago, most likely created a slightly erosional regime that may have removed sediments deposited during the preceding period of deposition (Dye and Athens 2000:19). However, the net gain in sediments would have been substantial. In 1911, it was estimated that about one-third of the Honolulu Plain was a wetland (Nakamura 1979:65, citing a Hawaiian Territory Sanitary Commission report). Pre-Contact Hawaiians used the lagoonal/estuary environment of the Honolulu plain to construct fishponds. Fishpond walls served as sediment anchors for the accumulation of detrital reef sediments. They also likely affected along-shore sedimentary transport, resulting in new littoral deposition and erosion patterns. In the post-Western Contact period, when the fishponds were no longer utilized, they became obvious locations for the deposition of fill. These reclaimed areas provided valuable new land for expanding urban development near the heart of growing urban Honolulu.

Foote et al. (1972) show the project area as being fill (FL), as shown in Figure 4. The authors describe fill land as: “This land type occurs mostly near Pearl Harbor and in Honolulu, adjacent to the ocean. It consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources” (Foote et al. 1972:31).

While fill materials will likely be found throughout the project area, the coastal location of Nohona Hale indicates natural Jaucas sand (JaC) may be encountered underneath portions of the current project area. Foote et al. (1972) describe Jaucas sand as follows:

> In a representative profile the soil is single grain, pale brown to very pale brown, sandy, and more than 60 inches deep. In many places the surface layer is dark brown as a result of accumulation of organic matter and alluvium. The soil is neutral to moderately alkaline throughout the profile. [Foote et al. 1972:48]

In this area of the Honolulu District, rainfall averages less than 30 inches per year (Armstrong 1983:62). Northeasterly trade winds prevail throughout the year, although their frequency varies from more than 90% during the summer months to 50% in January; the average annual wind velocity is approximately 10 miles per hour (Wilson Okamoto & Associates 1998:2-1). Vegetation

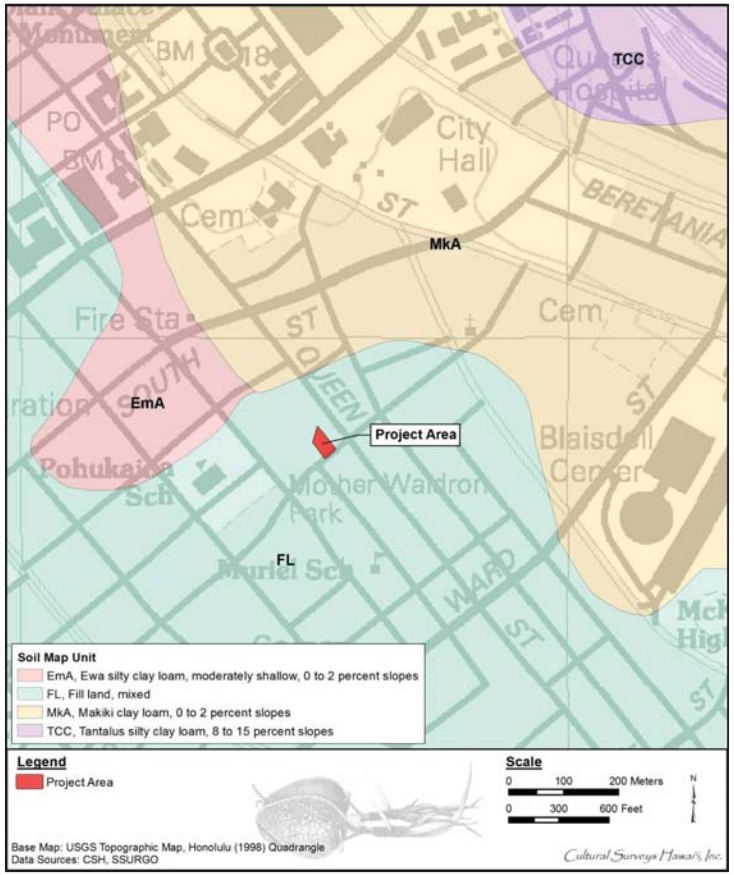

Figure 4. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

within the project area is limited to ornamental vegetation and two mango trees (*Mangifera*) along the project area margins.

1.4.2 Built Environment

The project area is located within central Honolulu, surrounded by modern urban development including commercial buildings, paved streets, sidewalks, utility infrastructure, and landscaped margins.

Section 2 Methods

2.1 Field Methods

CSH completed the fieldwork component of the AIS under archaeological fieldwork permit number 16-26, issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was conducted on 4 and 5 April 2016 by CSH archaeologists Megan Hawkins, M.A., Project Director Michelle Pammer, B.A., Jennifer Robins, B.A., and Karl Van Ryzin, B.A. under the general supervision of Hallett H. Hammatt, Ph.D., Principal Investigator, and Project Manager Douglas Borthwick. This work required approximately 6 person-days to complete and included 100% pedestrian inspection of the project area, GPS data collection, and subsurface testing.

2.1.1 Pedestrian Survey

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of historic property identification and documentation. As there were no surface historic properties, historic property identification efforts focused on the identification of subsurface cultural deposits.

2.1.2 Subsurface Testing

The subsurface testing program was backhoe assisted and involved three test excavations. The linear trenches measured 6 m long by 0.75 m (2 ft) wide. If feasible, the trenches were excavated around subsurface utilities.

A stratigraphic profile of each test excavation was drawn and photographed. The observed sediments were described using standard USDA soil description observations/terminology. Sediment descriptions included Munsell color; texture; consistence; structure; plasticity; cementation; origin of sediments; descriptions of any inclusions such as cultural material and/or roots; lower boundary distinctiveness and topography; and other general observations. Stratigraphic anomalies were exposed and carefully represented on test excavation profile maps.

No sediment samples were collected from the three trenches.

2.1.3 Documentation

All test excavations were documented as thoroughly as possible and included stratigraphic profiles, plan views, photographs, and written descriptions. The observed sediments were described using standard USDA soil description observations/terminology as described above. Any stratigraphic anomalies or potential cultural deposits were carefully represented on test excavation profile or plan view maps.

All identified archaeological historic properties were documented as thoroughly as possible, including lateral (areal) extent, cultural content, function, age, interrelationships with other sites and features, and historic significance. Feature documentation included profiles and/or plan views, sample collection, written descriptions, stratigraphic descriptions, and photographs.

The locations of each of the test excavations, identified archaeological historic properties, and significant features were recorded using a Trimble GPS Pathfinder ProXH mapping-grade GPS unit with a TSCI Datalogger using real-time differential correction. This unit provides sub-meter

horizontal accuracy in the field. GPS field data was post-processed and information was converted into GIS shape files using Trimble's Pathfinder Office software, version 5.6, and graphically displayed using ESRI's ArcGIS, version 10.2.1.

2.2 Laboratory Methods

Materials collected during AIS fieldwork were identified and catalogued at CSH's laboratory facilities on O‘ahu. Analysis of collected materials was undertaken using standard archaeological laboratory techniques. Materials were washed, sorted, measured, weighed, described, and/or photographed.

2.2.1 Artifact Analysis

In general, artifact analysis focused on establishing, to the greatest extent possible, material type, function, cultural affiliation, and age of manufacture. As applicable, artifacts were washed, sorted, measured, weighed, described, photographed, and catalogued. Diagnostic (dateable or identifiable) attributes of artifacts were researched. Historic artifacts were identified using standard reference materials (e.g., Elliott and Gould 1988; Fike 1987; Godden 1964; Kovel and Kovel 1986; Lehner 1988; Lindsey 2014; Millar 1988; Munsey 1970; Toulouse 1971; Whitten 2009; and Zumwalt 1980) , as well as resources available on the internet. Analyzed materials were tabulated and are presented in Section 5.

2.2.2 Disposition of Materials

Materials collected during the current AIS will remain temporarily curated at the CSH office in Waimānalo, O‘ahu. CSH will make arrangements with the landowner regarding the disposition of this material. Should the landowner request different archiving of material, an archive location will be determined in consultation with the SHPD. All data generated during the course of the AIS are stored at the CSH offices.

2.2.3 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai‘i, the Hawai‘i State Archives, the Mission Houses Museum Library, the Hawai‘i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai‘i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database (Waihona ‘Aina 2000).

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

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3.1 Explanation of Place Names

As noted in the introduction, the current project area is within the Kaka‘ako Community Development District. However, the boundary of this development district is not the same as the ancient boundary of Kaka‘ako. The development district comprises the *‘ili* (land section) of Kaka‘ako and lands once known as Ka‘ākaukukui, Kukuluāe‘o, and Kewalo, and even smaller areas—portions of *‘ili*—called Kawaiaha‘o, Honuakaha, Ka‘ala‘a, ‘Āpua, ‘Auwaiolimu, Pualoalo, Pu‘unui, and Kolowalu. The current project area is within the *‘ili* of Kewalo and is aligned on the northwest side with a *makai* (seaward) portion of the *‘ili* of Pualoalu. Kewalo literally means "the calling," as in an echo (Pukui et al. 1974:109).

John Papa ‘Ī‘ī mentions some of these lands while discussing early nineteenth century trails in the Honolulu/Waikīkī area (Figure 5). The fact that the trail traversed this region—characterized by ponds, marshlands, and *lo‘i* (irrigated fields)—suggests the trail, especially as it neared the coastline at Kālia, must have run on a sand berm raised above surrounding wetlands and coral flats. On this inland trail (probably close to the current alignment of Queen Street and current project area), walking from Waikīkī to Honolulu, "The trail from Kalia led to Kukuluaeo, then along the graves of those who died in the smallpox epidemic of 1853, and into the center of the coconut grove of Honuakaha" (‘Ī‘ī 1959:89).

The smallpox epidemic graves referred to are within the Honuakaha Cemetery, designated State Inventory of Historic Places (SIHP) # 50-80-14-3712, near the corner of Halekauwila and South streets, *makai* of Kawaiaha‘o Church. Honuakaha was a settlement located generally between Punchbowl and South streets, on the *makai* side of Queen Street.

3.2 Legendary Accounts

The present study area is located along the western boundary of Kewalo, a region and *‘ili* of Honolulu Ahupua‘a shown on early historic maps. Kewalo once had a freshwater spring in the central portion (current location unknown), as seen in the proverb "Ka wai huahua‘i o Kewalo" which translates as "The bubbling water of Kewalo." Two springs are mentioned in a traditional story of the Waters of Ha‘o. This legend tells of two children of the chief Ha‘o who ran away from

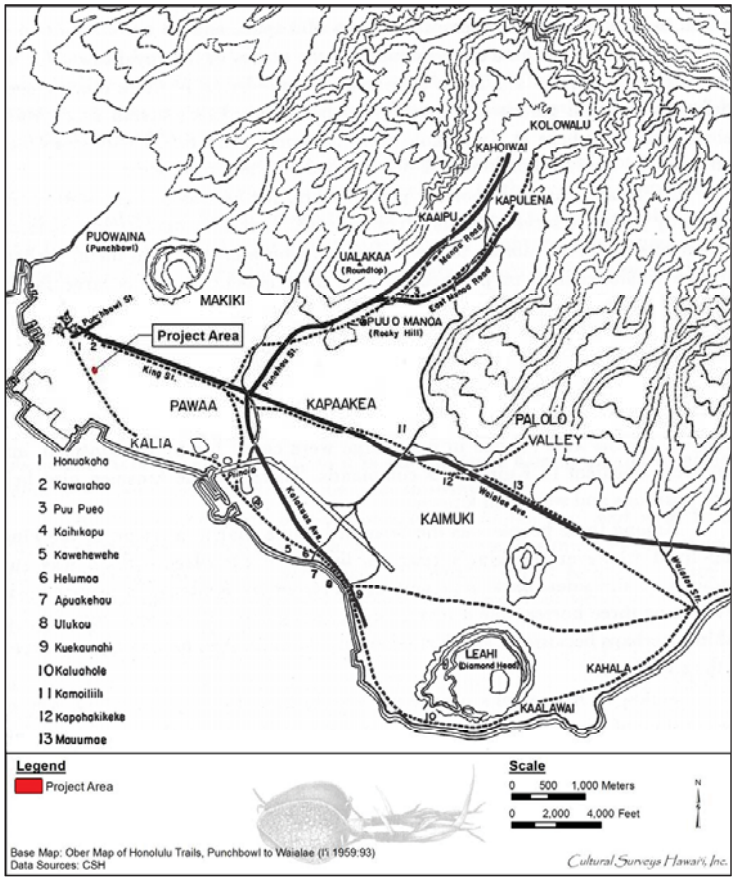


Figure 5. Early nineteenth century (ca. 1810) trails on the southwest coast of O'ahu, showing the location of Honuakaha, Kukuluāe'o, and Kālia (Ober ca. 1810)

their cruel stepmother. They stayed a time with the caretakers of Kewalo Spring, which may have been located close to the trail that connected Waikīkī and Honolulu. The children then left when they heard the chiefess had sent men to look for them. The two children followed the moonlit trail across the plain toward Kou (Honolulu), but finally collapsed from weariness and thirst. In a dream, the boy's mother told him to pull up a plant close to his feet. When he did, he found a spring under the plant, which was called the Water of Ha'o, or Kawaiaha'o. This spring is located at the western end of the trail, near Kawaiaha'o Church in Kaka'ako (Pukui 1988:87–89).

The Kewalo area also once had a famous fishpond, which was used to drown members of a pariah caste (*kauwā*) or *kapu* (taboo) breakers as the first step in a sacrificial ritual known as Kānāwai Kaihehe'e (Kamakau 1991:6) or Ke-kai-he'ehe'e, which translates as "sea sliding along," suggesting the victims were slid under the sea (Westervelt 1991:63). Sterling and Summers (1978) describe Kewalo as follows:

> A fishpond and surrounding land on the plains below King Street, and beyond Koula. It contains a spring rather famous in the times previous to the conversion to Christianity, as the place where victims designed for the Heiau of Kanelaau on Punchbowl slopes, was first drowned. The priest 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 superiors.' From this it was called Kawailumalumai, 'Drowning waters.' [Sterling and Summers 1978:292]

Kewalo is mentioned in a legend as a marsh near the beach, where tall *pili* grass was growing. Kapoi went to this area to get thatching for his house. While there, Kapoi found seven owls eggs and took them home to cook for his supper. An owl perched on the fence surrounding his house and cried out "O Kapoi, give me my eggs!" Kapoi eventually returned the eggs, and the owl became his family god and instructed him to build a heiau named Mānoa. Kapoi built the heiau and placed some bananas on the altar as a sacrifice. He also set the *kapu* days for its dedication. The king of O'ahu, Kākuhihewa, who was building his own *heiau* in Waikīkī, had made a law that if any man among his people erected a *heiau* and set the *kapu* before him, that man should die. Kapoi was seized and taken to the *heiau* of Kūpalaha, at Waikīkī. The owl that Kapoi had first met secured the aid of the king of the owls at Owl's Hill (Pu'u Pu'eo) in Mānoa, who gathered all of the owls of the islands; they flew to Kūpalaha and battled the king's men, who finally surrendered. From this time the owl was considered a powerful *akua* (god). The battle area was known as Kukaeunahio-ka-pueo, which means "the confused noise of owls rising in masses" (Westervelt 1991:135–137; Thrum 1998:200–202).

Kewalo was also the birthplace of the great chief Hua-nui-ka-la-la'ila'i, as mentioned in this *mele* (story) chanted by Kamakau (1991:24):

'O Hua-a-Kamapau ke 'li'i	Hua-a-Kamapau the chief
O Honolulu o Waikīkī	O Honolulu, of Waikīkī
I hānau no la i kahua la i Kewalo,	Was born at Kewalo,
'O Kālia la kahua	Kālia was the place [the site]
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;
I uka i Kaho‘iwai i	Upland at Kaho‘iwai, at
Kanaloaho‘okau . . .	Kanaloaho‘okau. . .

The chief Hua was famous for his love of cultivation and his care for the people. His *heiau* was in Kukuluāe‘o (*‘ili* adjacent to Kewalo) in Honolulu, called Pu‘ukea; it is mentioned in a traditional *wānana* (prophecy) recorded by Kamakau (1991:24–25):

[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 unuunu 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
[I ‘ai ‘na ka i‘a o Maunalua] . . .	[“Eating” the fish of Maunalua] . . .

The chant mentions the *mahiki* grass of Pu‘ukea Heiau. The Hawaiian term *mahiki* means “to peel off” (Andrews 2003:369). The word was also used to describe a rite to exorcise an evil spirit, as the skilled *kahuna* (priest) “peeled” the malicious spirit from the afflicted. Used in the ritual was a shrimp called *mahiki* or a native grass called *mahiki*. *Mahiki*, or *‘aki‘aki*, is a tufted rush (*Sporobolos* sp.) found near the seashore. The ethnologist Mary Kawena Pukui states that even during her youth, parents put “*ti* leaves, or *hala*, or *‘aki‘aki* grass, in a little sea-salt water and [would] have the child drink it” (Pukui et al. 1972:163) to rid them of badly behaving spirits. The use of this grass in a ritual may explain its association with a ceremonial *heiau*, or it may simply be that the Kaka‘ako coast was a good habitat and thus a favored place for healers to collect this type of grass. The literal meaning of Pu‘ukea is “white hill” (Pukui et al. 1974:199), although it may have alternate meanings. Pu‘ukea is also the name of a small land division within the *‘ili* of Kukuluāe‘o, mentioned in at least two Land Commission Awards, LCA 1502 (not awarded) and LCA 1504. LCA 1504 was located near the junction of Halekauwila Street and Cooke Street.

It is fairly common for a *heiau* to have the same name as the *‘ili* it is located within, so it is possible Pu‘ukea Heiau was also near the junction of Halekauwila and Cooke streets. The majority of the house sites in the mid-nineteenth century in Kukuluāe‘o were located near Halekauwila Street and Queen Street, *mauka* (inland, toward the mountains) of the low-lying coastal

swamplands on higher dry ground. It is possible the *heiau* platform or the area it was built on was one of the few “high spots” in the flat, low-lying swamp that surrounded it, and thus gained the name *pu‘u kea* (white hill).

From these legendary accounts it can be seen that Kewalo was traditionally noted for its fishponds and salt pans, for the marsh lands where *pili* grass and other plants could be collected, for ceremonial sites such as the Kewalo spring, the fishpond at which sacrifices were made and Pu‘ukea Heiau, and for the trails that allowed transport between the more populated areas of Waikīkī and Honolulu. Important chiefs were born in the area and conducted religious rites, and commoners traveled to the area to procure food and other resources; some commoners probably also lived in the area, possibly adjacent to the ponds and trails.

3.3 Early Post-Contact History and Population Centers

Kewalo is between two centers of population, Kou and Waikīkī, on the southern shore of pre-Contact O‘ahu. In Waikīkī, a system of irrigated taro *lo‘i* (irrigated pond fields) fed by streams descending from Makiki, Mānoa, and Pālolo valleys blanketed the plain, and networks of fish ponds dotted the shoreline. Similarly, Kou—the area of downtown Honolulu surrounding the harbor—possessed shoreward fishponds and irrigated fields watered by ample streams descending from Nu‘uanu and Pauoa valleys. The pre-Contact population and land use patterns of Kewalo may have derived from its relationship to these two densely populated areas; it may have participated in some of the activities associated with them. Thus, the attempt to reconstruct the Kewalo region (and the present study area)—as it existed for the Hawaiians during the centuries before Western Contact and the modern urbanization that has reconfigured the landscape—must begin with accounts of Kou and Waikīkī.

Waikīkī is actually the name of a large *ahupua‘a* (traditional land division) encompassing lands stretching from Honolulu to Maunalua Bay. Within that *ahupua‘a*, by the time of the arrival of Europeans during the late eighteenth century, the area today known as Waikīkī had long been a center of population and political power on O‘ahu. According to Martha Beckwith (1940:383), by the end of the fourteenth century, Waikīkī had become “the ruling seat of the chiefs of O‘ahu.” The preeminence of Waikīkī continued into the eighteenth century and is confirmed by the decision of Kamehameha, in the midst of unifying control of the islands, to reside there after winning control of O‘ahu by defeating the island’s chief, Kalanikūpule.

Chiefly residences were only one element of a complex of features sustaining a large population that characterized Waikīkī up through pre-Contact times. Beginning at least by the fifteenth century, a vast system of irrigated taro fields was constructed, extending across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. This field system, an impressive engineering design traditionally attributed to the chief Kalamakua, took advantage of streams descending from Makiki, Mānoa, and Pālolo valleys, which also provided ample fresh water for Hawaiians living in the *ahupua‘a*. Water was also available from springs in nearby Mō‘ili‘ili and Punahou. Closer to the Waikīkī shoreline, coconut groves and fishponds dotted the landscape. A continuous zone of population and cultivation from the shoreline of present day Waikīkī Beach extended north well into Mānoa Valley. The western and eastern bounds of this zone are less clear, and there are no specific references to Waikīkī’s abundance reaching into the Kewalo region.

A basic description of Honolulu and Kou, up to Western Contact, is given by E.S. Craighill and Elizabeth Handy:

> What is now Honolulu was originally that flatland area between the lower ends of Nu‘uanu and Pauoa Valleys and the harbor. [W.D.] Westervelt . . . wrote that ‘Honolulu was probably a name given to a very rich district of farm land near what is now . . . the junction of Liliha and School Streets, because its chief was Honolulu, one of the high chiefs at the time of Kakuhihewa’. . . . It is probable that the chief referred to by Westervelt took his name from the harbor and adjoining land. The original name of the land where the town grew when the harbor became a haven for foreign ships was Kou. . .The number of *heiau* in this area indicates that it was a place of first importance before the era of foreign contact. [Handy and Handy 1972:479]

Rev. Hiram Bingham, arriving in Honolulu in 1820, described a still predominantly Native Hawaiian environment—still a “village”—on the brink of western-induced transformations:

> We can anchor in the roadstead abreast of Honolulu village, on the south side of the island, about 17 miles from the eastern extremity. . . . Passing through the irregular village of some thousands of inhabitants, whose grass thatched habitations were mostly small and mean, while some were more spacious, we walked about a mile northwardly to the opening of the valley of Pauoa, then turning southeasterly, ascending to the top of Punchbowl Hill, an extinguished crater, whose base bounds the northeast part of the village or town. . . . 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, and the valley stretching a few miles north into the interior, which presented its scattered habitations and numerous beds of kalo (arum esculentum) in its various stages of growth, with its large green leaves, beautifully embossed on the silvery water, in which it flourishes. [Bingham 1847:92–93]

The Kewalo region would have been in Bingham’s view as he stood atop “Punchbowl Hill” looking toward Waikīkī to the south; it would have comprised part of the area he describes as the “plain of Honolulu” with its “fishponds and salt making pools along the seashore.”

Another visitor to Honolulu in the 1820s, Captain Jacobus Boelen, hints at the possible pre-Contact character of Honolulu and its environs, including the Kewalo area:

> It would be difficult to say much about Honoruru. On its southern side is the harbor or the basin of that name (which as a result of variations in pronunciation [*sic*] is also written as Honolulu, and on some maps, Honoonoono). The landlocked side in the northwest consists mostly of tarro fields. More to the north there are some sugar plantations and a sugar mill, worked by a team of mules. From the north toward the east, where the beach forms the bight of Whytetee, the soil around the village is less fertile, or at least not greatly cultivated. [Boelen 1988:62]

Boelen’s description implies the Kewalo region and the present project area are within a “not greatly cultivated” region of Honolulu, perhaps extending from Pūowaina (Punchbowl Crater) at the north through Kaka‘ako to the Kālia portion of Waikīkī in the east.

An 1817 map of the south coast of O‘ahu drawn by Otto Von Kotzebue, a lieutenant aboard the Russian naval ship *Rurick*, indicates the project area was located within a region originally composed of coastal marsh (Figure 6). The map shows fishponds and taro *lo‘i* (irrigated patches, shown as rectangles) surrounding the project area, massed around the streams descending from Nu‘uanu and Mānoa valleys. Kotzebue notes of the region:

> The cultivation of the valleys behind Hanarura is remarkable. Artificial ponds support, even on the mountains, the taro plantations, which are at the same time fish-ponds; and all kinds of useful plants are cultivated on the intervening dams. [Kotzbue 1821:240]

The shift in population and habitation concentration along the south coast in the early post-Contact period, along with the resultant development of the surrounding built environment reflects the post-Contact movement of Hawaiians to the area around Honolulu harbor—the only sheltered landing on O‘ahu and the center of increasing trade with visiting foreign vessels. Kamehameha himself had moved from Waikīkī to Honolulu in 1809.

A clearer picture of Kewalo and the present project area develops with accounts of Honolulu by other visitors and settlers during the first half of the nineteenth century. Gorman D. Gilman, who arrived in Honolulu in 1841, recalled in a memoir the limits of Honolulu during the early 1840s:

> The boundaries of the old town may be said to have been, on the *makai* side, the waters of the harbor; on the *mauka* side, Beretania street; on the Waikīkī side [i.e., the area just beyond Punchbowl Street], the barren and dusty plain, and on the Ewa [west] side, the Nuuanu Stream. [Gilman 1903:97]

Gilman further describes the “barren and dusty plain” beyond (east of) Punchbowl Street:

> The next and last street running parallel [he had been describing the streets running *mauka-makai*, or from the mountains to the shore] 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]

American missionary C.S. Stewart further confirmed in his memoirs the “forsaken” and “desolate looking” environs of the missionary enclave and of Kawaiaha‘o Church during the period of initial mission settlement in the 1820s. Stewart arrived on Maui after living at the mission and declared Lahaina to be “like the delights of an Eden,” after having spent “four weeks residence on the dreary plain of Honoruru” (Stewart 1970:177). The preceding descriptions of the Honolulu plain, most likely include—at least for western sensibilities—the Kewalo region.

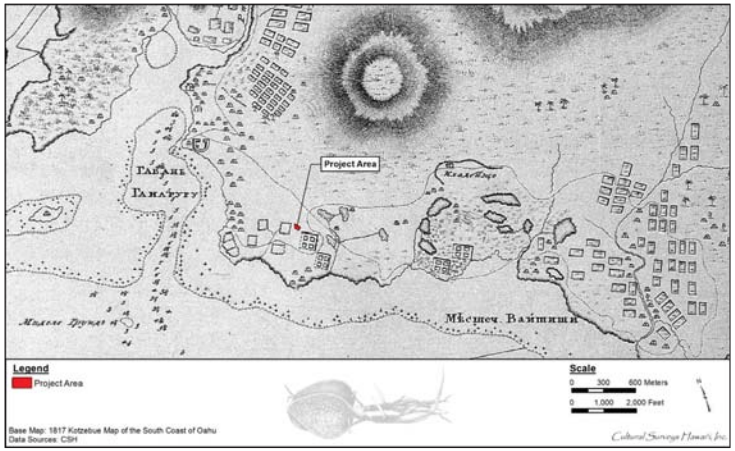


Figure 6. 1817 map of the South Coast of O‘ahu by Kotzebue (portion), showing the project area between irrigated taro fields (*lo‘i*) and fishponds

The barrenness of the Kewalo area is illustrated in two sketches, one made in 1834 when Kawaiaha‘o Church was still a long grass-thatched building (Figure 7) and one made in 1853 after the grass hut had been replaced by a large coral stone structure with a steeple (Figure 8Figure 7). Between Kawaiaha‘o Church and the sea are only a few scattered huts along the shore and aligned along the inland trail (now covered by King Street). The project area would be *makai* and south of the church near the shore. The missionary families grazed their cows in the lands *makai* of the mission houses, possibly on lands near the project area (*Paradise of the Pacific* 1950:21). An 1855 map shows the project area surrounded by ponds or wetlands including a large rectangular water feature immediately northwest (Figure 9).

3.3.1 Mid-Nineteenth Century and the Māhele

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—which introduced private property into Hawaiian society. In 1848, the crown, the Hawaiian government, and the *ali‘i* (chiefs) received their land titles. The common people (*maka‘āinana*) began to receive their *kuleana* awards (individual land parcels) in 1850. It is through records for Land Commission Awards (LCA) generated during the Māhele that the first specific documentation of life in Kewalo and Kukuluāe‘o as it had evolved up to the mid-nineteenth century come to light.

The LCA records indicate the traditional Hawaiian usage of the region and its environs may have been confined to salt making and farming of fishponds, with some wetland agriculture in those areas *mauka* or toward Waikīkī at the very limits of the field system descending from Makiki and Mānoa valleys. However, the testimonies do indicate the area was lived on and shaped by Hawaiians before the nineteenth century. The LCA records also reveal that, midway through the nineteenth century, taro cultivation, traditional salt making, and fishpond farming activities continued within the Kewalo/Kukuluāe‘o area (Figure 10). These activities and the land features that supported them would be eliminated, or buried, during the remainder of the nineteenth century by the urbanization of Honolulu.

3.3.1.1 Kewalo ‘Ili

On southeastern O‘ahu, *ahupua‘a* generally extended from the Ko‘olau mountain range on the *mauka* side to the seacoast on the *makai* side. The *ahupua‘a* was divided further into smaller land divisions called *‘ili*. However, in the Honolulu/Waikīkī area, land divisions became more complicated. Because of the early development and importance of the coastal areas, several *ahupua‘a* such as Nu‘uanu, Pauoa, Makiki, Mānoa, and Pālolo became “cut off” from the sea. In order to retain some access to all of the resources of the land, several *‘ili* had *lele*, or jump lands, which were smaller contiguous or non-contiguous parcels in the uplands, in the river valleys, and along the coast. Kewalo was one of these *lele* lands, which were often independent of the adjacent *ahupua‘a*. Kewalo had a narrow upland section (often called “Kewalo Uka”), a larger lower river valley/plain section, and a small coastal section (called “Kewalo Kai”) joined by a small strip of land. The project area is situated along the northwest boundary of the larger Kewalo LCA claim, adjacent to LCA 10605 (‘Āpana [lot or parcel] 1, section 3) described in testimonies as a *makai* (seaward) *lele* of Pualoalo ‘Ili.

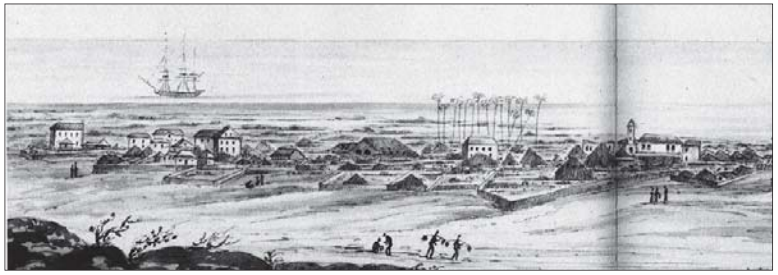


Figure 7. “Town of Honolulu: Island of Woahoo: Sandwich Islands,” portion of 1834 sketch by anonymous illustrator; the project area is the barren landscape left and back of Kawaiaha‘o Church, the long thatched structure in the center of the sketch (original sketch at Bernice Pauahi Bishop Museum; reprinted in Grant 2000:64–65)

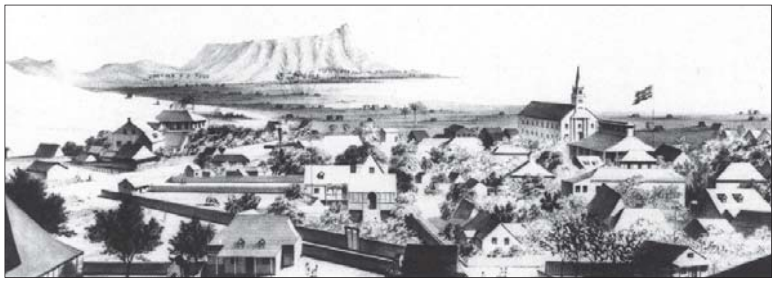


Figure 8. “View of Honolulu from the Catholic Church No. 2,” central panel of sketch by Paul Emmert ca. 1853; the project area is on the barren landscape south (back) of the coral-block Kawaiaha‘o Church (structure with steeple completed in 1842) (original sketch at Hawaiian Historical Society; reprinted in Grant 2000:5)

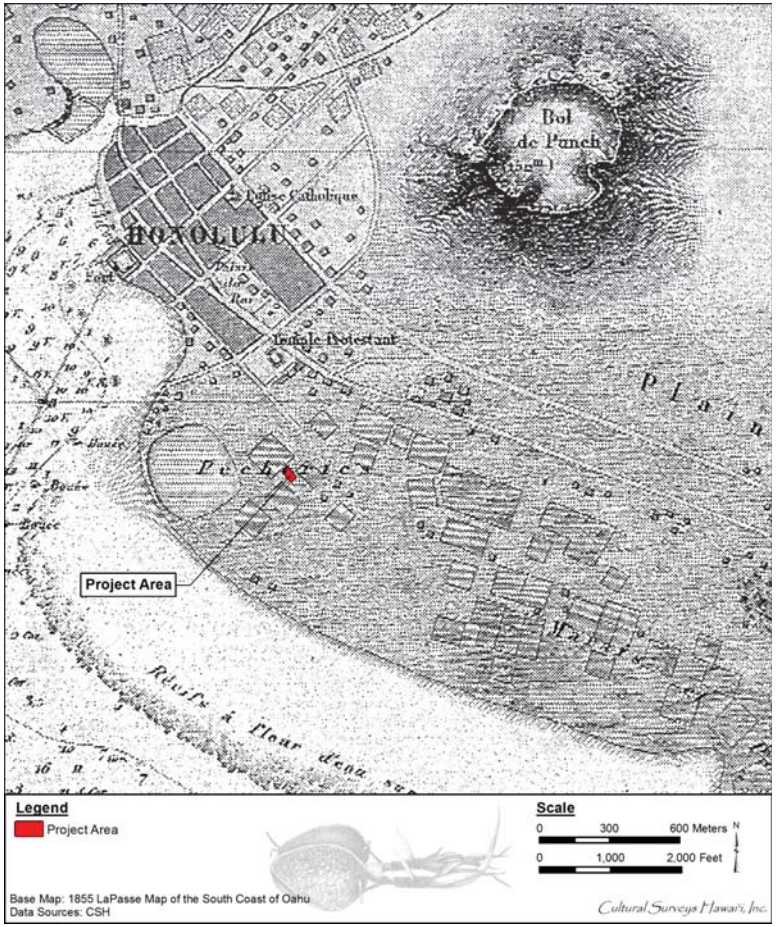


Figure 9. 1855 LaPasse map of the Oahu’s south coast and approximate location of project area

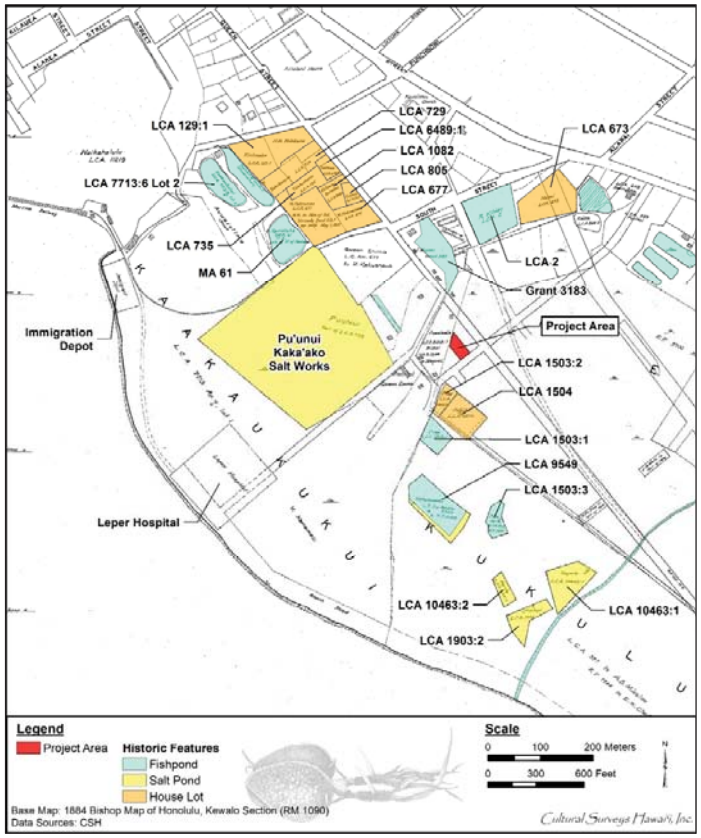


Figure 10. 1884 map of Honolulu, Kewalo Section (portion) by S.E. Bishop with highlighted Land Commission Awards indicating house lots, fishponds, and salt ponds claimed in Land Court testimonies; project area located in Kewalo 'Ili awarded to Kamake'e Pi'ikoi (LCA 10605: 'Āpana 7)

The *'ili* of Kewalo was awarded to Kamake'e Pi'ikoi, (Royal Patent 5716) wife of Jonah Pi'ikoi, as part of LCA 10605, *'āpana* 7. Jonah Pi'ikoi was an *ali'i*, a retainer of Kauikeaouli, Kamehameha III, who held several government posts. The award was divided between himself and his wife (Kame'elehiwa 1992:269). According to Pukui (et al. 1974:184), Pi'ikoi built the first two-story wooden house in this area, which was located near the future site of McKinley High School.

A sketch of a portion of LCA 10605: 'Āpana 1 (portion 3) on the northwest side of the current project area, indicates a series of ponds existed inside the adjacent parcel and one pond is shown in Kewalo 'Ili southwest of the project area (Figure 11).

3.3.2 Kaka'ako Salt Works and the Salt Pans of Kewalo and Kukuluāe'o

Much of the coastal lands in Kewalo and Kukuluāe'o were used to produce salt. The Hawaiians used *pa'akai* (salt) for a variety of purposes, to flavor food, to preserve fish by salting, for medicines, and for ceremonial purposes. David Malo described the traditional method:

> *O ka paakai kekahi mea e pono ai, he mea e ono ai, ka ia, a me ke koekoe o ka paina ana, he mea hana ia ka paakai, ma kekahi aina, aole i hana a ma kekahi aina, o ke kai makai, e kii aku no ka wahine, a lawe mai ma ke poi, a ke kai hooholo ia mai kekahi ma kauwahi mai.*
>
> *E waiho kela kai ma kekahi poho paha, he ekaha paha, he kahe ka paha, a liu malaila, alaila lawe ana kauwahi e, a paakai iho la no ia, o ka papa laau ka mea kui poi.* [Malo 2006:73]
>
> Translation
>
> Pa'akai (salt) is another beneficial item. It is used to make fish delicious and tasteless foods edible. Pa'akai is made at a particular place, [but] it [salt] is not actually made from this spot, rather it [salt water] came from the sea. A woman went to get some when the sea crashed [upon the rocks] and she ran back [the salt water] to this particular spot.
>
> That salt water (*kai*) is placed in, perhaps, a depression (*poho*) or a 'Bird's nest' (*ēkeha*) or rock basin (*kāheka*) and allowed to evaporate (*liu*). Then it is taken to another spot and is formed into *pa'akai*. Wooden boards (*papa lā'au*) are used to pound poi (mashed cooked *kalo* corms) on. [Malo 2006:95]

Captain Cook was the first to note the method of making salt in prepared "saltpans":

> 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 saltpans 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. . . . Besides the quantity we used in salting pork, we filled all our empty casks, amounting to sixteen puncheons, in the Resolution only. [Cook 1784:151]

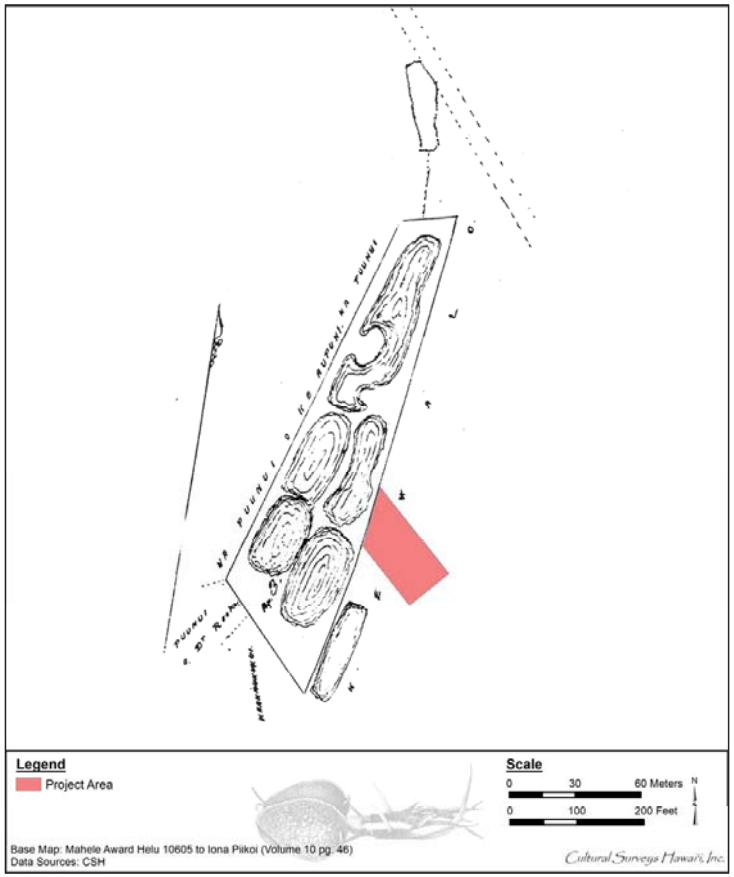


Figure 11. Sketch of Land Commission Award 10605 ('Āpana 1, Section 3) showing pond features northwest and southwest of the current project area

In an article on Hawaiian salt works, Thomas Thrum discusses the large salt works at Ālia Pa'akai (Salt Lake in Moanalua) and at Pu'uloa on the western loch of Pearl Harbor. Kamakau (1961:409) reported, "The king and Isaac of Pu'uloa are getting rich by running the salt water into patches and trading salt with other islands." The salt was sent to Russian settlements in the Pacific Northwest, where it was used to pack salmon (*Hawaiian Gazette*, 29 January 1897).

Thrum also mentions a salt works in Kaka'ako:

> Honolulu had another salt-making section in early days, known as the Kakaako salt works, the property of Kamehameha IV, but leased to and conducted by E.O. Hall, and subsequently E.O. Hall & Son, until comparatively recent years. This enterprise was carried on very much after the ancient method of earth saltpans as described by Cook and Ellis. [Thrum 1924:116]

The export of salt declined in the late nineteenth century. Thrum (1924:116) states the apex of the trade was in 1870, but by 1883, he noted that "pulu, salt and oil have disappeared entirely" from the list of yearly exports (Thrum 1884:68). By 1916, only one salt works, the Honolulu Salt Company, was still in operation. Salt continued to be manufactured for local use; the Kaka'ako Salt Works appears on maps as late as 1891 and a page in Victoria Wards's ledger for 1883 notes a yearly income of $651.50 received from her "Salt Lands" in Kukuluāe'o (Hustace 2000:50).

By 1901, most of the fishponds and salt pans *makai* of the Ward "Old Plantation" area were reported as abandoned. In that year, the Hawaii First Legislative Assembly (Hawaii Legislature 1901:185) proposed to build a ditch to drain away the "foul and filthy water that overflows that district at the present time."

> The district makai of King St. and the Catholic Cemetery, Ewa of Mrs. Ward's (the Old Plantation), mauka of Clayton St., and Waikiki of the land from King St., leading to the Hoomananaauao Church, consists of six large abandoned fish ponds and a large number of smaller ones, all in filthy condition, fed by springs and flowing into Peck's ditches. Just makai of these ponds, at the end of Clayton street, next to Mr. Ward's, is Peck's place. An artesian well flushing the wash houses flows into two foul ditches, thence to the big pond which is Waikiki of what used to be Cyclomere and next to Mrs. Ward's line [ditch] extending down to Waimanu St.
>
> The rear portion of Mrs. Ward's property down to Waimanu St. used to be fish ponds all connecting to the sea by a ditch which is fed by an artesian well. These ponds, with the exception of three, are abandoned. [Hawaii Legislature 1901:185]

3.3.3 Trash Burning and the Kaka'ako and Kewalo Incinerators

In the early years of garbage disposal, all trash was dumped into low-lying ground or landfills, or burned in the open area. To reduce the volume of waste, plans were made to build incinerators, where "putrescible" (mainly animal and fish waste) trash could be burned in incinerators, while non-animal material, called "combustible" waste was still disposed of in the earlier method (Young 2005). Thomas Thrum reported on the first incinerator in the Kaka'ako area in 1905:

> Early in the year was completed the long projected garbage crematory for the disposal, daily, of the city's refuse by a patent and sanitary process. It is located on the shore of Kakaako, adjoining the sewer pumping station; is two stories in height and built of brick. [Thrum 1906:177]
>
> The dredging of Honolulu harbor and its channel is completed as far as planned for the present, and excavations for the *Alakea* and *Kinau* slips finished, the material there from being used to fill in a large area of Kakaako and the flats in the vicinity of the sewer pumping station and garbage crematory. The amount of material removed by the Federal dredging was a million and a half cubic yards. [Thrum 1907:148–149]

For the incinerator, Thrum noted the following:

> The new station is built on piles on reclaimed land that is being filled in from the coral dredgings that is going on, and is gradually taking on a tropical appearance. . . . Adjoining its premises on the mauka side is the new building designed for the Planters’s Association for their labor bureau. [Thrum 1907:148–149]

In the early 1920s, trash was burned in the open at the Ala Moana Dump (landfill area *makai* of Ala Moana Boulevard). The Hawaii Public Works recommended that an incinerator should be built for the burning of “putrescible” waste. The Kewalo Incinerator (Incinerator Number 1) was built in the Italianate-style, at the intersection of Ahui and Olomehana streets in 1930 by the City and County of Honolulu. The facility was built to dispose of waste from the Ala Moana dump and use the ash to fill the seawall in Ka‘ākaukukui in the late 1940s to create 29 additional acres of land, adjacent to Fort Armstrong. It ceased operations in 1945 when a new incinerator was built on Ohe Street. The second incinerator, built on Ohe Street in 1946–1948 was used for waste burning until 1997 (Mason Architects 2002).

3.3.4 Kaka‘ako Reclamation

The first efforts to deepen Honolulu Harbor were made in the 1840s. The idea of using this dredged material, composed of sand and crushed coral, to fill in low-lying lands, was quickly adopted. Between 1857 and 1870, the “Esplanade” between Fort and Alakea streets was created on 22 acres of filled-in former reef and tideland. By 1874, Sand (Quarantine) Island, site of the first immigration station, had been created over “reclaimed” land on reefs.

By the 1880s, filling-in of the mud flats, marshes, and salt ponds in the Kaka‘ako and Kewalo area had begun. This filling was pushed by three separate but overlapping improvement justifications. The first directive or justification was construction of new roads and improving older roads by raising the grade so flooding during heavy rains would not wash the improvements away.

Although public health and safety were prominently cited, according to Nakamura (1979:113), the main desire (and third justification) to fill in Honolulu, Kewalo, and then Waikīkī lands was to provide more room for residential subdivisions, industrial areas, and finally tourist resorts. In the early part of the twentieth century, Kaka‘ako was becoming a prime spot for large industrial complexes such as iron works, lumber yards, and draying companies, which needed large spaces for their stables, feed lots, and wagon sheds.

In 1904, the area around South Street from King to Queen streets was filled in. The Hawaii Department of Public Works (1904:117) reported “considerable filling [was] required” for the extension of Queen Street, from South Street to Ward Avenue, which would “greatly relieve the district of Kewalo in the wet season.”

3.3.5 Kewalo Reclamation Project

Although the Board of Health could condemn a property and the Department of Public Works could then fill in the land, the process was rather arbitrary and piecemeal. In 1910, after an epidemic of bubonic plague, the Board of Health condemned a large section of Kewalo, consisting of 140 land parcels, (including areas once known as Kukuluāe‘o and Ka‘ākaukukui), which had numerous ponds (Hawaii Department of Public Works 1914:196).

In 1914, the entire

> . . . locality bounded by King street, Ward avenue, Ala Moana and South street, comprising a total area of about two hundred acres, had been found by the board of health of the Territory to be deleterious to the public health in consequence of being low and below ‘the established grades of the street nearest thereto’ and at times covered or partly covered by water and improperly drained and incapable by reasonable expenditure of effectual drainage, and that said lands were in an insanitary and dangerous condition. [Hawaii Reports 1915:329]

The first land to be filled in was the portion of the Ward Estate Kukuluāe‘o property west of Ward Avenue, completely filled in by June 1913. By August, the rest of the Ward Kukuluāe‘o lands west of Ward Avenue had been completely filled and by February 1914, all of the land from South Street to Ward Avenue, and from Ala Moana to Queen Street had been filled (Figure 12).

Legal proceedings in 1914 did manage to shut down operations planned for the area from Ward Street to Waikīkī but infilling was eventually completed (Thrum 1916:159-160). This land was mainly owned by the Bishop Estate, who leased the land to small farmers growing taro and rice and raising ducks in the ponds. In 1916, the Bishop Estate announced that as soon as their present tenant leases expired, they planned to fill the lands and divide them into residence and business lots (Larrison 1917:148–149). In 1919, a portion of the coastal section of the Bishop Estate lands was secured by the government in order to expand the Kewalo Basin (Thrum 1920:148).

3.3.6 Kewalo Basin Dredging

In 1919, the Hawai‘i Government appropriated $130,000 to improve the small harbor of Kewalo for the aim of “harbor extension in that it will be made to serve the fishing and other small craft, to the relief of Honolulu harbor proper” (Thrum 1920:147). As the area chosen for the harbor site was adjacent to several lumber yards, such as the Lewers & Cooke yards, the basin was initially made to provide docking for lumber schooners, but by the time the wharf was completed in 1926, this import business had faded, so the harbor was used mainly by commercial fishermen. The dredged material from the basin was used to fill a portion of the Bishop Estate on the western edge of Waikīkī and some of the Ward Estate in the coastal area east of Ward Avenue (U.S. Department of the Interior 1920:52). In 1941, the basin was dredged and expanded to its current 55 acres. In

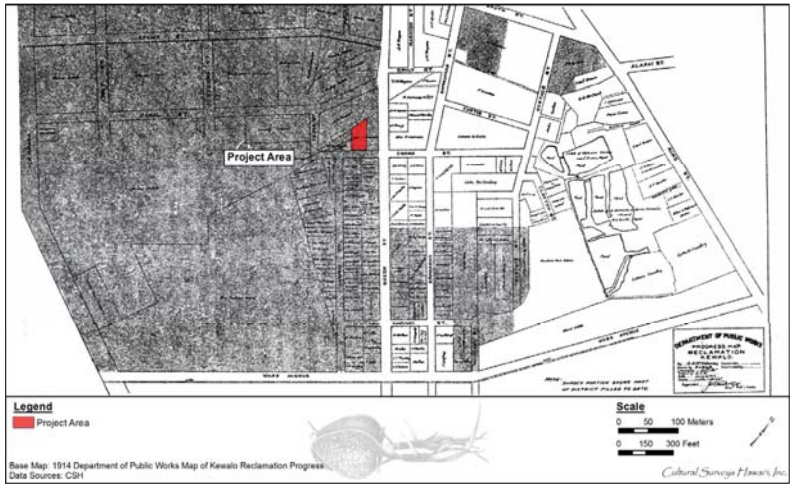


Figure 12. 1914 map of progress of the Kewalo Reclamation Project, showing the completion of filled lands west of Ward Avenue (map in Hawaii Department of Public Works 1914)

1955, dredged material was placed along the *makai* side to form an 8-acre land section protected by a revetment.

3.3.7 Waikīkī Reclamation Project

It was during the 1920s that southeast O'ahu was transformed when construction of the Ala Wai Drainage Canal—begun in 1921 and completed eight years later—resulted in the draining and filling in of the remaining ponds and irrigated fields of Honolulu and Waikīkī. The canal was one element of a plan to urbanize Waikīkī and the surrounding districts, first conceived in 1906. The final result was a "canal three miles long, with an average depth of twenty-five feet and a breadth of two hundred fifty feet" (*Honolulu Advertiser*, 17 October 1928:2:16).

The first action was to dig a canal parallel to the coast along Waikīkī Beach. The dredged material was placed on adjacent properties from McCully Street to Kapi‘olani Park. This action affected several private landowners, including the Bishop Estate and the Booth Estate. The second action was to dredge a canal from the beach toward the reef. The dredged material was pumped to the new McKinley High School site, an area of former large ponds adjacent to the eastern boundary of the *mauka* portion of the Ward Estate (Hawaii Governor 1922:49-50). Additional dredged material was used to fill the area *makai* of the school grounds in 1930 (Hawaii Governor 1930:74).

Several claims were made against the dredging company, including compensation for destroyed crops and livestock by farmers. For instance, a Chinese tenant farmer named Chang Fow, leasing lands in Waikīkī from the Bishop Trust Company wrote a letter of complaint indicating the salt water that leached into his lands as a result of the dredging of the canal had devastated his fishponds and stocks of ducks and chickens (letter from Chang Fow to the Bishop Trust Company, 23 May 1922 in Nakamura 1979:100-101). His claims, along with those of other residents of the area, give an impression of the continuing agricultural subsistence base in Waikīkī that lasted into the 1920s, and rapidly became a thing of the past.

3.3.8 Early Twentieth Century to the Present – Development

Subsequent maps show the future development of Kukuluāe‘o/Kewalo area in a grid of streets extending from Honolulu town toward Waikīkī. Other maps and documents generated during the last decades of the nineteenth century and first decades of the twentieth century reveal the disappearance of the traditional Hawaiian landscape of Kukuluāe‘o/Kewalo, including the conversion of taro *lo‘i* to rice fields. The urban development of the project area is shown on a series of late nineteenth and twentieth century maps and aerial photographs from 1893 throught 1953 (Figure 13 through Figure 22), the earliest of which (see Figure 13) shows the project area at the time of drafting still remained a swamp.

By 1897, the nascent traces of the future development is visible (see Figure 14Figure 14) in the grid of roads (Queen and Cooke streets) in the vicinity of the project area. Kaka‘ako and Kewalo were considered outside the Honolulu town boundary and were used in the mid- to late nineteenth century as a place for cemeteries, burial grounds, and for the quarantine of contagious patients. Then in the beginning of the twentieth century, the area was used as a place for sewage treatment and garbage burning, finally becoming an area for cheap housing, and commercial industries (Griffin et al. 1987:13). Other maps, photographs, and documents generated from the last decades

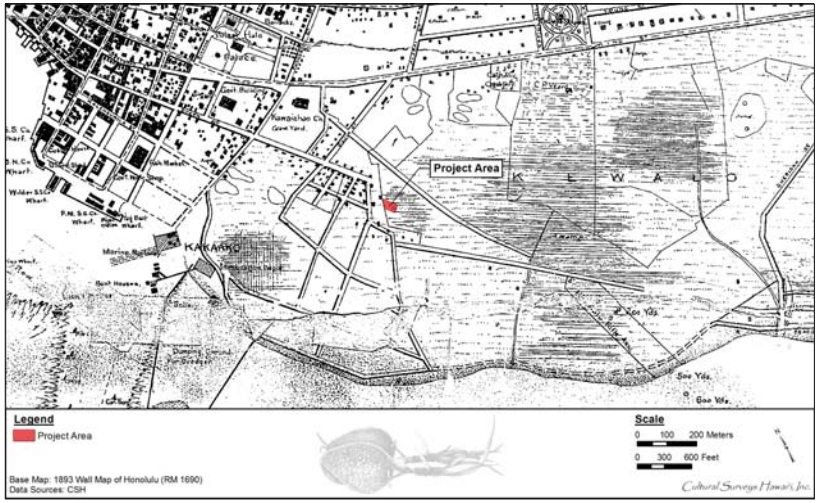


Figure 13. 1893 Wall map showing location of project area within marshland

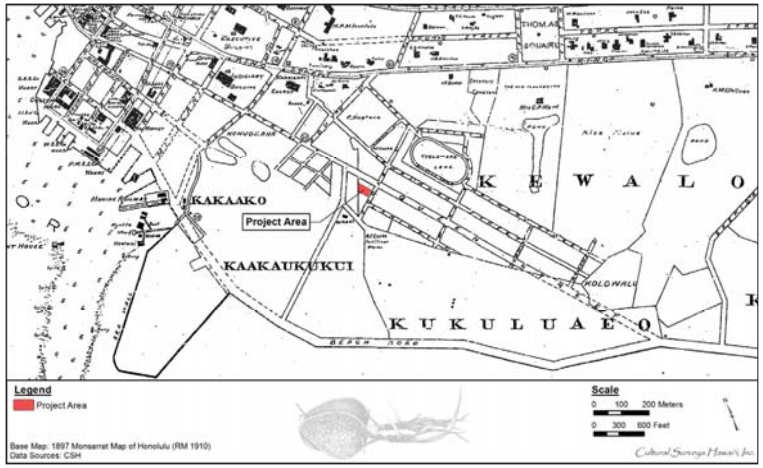


Figure 14. 1897 Monsarrat map showing new named roads (Queen, Cooke and Laniwai streets) in vicinity of project area (vacant)

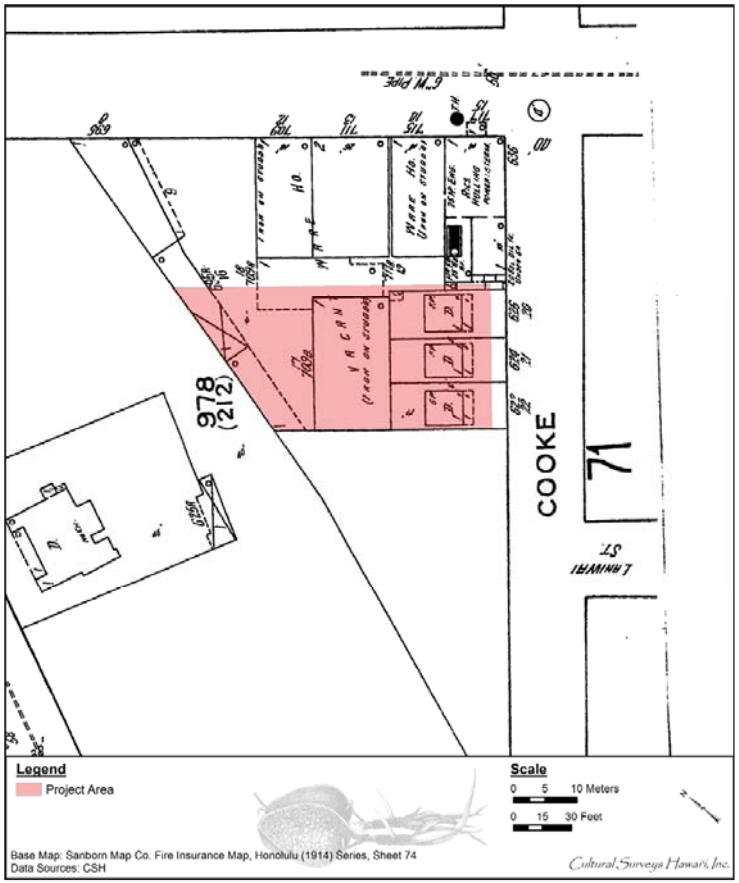


Figure 15. 1914 Sanborn Map Company fire insurance map of Honolulu (portion) showing dwellings and a vacant warehouse in project area

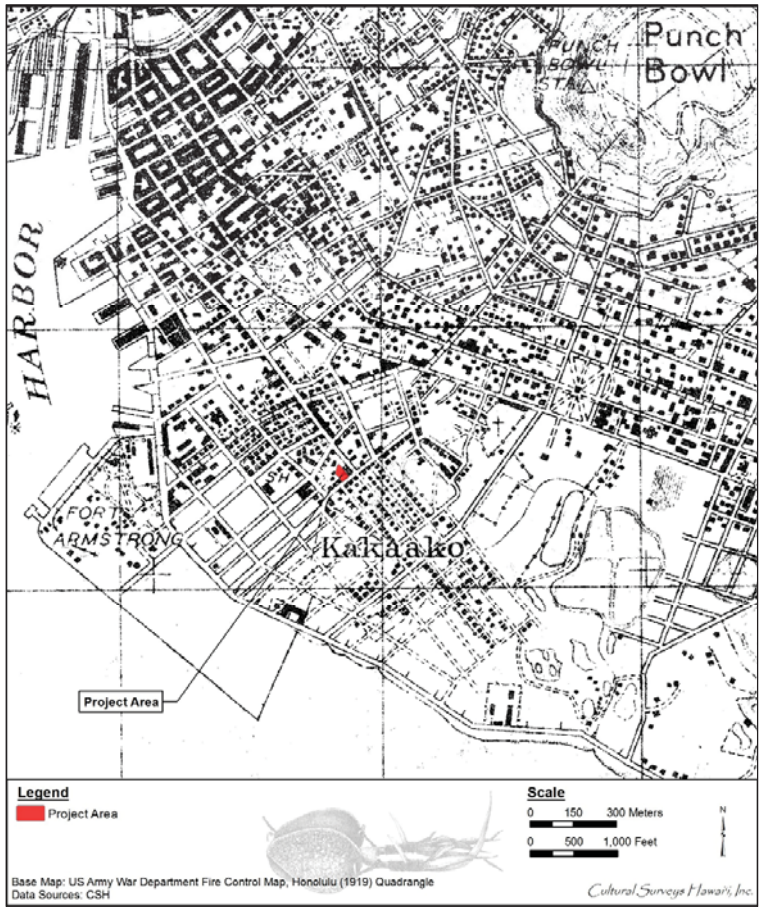


Figure 16. 1919 U.S. Army War Department map showing location of project area

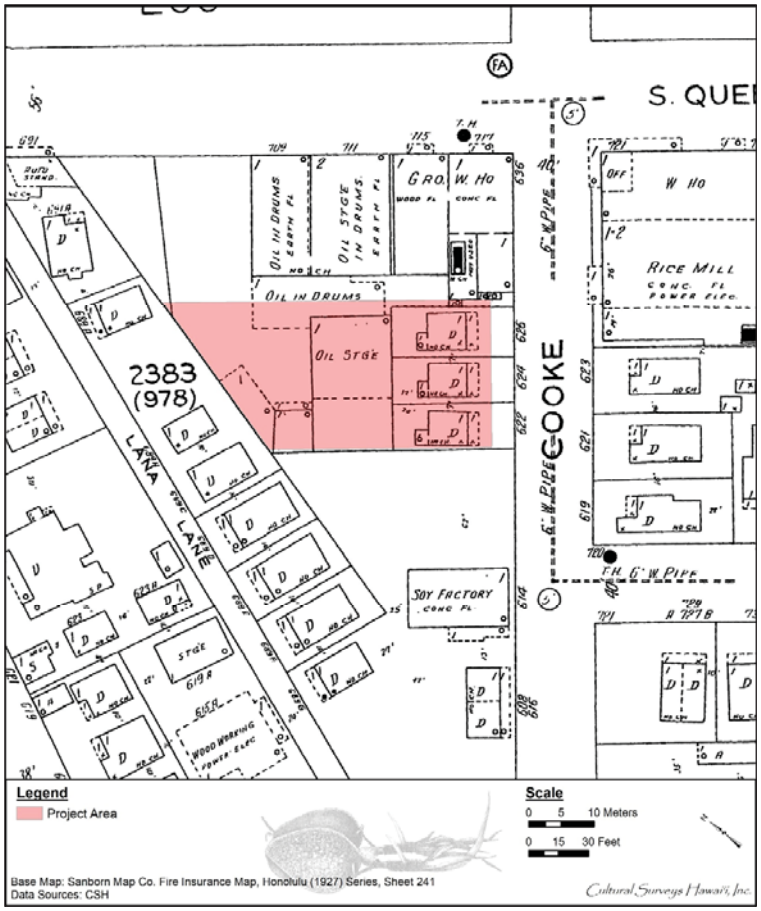


Figure 17. 1927 Sanborn Map Company fire insurance map of Honolulu (portion) showing dwellings, “Oil Stage” and oil storage buildings in project area

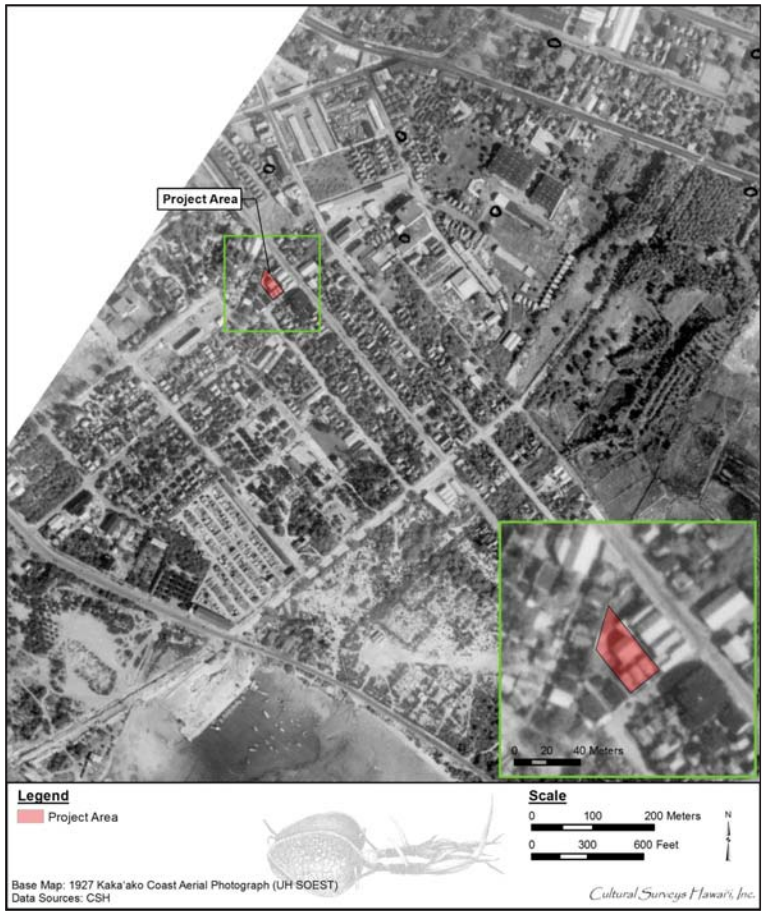


Figure 18. 1927 aerial photograph showing at least four buildings in project area

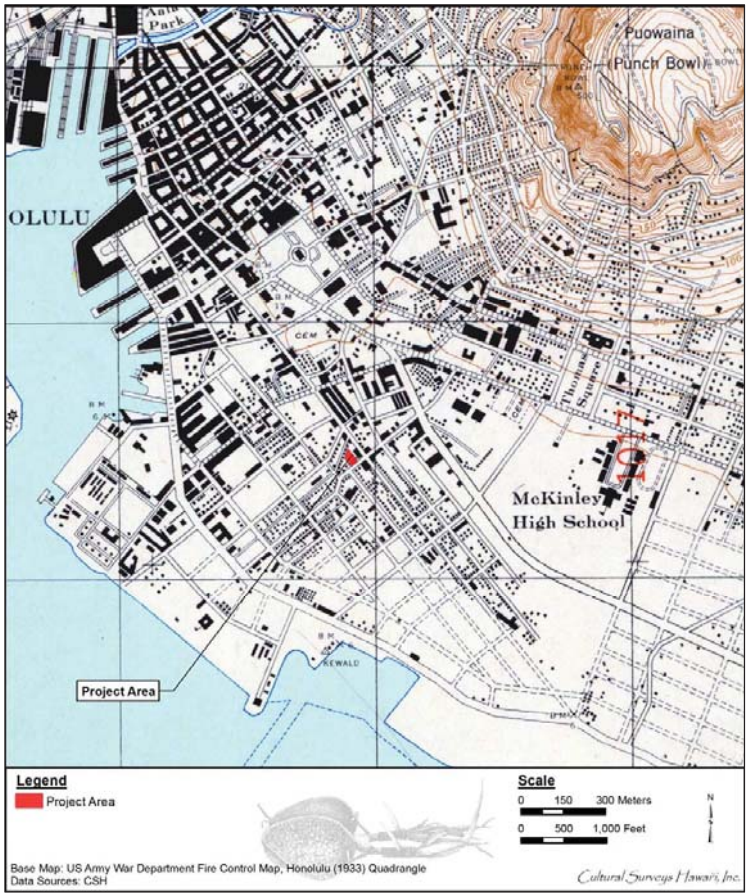


Figure 19. 1933 U.S. Army War Department Fire Control map showing three buildings in project area

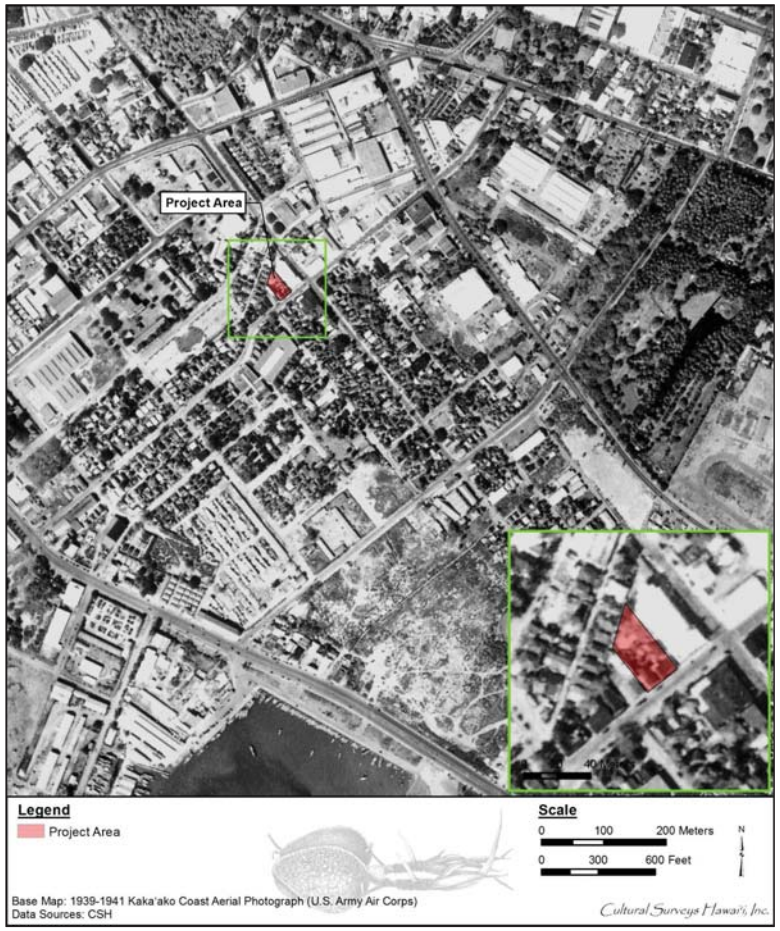


Figure 20. 1939-1940 Aerial photograph of the Kaka‘ako Coast (U.S. Army Air Corps)

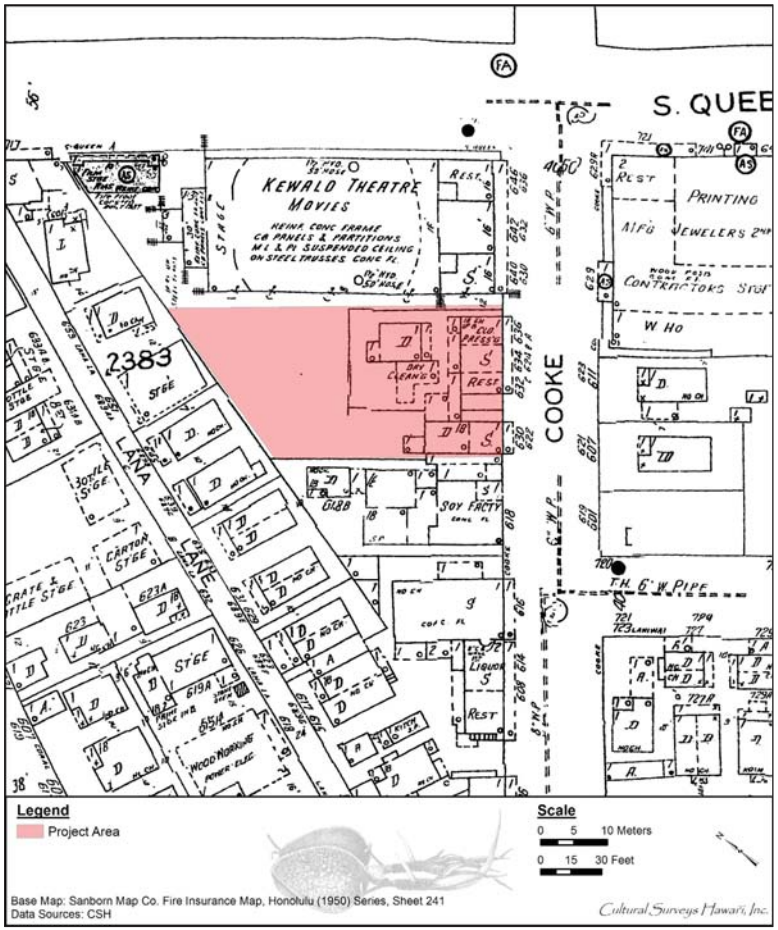


Figure 21. 1950 Sanborn Map Company fire insurance map of Honolulu (portion) showing shops, dwellings, and a restaurant in project area

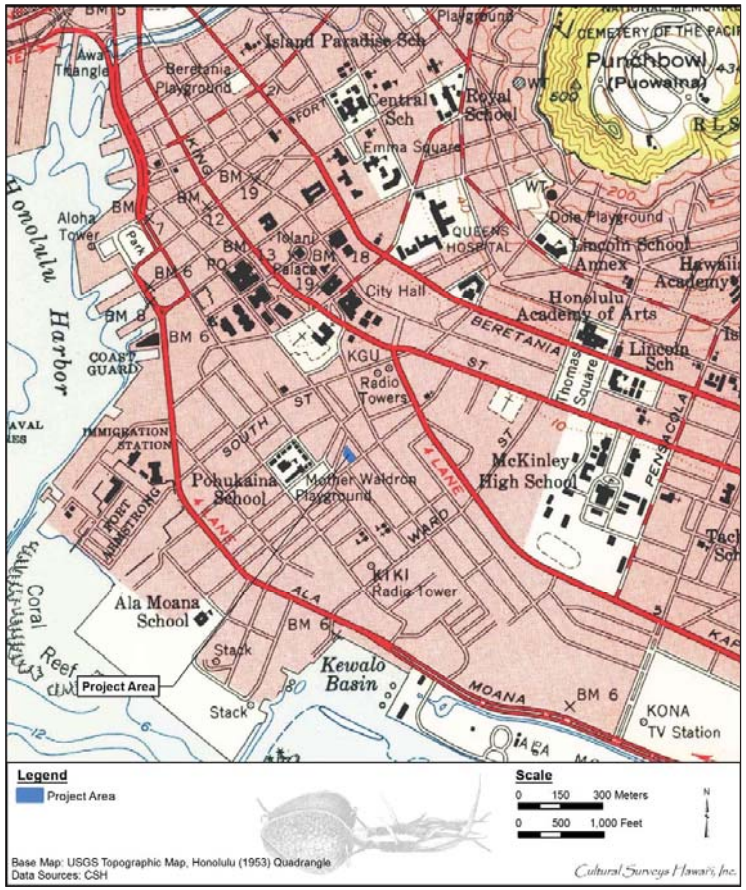


Figure 22. 1953 Honolulu USGS topographic quadrangle and location of project area

of the nineteenth century up to the present reveal further characteristics of the original character of the Kewalo lands and the disappearance of that landscape.

3.3.8.1 Project Area Development

The first evidence of development in the project area is documented on a 1914 fire insurance map (Sanborn 1914; see Figure 15) showing three identical dwellings or cottages adjacent to Cooke Street and a “vacant” warehouse on the northeast side of the dwelling. Each of the dwellings measured 5.3 m by 5.8 m with 1.5-m wide extensions (possible *lanai*) aligned on Cooke Street. The warehouse building with segregated areas appears to extend northeast into the adjoining parcel—suggesting both lots were under single ownership or lease at this time. A similar building footprint is indicated on a 1927 fire insurance map (Sanborn 1927; see Figure 17) with additional storage rooms built on the back side of the dwellings and the original warehouse labeled as an “Oil Stage” with an adjacent building or room on the northeast that contained “Oils in Drums.” A 1927 aerial photograph (see Figure 18) also indicates three adjacent rooftops along Cooke Street and a larger rooftop, likely representing the warehouse, at the center of the project area.

In 1937, Kewalo Theater opened next to the project area at the corner of Cooke and Queen Street. The 820-seat theater showed a variety of movies with the majority being “moveovers” from the bigger movie houses downtown (Dye 1998:37). The small neighborhood theater closed down by the late 1950s, a time when more innovative movie houses were sought to compete with television (Angell 2011:123).

During this same time period, the project area contained one of its original 1914 streetfront dwellings but the remaining buildings were expanded or newly built along Cooke Street and at the site of the former warehouse at the center of the project area (Sanborn 1950; see Figure 21). Although at least two dwellings are indicated on the Sanborn (1950) map, other buildings or segregated areas include two stores, a restaurant, and dry cleaning and clothes pressing facilities.

3.4 Previous Archaeological Research

Most traditional Hawaiian surface structures had been demolished in the Kaka‘ako area by the time of the first scientific archaeological surveys (i.e., Griffin 1987). In his report on the survey of O‘ahu sites conducted in 1930, McAllister (1933:80) says of Honolulu, “Information regarding former sites within the present limits of Honolulu must come entirely from literary sources.” He does mention Pākākā Heiau, once the main royal temple in Honolulu; this *heiau* would have been located around the foot (*makai* end) of Fort Street. He does not list Pu‘ukea Heiau (discussed in Section 2.1.2), which Kamakau (1991:24–25) placed in Kukuluāe‘o, but he does note that Peter Corney (1896:101), a visitor to the island in 1819, saw several *heiau* (*morai*) along the Honolulu shore.

Archaeological investigations have been conducted in properties adjacent to the project area and on road alignments near the present project area; the locations of archaeological studies conducted in the vicinity of the current project area are illustrated in Figure 23 and summarized in Table 1. Figure 24 illustrates the locations of historic properties in the vicinity of the project area. The following is a summary of these archaeological studies.

Figure 23. Previous archaeological studies located in vicinity of Hale Nohona project; figure is bounded by South Street on the northeast, Pohukaina Street on the southwest, and Kawaiaha‘o Street on the northwest

Table 1. Previous Archaeological Studies in the Vicinity of the Project Area

Reference	Type of Study	Location	Results (SIHP # 50-80-14****)
Schilz 1991	Archaeological assessment	Queen Emmalani Tower/Keola La‘i Condominium project; TMKs: [1] 2-1-048:008 and 009	Concluded project area had low potential for subsurface cultural deposits; recommended monitoring during below grade excavations
Douglas 1991a	Burial report	Coral and Queen streets	Six burials reported (SIHP # -4380)
Douglas 1991b	Burial report	Mother Waldron Park	Burials identified during construction of water line across park; no locations provided and assigned SIHP # -4380
Douglas 1991c	Background research of historic Mother Waldron Park structures	Mother Waldron Park	Park designated SIHP # -1388, as part of a thematic group of Honolulu City and County Art Deco Parks
Kawachi 1991	Archaeological monitoring	Queen Emmalani Tower/Keola La‘i Condominium project; TMKs: [1] 2-1-048:008 and 009	Single human humerus and cranium identified (no site number assigned)
Pfeffer et al. 1993	Archaeological monitoring	South St and Quinn	Identified 116 burials associated with original extent of Kawaiaha‘o Cemetery; 31 burials associated with historic Honuakaha smallpox cemetery
Winieski and Hammatt 2000	Archaeological monitoring	Kaka‘ako Improvement District 3 project	Identified 11 burials, designated SIHP #-5820; many had been disturbed by construction work; those found in situ or partially in situ were in traditional Hawaiian flexed burial positions within the buried A horizon or natural sand deposits
		Pohulani Elderly Rental Housing project	Identified 9 burials, in extended and flexed burial positions, designated SIHP # -4380

Reference	Type of Study	Location	Results (SIHP # 50-80-14****)
		Kauhale Kaka‘ako project	Documented a buried A horizon and natural sand deposits underlying various fill layers (Trenches 1–4) and one area (Trench 5) of previous pond sediments; no SIHP numbers assigned
Perzinski et al. 2005	Archaeological inventory survey	Queen Emmalani Tower/Keola La‘i Condominium project; TMKs: [1] 2-1-048:008 and 009	Two isolated human skeletal remains (SIHP # -1604) and evidence of historic occupation (SIHP # -6766)
Hazelett et al. 2008	Archaeological monitoring	Queen Emmalani Tower/Keola La‘i Condominium project; TMKs: [1] 2-1-048:008 and 009	Additional isolated human remains associated with SIHP # -1604
Tulchin, Borthwick, and Hammatt 2009	Archaeological inventory survey	Halekauwila Place-Pohukaina School	Historic artifacts such as bottles and ceramics found, dating to late nineteenth/early twentieth century
Tulchin, Altizer, Borthwick, and Hammatt 2009	Ground penetrating radar survey	Kamehameha Schools Block 2; TMKs: [1] 2-1-030:001, 043	Results indicated GPR may provide useful data in determining underlying stratigraphy present within current study area
O’Hare et al. 2009	Archaeological inventory survey plan	Block bounded by South, Halekauwila, Keawe, and Queen streets; TMK: [1] 2-1-031:030	Observed SIHP # -7189; no site number given until current inventory survey
Pammer et al. 2011	Archaeological inventory survey	Kamehameha Schools Block 2; TMKs: [1] 2-1-030:001, 043	Four historic cultural layers identified; historic building structures (SIHP # -7124), a burnt historic trash layer (SIHP # -7189), salt pans (SHPD # -7190), and a late pre-Contact/early post-Contact cultural layer (SHPD # -7197)

Reference	Type of Study	Location	Results (SIHP # 50-80-14****)
Dagher and Spear 2013	Burial site component of data recovery plan	Intersection of Halekauwila and Cooke St; TMK [1] 2-1-050:004	One inadvertent burial identified during construction activities (SIHP # -7276)
O’Hare et al. 2012	Archaeological literature review and field inspection	Intersection of Halekauwila and Keawe St; TMKs: [1] 2-1-031, 030	No historic properties identified during surface inspection; property has low potential for pre-Contact cultural deposits and higher potential for post-Contact cultural deposits
Hammatt 2013	Honolulu High-Capacity Transit Corridor–City Center (Section 4)	Archaeological inventory survey	Three historic properties documented within the vicinity of the current project area; SIHP # -5820 consisting of two cultural deposits (a culturally enriched, sandy loam A horizon and a historic fill deposit utilized as a living surface) and 42 associated features, including 12 human burials; SIHP # -7189, consisting of a burned trash fill deposit; and SIHP # -7429 consists of a culturally enriched A horizon with pit features overlying Jaucas sand; included an isolated human skeletal element within the A horizon

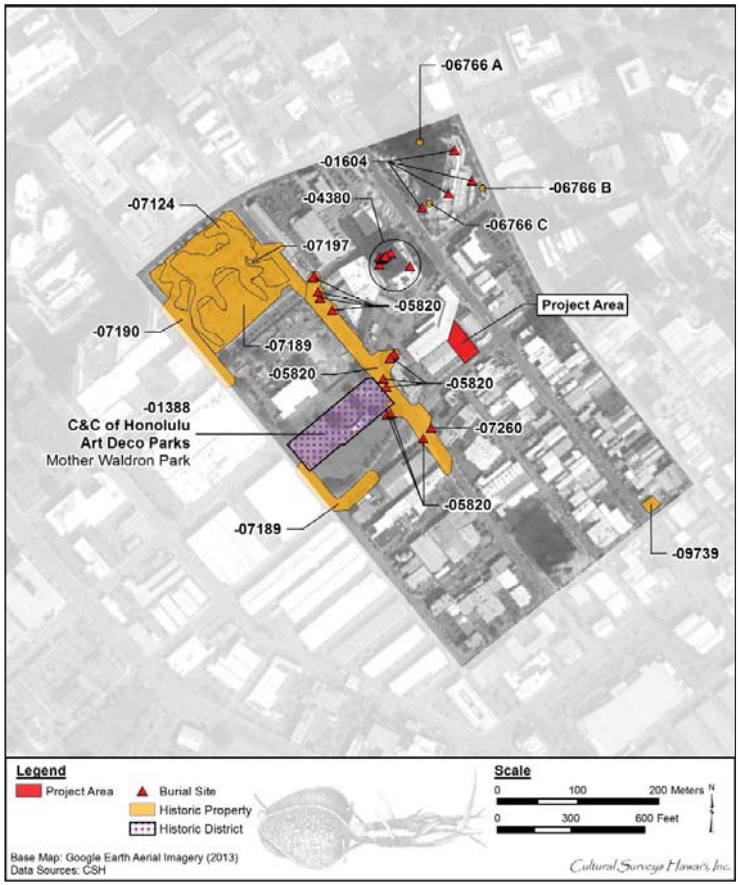


Figure 24. Locations of archaeological sites in vicinity of Hale Nohona Hale project

3.4.1 Keola La‘i Condominium Project (Schilz 1991; Kawachi 1991; Perzinski et al. 2005, and Hazlett et al. 2008)

In 1991, monitoring and test excavations (Schilz 1991) were recommended for a property bound by Kawaiaha‘o Street (north), South Street (west), Queen Street (south), and Emily Street (east) during the construction of the then proposed Queen Emmalani Tower (TMKs: [1] 2-1-048:008–019).

During monitoring for the Queen Emmalani Tower, a human skull was found in the backdirt pile. Carol Kawachi (1991) from the SHPD went to the site to monitor the decontamination of the remaining dirt piles. One additional bone, a humerus, was found. The burial remains were designated SIHP # 50-80-14-1604. The human remains were examined by osteologists from the University of Hawai‘i (Pietrusewsky et al. 1989). Historic artifacts, related to the residential use of the buildings in the Magoon Block were also found in the backdirt piles.

In 2005, Perzinski et al. (2005) conducted an archaeological inventory survey in the same area Schilz (1991) worked on, excavating 13 trenches. Perzinski et al (2005) discovered two additional human skeletal elements, which were considered part of previously identified site SHPD # -1604. Three subsurface features, a garbage pit with many historic artifacts (dating to the decades around the turn of the century), a wall remnant/concrete slab remnant, and a posthole, were considered residential/industrial remains of the late nineteenth/twentieth century occupation and use of the block; these features were designated SIHP # -6766.

CSH (Hazlett et al. 2007) monitored construction at the Queen Emmalani site (now called the Keola La‘i Condominium). Historic artifacts dating to the decades around the turn of the century were found in several trenches. Two isolated human skeletal remains in historic fill sediments were discovered in a utility trench near and parallel to Kawaiaha‘o Street. These human remains were considered part of SIHP # -1604. In all, the scattered human remains are from at least four different individuals.

3.4.2 Kaka‘ako Improvement District 1 (Pfeffer et al. 1993)

From April 1986 through August 1988, CSH (Pfeffer et al. 1993) conducted monitoring, data recovery, and excavation services within the Hawaii Community Development Authority’s Kaka‘ako Improvement District 1 (ID-1), which was bounded by Punchbowl Street (west), South Street (east), King Street (north), and Ala Moana Boulevard (south) and easterly extensions on Kawaiaha‘o Lane, Auahi Street, and Queen Street sections immediately northeast of the current project area.

Four burial site areas (149 burial sets) were encountered in the Kaka‘ako ID-1 project area; two were associated with cemeteries and two were isolated burials. None of the burials were identified in the Queen Street section closest to the current project area. A variety of other archaeological and historical features were noted, excavated, and recorded during the monitoring process, including historic trash, layers, historic cultural features, and fill layers associated with the urbanization of the Kaka‘ako area.

3.4.3 Kaka‘ako Improvement District 3 and Pohulani Elderly Housing (Douglas 1991a–c; Winieski and Hammatt 2000)

In November 1990, during construction of an elderly housing project at the southwest corner of Coral and Queen streets, human bones were uncovered and reported to the SHPD (Douglas 1991a). Disinterment for the burials was recommended and CSH (Winieski and Hammatt 2000) then conducted excavations in November 1990. Eight separate burials were identified on the east side of the property; only five were removed. A glass bead was found with one burial, suggesting a post-Contact date. One burial also exhibited a pre-mortem loss of the mandibular incisors, which suggests deliberate tooth evulsion. This procedure was known to have been practiced by Hawaiians in the pre-Contact and early post-Contact periods. The author concluded the burials were probably of Hawaiian ethnicity, perhaps representing a nuclear family. This burial area was later designated SIHP # -4380. This project area is within the boundary of LCA 2045 to Kauwahi, who received the parcel in the time of Kamehameha I, indicating this was a Hawaiian habitation area as early as the beginning of the nineteenth century.

In March 1991, during excavation of a water line trench between Coral and Queen streets across Mother Waldron Park, human skeletal remains were discovered and disinterred (Douglas 1991b). The remains were determined to be of Hawaiian ancestry, with a pig burial possibly associated with the burial. These burials were considered part of SIHP # -4380.

Douglas (1991c) also conducted background research on the property and structures and Mother Waldron Park, which has been designated SIHP # -1388.

Between November 1990 and September 1992, CSH (Winieski and Hammatt 2000) monitored construction at the Kaka‘ako Improvement District 3 area, the Pohulani Elderly Rental Housing project area, and the Kauhale Kaka‘ako Project area (TMKs: [1] 2-1-030, 031, 032, 044, 046, 047, 048, 050, 051, 052, 054). Kaka‘ako Improvement District 3 was bounded by Kapi‘olani and King streets (north), the northern end of Cooke Street (east), Halekauwila Street (south), and South Street (west). It includes extensions of Keawe and Cooke streets to the south.

The monitoring of subsurface excavations revealed that although the area had been previously disturbed to a great extent, a cultural layer and in situ Jaucas sand and volcanic cinder deposits are still intact below fill layers. The cultural layer contained historic artifacts mixed with scant traditional Hawaiian cultural materials. Twenty human burials were discovered during these projects, nine at the Pohulani Elderly Rental Housing project (SIHP # -4380) and 11 in and around Mother Waldron Park (SIHP # -5820). Five burials were in an extended position, seven were flexed, and the position of eight could not be determined. One burial was in a coffin and one contained a glass trade bead, suggesting the burials were of post-Contact age. The 17 burials recovered were reinterred in the northeast corner of Mother Waldron Park. Three were left in place beneath the Pohulani Elderly Rental Housing Facility. These scattered burials are all clustered around the location of LCA 982 to Kukao and the Pu‘unui parcel to Queen Emma, an area with a cluster of Hawaiian house lots shown on several late nineteenth century maps.

3.4.4 Halekauwila Place – Pohukaina School (Tulchin, Altizer, Borthwick, and Hammatt 2009)

In 2009, CSH archaeologists excavated 16 trenches in the Halekauwila Place property, once the grounds of Pohukaina School (Tulchin, Altizer, Borthwick, and Hammatt 2009). Subsurface

testing revealed several historic and modern fill layers overlying the natural sediments. The natural sandy clay sediments were typical of a wet, marsh-type environment. Fill layers overlying the natural sediments included a layer of ash and burnt garbage, interpreted to be fill material generated by the city's municipal garbage incinerator, and layers of sandy clay, interpreted to be fill material generated by the dredging of Honolulu Harbor and other coastal areas in the vicinity. The presence of the dredge fill material and incinerator fill material is consistent with background research of Kaka‘ako land reclamation projects in the late 1800s and early 1900s. The upper terrigenous fill layers included construction debris and abandoned utilities, evidence of the former Pohukaina School. Numerous historic artifacts, mainly glass bottles and ceramics, were recovered to the fill layers, most were dated to the late nineteenth to early twentieth century. No pre-Contact cultural layers or burials were found.

3.4.5 Kamehameha Schools Block 2 (O'Hare et al. 2009; Tulchin, Borthwick, and Hammatt 2009; Pammer et al. 2011)

In 2009, CSH completed an archaeological inventory survey plan (AISP) for three Kamehameha Schools Kaka‘ako parcels (O'Hare et al. 2009). The AISP included a preliminarily testing phase consisting of seven test excavations. Subsurface testing revealed stratigraphy within the project area consisted of imported fill overlying naturally deposited marine clay. Of note was the presence of a historic trash layer either atop naturally deposited sediment or directly atop the coral shelf. Historic artifacts within the trash layer consisted of glass bottles and ceramics dating from the late nineteenth to the early twentieth century.

A GPR study conducted in the project area consisted of the comparison and analysis of data collected previously within the study area by CSH and Global Geophysics (Tulchin, Borthwick, and Hammatt 2009). Stratigraphic profiles previously recorded by CSH (O'Hare et al. 2009) were referenced against two-dimensional (2D) depth profiles generated during a GPR survey of the study area by Global Geophysics in an attempt to map out the study area's stratigraphy utilizing GPR. One of the goals was to accurately identify naturally deposited sediments (i.e., Jaucas sand) within the study area. Stratigraphic interfaces were clearly demarcated on the GPR 2D depth profiles, however, the type of sediments present at these interfaces was not defined.

In 2011, CSH (Pammer et al. 2011) completed an archaeological inventory survey for a Kamehameha Schools Block 2 parking lot parcel bounded by South Street to the northwest, Halekauwila Street to the northeast, Keawe Street to the southeast, and Pohukaina Street to the southwest. A total of four historic properties were identified within the project area: SIHP #s -7124, -7189, -7190 and -7197. SIHP # -7124 consists of 31 historic building remnants features (Features A–EE), generally located just beneath the modern layers of fill. These include brick and mortar clusters, slabs of concrete/basalt, concrete footings with metal supports, large slabs of very hard, corroded, melted metal, and pit features containing demolition debris. SIHP # -7189 consists of a layer of burnt historic debris, suspected to be from the open-air burning of urban refuse during the early 1900s. The charred remains were then utilized to fill in the unwanted wetlands around the project area. The observed cultural materials include glass bottles, ceramics, and other domestic waste. SIHP # -7190 consists of old salt pan remnants, presenting as an approximately 5 cm thick layer of alternating peat and clay striations. SIHP # -7197 consists of a sandy cultural layer containing one late pre-Contact/early post-Contact fire pit feature.

3.4.6 Honolulu High-Capacity Transit Corridor Project (HHCTCP) (Hammatt 2013)

Between November 2011 and February 2013, CSH conducted an archaeological inventory survey of the Honolulu High-Capacity Transit Corridor Project (HHCTCP) (City Center), which extended from Kalihi Stream in the west to the Ala Moana Center in the east (Hammatt 2013). The 250 AIS test excavations documented a total of 19 historic properties along the length of the project corridor. Of these, only one historic property (SIHP # -5820), previously identified by Winieski and Hammatt (2000), was documented in the vicinity of the project area on Halekauwila Street. In addition to the previously identified burials, Hammatt et al. (2013) recorded two cultural layers: 1) a historic A horizon consisting of reworked/redeposited natural loamy sand and eight associated pit features (including a possible post mold and two dog burials) and 2) a lower in situ, culturally enriched, loamy sand A horizon containing 19 associated pit features and cultural material such as a marine shell midden, shell fishhook, historic artifacts, faunal remains, charcoal, a basalt tool, and a modified human tibia fragment. Additional pit features, including a horse burial were identified in association with a disturbed layer and an in situ human burial was identified within intact Jaucas sand.

3.4.7 O'Hare et al. 2012

CSH completed an archaeological literature review and field inspection for Servco's "South Street Property" located in the *mauka* area of Kaka‘ako, on the *makai* section of the city block bound by South, Halekauwila, Keawe, and Queen streets (O'Hare et al. 2012). The background research indicates the property probably lies on high ground surrounded by fishponds, salt ponds and pans, and marsh—valuable sources of income for the *ali‘i* class in the late nineteenth century, and many high chiefs lived in the nearby Honuakaha Village. The property once contained two early twentieth century churches but no records exist to suggest the presence of a cemetery. The project area is evaluated as having a high probability for post-Contact deposits and a low probability for pre-Contact habitation use because it was once surrounded by marshland.

3.4.8 Dagher and Spear (2013)

SCS conducted data recovery of an inadvertent burial (SIHP # -7260) uncovered during construction of an above-ground transformer box at the intersection of Halekauwila and Cooke streets (TMK: [1] 2-1-050:004) (Dagher and Spear 2013). A partial set of displaced in situ human skeletal remains (30%) was recovered from the backdirt in association with traditional Hawaiian cultural material, including volcanic glass artifacts and faunal midden. The remains appeared to be of Native Hawaiian ancestry.

3.5 Background Summary and Predictive Model

From the pre-Contact period into the early 1900s, Kaka‘ako was considered separate from the two main population centers of the region, Honolulu and Waikīkī. It was sparsely populated and characterized by a relatively barren plain dotted with fishponds and saltpans. In general, Kaka‘ako was not a favored location of permanent habitation or traditional agricultural activities.

Previous archaeology indicates much of the sediments in the area are fills, some of which extend to the water table. Subsurface cultural deposits identified in the vicinity of the project area consist of post-Contact deposits associated with salt production, trash disposal, and urban/industrial

development. Elsewhere, some natural sediments remain intact below the fill layers, including sections with calcareous or marine sands; this is important since sand dunes or berms were favored locations for traditional Hawaiian burials. Small clusters of traditional Hawaiian burials have also been recorded within 100 m southwest (SIHP # -5820) and northwest (-4380) within calcareous sands and contexts disturbed by historic and modern development in Kaka‘ako. In addition, more than 200 burials have been recorded in the Kaka‘ako area from Punchbowl to Cooke Street, and from King to Pohukaina Street mostly in two large historic cemeteries.

The current project area is situated within former marshland along the western boundary of Kewalo Ili, *mauka* of the pre-1850 coastline. Mid-1800s Māhele documents indicate the property was marshland when awarded to Kamake‘e Pi‘ikoi (LCA 10605; ‘Āpana 7), wife of Jonah Pi‘ikoi —an *ali‘i* and retainer of Kauikeaouli, Kamehameha III, who held several government posts. Archival maps suggest the project area remained undeveloped until ca. 1914, when the marsh was in-filled from South Street to Ward Avenue, and from Ala Moana Boulevard to Queen Street. After 1914, the project area and surrounding Kaka‘ako region was intensively developed with the construction of a road grid, residential units, and industrial/commercial buildings.

Although no pre-Contact cultural deposits are expected in the former marsh, traditional Hawaiian burials might be present in elevated sand berms (Jaucus sand), as documented elsewhere in the former tidal flats or marshland.

Section 4 Results of Fieldwork

The fieldwork component of this project consisted of a pedestrian survey involving 100% surface coverage and subsurface testing using backhoe-assisted test trenches (T-1 through T-3). The pedestrian survey confirmed that the entire surface of the project area had been modified as a result of commercial and residential development. As there were no surface historic properties, the archaeological inventory survey primarily focused on a subsurface testing aimed at documenting the stratigraphy and any buried historic properties identified within the project area.

Three test trenches (T-1 through T-3) were completed in the current parking lot that encompasses the southeast portion of the project area (Figure 25 and Figure 26). Each trench was excavated to the upper boundary of the hard coral shelf or to beneath the water table. A buried historic property (SIHP # 50-80-14-7942) was identified in all three test trenches. SIHP # -7942, Feature 1, is a historic burnt trash layer likely used to fill in the former marshland in the project area. SIHP # -7942, Feature 2, consists of historic structural remnants associated with early to mid-twentieth century buildings.

4.1.1 Stratigraphic Overview

According to the USDA Soil Survey data, the project area is composed of mixed fill land that is suitable for waste related activities, urban and recreational activities, and wildlife (USDA 2001). Additionally, background research and previous archaeological investigations in the Kaka‘ako region documented comprehensive deposits of hydraulic (dredged) material and burnt nineteenth to twentieth century trash deposits used to fill in the former tidal flats and marshlands, followed by an intensity of development as Honolulu expanded into the newly claimed Kaka‘ako area.

The observed stratigraphy in the project area reflects this general stratigraphic sequence of historic and recent fills and building placed over natural lagoon or wetland sediments or calcareous sand berms formed on top of the wetland sediments. All three trenches contained a modern asphalt surface and base course overlying five to eight fill layers that included ca. post-1914 structural remains (SIHP # -7942, Features 2a–2d) in T-1 and T-3 and a base fill of burnt trash (SIHP # -7942, Feature 1) in T-1 and T-2. Natural calcareous sand, possibly representing a former sand berm, was identified in portions of T-2 and T-3. Natural wetland deposits were situated at the water table throughout the project area, either below the historic burnt trash layer in T-1 (Stratum IV) or below the calcareous sand deposit in T-2 and T-3.

The remaining natural stratigraphy exposed in the trenches (Strata IV and V) suggests the presence of a ponded feature with wetland sediments in the northwest portion of the current parking lot and a possible sand berm extending along the southeastern edge of the pond feature.

4.1.2 Trench 1 (T-1)

T-1 was excavated in the northwest corner of the asphalt parking lot, 2.6 m from the project’s boundary (see Figure 25 and Figure 27). The excavation measured 6.0 m in length by 0.7 m in Figure 28 and Table 2) consists of the current asphalt (Stratum Ia) and underlying base course material (Stratum Ib), followed by different fills of sandy clay loam, gravelly silt loam, and clay loam (Stratum Ic-Ie); gravelly sandy loam with intact structural remnants

Figure 25. Aerial photograph showing locations of test excavations in Nohona Hale project area (Google Earth 2013)

Figure 26. Overview of project area, T-3 in foreground; view to northwest

Figure 27. Overview of T-1; view to northwest

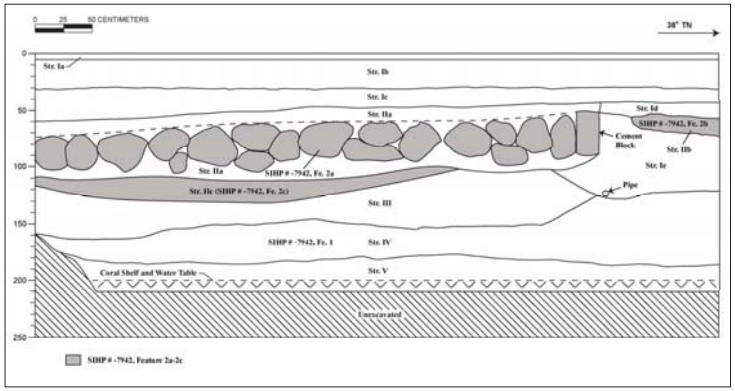


Figure 28. Stratigraphic profile of T-1, showing location of SIHP # 50-80-14-7942, Feature 1 and Features 2a–2c; northwest wall

Table 2. Stratigraphic Description of T-1

Stratum	Depth (cmbs)	Description
Ia	0–5	Asphalt; 10YR 2/1, black, abrupt, smooth boundary; represents current parking lot
Ib	5–31	Fill (base course); 7.5YR 3/2, dark brown, extremely gravelly, clay loam; weak, very fine granular structure; no cementation; loose consistence; clear, wavy lower boundary.
Ic	29–57	Fill; 10YR 3/3, dark brown, very gravelly sandy clay loam, contains 35 to 60% coral gravel, moderate, fine, granular structure; no cementation; moist, loose consistence, slightly plastic; clear and wavy lower boundary; contains brick fragments, and asphalt chunks
Id	36–55	Fill; 7.5YR 3/2, dark brown, gravelly silt loam; contains 15 to 35% gravel; weak, fine granular structure; no cementation; loose consistence (moist); slightly plastic; diffuse and broken lower boundary; contains glass, charcoal, and small brick fragments
Ie	50–126	Fill: 10YR 6/3, pale brown, gravelly clay loam; contains 15 to 35% gravel; moderate, fine, blocky structure; friable; plastic; diffise, broken lower boundary; appears to be reworked hydraulic dredge material incorporated with loamy matrix; contains slate fragments
IIa	44–110	Fill; 10YR 3/2, very dark grayish brown, very gravelly, sandy loam; contains 35 to 60% gravel; weak, granular structure; no cementation; medium to hard (dry) consistence; non-plastic; abrupt and smooth lower boundary; lens of 10YR 6/1, gray silty clay possibly containing hydraulic dredged material; SIHP -7942 (Feature 2a), contains structural remains (cinder blocks and boulder concentration)
IIb	52–73	Two fill components comprising possibly rotten (saprolitic) rock (10YR 5/8, yellowish brown silt) and coral (2.5Y8/1, white silt); massive; structureless; no cementation; very abrupt and broken lower boundary; possible stucture floor, SIHP # -7942, Feature 2b
IIc	100–133	Fill; 5YR 3/6, dark red, sand; weak, fine granular structure; no cementation; loose (dry) consistence; clear and broken lower boundary; possible red brick foundation (decomposed) only present in southwest end of trench; SIHP # -7942, Fea. 2c
III	50–160	Fill; 10YR 3/3, dark brown, sandy loam; weak, granular structure, no cementation; slightly sticky (wet); plastic; abrupt and broken boundary; contained slate roofing tile, bottles, and metal
IV	70–185	Fill; 10YR 2/1, very black clay, massive; structureless; no cementation; abrupt and wavy boundary; greasy matrix with noxious odor; contains ceramic and glass bottles, miscellaneous metal, burnt

Stratum	Depth (cmbs)	Description
		wood; SIHP # -7942, Feature 1, historic trash layer associated with open-air trash burning reposited as fill during land reclamation event
V	175–210	Natural; GLEY N 6/ gray, sandy clay; moderate, blocky structure, sticky (wet); no cementation; plastic; naturally deposited wetland sediments atop coral shelf

(Stratum IIa; SIHP # -7942, Feature 2a); white and yellowish brown silt representing possible structure floor (Stratum IIb; SIHP #-7942, Feature 2b); a possible foundation composed of dark red sand from decomposing brick (Stratum Ic; SIHP # -7942, Feature 2c); sandy loam fill (Stratum III); a fuel-contaiminated black clay and burnt trash layer (Stratum IV; SIHP #-7942, Feature 1); and natural sandy clay of marsh sediments (Stratum V) (Figure 29–Figure 32). The coral shelf and water table were reached at the base of excavation (see Figure 29 and Figure 30).

Marked by the cement block in Stratum IIa, Feature 2a of SIHP # -7942 terminates abruptly 1.0 m from the northeast end of T-1. Fire insurance maps (Sanborn 1914, 1927, and 1950) indicate the presence of a warehouse in the vicinity of T-1 (Figure 33–Figure 35).

Stratum IIb is located in the northeast end of T-1, 20 cm the northeast of Feature 1. The two-component layer is interpreted as a possible structure floor and assigned Feature 2b of SIHP # -7942. According to the 1927 fire insurance map, Feature 2b is aligned along a dashed line defining two internal spaces inside the former warehouse (see Figure 34). The space northeast of Feature 2b is labeled an “Oil Stage.”

Stratum III contains a layer of decomposed brick material that might represent a remnant brick floor or foundation below Feature 2a in Stratum IIa. The brick feature is designated Feature 2c of SIHP # -7942.

Stratum IV is an historic burnt trash fill event (SIHP # -7942, Feature 1) lying directly on natural wetland sediments (Stratum V). The site layer represents initial in-filling of the project area prior to ca. 1914 using trash burned in open air dump sites.

4.1.3 Trench 2 (T-2)

Trench 2 was excavated in the northeast side of asphalt parking lot approximately 3.2 m from the project boundary. The T-2 excavation measured 6.0 m in length by 0.7 m in width, with a maximum depth of 200 cmbs (Figure 36). Multiple imported fill layers were exposed in the excavation that lay on top of a natural calcareous sand layer and underlying wetland sediments (Figure 37–Figure 40). A utility pipe was encountered at the center of the trench at 80 cmbs and was pedestaled for the remainder of the excavation.

The introduced fills observed in T-2 consist of the current asphalt parking lot (Stratum Ia) and underlying base course material with a lens of red sand (Stratum Ib) followed in depth by a different sequence and nature of fills on each side of the pedestaled utility line. These consist of light gray gravely sandy loam (Stratum Ic), cinder (Stratum Ie) and locally procured marsh deposits on the northeast side of the utility line and a dark gray, gravelly sandy loam (Stratum Id), dark brown sandy loam clay (Stratum If) and a thin lens of burned trash on the southwest side of the utility line. With no relation to the different fills on each side of the buried utility, the underlying natural deposits include wetland sediments (Stratum V) in the southwest portion of the trench and calcareous sand (Stratum IV) lying on wetland sediments (Stratum V) in the northeast portion of the trench. This stratigraphic anomaly suggests T-2 was excavated at the interface of a pond feature and a possible sand berm formed along the east and southeast edge of the pond feature.

Figure 29. Photograph of T-1 at base of excavation; view to northeast

Figure 30. Photograph of T-1 showing close up of Stratum IIa cement block in northwest wall

Figure 31. Photograph of T-1 northwest and northeast walls at 105 cmbs; view to northeast (Stratum IIb yellowish brown and white silt evident in northeast wall)

Figure 32. Photograph of T-1 northwest wall; Stratum IIIc (decomposed brick) overlying burnt trash layer (Stratum IV) and wetland sediments (Stratum V); view to northwest

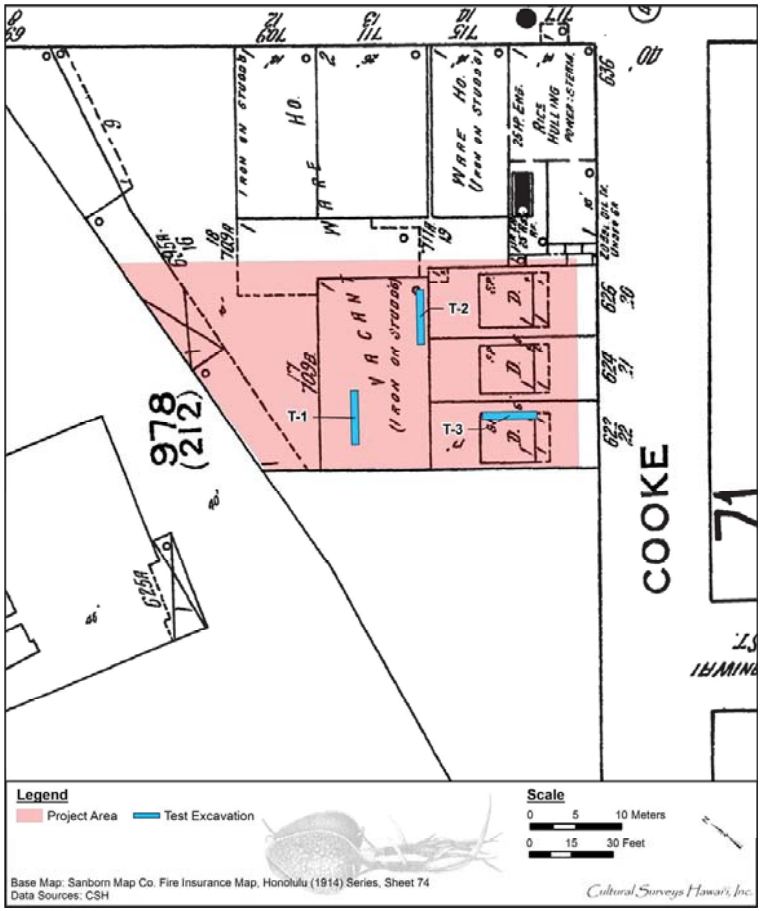


Figure 33. 1914 Sanborn fire insurance map showing locations of T-1, T-2, and T-3 excavations

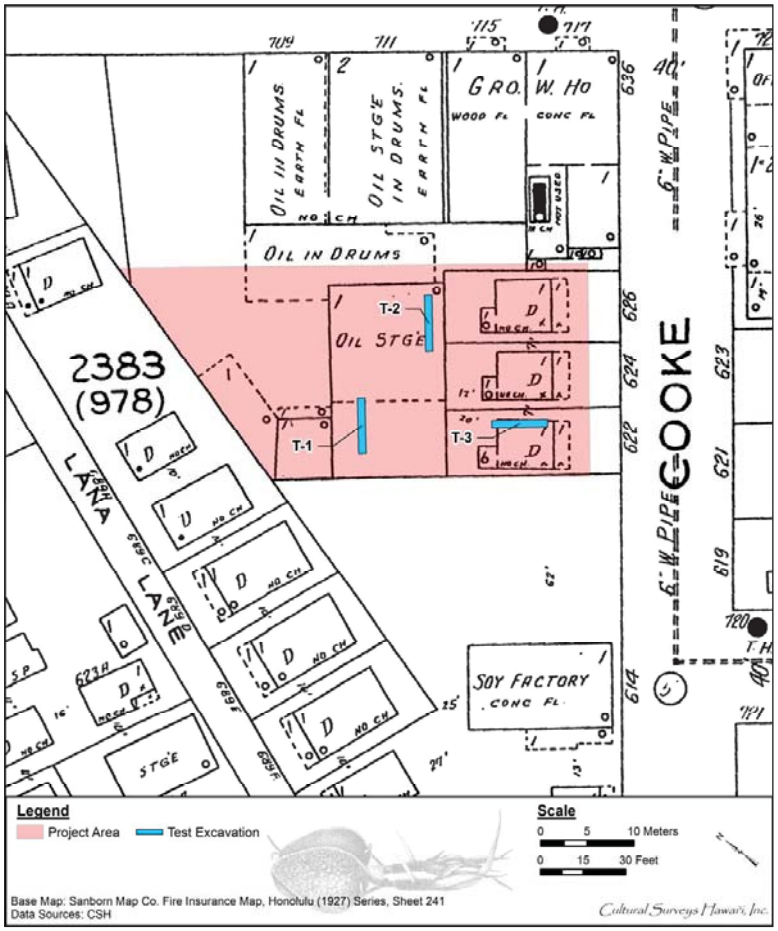


Figure 34. 1927 Sanborn fire insurance map showing locations of T-1, T-2, and T-3 excavations

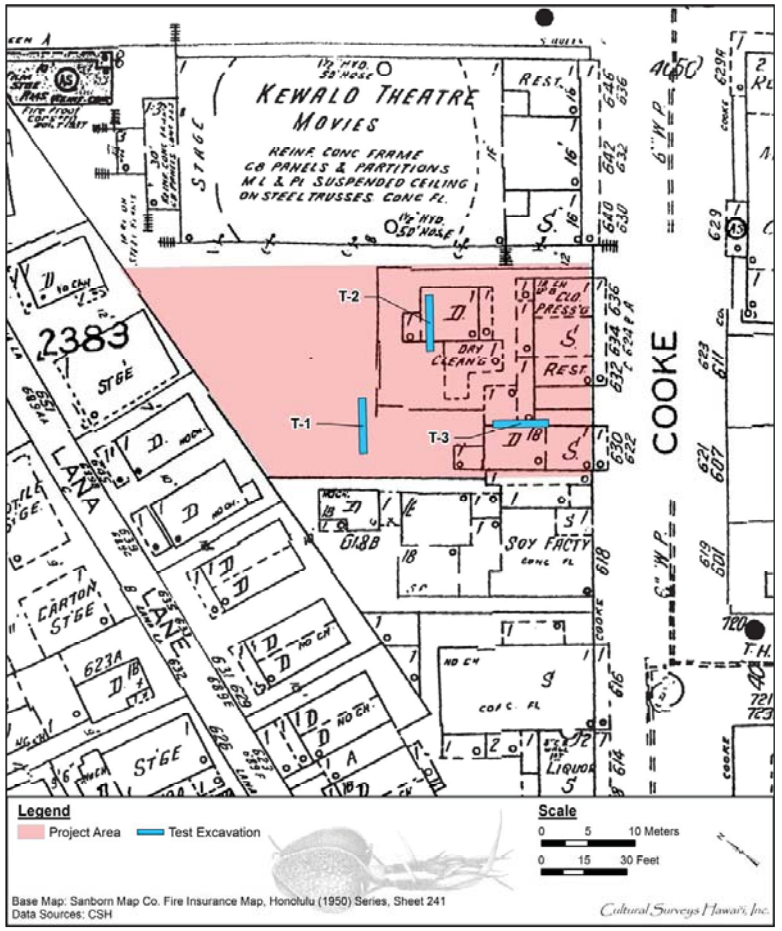


Figure 35. 1950 Sanborn fire insurance map showing locations of T-1, T-2, and T-3 excavations

Figure 36. Photograph of T-2 overview; view to northeast

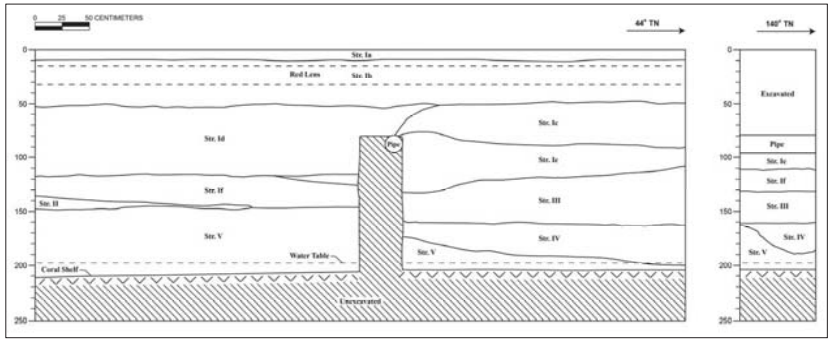


Figure 37. Illustration of T-2 stratigraphic profile; northwest and central pedestal walls

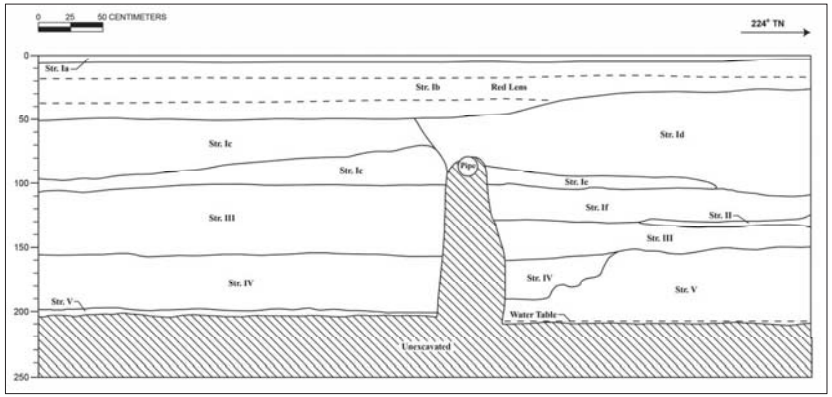


Figure 38. Illustration of T-2 stratigraphic profile; southeast wall

Table 3. Stratigraphic Description of T-2

Stratum	Depth (cmbs)	Description
1a	0‘ 5	Asphalt; 10YR 2/1, black, abrupt, smooth boundary; represents current parking lot
1b	5–50	Fill (base course); 7.5YR 6/1, gray, extremely gravelly, loamy sand; weak, very fine granular structure; no cementation; loose consistence; clear, wavy lower boundary; lens of weak red (10R 4/4) loamy sand lens at center of base course
Ic	50–95	Fill; 7.5YR 7/1, light gray, very gravelly sandy clay loam, contains 60 to 90% coral gravel, moderate, medium blocky structure, no cementation; mostly friable, plastic; very abrupt, smooth, lower boundary
Id	28–110	Fill; 5YR 3/1, very dark gray, gravelly sandy loam, contains 15 to 35% gravel; weak, medium, granular; structure; no cementation; loose (dry); non-plastic; abrupt and smooth boundary; contains demolition material from former structures (e.g., boulders, concrete chunks, iron)
Ie	70–105/130	Fill; 10YR 3/1, very dark gray cinder, 7.5yr 7/1, light gray cinder, and 10YR 3/1 very dark gray sand; single grain, structureless; loose (dry); non-plastic; abrupt and smooth lower boundary; represents fill composed of sand and volcanic cinder
If	101–130	Fill; 10YR 3/3, dark brown, sandy clay loam; weak, fine, granular structure; friable (moist); slightly plastic; abrupt; and smooth, lower boundary
III	113–155	Natural; 7.5YR 8/1, white sandy clay; massive structureless; Sticky (wet); plastic; abrupt and smooth lower boundary; represents lagoonal sediments associated with former marshland
IV	155‘ 200	Natural; 10YR 7/6, yellow, loamy sand; structureless, single grain, loose (moist); non-plastic; abrupt and smooth lower boundary; represents intact calcareous sand possibly associated a sand berm
V	150‘	Natural; GLEY 5B 5/1, bluish gray, very gravelly, loamy sand; contains 35 to 60% gravel; weak, very fine single grain; structureless; firm (moist); non-plastic; represents naturally deposited wetland sediments

Figure 39. Photograph of T-2 overview and southeast wall at base of excavation

Figure 40. Photograph of T-2 southeast wall, showing possible sand berm layer (Stratum IV) overlying wetland sediments (Stratum V) at base of excavation; view to south

The burnt trash layer (Stratum II) is an extension of the Stratum IV historic burnt trash layer (SIHP # -7942, Feature 1) identified in T-1 that marks the initial filling of the natural wetlands in the project area. The thin nature of the burnt trash fill deposit suggests subsequent development of the property removed part of the original base fill or for whatever reason, less fill was required in this portion of the project area. The 1950 Sanborn fire insurance map (see Figure 35) indicates the majority of T-2 was excavated inside a "dwelling" or house structure with an adjoining dry cleaning building. The southwest end of T-2 lies outside the structure footprint, which might account for the different fill stratigraphy identified on either side of the buried utility line. No historic structural remains were identified in the T-2 excavation.

4.1.4 Trench 3 (T-3)

Trench 3 was excavated in the southwest corner of the current asphalt parking lot approximately 4 m from Cooke Street and the project boundary (see Figure 25). The T-2 excavation measured 6.0 m in length by 0.7 m in width, with a maximum depth of 200 cmbs. The stratigraphy was characterized by multiple imported fill layers lying on top of natural marine sand and wetland sediments (Figure 41–Figure 43). The water table and coral table were encountered at the base of excavation.

The T-3 stratigraphy consists of the current asphalt parking lot (Stratum Ia) and underlying base course material (Stratum Ib), followed in decreasing depths by four layers—a clay loam representing a possible prepared soil surface such as a road or parking lot (Stratum Ic), underlying gravelly sandy loam base course (Stratum Id), gravelly sandy loam with utility trenches and four pipes and concrete demolition material (Stratum Ie), cobbly loam sand fill with structural remnants (Stratum If; SIHP # -7942, Feature 2d), and locally procured wetland sediments (Stratum III) lying directly on natural marine sand (Stratum III) and wetland sediments (Stratum IV). An abandoned sewer pipe (in Stratum Ie) extended across the northwest end of the trench at 80 cmbs. The pipe was left in place during the excavation.

Similar to the T-2 stratigraphy, the introduced fills were situated above natural wetland sediments in the northwest end of the trench and natural calcareous sand (possible sand berm) on top of wetland sediments in the remaining southeast portion of T-3. This stratigraphic anomaly also suggests T-3 was excavated at the interface of a pond feature (northwest) and possible sand berm formed along the southeastern edge of the pond feature.

Stacked cement blocks identified in Stratum If (Figure 43 and Figure 44) are structural remnants (Feature 2d) associated with SIHP -7942. Fire insurance maps (Sanborn 1914, 1927, and 1950) indicate the T-1 excavation was aligned with the northeast perimeter of a dwelling or house structure located along Cooke Street (see Figure 33–Figure 35). The house structure was one of three adjacent cottages constructed in the project area in 1914. The 1950 fire insurance map (Sanborn 1950) indicates the house structure remained at its original 1914 location (with some modification) into the mid-twentieth century.

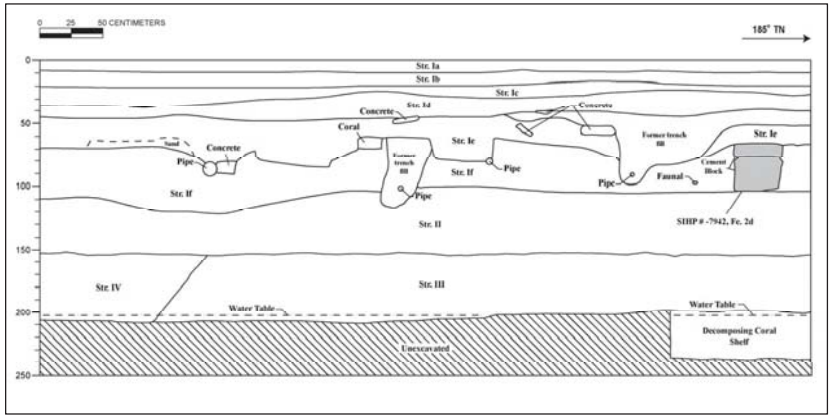


Figure 41. Illustration of T-3 stratigraphic profile, showing location of SIHP # 50-80-14-7942, Feature 2d; northeast wall

Table 4. Stratigraphic Description of T-3

Stratum	Depth (cmbs)	Description
Ia	0–10	Asphalt; 10YR 2/1, black, abrupt, smooth boundary; represents current parking lot
Ib	10–25	Fill; 10YR 5/3, extremely gravelly, sandy loam, contains 60 to 90% gravel, granular structure; no cementation; loose consistence; clear and smooth lower boundary
Ic	25–60	Fill; 7.5YR 3/4, dark brown, clay loam; moderate, fine, blocky structure weakly coherent (dry); plastic; clear; and smooth lower boundary; respresents layer between asphalt base course above and base course below; possible prepared soil surface for road or structure interior floor
Id	22–60	Fill (base course); 10R 5/3, weak red, extremely gravelly sandy loam; contains 60 to 90% gravel; loose (dry), clear and wavy lower boundary
Ie	45–60	Fill; 10YR 5/3, brown, very gravelly sandy loam, contains 35 to 60% gravel, very coarse; loose (dry); clear and wavy boundary; contains demolition material (cement fragments) and utility trenches including two metal utility pipes; lens of coral sand and dark brown sandy loam associated with utility trenches
If	62–80	Fill; 10YR 3/4, dark yellowish brown, cobbly loamy sand; contains 15 to 35% cobbles, medium, granular; structure; no cementation; loose (dry); non-plastic; clear and wavy lower boundary; SIHP # -7942, Feature 2d, contains intact structural foundation blocks associated with post-reclamation in-filling
II	120–150	Fill; 10YR 7/2, light gray, loamy sand; weak, very fine single grain; structureless; no cementation; represents locally procured marsh sediments possibly used as fill during reclamation in-filling or construction of ca. post-1914 structures
III	153–	Natural; 10YR 8/4, very pale brown, sand; structureless, single grain, loose (moist); no cementation; non-plastic; abrupt and smooth lower boundary; represents intact marine sand possibly associated with sand berm
IV	150–	Natural; GLEY 10Y 5/1, greenish gray loamy sand; very fine single grain; structureless; no cementation sticky (wet), plastic; represents naturally deposited wetland sediments

Figure 42. Photograph of T-3 southwest wall showing sewer pipe at 80 cmbs and wetland sediments (Stratum IV) visible in northwest end of trench

Figure 43. Photograph of stacked cement blocks (SIHP # - 7942, Feature 2d) in T-3, Stratum If

Figure 44. Photograph of utility pipe in T-3 Stratum Ie

Section 5 Results of Laboratory Analysis

5.1 Historic Artifact Analysis

Archaeologists collected 55 historic artifact fragments during 2016 Nohona Hale project. The artifacts are described in Table 5 and photographs of a sample of artifacts are presented in Figure 45–Figure 102). The artifacts consist of 38 glass bottles or bottle fragments, one pressed glass fragment, six ceramic bottles or bottle fragments, one ceramic flatware fragment, four ceramic hollowware fragments, one ceramic tableware fragment, one brick, one door hardware fragment, one nail, and one fragment of slate roofing tile.

All of the artifacts were recovered from historic fills associated with urbanization of the project area. Forty-nine artifacts are associated a burnt historic trash layer (SIHP # -7942, Feature 1) derived from late nineteen and early twentieth open-air trash burning dumps. Two of the artifacts were recovered from a fill layer (Stratum If) containing historic structural remnants in T-3 (SIHP # -7942, Feature 2d).

5.1.1 Glass Artifacts

All terminology used to describe bottle traits and all bottle dating information in this report section is based on information from the U.S. Department of Interior, Bureau of Land Management (BLM)/ Society of Historic Archaeology (SHA) “Historic Glass Bottle Identification and Information Website” (BLM/SHA 2014), unless otherwise noted. Research on historic bottles focused on the function and manufacturing dates of the items, using reference texts and online resources to identify glass manufacturers’ marks on bottles and company histories of the content brands.

There are three stages in the evolution of glass bottle manufacture. Since antiquity, bottles have been free-blown with a blow-pipe. These types of bottles are usually asymmetrical, crudely made and often have a pontil mark where a rod was used to hold the bottle during the last stages of manufacture, finishing the lip of the bottle by hand. In the United States, these types of bottle usually pre-date ca. 1865 (BLM/SHA 2014_Glassmaking). There were no free-blown bottles in the artifact collection.

Around ca. 1800, glassworkers began to blow bottles into some type of mold, usually a metal mold. Some of the earliest mold types include a three-piece dip mold (1800-1870), which included a bottom mold that formed most of the body, and a hinged top mold forming the shoulder, neck and finish. This resulted in a smooth body with a seam around the shoulder and up the neck. The most common mold from the mid-nineteenth century into the twentieth century (post-1850) was a two-piece mold with a separate cup-bottom plate. These types of bottles have a mold seam around the base of the bottle, and two side seams that run vertically up the sides of the bottle. The side mold seams usually end on the neck, as the lip on mold-blown bottles was still finished by hand. Two-piece molds were the dominant form used in the post-1880 period. A four-piece cup-bottom mold was also used from 1880 into the 1910s. A four-piece mold has two side seams and a horizontal seam around the body. Four-piece molds were commonly used from the 1880s to the

1910s. In the 1880-1915 period, bottles were also blown in a turn mold, in which the side seams were erased during the manufacturing process.

Table 5. Summary of Historic Artifacts

Acc. #	Provenience	Material	Type	Description	Origin	Age
1	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottle, complete, round base, mold-blown, turn-molded, tooled blob finish		1870-1920
2	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Aqua blue medicine bottle, complete, oval base, mold-blown, two-piece cup bottom mold, tooled patent finish, embossing: “F. BROWN'S / ESS OF / JAMACA GINGER / PHILAD A” on body	American	1870-1917
3	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottle, complete, round base, mold-blown, turn-molded, tooled oil finish		1870-1920
4	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottle, complete, round base, mold-blown, turn-molded, tooled oil finish		1870-1920
5	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle, complete, round base, mold-blown, turn-molded, tooled oil finish		1870-1920
6	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Bottle	Stoneware ale bottle, complete, round base, Bristol and Ferro-Bristol glazed bottle, impressed makers mark on heel, “BARROWFIELD / 12 / POTTERY”	British	1866-1929
7	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottles, base to body (1) and base to shoulder (1) fragment, round base, mold blown, turn-molded		1870-1920
8	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle, complete, round base, mold-blown, turn-molded, tooled oil finish		1870-1920
9	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottles, shoulder to lip fragments, cylindrical bottles, mold-blown, unknown mold type, applied oil finish		1800-1885
10	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Bottle	Stoneware ale bottle, complete, round base, Bristol and Ferro-Bristol glazed bottle	British	1850-1920s

Acc. #	Provenience	Material	Type	Description	Origin	Age
11	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive wine/champagne bottle, complete, round base, mold-blown, turn mold, applied champagne finish, corroded stopper for the cork intact		1880-1920
12	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottle, complete, round base, mold-blown, turn-molded, tooled oil finish		1880-1920
13	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive wine/champagne bottle, complete, round base, mold-blown, turn-molded, tooled champagne finish, deep kick up, remnant of copper wire around neck		1880-1920
14	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive bottle, base to shoulder, round base, mold-blown, turn-molded, missing finish		1880-1920
15	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Bottle	Stoneware ale bottle, complete, round base, Bristol and Ferro-Bristol glazed bottle, remnant of metal foil label embossed, "[WH]EEL BRAND"	British	1850-1920s
16	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Bottle	Stoneware "Westerwald" jug, brown salt glaze on exterior, transparent glaze on interior, impressed "5" on heel	German	1850-1914
17	Trench 1, Str.III/IV, 100-180 cmbs	Brick	Brick	Brick fragment, "N. O…" impressed on brick, 10YR 6/3		
18	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Hollowware	Porcelain bowl base to body (1) and base to rim (2) wintergreen (celadon) glaze on interior and exterior, hand-painted blue mark on base	Asian	Post-1850
19	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Hollowware	Stoneware teapot or jar, body fragment, underglaze blue hand-painted structure, possibly a fishing hut on a dock, dark blue outline lines with lighter blue wash	Chinese	Post-1830
20	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Colorless bottle, shoulder to lip fragment, machine made, collared ring finish		Post-1905

Acc. #	Provenience	Material	Type	Description	Origin	Age
21	Trench 1, Str.III/IV, 100-180 cmbs	Metal	Nail	Corroded square nail (2)		
22	Trench 1, Str.III/IV, 100-180 cmbs	Stone	Slate	Slate roofing tile fragment		
23	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive bottle, base to shoulder fragment, round base, mold-blown, turn-molded, missing finish		1880-1920
24	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottles, shoulder to lip fragment (2), cylindrical bottles, mold-blown, applied oil finish		1800-1880
25	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle, neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, seams on the neck, applied oil finish		1800-1885
26	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, applied oil finish		1800-1885
27	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, tooled oil finish		1880-1920
28	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle, neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, tooled grooved ring finish, intact cork, remnant of paper label on neck and lip		1870-1920
29	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber beverage bottle, neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, tooled champagne finish		1870-1920
30	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Light green wine/champagne bottle, neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, applied champagne finish		1800-1885

Acc. #	Provenience	Material	Type	Description	Origin	Age
31	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive beverage bottle, shoulder to lip fragment, cylindrical bottle, mold-blown, unknown mold type, tooled mineral finish		1870-1920
32	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Light olive beverage bottle, neck to lip fragment, cylindrical bottle, mold-blown, unknown mold type, applied champagne finish		1800-1920
33	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Aqua blue bottle, neck to lip fragment, mold-blown, unknown mold type, tooled double ring finish		1880-1920
34	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Light amber (yellow) wine/champagne bottle, neck to lip fragment, mold-blown, unknown mold type, applied champagne finish		1800-1885
35	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber bottle, base to body fragment, round base		
36	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive bottle, neck to shoulder fragment, cylindrical bottle		
37	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive bottle, base to body fragment, round base, deep kick up		
38	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Aqua Lea & Perrins bottle, base to body fragment, round base, mold-blown, unknown mold type, missing finish, embossing: "LE[A & PERRINS]" on body, "J52D / S." on base	American	1875-1920
39	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Milk glass, body to rim fragment		

Acc. #	Provenience	Material	Type	Description	Origin	Age
40	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Bottle	Stoneware ale bottle, base to body (1) and neck to lip (1) fragments, round base, Bristol and Ferro-Bristol glazed, impressed makers mark on heel "[H. KE]NNEDY / BARROWFIELD / 33 / POTTERY / GLASGOW"	British	1886-1929
41	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Flatware	Whiteware flatware, rim fragment, transparent glaze, oval shaped	Euro-American	post-1820
42	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Amber bottle base to shoulder fragment, round base, mold-blown, turn mold		1870-1920
43	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive case gin bottle, base to body, square base, mold-blown, three-piece dip mold, "X" embossed on base		1800-1870
44	Trench 1, Str.III/IV, 100-180 cmbs	Glass	Bottle	Olive bottle, base to body, round base		
45	Trench 1, Str.III/IV, 100-180 cmbs	Ceramic	Bottle	Stoneware bottle, base to body, Bristol glaze on interior and exterior, small amount of Ferro-Bristol on shoulder, impressed maker's mark, "H. KENNEDY / BARROWFIELD / 52 / PO[TTERY]"	British	1886-1929
46	Trench 2, Str.II, 130-150 cmbs	Glass	Bottle	Olive (black) glass bottle, complete, round base, mold-blown, three-piece dip mold, applied brandy finish		1800-1870
47	Trench 2, Str.II, 130-150 cmbs	Glass	Bottle	Aqua soda bottle, missing neck and lip, round base, Codd-stopper body style, mold-blown, two-piece cup bottom mold, missing finish, embossing: "TAHITI / LEMONADE / WORKS COMPANY / HONOLULU HI // ACME PATENT / 4 / SOLE MAKER / DAN RYLANDS / BARNSLEY" on body	American	1892

Acc. #	Provenience	Material	Type	Description	Origin	Age
48	Trench 2, Str.II, 130-150 cmbs	Glass	Bottle	Amber bottle base to shoulder, round base, mold-blown, three-piece dip mold, missing finish		1800-1870
49	Trench 2, Str.II, 130-150 cmbs	Glass	Pressed glass	Colorless pressed glass base		Post-1870
50	Trench 3, Str.Ie, 45-60 cmbs	Glass	Bottle	Olive bottle body fragment, cylindrical bottle		
51	Trench 3, Str.Ie, 45-60 cmbs	Glass	Bottle	Olive bottle neck to lip fragment, mold-blown, unknown mold type, applied oil finish		1800-1885
52	Trench 3, Str.Ie, 45-60 cmbs	Ceramic	Hollowware	Whiteware hollowware, base to body fragment, transparent glaze, blue transfer print on interior and exterior, landscape motif	Euro-American	1784-1859
53	Trench 3, Str.Ie, 45-60 cmbs	Metal	Door hardware	Brass plate for a door latch		
54	Trench 3, Str.If, 62-80 cmbs	Ceramic	Hollowware	Whiteware hollowware, body to rim fragment, transparent glaze, blue floral print on interior, large chunk of rock/cement on fragment	Euro-American	1784-1859
55	Trench 3, Str.If, 62-80 cmbs	Ceramic	Tableware	Ironstone vessel, body (1) and handle (1) fragment, transparent glaze	Euro-American	Post-1840

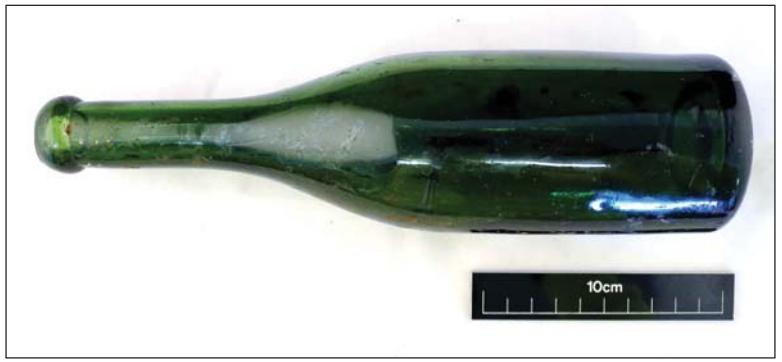


Figure 45. Acc. # 1, olive turn-molded bottle

Figure 46. Acc. # 2, aqua two-piece cup bottom mold medicine bottle

Figure 47. Acc. # 3, olive turn-molded bottle

Figure 48. Acc. # 4, olive turn-molded bottle

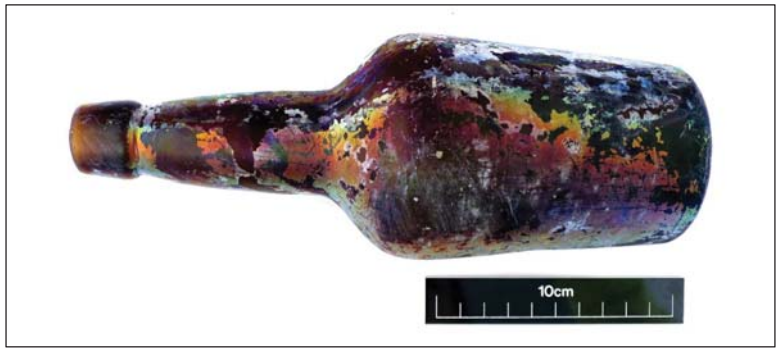


Figure 49. Acc. # 5, amber turn-molded bottle

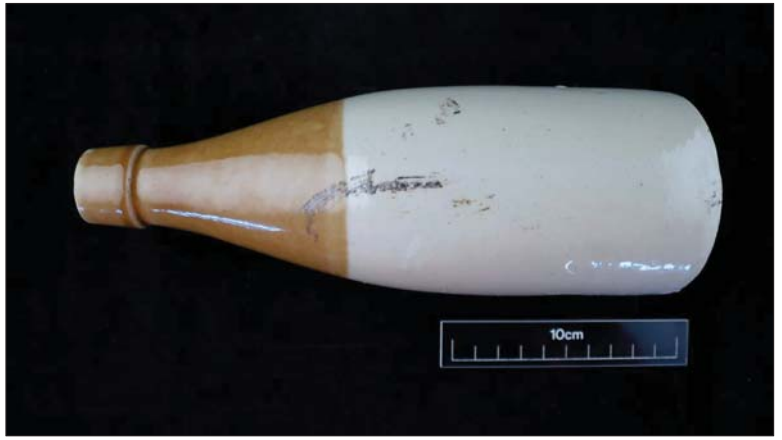


Figure 50. Acc. # 6, British stoneware ale bottle

Figure 51. Acc. # 7, olive turn-molded bottle base to body

Figure 52. Acc. # 8, amber turn-molded bottle

Figure 53. Acc. # 9, olive neck to lip fragments from large bottles

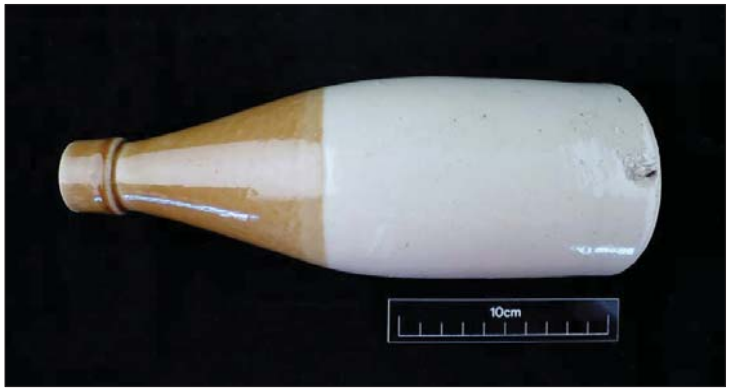


Figure 54. Acc. # 10, British stoneware ale bottle

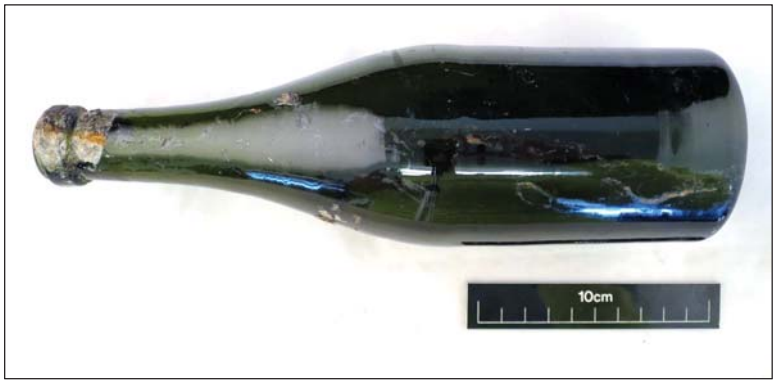


Figure 55. Acc. # 11, olive turn-molded bottle

Figure 56. Acc. # 12, olive turn-molded bottle

Figure 57. Acc. # 13, olive turn-molded bottle with intact wire stopper

Figure 58. Acc. # 14, olive turn-molded bottle base to body fragment

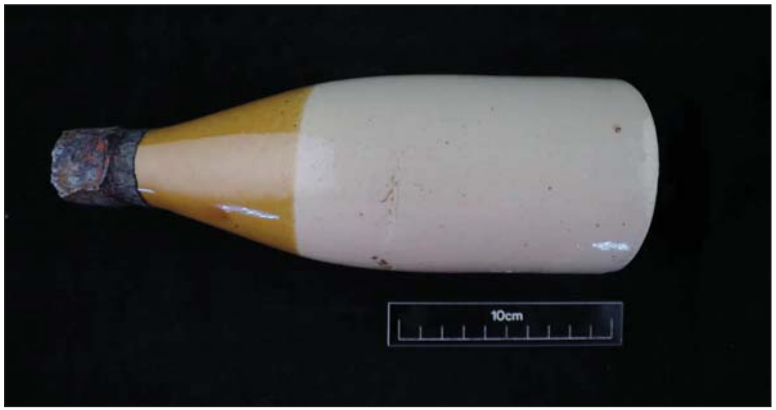


Figure 59. Acc. # 15, British stoneware ale bottle with intact foil

Figure 60. Acc. # 16. German “Westerwald” jug

Figure 61. Acc. # 17, brick fragment

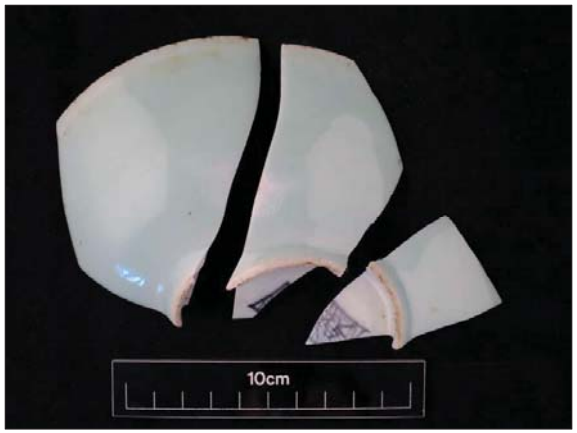


Figure 62. Acc. # 18, porcelain wintergreen (celadon) bowl fragments

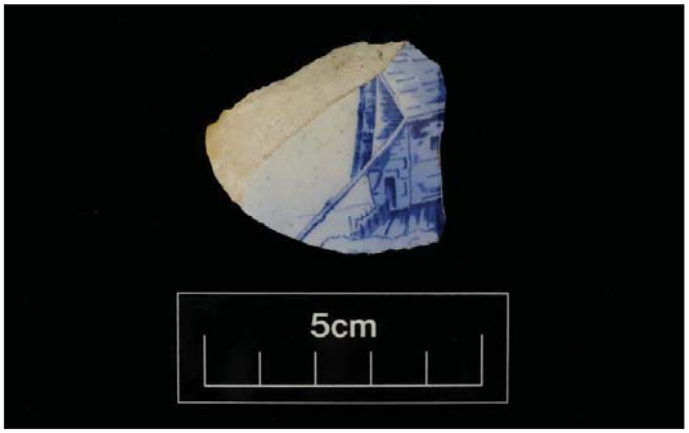


Figure 63. Acc. # 19, stoneware body fragment with underglaze hand-painted blue design

Figure 64. Acc. # 20, colorless machine made shoulder to lip fragment

Figure 65. Acc. # 21, corroded square nails

Figure 66. Acc. # 22, slate roofing tile fragment

Figure 67. Acc. # 23, olive turn-molded bottle base to body fragment

Figure 68. Acc. # 24, light green shoulder to lip bottle fragments

Figure 69. 1) Acc. # 25, amber neck to lip fragment, applied oil finish; 2) Acc. # 26, amber neck to lip fragment, applied oil finish; 3) Acc. # 27, amber neck to lip fragment, tooled oil finish; 4) Acc. # 28, amber neck to lip fragment, tooled grooved ring finish; 5) Acc. # 29, amber neck to lip fragment, tooled champagne finish

Figure 70. 1) Acc. # 30, light green neck to lip fragment, applied champagne finish; 2) Acc. # 31, olive shoulder to lip fragment; tooled mineral finish; 3) Acc. # 32, light olive neck to lip fragment, applied champagne finish; 4) Acc. # 33, aqua neck to lip fragment, tooled double ring finish; 5) Acc. # 34, light olive (yellow) neck to lip fragment, applied champagne finish

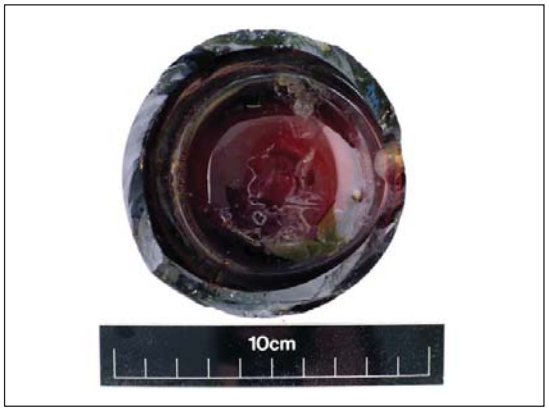


Figure 71. Acc. # 35, amber base to body fragment

Figure 72. Acc. # 36, olive shoulder to neck fragment

Figure 73. Acc. # 37, olive base to body fragment

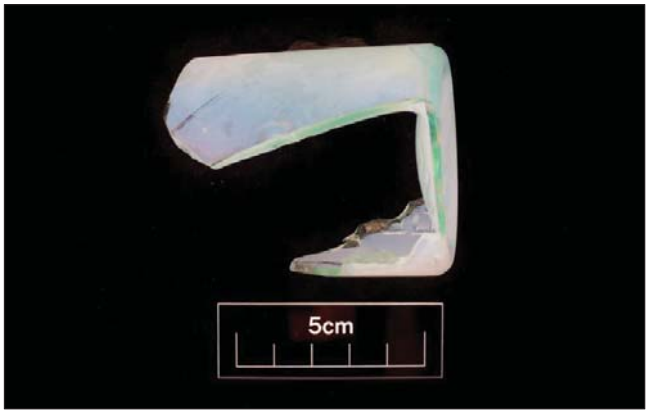


Figure 74. Acc. # 38, aqua Lea & Perrins bottle base to body fragment

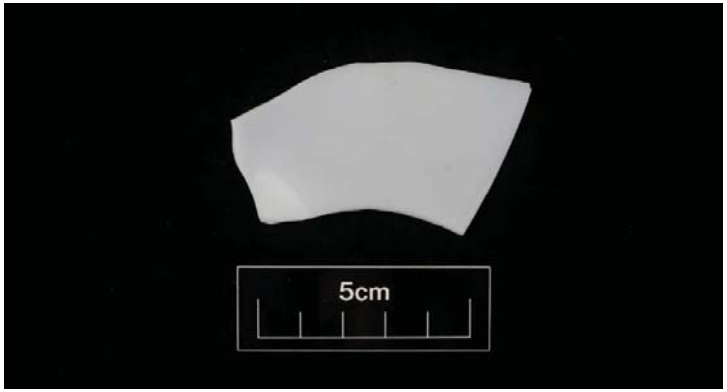


Figure 75. Acc. # 39, milk glass body fragment

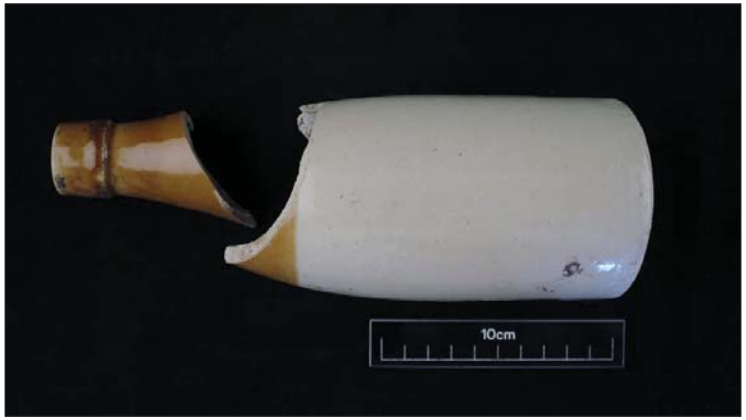


Figure 76. Acc. # 40, British stoneware ale bottle

Figure 77. Acc. # 41, whiteware flatware rim fragment

Figure 78. Acc. # 42, amber turn-molded bottle

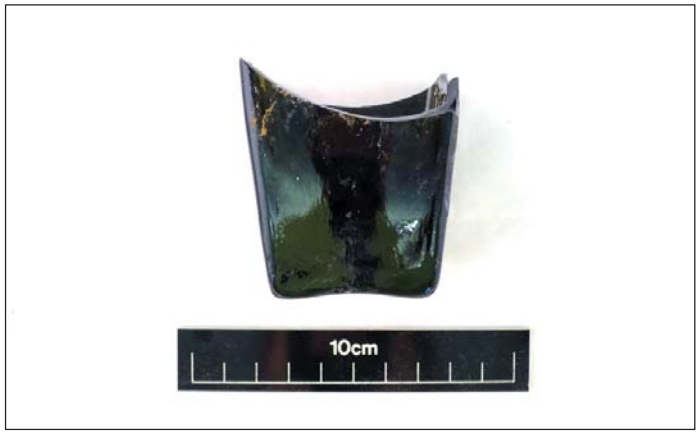


Figure 79. Acc. # 43, olive case gin bottle base

Figure 80. Acc. # 44, olive base to body fragment

Figure 81. Acc. # 45, British stoneware ale bottle

Figure 82. Acc. # 46, olive three-piece dip molded bottle

Figure 83. Acc. # 47, aqua soda bottle, two-piece cup bottom mold, Codd-stopper body style

Figure 84. Acc. # 48, amber three-piece dip-molded base to neck fragment

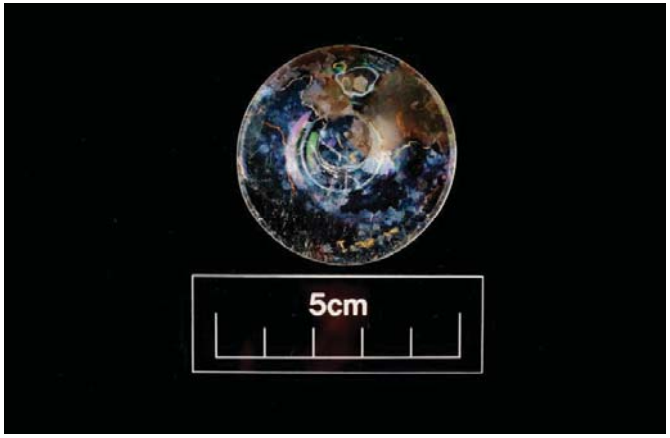


Figure 85. Acc. # 49, colorless pressed glass base

Figure 86. Acc. # 50, light olive body fragment

Figure 87. Acc. # 51, olive neck to lip fragment, applied oil finish

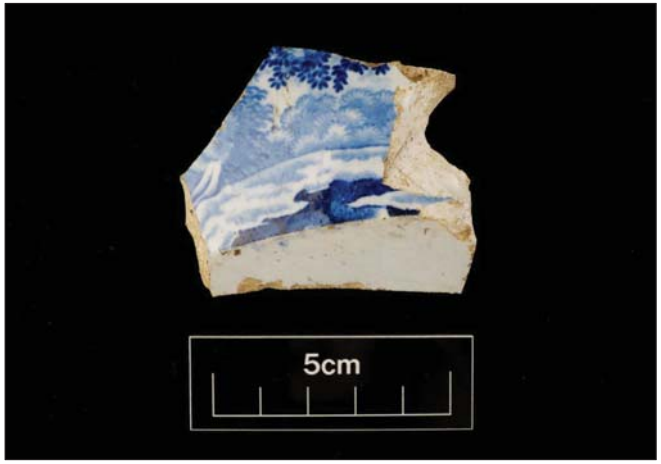


Figure 88. Acc. # 52, whiteware base to body fragment, blue transfer print

Figure 89. Acc. # 53, brass plate for a door latch

Figure 90. Acc. # 54, whiteware body to rim fragment, blue floral transfer print

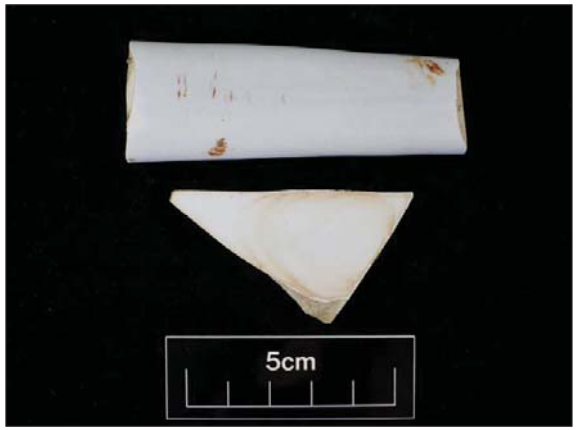


Figure 91. Acc. # 55, ironstone body and handle fragments

Semi-automatic machines were introduced in the 1890s and mainly used to make wide-mouth bottles/jars; glass still had to be manually fed into the machines by the glass workers. In1903, Michael Owens invented a machine that did away with most of the skilled glass workers. The machine was used to blow wide-mouth bottles as early as 1905 and narrow-necked bottles (such as beverage bottles) as early as 1908. This Automatic Bottle Machine (ABM) blew a bottle from base to lip, usually using a two-piece cup-bottom mold. The two side seams extend to and over the lip of the bottle, or to a horizontal seam at the bottom of the bottle finish. The base of a bottle made in early Owens ABM machines often had a round scar with feathered edges on the base. There are few ways, other than the presence of the Owens suction scar on the base, to distinguish a bottle made by a semi- versus a fully automatic machine, so both types of bottles are described in this report section simply as “machine-made.”

Of the 38 bottles in the collection, 31 are mold-blown, one is machine-made, and the manufacturing techniques for six are unknown. Of the mold-blown bottles, three were manufactured using a three-piece dip mold (Acc. #s 43, 46, and 48), 13 were manufactured using a turn mold (Acc. #s 1, 3–5, 7, 8, 11–14, 23, and 42), two were made using a two-piece cup bottom mold (Acc. #s 2 and 47), and the mold types for 13 are unknown.

During the mold-blown era (1800–ca. 1920), the lip of the bottle continued to be finished by hand. Determining the method employed in finishing a mouth-blown bottle can be one of the more useful diagnostic tools in determining the approximate manufacturing date range. Early free-blown methods, such as simply bursting off the glass blowpipe from the bottle lip, were still used in the mold-blown period. No bottles in the collection had this type of finish. An applied finish was used between the early and late 1880s—particularly between about 1840 and 1885. The technique

entailed an application of additional glass on the bottle neck, which was then shaped with a specialized “lipping” tool. Some diagnostic features of the applied finish are side mold seams that end abruptly on the neck at the lower end of the finish, with excess glass slopping over onto the upper neck below the finish, and a horizontal ridge inside the neck of the bottle that may be felt by inserting a finger into the bottle bore (BLM/SHA 2015_Finishes). An applied lip was noted on ten bottles (Acc. #s 9, 11, 24–26, 30, 32, 34, 46, and 51) in the collection.

The Standard Tooled Finish was first used as early as the 1860s on smaller bottles, although it did not became the dominant finishing method until 1890. The glass for the finish is not added, but the neck of the bottle is refired and formed into the finish by a lipping tool. Some diagnostic features of the Tooled Finish are side mold seams that fade out on the neck of the bottle below the finish, concentric horizontal tooling marks present on the finish and upper neck, an absence of glass slopping over onto the upper neck, and an absence of the interior ridge in the bore (BLM/SHA 2015_Finishes). Thirteen bottles in the collection (Acc. #s 1–5, 8, 12, 13, 27–29, 31, and 33) have a tooled finish (1885–1920).

Embossing and makers’ marks can further date three of the mold-blown bottles. Acc. # 2 is an aqua medicine bottle that once held F. Brown’s Essence of Jamaica Ginger. Fredrick Brown was an importer and manufacturer of medicine and pharmaceutical goods in the Philadelphia area beginning in the 1850s. The company produced a number of medicines, with the Essence of Jamaica Ginger as one of the most popular. Frederick Brown died in 1866 and his son, Fredrick Jr. took control of the company. The company was in existence until at least 1917. Jamaica Ginger or “Jake” as it was called, was a popular drink during prohibition due to its average of 80% alcohol content (Munsey 2005).

Acc. # 38 is a Lea and Perrins bottle fragment. The Lea and Perrins Company was founded in England in 1838 with the first imports shipped to the United States by 1849. The popularity of the sauce was, in part, spurred by the massive gold rush in California. The sole importer of the condiment in the United States was John Duncan’s Sons, New York (Odyssey’s Virtual Museum n.d.). Although it was distributed by John Duncan, they did not bottle the sauce until 1875. Before that, whole bottles were shipped to the United States. By 1875, The Lea and Perrins shipped casks and bottled it in the U.S. (Shurtleff and Aoyagi 2012). John Duncan contracted Salem Glass Works, from Salem, New Jersey to make all bottles with “JDS” embossed on the base. By 1902, John Duncan was no longer importing the condiment, but making and bottling it in New York. The JDS makers mark on the base was used until the 1920s (BLM/SHA 2016_Makers Marks).

Acc. # 47 is an aqua soda bottle. The glass bottles were made in mainland U.S. plants and shipped to Hawai‘i, where local companies bottled their own brand of carbonated sodas. The soda bottle fragments with embossed (raised) letters were carefully compared to photographs in Elliott and Gould’s (1988) comprehensive book on Hawaiian mold-blown bottles, *Hawaiian Bottles of Long Ago*, to identify the bottlers. The bottle from the collection was filled by the Tahiti Lemonade Works Company that dates to 1892.

Acc. # 49 is a pressed glass goblet or wine glass base. Pressed glass is formed when molten glass was poured into a mold and a plunger would “press” the glass in the mold. Pressed glass tableware was produced beginning in 1825. This early type of glass was generally very ornate to hide any manufacturing flaws (Welker and Welker 1985). By 1865, pressed glass technology had

advanced and was extremely popular due to its functionality and affordability. By the 1920s, the popularity of pressed glass had tapered due to the popularity of crystal tableware (Welker and Welker 1985). The remaining glass fragments have little to no diagnostic features and little can be said about them.

5.1.2 Ceramic Artifacts

Ceramic vessels were analyzed for basic descriptions such as shape, paste, color, and designs. Shapes are designated as “flatware” (e.g., plates, shallow saucers) or “hollowware” (e.g., bowls, cups). When the fragment was too small to determine the general shape, the item is listed as “tableware” or “unknown.” The Florida Museum of Natural History (2016) maintains an internet site with a visual guide to historic ceramics. Their ceramic identification site divides paste type into “earthenwares,” “stonewares,” and “porcelains.” The terminology and dates for manufacturing or decoration techniques used in this section are from the Maryland Archaeological Conservation Lab (2012) internet site “Diagnostic Artifacts of Maryland, unless otherwise noted.

Of the 12 ceramics, one is identified as flatwares, four are hollowwares, six are bottles, and one could not be determined as hollowware or flatware and is thus classified as tableware. In the collection, ten ceramic fragments are of Euro-American origin, with five further classified as British and one classified as German, one is Chinese, and one cannot be classified as Japanese or Chinese and is thus classified as Asian.

When classifying Euro-American ceramics, they generally fall into coarse earthenware, stoneware, refined earthenware, and porcelain. The earthenware were all manufactured in Europe, Great Britain, or American so their “origin” (manufacturing location) is listed as “Euro-American” in the table. Coarse earthenwares are fired at temperatures of 900-1200º C and are soft, porous, and less compact than refined earthenware. Stoneware are made of a coarser paste than refined earthenware or porcelain, are fired at a high temperature (1200-1350º C), and are non-vitreous and non-porous. Whiteware (refined earthenware) is made of a porous, compact material fired at 1100-1200º C. Porcelains are very hard, compact, and vitreous and fired at temperatures of 1300-1450º C (Florida Museum of Natural History 2016).

Of the Euro-American ceramics in this collection, one is whiteware (refined earthenware) flatware fragments (Acc. # 41) and two are whiteware hollowware fragments (Acc. #s 52 and 54). Whiteware is generally made after 1820 and is still made today (Lebo 1997: Appendix G: 5–6). Two of the fragments have decoration, both have blue transfer print (1784-1859) (Maryland Archaeological Conservation Lab 2012). The remaining fragment is undecorated and only has a transparent glaze. One fragment can be identified as ironstone (Acc. # 54). Ironstone (whiteware) is a type of semi-vitreous refined earthenware introduced in 1840. These wares are sometimes molded but have little other decoration (Lebo 1997: Appendix G:5).

Six Euro-American stoneware bottles were also collected from the project area. Of the stoneware bottles collected, five are British two-tone ale bottles and one is a German “Westerwald” jug. British stoneware bottles were first manufactured in Glasgow and Liverpool in Great Britain beginning in the early nineteenth century. These bottles often have a Bristol body with an orange tinted or “Ferro-Bristol” glaze on the shoulder, neck, and lip. Of the bottles three have the maker’s mark of H. Kennedy of Barrowfield Pottery (Acc. #s 6, 40, and 45). The pottery, headquartered

in Glasgow, was in operation from 1866–1929. One bottle has a remnant of a metal foil with the name “Wheel Brand” and the illustration of a wagon wheel. No information could be found about this brand. The remaining stoneware ale bottle does not have any markings.

Acc # 16 is a stoneware “Westerwald” jug. These bottles, manufactured in the lower Westerwald region of Germany, were cylindrical, salt glazed, stoneware bottles used to export mineral water, and were later shipped to northern Europe to be filled with gin (Leavitt 2013). The bottles came in a variety of shapes that evolved throughout time, however, the most common shape was a tall, cylindrical bottle with a loop handle on the shoulder and a short neck. These bottles held approximately 1 liter of liquid. The main purpose of these bottles was to export mineral water from the Westerwald region of Germany. However, many of them got sent to Holland to be filled with Dutch gin for export purpose (Leavitt 2013). The sturdiness of the bottles made them ideal for shipping both water and gin overseas. The bottles were manufactured as early as the early to mid-nineteenth century and continued to be made in the traditional, hand-thrown, salt glazed style until World War I (Leavitt 2013).

Acc. # 19 is a Chinese teapot or jar with a blue hand-painted fishing hut or dock motif. Although the immigration of Chinese to work on the Hawaiian sugar plantations took place between 1852 and 1892 (Nordyke and Lee 1998:196, 198, 204), several Chinese entrepreneurs had established themselves in the Islands before 1852. In a study on three early Chinese stores in Hawai‘i, Char (1974:31) stated that: “Missionary and merchant families of the white population took to China goods, as did the New Englanders at home in America.” The earliest recorded Chinese storefront in Honolulu is mentioned in the 1830s as Samsung & Company.

Acc. # 18 is a porcelain bowl base with wintergreen or celadon glaze. Wintergreen or Celadon glaze is a light blue to bluish green glaze, usually on the interior and exterior of the vessel. It has been noted in collections containing both Chinese and Japanese ceramics. Some sources say it was a Chinese invention adopted by the Japanese in the seventh century (Lister and Lister 1989:50; Ross 2012:19), others say it was of Japanese origin adopted by the Chinese (Sando and Felton 2013; Stenger 1986; Wegars 1988:159). Certain techniques can be definitely linked to Japanese celadon, such as polychrome hand-painted over glaze on celadon and the Japanese technique of *kasuri-mon* (incising the exterior of the vessel before glazing) (Ross 2012). However, the vessel fragments recovered from this project area had neither and can thus only be classified as “Asian” until further research can be done.

5.1.3 Other Historic Artifact

Four miscellaneous historic artifacts were recovered from the project area including a brick fragment (Acc. # 17), two corroded square nails (Acc. # 21), a fragment of slate roofing tile (Acc. # 22), and a brass plate for a door latch (Acc. # 53). Because of the nature of these artifacts and lack of diagnostic information, little can be said about them.

5.1.4 Historic Artifact Summary

The artifacts from this collection consist of mainly glass bottles and ceramics. Of the bottles in the collection that could be identified, all but one were mold-blown. The most common mold in the collection is a turn mold, which dates from 1870-1920. When looking at the finish types in the collection, the artifacts exhibit a fairly equal amount of applied (1800-1885) and tooled (1870-

1920) finishes. There are two mold-blown bottles that can be further dated to specific date ranges (Acc. # 2, 1866-1917 and Acc. # 38, 1875-1920) and one that can be dated to a specific year (Acc. # 47, 1892). The ceramic artifacts consist of six stoneware bottles and six tableware fragments. The bottles include British ale bottles (1850-1920s) and one German bottle (1850-1914).

The collection, representing refuse from multiple domestic households, dates to approximately 1850 through the early twentieth century.

Section 6 Historic Property Description

One historic property was newly identified during the Nohona Hale AIS (Figure 92). SIHP # 50-80-14-7942 consists of an historic burnt trash fill (Feature 1) and historic structural remains (Feature 2).

FORMAL TYPE:	Burnt historic debris/structural remains
FUNCTION:	Refuse disposal, fill material (Feature 1); structural remains (Feature 2)
# OF FEATURES:	2
AGE:	Historic (1860s to 1950s)
DIMENSIONS:	Undetermined
LOCATION:	Located sporadically throughout the project area
TAX MAP KEY:	TMK: [1] 2-1-051:014
LAND JURISDICTION:	Hawaii Community Development Authority

SIHP # -7942 consists of two historic cultural deposits: a burnt trash deposit, designated Feature 1, and structural remnants, designated Feature 2. Feature 1 was identified as Stratum IV in T-1 and Stratum II in T-2. Feature 2 consists of four structural remnants (Features 2a–2d) identified in T-1 and T-3.

Feature 1

Feature 1 is the burnt trash deposit mixed with a greasy black clay (Figure 93–Figure 95). The deposit is 20 to 65 cm thick in T-1 and appears only as a 5 to 10 cm lens in the northwest end of T-2—the trench section closest to T-1. Both the historic artifact concentration and the thickness of the layer varied throughout the project area, with the deepest deposit observed in the western or *makai* portion. The historic deposit underlay varying layers of modern and historic fill and was situated on top of natural wetland sediments in T-1 or calcareous sand deposit in T-2.

Abundant domestic artifacts were observed within the site deposit, including large quantities of glass bottles, ceramics, metal, and cut faunal bone within a sediment matrix of very black clay. Historic glass and ceramic bottles collected from Feature 1 are associated with the mid-late 1800 and early 1900 period.

Feature 1 consists of trash remains likely burned in open areas during the nineteenth and early twentieth centuries. The subsurface burnt trash layer was then deposited in the project area in the early twentieth century when low-lying areas in Kewalo ‘Ili were infilled to advance urban development. Historic structures appear on a 1914 Sanborn fire insurance map, suggesting the project area was filled prior to this year (see Figure 33).

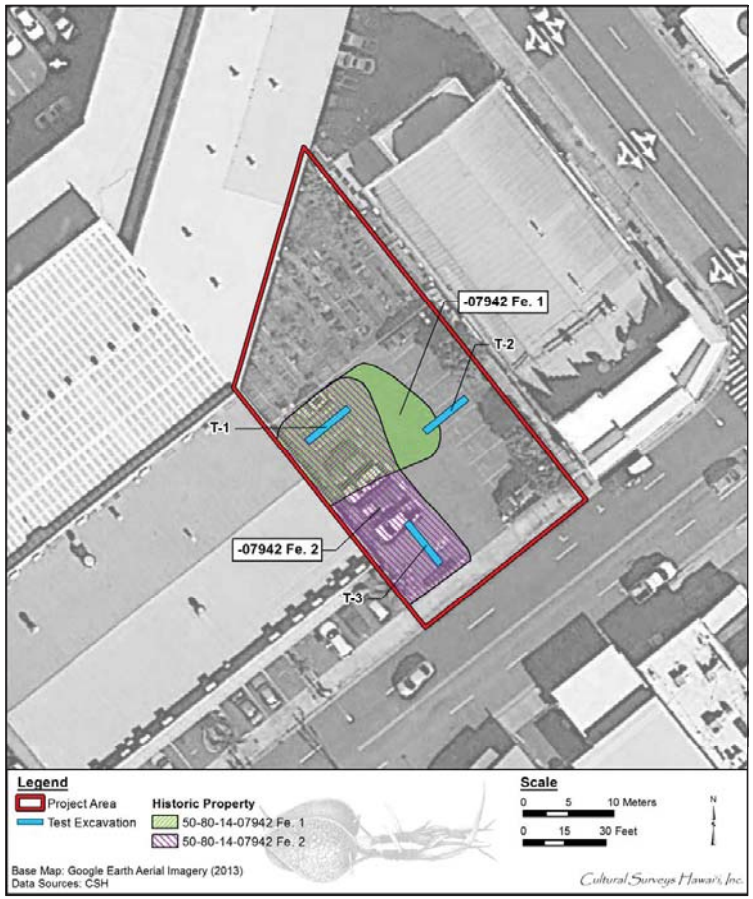


Figure 92. Aerial photograph showing the possible extent of SIHP # 50-80-14-7942, Feature 1 and 2 in project area

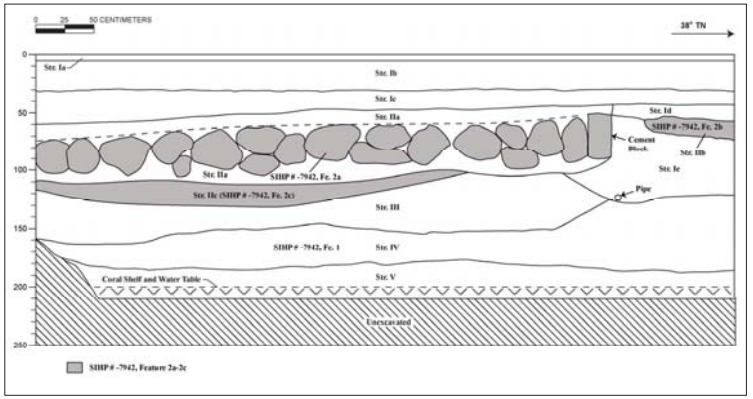


Figure 93. Illustrated stratigraphic profile of Trench 1 showing SIHP #-7942; northwest wall

Figure 94. Photograph of T-1 northwest wall showing SIHP # 50-80-14-7942, Feature 2a (boulder concentration) and Feature 2b (decomposing red brick) and dark clay matrix of historic trash layer (Feature 1) near base of Trench 1 excavation

Figure 95. Photograph of Trench 1 backfill showing dark matrix of SIHP # 50-80-14-7942 trash layer (Stratum IV) bonded with gleyed wetland sediments

Feature 2

Feature 2 consists of four structural component remnants identified in the southwest portion of the project area (T-1 and T-3). The feature contains possible foundations and a footing (Feature 2a, 2c and 2d) and a possible floor (Feature 2b) associated with residential and commercial infrastructure built in the project area during the early twentieth century.

Feature 2a includes an alignment of concrete blocks in Stratum IIa that runs parallel with T-1's northwest wall (see Figure 93, Figure 96 and Figure 97). The alignment was identified between 50 and 100 cmbs and extended 25 cm into T-1 from its northwest wall. A boulder concentration was observed behind the concrete block alignment in the northwest wall. The feature in plan is 4 m long and the individual blocks are 30 cm square in profile. One of the blocks was exposed in the northwest wall of T-1, marking the feature's end point 1.0 m from the northeast end of T-1. Feature 1 likely represents a remnant foundation of an historic building. Fire insurance maps (Sanborn 1914, 1927, and 1950) indicate the presence of a warehouse in the vicinity of T-1 (see Figure 33–Figure 35).

Feature 2b is a 15-cm thick stratigraphic layer (Stratum IIb) confined to the northeast end of T-1 and observable in the adjoining northwest and northeast walls of the trench (see Figure 93 and Figure 98). The layer consists of two silt layers possibly representing decomposed rock (yellowish brown silt) overlying decomposed coral (white silt). According to the 1927 Sanborn fire insurance map, the southwest edge of Feature 2b is aligned along a dashed line defining two internal spaces inside the former warehouse (see Figure 34). The space northeast of Feature 2 is labeled an "Oil Stage."

Figure 96. Plan view photograph showing SIHP # -7942, Feature 2a concrete block alignment exposed at 60 cmbs in southwest half of T-1

Figure 97. SIHP # -7942, Feature 2a cement block shown in profile of T-1 northwest wall

Figure 98. Photograph of SIHP # -7942, Feature 2b, possible floor feature of decomposed rock and coral (Stratum IIb) in northeast corner of T-1

Feature 2c is a 10–30 cm thick dark red sand layer located in T-1 immediately below Feature 2a (Figure 99). The red sand represents decomposed brick and is interpreted as a possible structure foundation or floor either pre-dating or associated with Feature 2a. The northeast end of Feature 2c shown in the northwest wall profile terminates around the same vertical location as Feature 2a.

Feature 2d consists of two stacked concrete rectangular blocks in the southeast end of T-3 (Figure 100–Figure 102). The blocks protruded into the test excavation from the northeast wall between 65 to 100 cmbs. The larger of the blocks lay at the base of Stratum If and measured roughly 40 cm square. A 10-cm thick concrete block was stacked on top of the larger block. Fire insurance maps (Sanborn 1914, 1927, and 1950) indicate the T-1 excavation was aligned with the northeast perimeter of a dwelling or house structure located along Cooke Street (see Figure 33–Figure 35). The house structure was one of three adjacent cottages constructed in the project area in 1914. The 1950 fire insurance map (Sanborn 1950) indicates the house structure remained at its original 1914 location (with some modification) into the mid-twentieth century. The single stack of concrete blocks might have served as a footing for a "post and pier" style of house construction in which the first floor of the house was elevated above grade.

SIHP # -7942 is assessed for significance and integrity according to Hawai'i state historic property significance criteria (see Section 10). SIHP # -7942 is assessed as significant under "d" (has yielded, or may be likely to yield information important in prehistory or history) pursuant to HAR §13-284-6. This historic property has the potential to provide data related to historic trash disposal and early 20th century in-filling of the Kewalo marshlands (Feature 1) and to provide additional information on pre- and post-Contact residential living spaces and commercial infrastructure within Kaka'ako (Feature 2).

Figure 99. Photograph of SIHP # -7942, Feature 2c, possible remnant brick foundation or floor

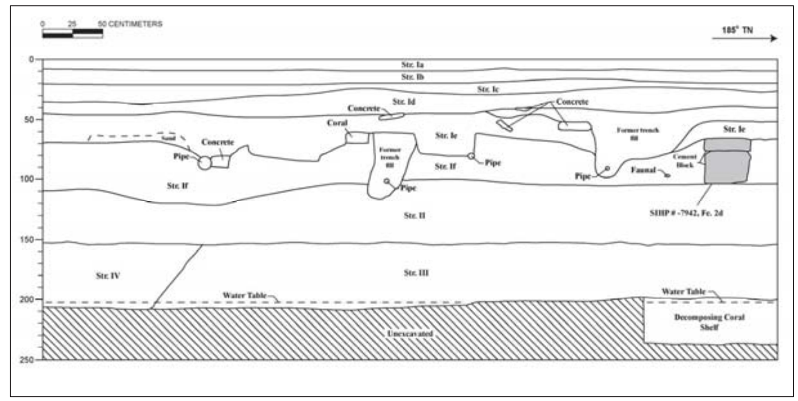


Figure 100. Stratigraphic profile of T-3 showing location of SIHP # -7942, Feature 2d; northeast wall

Figure 101. Photograph of SIHP # -7942, Feature 2d concrete blocks in southeast corner of T-3; plan view

Figure 102. Photograph of SIHP # -7942, Feature 2d, concrete blocks shown in profile in northeast wall of T-3

Section 7 Summary and Interpretation

The fieldwork component of this project was conducted on 4 April and 5 April 2016 by Megan Hawkins, M.A., Michelle Pammer, B.A., Jennifer Robins, B.A., and Karl Van Ryzin, B.A., under the general supervision of Hallett H. Hammatt, Ph.D., Principal Investigator. Fieldwork consisted of an initial 100% coverage pedestrian survey followed by a subsurface testing program. The pedestrian survey concluded that no surface historic properties were present and that the entire surface of the project area had previously been modified as a result of development of commercial buildings. As there were no surface historic properties, the archaeological inventory survey focused on the program of subsurface testing to locate any buried cultural deposits and to facilitate a thorough examination of stratigraphy within the project area.

A total of three backhoe-assisted test excavations were completed in the open parking lot comprising the majority of the project area. The test excavations measured 6.0 m (20 ft) long by 0.7 m (2.3 ft) wide and terminated at the water table or coral shelf, depending on which was encountered first.

In general, the stratigraphic sequence within the Nohona Hale project area from the present asphalt parking lot to the coral shelf includes the current developed land surface overlying buried historic structure remnants (SIHP # -7942, Feature 2), various layers of imported fill and burnt trash reclamation fill (SIHP # -7942, Feature 1), overlying natural Jaucas (calcareous) sand or wetland sediments.

The reclamation fill (SIHP # -7942, Feature 1) consists of burnt trash deposits introduced to the project area during the Kewalo Reclamation Project undertaken from 1910–1914. Historical records indicate the project area was located in the portion of land northwest of Ward Avenue that was filled during this time (see Figure 12). The burnt trash layer contained abundant late nineteenth to early twentieth century artifacts including glass and ceramic bottles, ceramics, metal fragments, and cut cow and pig bone. Based on the artifact assemblage, it is believed that the trash layer comprises trash derived from municipal collection of domestic refuse and from industrial waste.

Buried structural remains (SIHP # -7942, Feature 2), including possible foundations (Features 2a, 2c, and 2d) and a possible floor (Feature 2b) were distributed in the project area. These building remnants are associated with residential and commercial infrastructure built in the project after the Kewalo Reclamation Project from 1910–1914.

Two possible environmental features were documented below the fill layers that might represent a natural pond feature in the center of the project area and an elevated sand berm on the east and southeast side of the pond (Figure 103). Historical maps confirm the project area was once within a marshland (see Figure 13) and that several pond-like features existed in the mid-1800s northwest and southwest of the project (see Figure 11). This historical data in combination with the testing results strongly suggest wetlands extended into the northwest portion of the project as shown on Figure 103. The sand berm in the southeastern corner of the project area probably represents an elevated landform within the former marshland.

Figure 103. Environmental features (probable pond and sand berm) identified in the project area; suggested extent of pond feature based on testing results and historical documentation of ponds in surrounding property

Section 8 Significance Assessments

Historic property significance is evaluated and assessed based on the five State of Hawai‘i historic property significance criteria. To be considered significant, a historic property must possess integrity of location, design, setting, materials, workmanship, feeling, and/or association and meet one or more of the following broad cultural/historic significance criteria (in accordance with HAR §13-13-284-6):

a. Be associated with events that have made an important contribution to the broad patterns of our history;

b. Be associated with the lives of persons important in our past;

c. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;

d. Have yielded, or is likely to yield, information important for research on prehistory or history; or

e. Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity.

CSH recommends that the historic property in the project area (SIHP # -7942) maintains the integrity to support their historic significance only under Criterion d (has yielded, or may be likely to yield information important in prehistory or history).

SIHP # 50-80-14-7942, Feature 1 is a subsurface layer of burnt historic debris, used to fill the unwanted wetlands of Kewalo both to remove pest habitation/breeding areas and create additional developmental areas. SIHP # 50-80-14-7942, Feature 2 consists of buried structural remains associated with early and mid-twentieth century housing and commercial enterprises within the project area.

SIHP # -7942 is assessed as significant under Criterion d for having yielded, or being likely to yield, information important in prehistory or history. Feature 1 has the potential to provide data related to historic trash disposal and subsequent in-filling of the Kewalo marshlands. Feature 2 has the potential to offer insight into building episodes and architectural characteristics of this initial period of residential and commercial development in the Kaka‘ako area.

Section 9 Project Effect and Mitigation Recommendations

The following project effect discussion and mitigation recommendations are intended to facilitate project planning and support the proposed project's required historic preservation consultation.

9.1 Project Effect

Results of the current AIS investigation indicate the proposed Nohona Hale project contains one historic property (SIHP # -7942). In order to mitigate potential adverse impacts to any archaeological cultural resources within the project area, it is recommended that project construction proceed under appropriate mitigation measures.

Under Hawai‘i State historic preservation review legislation, the project's effect recommendation is "effect, with proposed mitigation commitments." The recommended mitigation measures for this AIS will reduce the project's effect on the identified archaeological cultural resources.

9.2 Mitigation Recommendations

This inventory survey investigation determined the project area contains significant subsurface deposits and historic structural remains. Due to the inherent limitations of any sampling strategy, however, it is possible additional historic properties or features, potentially including human burials and non-burial archaeological deposits, may be uncovered during construction activities. The inventory survey's recommended mitigation measures for SIHP # -7942 is archaeological monitoring.

Section 10 References Cited

Andrews, Lorrin
2003 *A Dictionary of the Hawaiian Language*. Island Heritage, Waipahu, Hawai‘i.

Angell, Lowell
2011 *Theatres of Hawai‘i*. Arcadia Publishing, Charleston, South Carolina.

Anonymous
1834 "Town of Honolulu: Island of Woahoo: Sandwich Islands" [sketch]. Original at Bernice Pauahi Bishop Museum Archives. Reprinted in *Hawai‘i Looking Back. An Illustrated History of the Islands*, by Glen Grant, 2000, pp. 64-65. Mutual Publishing, Honolulu.

Armstrong, R.W.
1983 *Atlas of Hawaii*. Second edition. University of Hawaii, Honolulu.

Beckwith, Martha
1940 *Hawaiian Mythology*. Yale University Press, New Haven, Connecticut.

Bingham, Hiram
1847 *A Residence of Twenty-One Years in the Sandwich Islands*. Convers, New York.

Bishop, S.E.
1884 Honolulu, Kewalo Section. Map by S.E. Bishop, Registered Map 1090. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

BLM/SHA (Bureau of Land Management/Society for Historical Archaeology)
2015 Historic Glass Bottle Identification & Information Website. Electronic document, www.sha.org/bottle/index.htm.

Boelen, Jacobus
1988 *A Merchant's Perspective: Captain Jacobus Boelen's Narrative of his Visit to Hawai‘i in 1828.* Hawaiian Historical Society, Honolulu.

Char, Wai-Jane
1974 Three Chinese Stores in Early Honolulu. *The Hawaiian Journal of History*, vol. VIII, Hawaiian Historical Society, Honolulu.

Cook, James P.
1784 *A Voyage to the Pacific Ocean 1776, 1777, 1779, and 1780*. Vol. 2 and 3. G. Nichol and T. Cadell, London.

Corney, Peter
1896 *Voyages in the Northern Pacific. Narrative of Several Trading Voyages From 1813 1818, Between the Northwest Coast of America, the Hawaiian Islands and China, with a Description of the Russian Establishments on the Northwest Coast.* Thos. G. Thrum, Honolulu.

Dagher, Cathleen and Robert Spear
2013 *A Burial Site Component of a Data Recovery Plan for State Site 50-80-14-7260 Kaka‘ako Area, Honolulu Ahupua‘a, Honolulu District (Kona), O‘ahu Island, Hawai‘i (TMK [1] 2-1-050:004).* Scientific Consultant Services, Inc., Honolulu.

Davis, Bertell D.
1989 *Subsurface Archeological Reconnaissance Survey and Historical Research at Fort DeRussy, Waikiki, Island of O‘ahu, Hawai‘i.* International Archaeological Research Institute, Inc., Honolulu.

Douglas, Michele Toomay
1991a Report on a Single Human Skeleton Recovered from Mother Waldron Park, Kaka‘ako, O‘ahu, Hawai‘i, Honolulu, Hawai‘i. Appendix A: *An Archaeological Monitoring Report for Kaka‘ako Improvement District 3 Pohulani Elderly Rental Housing and Kauhale Kaka‘ako, Honolulu, O‘ahu, Hawai‘i (TMK 2-1-30, 31, 32, 44, 46, 47, 48, 50, 51, 52, 54),* by John Winieski and Hallett H. Hammatt. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

1991b *Report on Six Human Skeletons from Coral Street and Queen Street, Kaka‘ako, O‘ahu, Honolulu.* Manuscript on file at Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.

1991c *Human Skeletal Remains from the Honolulu Ironworks.* University of Hawai‘i at Mānoa, Honolulu.

Dye, Bob (Editor)
1998 *Hawaii Chronicles II: Contemporary Island History From the Pages of Honolulu Magazine.* University of Hawai‘i Press, Honolulu.

Dye, Tom and J. Stephen Athens
2000 Part A: Introduction. In *Ancient Hawaiian Fishponds of Pearl Harbor: Archaeological Studies on U.S. Navy Lands, Hawai‘i,* edited by J. Stephen Athens. International Archaeological Research Institute, Inc., Honolulu.

Elliott, Rex R. and Stephen C. Gould
1988 *Hawaiian Bottles of Long Ago*. Revised edition. Hawaiian Service, Inc., Honolulu.

Emmert, Paul
1853 View of Honolulu from Catholic Church No. 2. [Sketch, central panel]. Hawaiian Historical Society, Honolulu.

Felton, David L., Frank Lortie, and Peter D. Schulz
1987 The Chinese Laundry on Second Street: Paper on Archaeology at the Woodland Opera House. *California Archaeological Reports* No. 24, September.

Fike, R.E.
1987 *The Bottle Book: A Comprehensive Guide to Historic, Embossed Medicine Bottles.* Peregrine Smith Books, Salt Land, Idaho.

Fitzpatrick, Gary
1986 *The Early Mapping of Hawai‘i.* Editions Limited, Honolulu.

Fletcher, Charles H. III and Anthony T. Jones
1996 Sea-level highstand recorded in Holocene shoreline deposits on O‘ahu, Hawaii. *Journal of Sedimentary Research* 66(3):632–641.

Florida Museum of Natural History
2016 *Historical Archaeology Digital Type Collections (historic ceramics).* Electronic document, www.flmnh.ufl.edu/histarch.

Foote, Donald E., Elmer L. Hill, Sakuichi Nakamura, and Floyd Stephens
1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.* U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawai‘i Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

Gilman, Gorman D.
1903 Streets of Honolulu in the Early Forties. Thomas G. Thrum, editor. *Hawaiian Almanac and Annual for 1904*. Thos. G. Thrum, Honolulu.

Godden, Geoffrey A.
1964 *Encyclopaedia of British Pottery and Porcelain Marks.* Herbert Jenkins, London.

Google Earth
2013 Aerial image. Electronic document, http://www.google.com (accessed November 2014).

Grant, Glen
2000 *Hawai‘i Looking Back: An Illustrated History of the Islands.* With Bennett Hymer and the Bishop Museum Archives. Mutual Publishing, Honolulu.

Griffin, P. Bion, D.T.P. Keene, and Joseph Kennedy
1987 *Kaka‘ako: Prediction of Sub-Surface Archaeological Resources, Kaka‘ako Community Development District, Archaeological Reconnaissance Survey.* University of Hawai‘i at Mānoa, Honolulu.

Grossman, E.E. and C.H. Fletcher
1998 Sea level higher than present 3500 years ago on the northern main Hawaiian Islands. *Geology* 26(4):363–366.

Grossman, E.E., C.H. Fletcher, and B.M. Richmond
1998 The Holocene sea-level highstand in the equatorial Pacific: analysis of the insular paleosea-level database. *Coral Reefs* 17: 309–327.

Hammatt, Hallett H.
2013 *Archaeological Inventory Survey Report for City Center (Section 4) of the Honolulu High-Capacity Transit Corridor Project, Kalihi, Kapālama, Honolulu, and Waikīkī Ahupua‘a, Honolulu (Kona) District, Island of O‘ahu TMK [1] 1-2, 1-5, 1-7, 2-1, 2-3.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Handy, E.S. Craighill and Elizabeth G. Handy
1972 *Native Planters in Old Hawaii: Their Life, Lore, and Environment.* Bishop Museum Bulletin 23. Bernice Pauahi Bishop Museum, Honolulu.

Harney, J.N., E.E. Grossman, B.M. Richmond, and C.H. Fletcher III.
2000 Age and composition of carbonate shoreface sediments, Kailua Bay, Hawaii. *Coral Reefs* 19:141–154.

Hawaii Department of Public Works
1904 *Annual Report of the Superintendent of Public Works to the Governor of the territory of Hawaii*. Bulletin Publishing Company, Honolulu.

1914 *Annual Report of the Superintendent of Public Works to the Governor of the territory of Hawaii*. Bulletin Publishing Company, Honolulu.

Hawaii Governor
1922 *Report of the Governor of the Territory of Hawaii to the Secretary of the Interior*. Government Printing Office, Washington, D.C.

1930 *Annual Report of the Governor of the Territory of Hawaii to the Secretary of the Interior*. Government Printing Office, Washington, D.C.

Hawaii Legislature
1901 *First Legislative Assembly of the Territory of Hawaii, 1901, Extra Session.* Grieve Publishing Company, Honolulu.

Hawaii Reports
1915 *Cases Decided in the Supreme Court of the Territory of Hawaii*. Honolulu Star-Bulletin, Honolulu.

Hawai‘i TMK Service
2014 Tax Map Key [1] 2-1-51. Hawai‘i TMK Service, Honolulu.

Hawaiian Gazette
1897 Article. *Hawaiian Gazette* 29 January.

Hazlett, Alexander, Mary Carney, and Hallett H. Hammatt
2008 *Archaeological Monitoring Report for the Honolulu Design Center Phase III Project, Waikiki Ahupua‘a, ‘Ili of Kewalo, Honolulu (Kona) District, O‘ahu Island TMK: [1] 2-3-010:048, 050, 052, 053, 054, 055, 056.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Honolulu Advertiser
1928 *Honolulu Advertiser*, 17 October:2, 16.

Hustace, Frank Ward, III
2000 *Victoria Ward and Her Family: Memories of Old Plantation*. Victoria Ward, Ltd., Honolulu.

‘Ī‘ī John Papa
1959 *Fragments of Hawaiian History as Recorded by John Papa ‘I‘i*. Bishop Museum Press, Honolulu.

Kamakau, Samuel M.
1961 *Ruling Chiefs of Hawaii.* Kamehameha Schools Press, Honolulu.

1964 *Ka Po‘e Kahiko: The People of Old*. Translated from the newspaper *Ke Au ‘Oko‘a* by Mary Kawena Pukui; arranged and edited by Dorothy B. Barrere. Bishop Museum Special Publication 51. Bernice Pauahi Bishop Museum, Honolulu.

1991 *Tales and Traditions of the People of Old: Nā Mo‘olelo a ka Po‘e Kahiko.* Bishop Museum Press, Honolulu.

Kame‘eleihiwa, Lilikala
1992 *Native Land and Foreign Desires. Pehea La E Pono Ai?* Bishop Museum Press, Honolulu.

Kawachi, Carol T.
1991 *Queen Emmalani Tower Project Monitoring, Kaka‘ako, Kona, O‘ahu, TMK [1] 2-1-48: 8-19.* State Historic Preservation Division, Kapolei, Hawai‘i.

Kotzebue, Otto V.
1817 South O‘ahu. Map by Otto von Kotzebue. In *The Early Mapping of Hawai‘i*, by Gary L. Fitzpatrick 1986, pp. 48–49. Editions Limited, Honolulu.

1821 *A Voyage of Discovery, into the South Sea and Bering Straits, for the Purpose of Exploring a North-east Passage Undertaken in the Years 1815-1818.* Longman, Hurst, Rees, Orme, and Brown, London.

Kovel, Ralph and Terry Kovel
1986 *Kovels’ New Dictionary of Marks: Pottery & Porcelain 1850 to the Present*. Crown Publishers, Inc., New York.

LaPasse, Lt. Joseph de
1855 Plan du Mouillage [Anchorages] d’Honolulu. Map by Lt. Joseph de LaPasse. In *The Early Mapping of Hawai‘i* by Gary L. Fitzpatrick, 1986, pp. 82–83. Editions Limited, Honolulu.

Larrison, G.
1917 Honolulu’s Future Water Supply. In *Hawaiian Almanac and Annual for 1917*. Thomas G. Thrum, Honolulu.

Leavitt, Robert C.
2013 The Westerwald Jugs. In *Ceramic Identification in Historical Archaeology: The View from California, 1822-1940.* Rebecca Allen, Julia E. Huddleson, Kimberly J. Wooten, and Glenn J. Farris, editors. Special publication series No. Society for Historic Archaeology.

Lebo, Susan A.
1997 *Native Hawaiian and Euro-American Culture Change in Early Honolulu, Archaeological Data Recovery, Harbor Court Property, Site No. 50-80-14-2456, Honolulu, Hawai‘i.* With contributions by P. Christiaan Klieger, Stephan D. Clark, Leslie L. Hartzell, Heidi A. Lennstrom, Boyd Dixon, Mary F. Riford, and Tracy Tam Sing. Anthropology Department, Bernice Pauahi Bishop Museum

Lehner, Lois
1988 *Lehner’s Encyclopedia of U.S. Marks on Pottery, Porcelain & Clay*. Collector Books, Paducah, Kentucky.

Lindsey, Bill
2014 Historic Glass Bottle Identification & Information Website. Accessed at http://www.sha.org/bottle.

Lister, Florence C. and Robert H. Lister
1989 *Chinese of Early Tucson Historic Archaeology from the Tucson Urban Renewal Project.* Anthropological Papers of the University of Arizona No. 52. University of Arizona Press, Tucson, Arizona.

Macdonald, Gordon A., Agatin T. Abbott, and Frank L. Peterson
1983 *Volcanoes in the Sea: The Geology of Hawaii.* University of Hawaii Press, Honolulu.

Malo, David
2006 *Ka Mo‘olelo Hawai‘i. Hawaiian Traditions.* Translated by Malcolm Nāea Chun. First People’s Productions, Honolulu.

Maryland Archaeological Conservation Lab
2012 *Diagnostic Artifacts in Maryland.* Electronic document, http://www.jefpat.org/diagnostic/index.htm

Mason Architects, Inc.
2002 *Incinerator Number One (Old Kewalo Incinerator). HAER No. HI-64*. Historic American Buildings Survey (HAER), Pacific Great Bain System Support Office, National Park Service, Oakland, California.

McAllister, J. Gilbert
1933 *Archaeology of Oahu.* Bishop Museum Bulletin 104. Bishop Museum Press, Honolulu.

Millar, Jim
1988 *The Handbook of Hawaiian Machine Made Soda Bottles.* Soda Mart, Goodletsville, Tennessee.

Monsarrat, M.D.
1897 Honolulu, Hawaiian Islands, map by M.D. Monsarrat. Registered Map 1910. Hawai‘i Land Survey Division, Department of Accounting and General Services,

Munsey, Cecil
1970 *Illustrated guide to Collecting Bottles.* Hawthorn Books, Inc., New York.
2005 Paralysis in a Bottle (The Jake Walk Story). *Bottles and Extras*, Winter 2006. Electronic document: http://www.fohbc.org/PDF_Files/ JakeWalkStory_CMunsey .pdf.

Nakamura, Barry
1979 The Story of Waikiki and the Reclamation Project. M.A. thesis, University of Hawai‘i, Honolulu.

Nordyke, Eleanor C. and Richard K. C. Lee
1989 The Chinese in Hawai‘i: A Historical and Demographic Perspective. *Hawaiian Journal of History* 23:196–216.

Odyssey’s Virtual Museum
N.D. *Lea & Perrin's Worcestershire Sauce Bottle and Stopper*. Electronic document: http://odysseysvirtualmuseum.com/products/Lea-%26-Perrin%27s-Worcestershire-Sauce-Bottle-and-Stopper.html

O’Hare, Constance R., Todd Tulchin, Douglas Borthwick, and Hallett H. Hammatt
2009 *Inventory Survey Plan for Three Kamehameha Schools Kaka‘ako Mauka Parcels, Kaka‘ako, Honolulu District, O‘ahu Island, TMK: [1] 2-1-030:001; 2-1-054:025, 027, 028, 032*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

O’Hare, Constance R., Douglas F. Borthwick, and Hallett H. Hammatt
2012 *Draft Archaeological Literature Review and Predictive Model Development for the Ward Neighborhood Master Plan Project, Kaka‘ako, Honolulu Ahupua‘a, Honolulu District, O‘ahu Island TMK: [1] 2-1-049:063, 080; 2-1-050:001, 061, 062; 2-1-052:011, 012, 016, 017, 020, 022, 024, 027, 028, 031 to 036, 038, 039, 040, 042, 043, 045, 046, 051, 052, 053, 2-1-053:001, 030; 2-1-056:001; 2-3-001:001, 004, 005; 2-3-002:001, 002, 059, 067, 086, 087, 104; 2-3-003:022, 065, 093, 094; 2-3-005:004, 005, 006, 012 to 017, 019, 022*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Pammer, Michelle F., Jeffrey W.K. Fong, and Hallett H. Hammatt
2011 *Archaeological Inventory Survey Report for the Block 2 Parking Lot, Kaka‘ako Ahupua‘a, Honolulu District, O‘ahu Island TMK: [1] 2-1-030:001, 043*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Paradise of the Pacific
1950 Kakaako, A Growing Business District. *Paradise of the Pacific* November:21.

Perzinski, David, Todd Tulchin, and Hallett H. Hammatt
2005 *Archaeological Inventory Survey of a 2.7-Acre Parcel at the Intersection of Queen and South Streets, Honolulu, HI, (TMK 2-1-48:8).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Pfeffer, Michael, Douglas F. Borthwick, and Hallett H. Hammatt
1993 *An Archaeological Summary of the Kaka‘ako Improvement District 1 Monitoring, Kaka‘ako, O‘ahu, Hawai‘i (TMKs 2-1-29 to 2-1-32, 2-1-46 to 1-2-48, 2-1-51, 2-1-54, and 2-1-55), for Hawaii Community Development Authority*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Pietrusewsky, Michael, Michele T. Douglas, and Rona Ikehara
1989 *An Osteological Study of Human Remains Recovered from South Street and Quinn Lane, Kaka‘ako, O‘ahu, Hawai‘i.* University of Hawai‘i, Honolulu.

Pukui, Mary Kawena and Caroline Curtis
1988 *Tales of the Menehune.* Collected or suggested by Mary Kawena Pukui; retold by Caroline Curtis. Kamehameha Schools Press, Honolulu.

Pukui, Mary Kawena, E.W. Haertig, and Catherine A Lee
1972 *Nānā I Ke Kumu (Look to the Source).* Hui Hānai, Honolulu.

Pukui, Mary Kawena, Samuel H. Elbert, and Esther T. Mookini
1974 *Place Names of Hawaii*. University of Hawaii Press, Honolulu.

Ross, Douglas
2012 Late Nineteenth and Early Twentieth-Century Japanese Domestic Wares from British Columbia. In *Ceramics in America*, edited by Robert Hunter, pp. 2–29. Chipstone Foundation. Electronic document version, http://academia.edu/2450069/Late _Nineteenth-_and_Early_Twentieth-Century_Japanese_Domestic_Wares_from _British_Columbia.

Sanborn Fire Insurance Company
1914 Sanborn Fire Insurance Map for 1914. Sanborn Map Company, New York. Available at the Hamilton Library, University of Hawai‘i at Mānoa, Honolulu.

1927 Sanborn Fire Insurance Map for 1927. Sanborn Map Company, New York. Available at the Hamilton Library, University of Hawai‘i at Mānoa, Honolulu.

1950 Sanborn Fire Insurance Map for 1950. Sanborn Map Company, New York. Available at the Hamilton Library, University of Hawai‘i at Mānoa, Honolulu.

Sando, Ruth Ann and David L Felton
2013 Inventory Records of Ceramics and Opium from a Nineteenth-Century Chinese Store in California. In *Ceramic Identification: Historic Archaeology: The View from California, 1822-1940.* Society of Historical Archaeology, Special Publication Series. No. 11

Schilz, Allan J.
1990 *An Evaluation of the Archaeological Resources at the Proposed Site of Queen Emmalani Tower, Kaka‘ako, Honolulu, Hawai‘i, TMK [1] 2-1-48:8-19.* Environmental and Energy Services, Honolulu.

Shurtleff, William and Akiko Aoyagi
2012 *History of Worcestershire Sauce (1837-2012): Extensively Annotated Bibliography and Sourcebook.* Soyinfo Center.

Stearns, H.T.
1978 *Quaternary Shorelines in the Hawaiian Islands*. Bishop Museum Bulletin 237. Bishop Museum Press, Honolulu.

Stenger, A.
1986 Japanese ceramics from Chinese ‘sojourner’ sites. Unpublished paper presented at the 19th Annual Meeting of the Society for Historical Archaeology, Sacramento, California, 8–12 January 1986.

Sterling, Elspeth and Catherine C. Summers
1978 *Sites of Oahu*. Departments of Anthropology and Education, Bernice Pauahi Bishop Museum, Honolulu.

Stewart, C.S.
1970 *Journal of a Residence in the Sandwich Islands, During the Years 1823, 1824, and 1825.* University of Hawaii Press for the Friends of the Library of Hawai‘i, Honolulu.

Thrum, Thomas G.
1884 Retrospect of the Year 1883. *Hawaiian Almanac and Annual for 1884*. Thomas G. Thrum, Honolulu.

1906 Retrospect for 1905. *Hawaiian Almanac and Annual for 1906*. Thomas G. Thrum, Honolulu.

1907 Retrospect for 1906. *Hawaiian Almanac and Annual for 1907*. Thomas G. Thrum, Honolulu.

1916 Retrospect for 1915. *Hawaiian Almanac and Annual for 1916*. Thos. G. Thrum, Honolulu.

1920 Retrospect for 1919. *Hawaiian Almanac and Annual for 1920*. Thomas G. Thrum, Honolulu.

1924 Hawaiian Salt Making. *Hawaiian Almanac and Annual for 1924*. Thomas G. Thrum, Honolulu.

1998 *Hawaiian Folk Tales: A Collection of Native Legends.* Compiled by Thomas G. Thrum. Mutual Publishing, Honolulu.

Toulouse, Julian Harrison
1971 *Bottle Makers and their Marks*. Thomas Nelson, Inc., Nashville and New York.

Tulchin, Jon, Douglas Borthwick, and Hallett H. Hammatt
2009 *Ground Penetrating Radar Survey for the Kaka‘ako Phase Ib South St Parking Lot, Kaka‘ako, Honolulu District, O‘ahu Island, TMK: [1] 2-1-030:001.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Tulchin, Todd, Kendy Altizer, Douglas Borthwick, and Hallett H. Hammatt
2009 *Final Archaeological Assessment of the Proposed Halekauwila Place Project, Kaka‘ako, Honolulu District, O‘ahu Island, TMK: [1] 2-1-051:009 por.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

UH SOEST
1927 UH SOEST Aerial Photograph, Kaka‘ako Coast. University of Hawai‘i at Mānoa School of Ocean and Earth Science and Technology–Coastal Geology Group. Online at http://soest.hawaii.edu/coastal/webftp/Oahu/mosaics/.

U.S. Army Air Corps
1939–1941 High-altitude aerial photographic series for O‘ahu, 1939–1941, M [Mission] 56.57 and M. 56.59. Aerial Photographs, File PPA 44 1.001 and 1.006, Copies available at the Hawai‘i State Archives, Honolulu.

U.S. Army War Department
1919 U.S. War Department Fire Control map, Honolulu Quadrangle. USGS Information Services, Denver, Colorado.

1933 U.S. War Department Fire Control map, Honolulu Quadrangle. USGS Information Services, Denver, Colorado.

U.S. Department of Agriculture
2001 Soil Survey Geographic (SSURGO) database. U.S. Department of Agriculture, Natural Resources Conservation Service. Fort Worth, Texas. http://www.ncgc.nrcs.usda.gov/products/datasets/ssurgo/ (accessed March 2005).

U.S. Department of the Interior
1920 *Reports of the Department of the Interior for the Fiscal Year Ended June 30 1920.* Government Printing Office, Washington D. C.

USGS (U.S. Geological Survey)
1953 Honolulu USGS 7.5-minute topographic quadrangle. USGS Information Services, Denver, Colorado.

1998 Honolulu USGS 7.5-minute topographic quadrangle. USGS Information Services, Denver, Colorado.

Waihona ‘Aina
2000 *The Māhele Database.* Electronic document, http://waihona.com

Wall, W.A.
1893 Map of Honolulu and Vicinity, by W. A. Wall, Surveyor. Registered Map No. 1690. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Wegars, Patricia
1988 *The Asian Comparative Collection.* Australian Historical Archaeology

Welker, John and Elizabeth Welker
1985 *Pressed Glass in America: Encyclopedia of the First Hundred Years, 1825-1925.* Antique Acres Press, Ivyland, Pennsylvania.

Westervelt, W.D.
1991 *Hawaiian Legends of Old Honolulu.* Collected and translated from the Hawaiian by W.D. Westervelt. Charles E. Tuttle Company, Rutland, Vermont.

Whitten, David
2009 *Glass Factory Marks on Bottles.* Electronic document, http://www.myinsulators.om/glass-factories/bottlemarks.html

Wilson Okamoto & Associates, Inc.
1998 *Final Environmental Impact Statement for the Block J Redevelopment Project Honolulu, O‘ahu, Hawai‘i.* Prepared for City and County of Honolulu Department of Community Services, Honolulu.

Winieski, John P. and Hallett H. Hammatt
2000 *An Archaeological Monitoring Report for Kākā‘āko Improvement District 3 Pohulani Elderly Rental Housing and Kauhale Kākā‘āko, Honolulu, O‘ahu, Hawai‘i (TMK 2-1-30, 31, 32, 44, 46, 47, 48, 50, 51, 52, 54).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Young, Robert
2005 Garbage in Paradise: A History of Honolulu’s Refuse Division. Unpaginated and unpublished report. City and County of Honolulu‘u Department of Environmental Services, Division of Refuse Collection and Disposal.

Zumwalt, Betty
1980 *Ketchup, Pickles and Sauces. 19th Century Food in Glass*. Mark West Publishers, Fulton, California.

Appendix A LCA 10605 Documents

No. 10605*O, Iona Piikoi, Honolulu, February 10, 1848

N.R. 563v4

Greetings to you the Land Commissioners: We hereby enter our claims for land, being the lands which passed to us by the division of lands of the Mo`i. Here are Iona Piikoi's:

1. Paa, with its lihis and its leles, Ahupua`a at Kona, Kauai
2. 2. Pualoalo and its lihi and leles, `ili at Honolulu, Oahu.
3. 3. Kaluaoopu, with its lihis and its leles, `ili at Waiawa, Ewa.
4. 4. Mikiola, with its lihis and leles, `ili at Kaneohe, Koolau.
5. 5. Kainehe, with its lihis and leles, Ahupua`a at Lahaina, Maui.

Here at Kamakee's:

6. Keapuka, lihis and leles, perhaps, `ili at Kaneohe, Koolau.
7. Kewalo, lihis and leles, perhaps, at Honolulu, Oahu.

Kindly award our claims, with their lihis and their leles, and all the places which wrongfully went to someone else, and which were trespassed upon and which were perhaps wrongfully occupied, and the places which were conveyed by lease, and all the rights which pertain in the names of those lands - the right to the protected fish and the wood and the water and everything which is said to pertain to these lands. That is what we give to you to work on and quiet title to us and to award in a way as to benefit the populace who are living on the land, and the lands which we occupy which also are for us. Here are these claims: a house lot in Honolulu, also, at Kamooiki, Honuaula, is a plantation of coconut trees.
I am, respectfully,
I. PIIKOI, KAMAKEE
/Translator's note: As far as I can determine, lihi is a pretty elastic term, meaning boundary or edge, but stretched to mean other areas not necessarily contiguous. Lele, of course, means "jump" areas./

F.T. 387-388v3
No. 10605, Kamakee Piikoi, September 28th, 1852

A portion of land in claimant's survey of Kewalo uka, called "Kapuni" is disputed by M. Kekuanaoa, also by the Government. Claimant avers that it is a part of Kewalo & therefore hers.

Kaia, sworn, says he is a kamaaina of Kewalo. Kaholoau was Luna of Kewalo in the time of Kaahumanu. After him were Mahina and Keaho. The name of the small piece of land now disputed is "Kapuni." It belonged to Kaahumanu. The above named Lunas were under Kaahumanu. "Kapuni" is a pauku aina in Kewalo. It does not belong to Kalokohonu, "Kapuni" was always included in Kewalo in the collection of taxes, and the people of "Kapuni" always worked for the konohiki of Kewalo. Naone, the present tax collector has lately caused this pauku of Kewalo to be included in Kalokohonu.

Mahina, sworn, I was Luna of Kewalo in the time of Kaahumanu, after Kaholoau. This pauku of land now in dispute, called "Kapuni," always formed part of Kewalo. "Kapuni" was always included with Kewalo in taxation and the people of "Kapuni" worked for the konohiki of Kewalo. "Kapuni" never belonged to Kalokohonu until the decision given by Naone to that effect, last year.

Mahu, sworn, says he is a kamaaina of Kewalo, and knows the piece of land now in dispute, called "Kapuni." It has always formed a part of the ili of Kewalo, from ancient times.

Cross Examination. I have lived on Kewalo since the time of Kaio, the konohiki, in the time of Kamehameha I. I know the boundaries of Kewalo uka pretty well. I know Kailepulu who lives there, but he is a newcomer. Witness gave the names of a long line of konohikis.

Paoimuai, sworn (for the Government), I am a kamaaina of Auwaiolimu adjoiing Kewalo. When I was a boy, I lived on Kewalo, when Kapaukahi was konohiki in the time of Kamehameha I. I know the pauku aina called "Kapuni," now in dispute. "Kapuni" belonged to Kaahumanu, i.e. to her ili of Kewalo. She had her Lunas there. Witness named some of the lunas. The men of "Kapuni" worked for the konohiki of Kewalo. It is about 40 years since "Kapuni" was joined to Kewalo - shortly after the sickness which destroyed the people's hair. "Kapuni" always formed part of Kewalo from that time till Naone's decision about 18 months ago.

N.T. 21-22v10
No. 10605, J. Piikoi, 1 July 1851, See page 387, vol. 3

No. 3176, G. Kailaa for Kamakee vs Kaaukai

Kukahiko, sworn, I have seen this house lot in Honolulu,

the boundaries are:
Mauka by Kekualaula's lot, Kahanaumaikai's lot
Waikiki by Puowaina street
Makai by Kaaoaohuna lot, S. Reynold's lot
Ewa by Road.

Land from Kaauka (i [kane?]) in 1843, Kaaukai had received it in 1832. When Kamakee had it permanently, G. Kailaa lived on the land and Ihu had enclosed it. Kaaukai built the house and Ihu had helped also by buying the material for thatching. Kailai has lived there to the present time, no disputes.

I have heard Kaaukai had bequested this place to Kamakee at the time Kapili had returned the deed of the land to Kaaukai. Kamaikaaloa had given this lot to Kaaukai, the chief had given her, her land. She had given orally to her brother Kamakee saying, "I am leaving for Hawaii, you are the chief's tenant, here is your house lot," Kaaukai lived on the land until her death.

Kanaulu, sworn for Kaaukai, I heard there were two of them on this place, Kamaikaaloa mauka and Kaaukai, Makai. This had been from the chief, later they had separate land. Then Kaaukai left for the island of Hawaii and I saw Kailaa living on that land. I have not known Kaaukai's bequest for anyone else and I have always seen Kailaa living there to the present time since the time of Kaahumanu I. Kailaa built his house and Pahua helped him to enclose the land. I have

heard on Maui they had lived together and they had agreed that the land would be for the other should either one of them die, so at Kaaukai's passing, the land was possessed by Kamaikaaloa. I have not heard Kamaikaaloa's bequest.

Pahua (female), sworn, I have seen this coconut grove at Mooiki of Honuaula, Maui.
Mauka by Government land
Kipahulu by "Makeaka" land
Makai by sea
Lahaina by "Nahupaka" land.

Kamakee, the wife of J. Piikoi, had received this land from Kapili, her brother in 1842, he had received it from their father, Ihu in 1841. Ihu had received it from Kaikioewa at the time of Liholiho and he has lived comfortably. He has planted coconut trees, the children have them now, no one has disputed the government has retaken the land since the great Mahele, except for the coconut grove. They are for Kamakee.

Kaahumanu, sworn, as a child, I had seen Ihu himself and his men plant those coconut trees at the time of Liholiho to the present time, no disputes. Cont. page 161.

N.T. 161v10
No. 10605, Johan Piikoi (from page 21)

COPY
Na Paa ahupuaa, Kona, Hawaii
Pualoalo ili of Honolulu, Kona, Oah.
Kaluaoopu ili for Waiau, Ewa, Oahu.
Mikiola ili for Kaneohe, Koolaupoko, Oahu.
Kainehe ahupuaa, Lahaina, Maui.
This distribution is good, the lands listed above are for Jonah Piikoi, he has been permitted to present his claims before the land officers.
(signature) Kamehameha, Seal
This Palace, 28 January 1848
This is a true copy from the Mahele Book
A.G. Thruston, Secretary K.K. Interior Minister Office, 31 March 1852

No. 10605, Kamakee Piikoi

COPY
Kewalo ili for Honolulu, Kona, Oahu.
Keopuka ili for Kaneohe, Koolaupoko, Oahu.
This distribution has been approved, it is good. The lands listed above are for Kamakee Piikoi and has been permitted to present this before the land officers.
(signature) Kamehameha II, Seal
This Palace, 28 January 1848
See page 328, True copy from the Mahele Book
A.G. Thruston, Secretary K.K. Interior Minister Office, 31 November 1852

N.T. 328v10

No. 10605, Jonah Piikoi

Jonah Piikoi's land distributions.
Na Paa ahupuaa, Kona, Hawaii.
Puaaloalo ili, Honolulu, Oahu.
Kaluaoopu ili, Waiau, Oahu.
Mikiola ili, Kaneohe, Koolaupoko, Oahu.
Kainehe ahupuaa, Lahaina, Maui.
TRUE COPY
Interior Office, A. Thruston, Chief Clerk
November 17, 1853

[Award 10605; R.P.; 2672, Kewalo Honolulu; 3 ap.; 60.44 Acs; R.P. 5715, Kewalo Honolulu; 4 apana, 88 Ac. 5 Roods, 78 Rods (location index gives 3 apana; 60.44 Acres); R.P. 5716; Koula Honolulu Kona; 1 ap.; 270.84 Acs; (Kamakee Piikoi); R.P. 5567, Pualoalo Honolulu; 1 ap.; 3.37 (Ap. 2); R.P. 5569, Pualoalo Honolulu; 2 ap.; 8.65 Acres; (Ap. 1 & 3); R.P. 1739; Punchbowl St.; 1 ap.; 1.17 Acs; (Iona & Kamakee Piikoi); R.P. 8135; Mikiola Kaneohe Koolaupoko; 2 ap.; 43.5 Acs; R.P. 6557; Waiau Ewa; 2 ap.; 35.7 Acs; (Apana 5); R.P. 5611; Kaneohe Koolaupoko; (Maui) R.P. 8400; Kainehe Lahaina; (Kauai) no R.P. Paa Kona; 1 ap.; 3263 Acs 1 rood 33 rods (ahupua`a); See also Award 3176 for Oahu]

APPENDIX B:

Pre-Assessment
Consultation Comment Letters
and Responses

BOARD OF WATER SUPPLY

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

June 8, 2016

RECEIVED
JUN 13 2016
WILSON OKAMOTO CORPORATION

EM

Mr. Earl Matsukawa, AICP
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Your Letter Dated May 24, 2016 Requesting Comments on the Environmental Assessment Pre-Assessment Consultation for the Proposed Nohona Hale Affordable Rental Micro-Unit Housing - Tax Map Key: 2-1-051: 014

Thank you for the opportunity to comment on the proposed 107-micro-unit high-rise residential 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 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.

Water conservation measures are recommended for all proposed developments. These measures include low flow plumbing fixtures, utilization of non-potable water for irrigation using rain catchment and chiller/air handler condensate, cooling tower conductivity meters and water softening recycling systems, drought tolerant plants, xeriscape landscaping, efficient irrigation systems and the use of Water Sense labeled ultra-low-flow water fixtures and toilets.

High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

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

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Ernest Lau
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania St.
Honolulu, Hawai'i 96843

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Lau:

Thank you for your letter dated June 13, 2016 regarding the subject pre-assessment consultation. We offer the following in response to your comments:

We acknowledge that the final decision on water availability for the subject project will be confirmed when the building permit application is submitted for approval, and that the applicant will be required to pay for Water System Facilities Chargers for resource development, transmission and daily storage.

The water conservation measures will be incorporated in the design of the subject project, and on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

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

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

EM

June 22, 2016

Wilson Okamoto Corporation
Attn: Earl Matsukawa
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUN 24 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa,

Subject: Environmental Assessment Pre- Assessment Consultation for
Hahona Hale Affordable Rental Micro-Unit Housing
TMK [1] 2-1-051:014
Honolulu, Hawaii

The Department of Design and Construction has no comments at this time.

Thank you for the opportunity to review and comment. If there are any further questions, please call me at 768-8480.

Sincerely,

Robert Kroning, P.E.
Director

RJK:ms(654056)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10189-01
July 23, 2017

Mr. Robert Kroning, P.E.
Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Kroning:

Thank you for your letter dated June 22, 2016 regarding the subject pre-assessment consultation. We acknowledge that the Department of Design and Constructions has not comments to offer at this time.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

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

EM

KIRK CALDWELL
MAYOR

ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 16-457

June 22, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUN 24 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Thank you for the opportunity to review and provide our input regarding your letter dated May 24, 2016, on the above subject project.

Our comments are as follows:

- Once construction phase commences, install approved Best Management Practices fronting all drainage facilities on City-maintained portion of Cooke Street.
- During construction and upon completion of the project, any damages/deficiencies to the City-maintained portion of Cooke Street right-of-way shall be corrected to City standards and accepted by the City.
- Please note that the sidewalk area fronting the proposed project is owned and maintained by Hawaii Community Development Authority.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

Ross S. Sasamura, P.E.
Director and Chief Engineer

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10189-01
July 23, 2017

Mr. Ross Sasamura
Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Sasamura:

Thank you for your letter dated June 22, 2016 regarding the subject pre-assessment consultation. We offer the following in response to your comments:

Approved Best Management Practices will be installed along all drainage facilities fronting the City-maintained portion of Cooke Street.

During construction and upon completion of the project, damages/deficiencies to the City-maintained portion of Cooke Street right-of-way will be corrected to City Standards for acceptance by the City.

It is noted that the sidewalk fronting the proposed project is owned and maintained by the Hawai'i Community Development Authority.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

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.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2016/ELOG-1315(FK)

June 23, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing Project – Kakaako
Tax Map Key: 2-1-051:014

Thank you for your letter dated May 24, 2016, soliciting comments on the Environmental Assessment (EA) Pre-Assessment Consultation for Nohona Hale Affordable Rental Micro-Unit Housing Project (Project). The Department of Planning and Permitting (DPP) supports the creation of affordable rental housing units, especially within walking distance of a planned rail station. The DPP offers the following comments:

1. The Draft EA should include a development schedule that identifies when a Project construction management plan (CMP) and traffic management plan (TMP) will be prepared. The CMP should be prepared and approved prior to issuance of any major building permit. The TMP should be prepared prior to the issuance of the temporary certificate of occupancy.

2. The Project must comply with the prevailing storm water quality standards at the time the construction/grading plans are submitted for review and approval.

3. The Project should consider incorporating an active ground-floor use along Cooke Street to front the ground-floor Community Facility space. Ground-level retail shops or restaurants encourage an active, lively street presence while supporting high-density Transit-Oriented Development neighborhoods.

4. Pedestrian circulation in this area is likely to increase with this Project and its proximity to the rail station. The Draft EA should include a plan that shows the location of existing and proposed street trees. Lack of shade along the streets exacerbates a heat island effect making temperatures for pedestrians and bicyclists uncomfortably high. In accordance with the draft Honolulu Complete Streets Design Manual, street trees should be planted within the right-of-way and next to the curb along Cooke Street (see attachment).

5. As a strategy to encourage transit usage and other modes of transportation, the DPP supports the reduction of off-street parking along with the provision of bicycle storage. Conveniently located bicycle racks should also be provided.

6. More specific comments will be provided on the Draft EA.

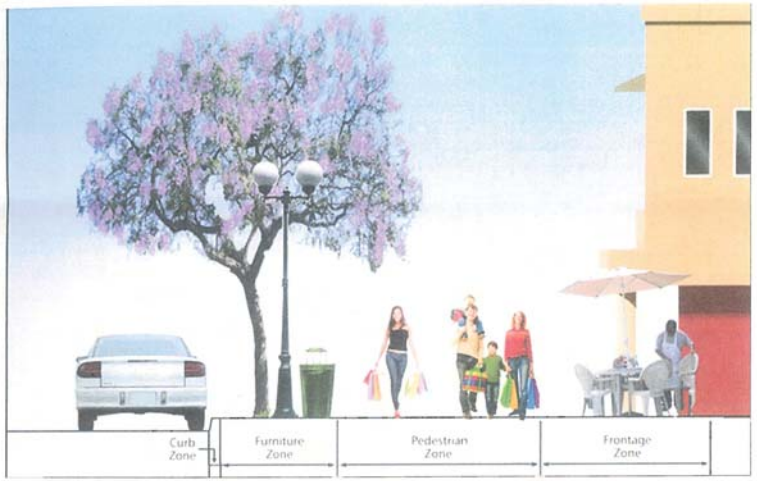
Should you have any questions, please contact Franz Kraintz of our staff at 768-8046.

Very truly yours,

for George I. Atta, FAICP
Director

GIA:js

Attachment



Credit: Marty Bruinsma (Self-Employed)

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. George I. Atta, FAICP
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Atta:

Thank you for your letter dated June 23, 2016 (2016/ELOG-1315 [FK]) regarding the subject pre-assessment consultation. We offer the following response to your comments:

The proposed project will comply with all applicable requirements set forth in your letter.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

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

June 9, 2016

Mr. Earl Matsukawa, AICP
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUN 13 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment (EA) Pre-Assessment Consultation
For Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014

Thank you for the opportunity to review and comment at the Pre-Assessment stage of the Environmental Assessment for the subject Nohona Hale Affordable Rental Micro-Unit Housing.

The Department of Parks and Recreation has no comment as the proposed project will have no impact on any of our programs and facilities. You may remove us as a consulted party for the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner at 768-3017.

Sincerely,

Michele K. Nekota
Director

MKN:jr
(653979)

WILSON OKAMOTO CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10189-01
July 23, 2017

Ms. Michele Nekota
Director
Department of Parks and Recreation
City and County of Honolulu
1000 Ulu'ohia Street, Suite 309
Kapolei, Hawai'i 96707

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Ms. Nekota:

Thank you for your letter dated June 13, 2016 regarding the subject pre-assessment consultation. We appreciate your determination that the proposed project will have no significant impact on any Department of Parks and Recreation (DPR) programs and facilities. DPR will be removed as a consulted party for the balance of the EA process.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, THIRD 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

TP5/16-654234R

June 17, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

SUBJECT: Pre-Assessment Consultation for Draft Environmental Assessment, Nohona Hale Affordable Rental Micro-Unit Housing, Kakaako, Oahu, Hawaii

In response to your letter dated May 24, 2016, we have the following comments:

1. All loading and unloading needs, refuse services and parking for the proposed facility (employees, visitors and service vehicles) should be handled on-site, rather than on City roadways. A description of how the refuse/service trucks and vehicles will safely maneuver in the parking area should be provided.

2. The access driveway should be designed with the highest pedestrian and bicycle safety measures.

3. On-site bike racks and secure bike storage for the residents, employees and visitors should be included.

4. Any damage to the existing roadway and sidewalk area caused by the project should be restored to its original or better condition.

5. The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheBus), etc., should continue to be kept apprised of the details of the proposed project and the impacts that the project may have on the adjoining local street area network.

6. 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.) to minimize any possible disruption to traffic on the local streets.

7. A street usage permit from the City's Department of Transportation Services should be obtained for any construction-related work that may require the temporary closure of any traffic lane on a City street.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,

Michael D. Formby
Director

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Michael D. Formby
Director
Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Formby:

Thank you for your letter dated June 17, 2016 (TP5/16-654234R) regarding the subject pre-assessment consultation. We offer the following response to your comments:

The proposed project will comply with all applicable requirements set forth in your letter.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

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

June 6, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUN 13 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

Subject: Preassessment Consultation for Draft Environmental Assessment
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key: 2-1-051: 014

In response to your letter dated May 24, 2016, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and 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]™, 2012 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1.)

   A fire department access road shall extend to within 50 feet 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; UFC™, 2012 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 fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; UFC™, 2012 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1; UFC™, 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.4.1.2, as amended.)

4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Battalion Chief Terry Seelig of our Fire Prevention Bureau at 723-7151 or tseelig@honolulu.gov.

Sincerely,

Socrates D. Bratakos

SOCRATES D. BRATAKOS
Assistant Chief

SDB/SY:bh

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Socrates D. Bratakos
Assistant Chief
Honolulu Fire Department
City and County of Honolulu
636 South Street
Honolulu, Hawai'i 96813-5007

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Bratakos:

Thank you for your letter dated June 6, 2016 regarding the subject pre-assessment consultation. We offer the following in response to your comments:

Per your comments, the proposed project will comply with all applicable provisions set forth by the National Fire Protection Association's (NFPA) Uniform Fire Code (UFC). Civil drawings reflecting such compliance will be submitted to HFD for review and approval.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

Hawaiian Telcom

RECEIVED
JUN 27 2016
WILSON OKAMOTO CORPORATION

June 22, 2016

EM

Wilson Okamoto Corporation
1907 S. Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826
Attention: Mr. Earl Matsukawa, AICP

Dear Mr. Matsukawa:

Subject: **Environmental Assessment (EA) Pre-Assessment Consultation**
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, Oahu, Hawaii

Thank you for the opportunity to review and comment on the environmental assessment pre-assessment consultation phase for the subject project.

In response to your letter dated May 24, 2016 that was addressed to Winslow I. Tanabe, Hawaiian Telcom does not have any comments to offer at this time.

Please submit future correspondence to:

Hawaiian Telcom, Inc.
Jon Uyehara
Senior Manager – OSP Engineering
Mail Code: HIA10
P.O. Box 2200
Honolulu, HI 96841

If you have any questions or require assistance in the future on this project, please call me at 546-7761.

Sincerely,

Les Loo
Network Engineer – OSP Engineering
Network Engineering & Planning

cc: File [Kakaako]

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Jon Uyehara
Senior Manager – OSP Engineering
Hawaiian Telcom, Network Engineering & Planning
P.O. Box 2200
Mail Code: HIA10
Honolulu, Hawai'i 96841

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Block M Queen Street Improvements
Tax Map Keys (TMK): [1] 2-3-003:087, por. 2-3-003:103, and
por. 2-3-004:080
Honolulu, O'ahu, Hawai'i

Dear Mr. Uyehara:

Thank you for your letter dated June 22, 2016 regarding the subject pre-assessment consultation.

We acknowledge that Hawaiian Telcom does not have any comments to offer on this project at this time.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

Oceanic
Time Warner Cable

EM

May 27, 2016

RECEIVED
MAY 31 2016
WILSON OKAMOTO CORPORATION

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Attention: Mr. Earl Matsukawa

Project: Environmental Assessment Nohona Hale Affordable Rental Micro- unit Housing

Subject: CATV comments on Project

Dear Mr. Matsukawa,

At this time Oceanic Time Warner Cable does not have any comments on the proposed project.

Sincerely,

Lionel Agular
OSP Engineer
Oceanic Time Warner Cable

200 Akamainui Street Mililani, Hawaii 96789-3999 Tel (808) 625-2100 Fax (808) 625-5888

WILSON OKAMOTO
CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Lionel Agular
Engineering Department
Oceanic Time Warner Cable
Lionel.Agular@TWCable.com

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Agular:

Thank you for your e-mail transmittal dated February 18, 2016 regarding the subject pre-assessment consultation. We acknowledge that you have no comments to offer in regards to the proposed project.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

DAVID Y. IGE
GOVERNOR

DOUGLAS MURDOCK
COMPTROLLER

AUDREY HIDANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1152.6

EM

JUN 6 2016

Mr. Earl Matsukawa. Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUN 09 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

Subject: Pre-Assessment Consultation for Environmental Assessment
Nohona Hale Affordable Rental Micro-Unit Housing
Kakaako, Oahu, Hawaii
TMK: (1) 2-1-051: 014

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Ms. Gayle Takasaki of the Public Works Division at 586-0584.

Sincerely,

for DOUGLAS MURDOCK
Comptroller

c: Ms. Janice Takahashi, DBEDT HHFDC

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Roderick Becker
Comptroller
Department of Accounting and General Services
State of Hawai'i
P.O. Box 119,
Honolulu, Hawai'i 96810-0119

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Becker:

Thank you for your letter dated June 6, 2016 regarding the subject pre-assessment consultation. We acknowledge that the Department of Accounting and General Services has no comments to offer at this time.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. XXXXX, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 8, 2016

Wilson Okamoto Corporation
Attention: Mr. Earl Matsukawa, AICP
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

via email: ematsukawa@wilsonokamoto.com

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment (EA) Pre-Assessment Consultation for Nohona Hale Affordable Rental Micro-Unit Housing

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on June 23, and June 30, 2016, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

'16 MAY 31 AM 10:40 ENGINEERING

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 31, 2016

RECEIVED
LAND DIVISION
2016 JUL -7 AM 11:03
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: PR'

DLNR Agencies:
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
X Engineering Division
___Div. of Forestry & Wildlife
___Div. of State Parks
X Commission on Water Resource Management
___ Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

TO:

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Environmental Assessment (EA) Pre-Assessment Consultation for Nohona Hale Affordable Rental Micro-Unit Housing
LOCATION: Honolulu, Island of Oahu; TMK: (1) 2-1-051:014
APPLICANT: Bronx Pro Group LLC and EAH Housing

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **June 22, 2016**.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

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

Signed: Cathy S. Chang
Print Name: Cathy S. Chang
Date: 7/5/16

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

To: Land Division
Ref: EA Pre-Assessment Consultation for Nohona Hale Affordable Rental Micro-Unit Housing

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a designated Flood Hazard.

The owner or the project property and/or their representative are responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zone designations can be found using the Flood Insurance Rate Map (FIRM), which can be accessed through the Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

National Flood Insurance Program establishes the rules and regulations of the NFIP - Title 44 of the Code of Federal Regulations (44CFR). The NFIP Zone X is a designation where there is no perceived flood impact. Therefore, the NFIP does not regulate any development within a Zone X designation.

Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may take precedence over the NFIP standards as local designations prove to be more restrictive. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4846.

The applicant should include water demands and infrastructure required to meet project needs. Please note that the projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

The applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 7/5/16

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Russel Y. Tsuji
Land Administrator
Department of Land and Natural Resources
State of Hawai'i
P.O. Box 621
Honolulu, Hawai'i 96809

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Tsuji:

Thank you for your letter dated May 31, 2016 regarding the subject pre-assessment consultation. We offer the following in response to your comments:

Engineering Division
We acknowledge that the project site is located in the FIRM Zone "X", and that the National Flood Insurance Program (NFIP) regulates development within this zone. The subject project will comply with the rules and regulations set forth by the NFIP as presented in Title 44 of the Code of Federal Regulations.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EMD/CWB

06001PCTM.16

June 1, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Attention: Mr. Keola Cheng
Consultant

Dear Mr. Matsukawa:

SUBJECT: Comments on the Environmental Assessment (EA) Pre-Assessment Consultation for Nohona Hale Affordable Rental Micro-Unit Housing
TMK: (1) 2-1-051:014
Honolulu, Island of Oahu, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated May 24, 2016. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at:
http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

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

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

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

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation.

5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:

   a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects

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

b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g. minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.

c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.

d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.

e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at: http://health.hawaii.gov/cwb/, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

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

CTM:bk

c: EPO [via e-mail only]
Mr. Keola Cheng, Wilson Okamoto Corporation [via e-mail woc@wilsonokamoto.com only]

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Alec Wong, P.E., Chief
Clean Water Branch (EMD/CWB)
Department of Health
State of Hawai'i
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Wong:

Thank you for your letter dated June 1, 2016 (06001PCTM.16) regarding the subject pre-assessment consultation. We offer the following in response to your comments:

1. The proposed project and any potential impacts to state waters will meet the criteria set forth in HAR Sections 11-54-1.1, 11-54-3, and 11-54-4 through 1154-8.

2. A National Pollutant Discharge Elimination System Permit has been obtained for coverage of project discharges of wastewater, including storm runoff into State surface waters.

3. The proposed project will not involve work in, over, or under waters of the United States.

4. All discharges related to project construction or operation will comply with the State's water quality standards.

5. Project planning efforts will comply with the guidelines set forth in your letter with regard to an emphasis on reducing, reusing, and recycling to protect, restore, and sustain water quality and beneficial uses of State waters.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

EPO 16-171

June 3, 2016

Mr. Earl Matsukawa
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Email: woc@wilsonokamoto.com

Dear Mr. Matsukawa:

SUBJECT: **Pre-Assessment Consultation Environmental Assessment (PAC EA) for Nohona Hale Affordable Rental Micro-Unit Housing, Honolulu, Oahu**
TMK: (1) 2-1-051:014

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PAC EA to our office on May 25, 2016. Thank you for allowing us to review and comment of the proposed project. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

EPO suggests you review guidance maps and viewers available on the Environmental Planning GIS website: http://health.hawaii.gov/epo/egis

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

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

Mahalo nui loa,

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

Attachments: OEQC Viewer Map of Project Area: http://eha-web.doh.hawaii.gov/oeqc-viewer
U.S. EPA EJScreen Report for Project Area: http://www2.epa.gov/ejscreen

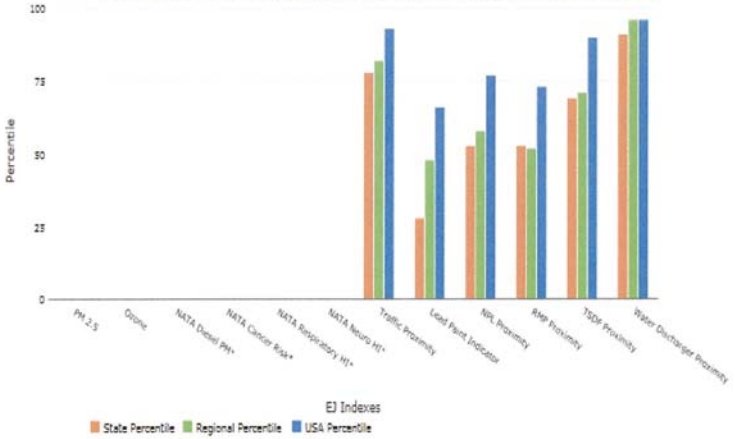
LM:nn

EPA United States Environmental Protection Agency

0.1 mile Ring Centered at 21.299975,-157.857596
HAWAII, EPA Region 9
Approximate Population: 338
Nohona Hale Affordable Rental Micro-Unit Housing

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	78	82	93
EJ Index for Lead Paint Indicator	28	48	66
EJ Index for NPL Proximity	53	58	77
EJ Index for RMP Proximity	53	52	73
EJ Index for TSDF Proximity	69	71	90
EJ Index for Water Discharger Proximity	91	96	96

EJ Index for the Selected Area Compared to All People's Block Groups in the State/Region/US



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

Selected Variables	Raw data	State Average	%ile in State	EPA Region Average	%ile in EPA Region	USA Average	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM (µg/m³)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Air Toxics Cancer Risk (risk per MM)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	450	280	84	190	89	110	95
Lead Paint Indicator (% pre-1960s housing)	0.019	0.17	22	0.25	24	0.3	15
NPL Proximity (site count/km distance)	0.057	0.092	55	0.11	49	0.096	56
RMP Proximity (facility count/km distance)	0.14	0.18	66	0.41	35	0.31	48
TSDF Proximity (facility count/km distance)	0.15	0.092	84	0.12	80	0.054	93
Water Discharger Proximity (count/km)	1.5	0.33	97	0.19	99	0.25	98
Demographic Indicators							
Demographic Index	62%	51%	81	46%	73	35%	83
Minority Population	75%	77%	35	57%	66	36%	82
Low Income Population	49%	25%	88	35%	72	34%	75
Linguistically Isolated Population	33%	6%	96	9%	94	5%	97
Population with Less Than High School Education	21%	10%	91	18%	84	14%	75
Population under Age 5	0%	6%	2	7%	4	7%	3
Population over Age 64	57%	14%	99	12%	99	13%	99

*The National-Scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Ms. Laura Leialoha Phillips McIntyre, AICP
Program Manager
Environmental Planning Office
Department of Health
P.O. Box 3378
Honolulu, Hawai'i 96801-3378

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Ms. McIntyre:

Thank you for your letter dated June 3, 2016 (EPO 16-171) regarding the subject pre-assessment consultation. The proposed project will adhere to all applicable standard comments outlined in the URL link provided in your letter. Further, the Department of Health's Hawai'i Environmental Health Portal and the updated Water Quality Standards Maps will be utilized as a reference resource throughout the design process for the subject project.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

DAVID Y. IGE
GOVERNOR

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:
STP 8.1994

EM

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

July 15, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JUL 21 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

Subject: Nohona Hale Affordable Rental Micro-Unit Housing
Environmental Assessment Pre-Assessment Consultation
Honolulu, Oahu, Hawaii
TMK: (1) 2-1-051:014

Our Department of Transportation's (DOT) comments on the subject project are as follows:

Airports Division (DOT-AIR)

1. Federal Aviation Administration (FAA) regulations require the submittal of FAA Form 7460-1, Notice of Proposed Construction or Alteration, in accordance with Code of Federal Regulations, Title 14, Part 77.9, if construction or alteration is within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet. The proposed development is located approximately 18,48 feet from the end of Runway 26L at Honolulu International Airport (HNL). Additionally, any tall equipment, such as cranes, that may be used during construction may also require the submittal of a FAA Form 7460-1. This form and criteria for submittal can be found at the following website: https://oeaaa.faa.gov/oeaaa/external/portal.jsp

2. The proposed project is located within the 60-65 Day Night Level (DNL) noise contour on the Honolulu International Airport 2008 (Forecast) Five Year Noise Exposure Map (NEM). Due to the proposed project's anticipated "natural ventilation," the developer should be cognizant of potential single event noise impacts upon residents from aircraft arriving and departing HNL.

Highways Division (DOT-HWY)

While access to the project is from Cooke Street, Ala Moana Boulevard (Route 92), a State highway facility, is about four blocks from the project site. The Draft Environmental Assessment should include a discussion of any traffic impacts generated by the project onto the nearby Ala Moana Boulevard.

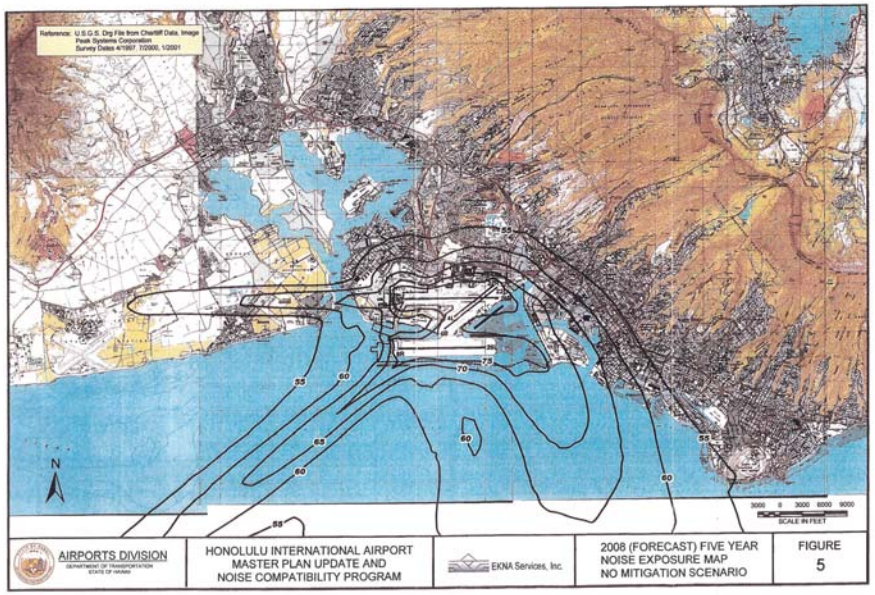
If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Sincerely,

FORD N. FUCHIGAMI
Director of Transportation

Attachment: HNL 2008 (Forecast) Five Year Noise Exposure Map

c: Gordon Wong, Federal Aviation Administration



WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Ford N. Fuchigami
Director of Transportation
Department of Transportation
State of Hawai'i
869 Punchbowl Street
Honolulu, Hawai'i 96813-5097

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Block M Queen Street Improvements
Tax Map Keys (TMK): [1] 2-3-003:087, por. 2-3-003:103, and
por. 2-3-004:080
Honolulu, O'ahu, Hawai'i

Dear Mr. Fuchigami:

Thank you for your letter dated July 15, 2016 (STP 8.1994) regarding the subject pre-assessment consultation. We offer the following in responses to the comments you forwarded:

Airports Division (DOT-AIR)
The proposed project will comply with all applicable requirements set forth in your letter.

Highways Division (DOT-HWY)
The proposed project is not anticipated to have significant traffic impacts upon State Highways, as the project will reduce the number of parking stalls on the project parcel, which would consequently reduce the site's contribution to vehicular traffic.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

HAWAII COMMUNITY
DEVELOPMENT AUTHORITY

KAKAAKO
KALAEOA

David Y. Ige
Governor

John Whalen
Chairperson

Aedward Los Banos
Interim Executive Director

547 Queen Street
Honolulu, Hawaii
96813

Telephone
(808) 594-0300

Facsimile
(808) 587-0299

E-Mail
contact@hcdaweb.org

Website
www.hcdaweb.org

Ref. No.: KAK 14-119

June 24, 2016

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Re: 630 Cooke Street Project, "Hale Nohona"
Environmental Assessment

The Hawaii Community Development Authority (HCDA) received a letter from Wilson Okamoto Corporation on May 25, 2016 requesting comment on the proposed Nohona Hale project at 630 Cooke Street. The HCDA is well aware of the project, having played an integral role as landowner, as well as selecting the proposal through a competitive Request for Proposal process.

The project description provided in the letter should be corrected in the Environmental Assessment. It is staff's understanding that the project proposes a single tower with two separated unit stacks sharing a single floor plate, rather than the described "two 12-story towers".

It is acknowledged that the project may utilize the Hawaii Revised Statutes, §201H-38 provision granted to affordable housing projects to request exemptions from the requirements of the Mauka Area Rules. It should be disclosed in the Environmental Assessment, and clearly indicated, specific provisions of the Mauka Area Rules from which the project may seek exemption.

If you should have any questions regarding this matter, please contact Daniel Simonich, Planner, at 594-0333.

Sincerely,

Aedward Los Banos
Interim Executive Director

ALB/DN/DS:ak

WILSON OKAMOTO
CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Aedward Los Banos
Interim Executive Director
Hawai'i Community Development Authority
547 Queen Street
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Los Banos:

Thank you for your letter dated June 24, 2016 (KAK 14-119) regarding the subject pre-assessment consultation. We offer the following in response to your comments:

The project description will be revised in the forthcoming Environmental Assessment to reflect a "single tower with two separated unit stacks sharing a single floor plate".

The specific provisions of the Mauka Area Rules from which the project will seek exemption will be clearly indicated in the forthcoming Environmental Assessment.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

DAVID Y. IGE
GOVERNOR

SCOTT GLENN
DIRECTOR

DEPARTMENT OF HEALTH | 235 South Beretania Street, Suite 702, Honolulu, HI 96813 | oeqchawaii@doh.hawaii.gov

(808) 586-4185

June 16, 2016

EM

Earl Matsukawa
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

RECEIVED
JUN 22 2016
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa,

SUBJECT: Pre-assessment Consultation for a draft Environmental Assessment (EA) for Nohona Hale Affordable Rental Micro-Unit Housing

The Office of Environmental Quality Control (OEQC) has reviewed your May 24, 2016 request for pre-assessment consultation for the proposed action and offers the following comments for your consideration:

1. The draft EA should consider short term construction impacts, long term operational impacts, as well as primary, secondary, and cumulative impacts.
2. The OEQC recommends incorporating low impact development (LID) strategies, including minimizing impervious surface areas (with pavers or pervious pavements) to help groundwater recharge and decrease stormwater runoff, as well as ensuring source reduction, reuse, and recycling throughout the project life. Resources for low impact development and green buildings can be found here: http://planning.hawaii.gov/lud/.
3. The OEQC recommends using native vegetation for any landscaping or re-vegetation of disturbed areas.
4. As the project location lies near or within five miles from the airport, please consult with the Airports Division of the State's Department of Transportation to evaluate any glare or glint issues that may affect aviation safety.
5. The OEQC notes that mixed-use buildings are most consistent with local policies. As this project is exclusively residential use, the OEQC recommends considering alternative uses for the ground level.

Thank you for the opportunity to comment at this early stage of this project. If you have questions, please contact our office at (808) 586-4185.

Sincerely,

Scott Glenn, Director

16-369

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Scott Glenn
Director
Office of Environmental Quality Control
Department of Health
235 South Beretania Street, Ste. 702
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Mr. Glenn:

Thank you for your letter dated June 16, 2016 (EPO 16-171) regarding the subject pre-assessment consultation. We offer the following in response to your comments:

Short-term construction impacts, long-term operational impacts, as well as primary secondary, and cumulative impacts will be assessed in the Draft EA. Low impact development (LID) strategies, as well as native vegetation will be incorporated, as appropriate, in the design of the proposed project. The State Department of Transportation - Airports Division has been consulted as part of the EA process. It is noted that mixed uses buildings are most consistent with local policies, and that the OEQC recommends that alternative uses for the ground level be considered.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

1907 S. Beretania Street, Suite 400 • Honolulu, Hawaii • 96826 • (808) 946-2277

OFFICE OF PLANNING
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

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

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

Ref. No. P-15198

EM

June 15, 2016

RECEIVED
JUN 17 2016
WILSON OKAMOTO CORPORATION

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Environmental Assessment Pre-Assessment Consultation for Nohana Hale Affordable Rental Micro-Unit Housing;
Tax Map Key: (1) 2-1-051:014

Thank you for the opportunity to provide comments on this pre-assessment consultation for a Draft Environmental Assessment (Draft EA) request for the Nohona Hale rental housing project. The pre-consultation review material was transmitted to our office via letter dated May 24, 2016.

It is our understanding that the partnership of the Bronx Pro Group and EAH Housing propose the development of the Nohona Hale affordable rental micro-unit apartment building. This housing complex will be located near Cooke and Coral Streets, within the Kakaako Community Development District.

Nohana Hale will be a rental apartment complex, offering 107 affordable rental units. Each unit will have approximately 300 square feet of living space. The 12-story apartment complex will have a lobby, community spaces, and management offices. The micro-unit rental concept promises a new type of mixed-use/mixed-income housing solution for residents of Honolulu.

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

1. Pursuant to Hawaii Administrative Rules (HAR) § 11-200-10(4) – general description of the action's technical, economic, social, and environmental characteristics; this project must demonstrate that it is consistent with a number of State environmental, social, economic goals, and policies for land use and housing development. The Hawaii State Plan provides goals, objectives, policies, and priority guidelines for

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

The Draft EA should include an analysis that addresses whether the proposed project conforms to or is in conflict with the goals, objectives, policies, and priority guidelines listed in the Hawaii State Plan. This analysis should address all of these themes. The most efficient method is summarizing these is in tabular form, followed by discussion of the passages. If any of these are not applicable, the Draft EA should state that these are "not applicable."

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

   HRS Chapter 205A-5(b) requires all State and county agencies to enforce the CZM objectives and policies. The Draft EA should include an assessment as to how the proposed project conforms to the goals and objectives of the Hawaii CZM program as listed in HRS § 205A-2. Compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343. These objectives and policies include recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

3. Pursuant to HAR § 11-200-10(6) – identification and summary of impacts and alternatives considered; in order to ensure that the coastline and water resources of the south shore of Oahu remain protected, the cumulative effects of stormwater runoff should be evaluated in the Draft EA. During heavy storm events, storm runoff can transport lose soil and sediments, land-based pollutants, and toxic materials from higher elevation within urban Honolulu to the ocean. These contaminated materials may have a damaging effect to the nearshore marine environment of Mamala Bay.

   The Draft EA should examine potential benefits and/or negative impacts resulting from this project on coastal and marine resources. Issues that may be examined in the Draft EA include, but are not limited to, project site characteristics in relation to

erosion controls on flood prone areas, undeveloped open spaces, and the absorption characteristics of the soil. Furthermore, it should differentiate between the existing permeable surfaces versus hardened surfaces in the area. These items, as well as the marine water quality classification, should be considered when developing mitigation measures to protect the coastal ecosystem.

The Draft EA should examine the cumulative impact on coastal resources from land-based polluted runoff and sediment loss. It should take into account all of the natural and manmade features in the area that have a cumulative effect on stormwater runoff volume and speed.

OP has resources available to assist in the development of projects which mitigate sediment and stormwater control on land, thus protecting the nearshore environment. OP recommends consulting these guidance documents and stormwater evaluative tools when developing strategies to address polluted runoff. They offer useful techniques to keep land-based pollutants and sediment in place and prevent contaminating nearshore waters, while considering the practices best suited for this project. The evaluative tools that should be consulted during the design process include:

- Stormwater Impact Assessments can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff, as well as consider secondary and cumulative impacts to the area http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_stormwater_impact_assessments_guidance.pdf

- Low Impact Development (LID), A Practitioners Guide covers a range of structural best management practices (BMP's) for stormwater control management, roadway development, and urban layout that minimizes negative environmental impacts http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

4. Although this micro-unit housing model will increase the inventory of affordable housing in urban Honolulu, the absence of any on-site vehicular parking for residents, particularly since this is not senior housing, could have unintended consequences on businesses in the area that rely on street parking. The Kakaako district already has a shortage of on-street parking and the addition of 107 apartment units to this area may exacerbate the problem.

This potential parking issue, and the specific measures to be undertaken by the project to reduce or eliminate reliance on individual cars, should be assessed and discussed in the Draft EA. For strategies to address street-parking shortage, please see Chapter Three (Land Use) and Chapter Eight (Parking & Transportation Demand Management) of the Draft Kakaako Community Development District Transit-Oriented-Development Overlay Plan.

This plan can be viewed or downloaded from the State Department of Business, Economic Development & Tourism website at http://dbedt.hawaii.gov/hcda/transit-oriented-development-plan/

5. So that the affordable rental aspects of the project may be replicable in other projects and other areas, the financing of the development should be detailed, including planning, design and construction costs, costs per square foot, and the sources and amounts of funding for the development.

If you have any questions regarding this comment letter, please contact Josh Hekekia of our Coastal Zone Management Program at (808) 587-2845.

Sincerely,

Leo R. Asuncion
Director

WILSON OKAMOTO CORPORATION
INNOVATORS · PLANNERS · ENGINEERS

10189-01
July 23, 2017

Mr. Leo R. Asuncion
Director
Office of Planning
State of Hawai'i
235 South Beretania Street, 6th Floor
Honolulu, Hawai'i 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for
Nohona Hale Affordable Rental Micro-Unit Housing
Tax Map Key (TMK): [1] 2-1-051:014
Honolulu, O'ahu, Hawai'i

Dear Director Asuncion:

Thank you for your letter dated June 15, 2016 (EPO 16-171) regarding the subject pre-assessment consultation. We offer the following in response to your comments:

1. The forthcoming Draft EA will include a discussion of the proposed project's relationship to the Hawai'i State Plan, HRS Chapter 226.

2. The forthcoming Draft EA will include a discussion of the proposed project's relationship to the objectives and policies of the Hawaii Coastal Zone Management (CZM) Program as set forth in HRS Chapter 205A.

3. The forthcoming Draft EA will include a discussion of project related impacts on coastal and marine resources, and will utilize the evaluative tools pertaining to Storm Water Impact Assessment and Low Impact Development cited in your letter.

4. The forthcoming Draft EA will include a discussion of measures and features to be implemented by the project to reduce/elimintate reliance of individual cars.

5. The forthcoming Draft EA will contain a discussion of project development costs and financing.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA. The Draft EA has been published and made available for downloading, review and comment in the current issue of the Office of Environmental Quality Control's (OEQC) Environmental Notice. Please use the following link to view the current issue of the Notice:

(http://oeqc.doh.hawaii.gov/Shared%20Documents/Environmental_Notice/current_issue.pdf)

We appreciate your participation in the pre-assessment consultation review process.

Earl Matsukawa, AICP
Project Manager

cc: Mr. David Mosey, Bronx Pro Group
Mr. Ken Takahashi, HHFDC

APPENDIX C:

Community Consultation Correspondence

- Neighborhood Board #11 Meeting Agenda
- Neighborhood Board #11 Meeting Minutes

ALA MOANA-KAKA'AKO NEIGHBORHOOD BOARD NO. 11

c/o NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET http:///www.honolulu.gov/nco

REGULAR MEETING AGENDA

Tuesday, April 25, 2017, 7:00 p.m.
Makiki Christian Church
829 Pensacola Street

Rules of Speaking: Anyone wishing to speak is asked to raise his/her hand, and when recognized by the Chair, to address comments to the Chair. Speakers shall keep their comments to under three (3) minutes, and those giving reports are urged to keep their reports to three (3) minutes or less. Please silence all electronic devices.

Note: The Board may take action on any agenda item. As required by the State Sunshine Law (HRS 92), specific issues not noted on this agenda cannot be voted on, unless added to the agenda. A two-thirds (2/3) vote (6) of this nine (9)-member Board is needed to add an item to the agenda. Adding an item to the agenda, however, is **not** permitted if (1) the item to be added is of reasonably major importance and (2) action on the item by the board will affect a significant number of persons. Determination of whether a specific matter may be added to an agenda must be done on a case-by-case basis.

1. **Call to Order**: Chair Ryan Tam
   - 1.1 Roll call: Ryan Tam, Chair; Larry Hurst, First Vice Chair; Michael Zehner, Second Vice Chair; Michelle Foyt, Treasurer; William Ammons, Rodney Chang, Bob Armstrong, and Chris Chung

2. **Public Safety Reports**
   - 2.1 Honolulu Fire Department (HFD)
   - 2.2 Honolulu Police Department (HPD)

3. **Good Neighbor Awards**
   - 3.1 Charlie and Diana Lorenz (Tam)
   - 3.2 Anthony Aalto (Armstrong)

4. **Filling of Vacancies** (Proof of residency required, Oath of Office as needed)
   - 4.1 **Subdistrict 1 – Official boundary description:** "Beginning at the junction of King Street and Kalākaua Avenue, southeast along Kalākaua Avenue to Kapi'olani Boulevard, thence west along Kapi'olani Boulevard to Ke'eaumoku Street, thence northeast along Ke'eaumoku Street to King Street, thence southeast along King Street to Kalākaua Avenue."

5. **Presentations** (Five (5) minutes each)
   - 5.1 Hawaii National Guard Youth Challenge Academy in Kapolei – Benjaline Maiava
   - 5.2 Keawe Street Green Infrastructure Retrofit – Jolie Wanger, Smart Trees Pacific
   - 5.3 Biki Launch – Benjamin Travino, BikeShare Hawaii
   - 5.4 Nohona Hale Affordable Micro Housing Project (630 Cooke Street) – Marian Gushiken, EAH Housing
   - 5.5 Thomas Square Project Update – Director Guy Kaulukukui, Department of Enterprise Services

6. **Residents' and Community Concerns**

7. **Committee Reports**
   - 7.1 Health and Public Safety – Larry Hurst
     - 7.1.1 Citizen Patrols Report
   - 7.2 Community Relations – Bob Armstrong, Larry Hurst, William Ammons
   - 7.3 Hawaii Community Development Authority (HCDA) – Rodney Chang
   - 7.4 Legislation – Michael Zehner and Michelle Foyt
   - 7.5 Parks and Water – Ryan Tam
     - 7.5.1 Board of Water Supply (BWS) Report
   - 7.6 Transportation – Bob Armstrong and William Ammons

7.6.1 Honolulu Authority for Rapid Transportation (HART) Report – Pat Lee
7.6.2 Makakilo/Kapolei/Honokai Hale Neighborhood Board No. 34 Maglev proposal
7.7 Homelessness – William Ammons, Rodney Chang, and Ryan Tam
7.8 Education – Michelle Foyt

8. Reports of Members' Attendance at Other Meetings

9. Elected Officials
9.1 Mayor Kirk Caldwell's Representative – Deputy Director Ian Santee, Department of Emergency Services
9.2 Councilmember Carol Fukunaga
9.3 Councilmember Ann Kobayashi – James Larson, staff
9.4 Councilmember Trevor Ozawa – Francis Choe, staff
9.5 State Representative Tom Brower
9.6 State Representative Scott Saiki – Kay Yasufuku Tam, staff
9.7 State Senator Brickwood Galuteria – Raytan Vares, staff
9.8 Governor David Ige's Representative – Cindy McMillan, Governor's Office, Director of Communications

10. Old Business (Discussion/Action)
10.1 Consider resolution providing comments on General Plan update
10.2 Consider resolution to request an annual Board member conference and training
10.3 Consider resolution to request extension of left turn prohibition from Ward Avenue to Hotel Street beyond current hours and creation of a loading zone in front of Blaisdell Center

11. New Business (Discussion/Action)
11.1 Discuss changes to HCDA Reserved Housing Rules and consider resolution providing comments

12. Board Administration
12.1 Selection of Board Officer (Secretary)
12.2 Approval of the March 28, 2017 Regular Meeting Minutes
12.3 Treasurer's Report – Treasurer Michelle Foyt

13. Permit Reviews / Hearings
13.1 Liquor Commission Hearings – Thursday, May 18, 2017 at 711 Kapi'olani Boulevard, 6th Floor, 4:00 p.m.
13.1.1 Lucky Strike Honolulu (1450 Ala Moana Boulevard) – Category 2 (Live entertainment/dancing)
13.2 HCDA Development Permits under Review and Hearings (547 Queen Street, 2nd Floor)
13.2.1 Kaka'ako Reserved Housing Rules – Public Hearings on Thursday, May 3, 2017 at 1:00 p.m., Wednesday, May 17, 2017 at 9:00 a.m.; Decision-Making hearing on Wednesday, May 31, 2017 at 9:00 a.m.
13.2.2 Construction of a new thatched Hale Pili at Hawaii Mission Houses, 533 South King Street – Decision-making hearing on Wednesday, June 7, 2017 at 1:00 p.m.

14. Upcoming Events
14.1 "Finding Value(s) in the Hawai'i Democratic Party" Panel Discussion – Saturday, May 6, 2017 at 10:00 a.m., Hawaii Pacific University Multipurpose Room, 1 Aloha Tower Drive
14.2 Beer Mile Fun Run – Saturday, June 24, 2017, 5:00 p.m. to 7:00 p.m., Cooke Street (Ala Moana Boulevard to Pohukaina Street)
14.3 "H3T – Race to the Base" – Saturday, October 21, 2017, 6:30 a.m., Ala Mona Beach Park

15. Announcements
15.1 Neighborhood Board Elections – Friday, April 28, 2017 to Friday, May 19, 2017. If you voted in the 2016 State elections, you are automatically eligible to vote in the 2017 Neighborhood Board elections. Registered voters, including military personnel, military family members, and legal resident aliens, will be mailed an electronic code, which can then be used to submit an online ballot.
15.2 Next Meeting – The next regular meeting of the Ala Moana/Kaka'ako Neighborhood Board No. 11 is scheduled for Tuesday, May 23, 2017, 7:00 p.m. at Makiki Christian Church, 829 Pensacola Street.

15.3 'Ōlelo Broadcasts – Broadcasts of the Ala Moana-Kaka'ako Neighborhood Board No. 11 meetings are on 'Ōlelo 49 on the first and third Thursdays at 8:00 a.m. and every second Sunday at 6:00 p.m.

15.4 No Loitering – Please do not loiter on Makiki Christian Church grounds after 9:00 p.m. Mahalo.

16. Adjournment

- Community Neighborhood Watches: Mother Waldron Park (525 Cooke Street) – Mondays, 5:30 p.m.; Sheridan Park (833 Pi'ikoi Street) – Monday/Tuesdays, 7:00 p.m.; Keola La'i Condominium (600 Queen Street) Tuesdays, 5:15 p.m.; Kolowalu Park (1177 Queen Street) – 1st and 3rd Tuesdays, 6:00 p.m.
- A mailing list is maintained for interested persons and agencies to receive this board's agenda and minutes. Additions, corrections, and deletions to the mailing list may be directed to the Neighborhood Commission Office (NCO) at Kapālama Hale, 925 Dillingham Boulevard, Suite 160, Honolulu, Hawaii 96817; Telephone (808) 768-3710 Fax (808) 768-3711; or call Neighborhood Assistant K. Russell Ho at (808) 768-3715 or e-mail kho4@honolulu.gov. Agendas and minutes are also available on the internet at www.honolulu.gov/nco.
- Any individual wishing to attend a Neighborhood Board meeting who has questions about accommodations for a physical disability or a special physical need should call the NCO at 768-3710 between 8:00 a.m. and 4:00 p.m. at least 24 hours before the scheduled meeting.
- All written testimony must be received in the Neighborhood Commission Office 48 hours prior to the meeting. If within 48 hours, written and/or oral testimony may be submitted directly to the Board at the meeting. If submitting written testimony, please note the Board and agenda item(s) your testimony concerns. Send to: Neighborhood Commission Office, 530 South King Street, Room 406, Honolulu, HI 96813. Fax: (808) 768-3711. Email: nbtestimony@honolulu.gov.

ALA MOANA-KAKA'AKO NEIGHBORHOOD BOARD NO. 11

c/o NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII, 96817
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DRAFT REGULAR MEETING MINUTES
TUESDAY, APRIL 25, 2017
MAKIKI CHRISTIAN CHURCH

CALL TO ORDER: Chair Ryan Tam called the meeting to order at 7:00 p.m. **Quorum was established with six (6) members present.** Note – This nine (9)-member Board requires five (5) members to establish quorum and to take official Board action. Chair Tam welcomed everyone to the Neighborhood Board meeting and thanked the Board members and the public for their input to the government.

Roll Call – William Ammons, Michael Zehner, Michelle Foyt, Ryan Tam, Sultan White, and Bob Armstrong.

Board Members Absent – Rodney Chang and Chris Chung.

Vacancies – There was one vacancy for Subdistrict 1.

Guests – Cindy McMillian (Governor David Ige's Representative, Office of the Governor); Deputy Director Ian Santee (Mayor Kirk Caldwell's Representative, Honolulu Emergency Services Department); Councilmember Ann Kobayashi and James Larson (Councilmember Kobayashi's Office); Kenny Amazaki (Councilmember Trevor Ozawa's Office); Lieutenant Alex Garcia (Honolulu Fire Department); Lieutenant Baron Lee (Honolulu Police Department, District 1); Jesse Souki (Hawaii Community Development Authority); Kevin Carney (EAH Housing); Jolie Wanger (Smart Trees Pacific); Charlie and Diana Lorenz (Feeding Hawai'i Together Org.); Daniel Alexander (Hawaii Bicycling League); David Robyak, Yankun Zhao, Hideichi Mori, Tanya Harrison, Douglas Valenta, Louise Black (Ala Moana-Kaka'ako Neighborhood Board No. 11 residents); Ronald Higa (Liliha/Puunui/Alewa/Kamehameha Heights Neighborhood Board No. 14 resident), Dexter Okada (KBLA); Dayton Oshiro ('Ōlelo Videographer), Sultan White and K. Russell Ho (Neighborhood Commission Office).

PUBLIC SAFETY REPORTS

Honolulu Fire Department (HFD) – Lieutenant Alex Garcia reported the following:

- March 2017 Statistics – There were 9 structure fires, 2 wildland/brush fires, 1 nuisance fires, 1 cooking fires, 17 activated alarms (no fires); 182 medical emergencies, 1 motor vehicle collisions with pedestrians, 2 motor vehicle crashes/collisions, and 8 hazardous materials incidents.
- Fire Safety Tips – Home Fire Sprinklers:
  - Fire sprinklers respond quickly and effectively to fire, often extinguishing the fire prior to the fire department's arrival.
  - Fire sprinklers can save lives and property from fire.
  - In 2014, the National Fire Protection Association (NFPA) found that sprinklers reduced fire deaths by 83%.
  - A 2014 NFPA report found that sprinklers reduced property loss in homes by 69%.

  Common Fire Sprinkler Myths:
  - Myth: All fire sprinklers will go off at once.
    Fact: Systems are designed so the closest sprinkler head to the fire is activated.
  - Myth: They cause a lot of water damage.
    Fact: Typically, sprinklers utilize 13 to 18 gallons of water per minute. Firefighting hoses flow at least ten times that of a sprinkler.

  Having fire sprinklers in the home is like having a fire fighter in the home 24 hours a day and ready to extinguish a fire!

Honolulu Police Department (HPD), District (1) – Lieutenant Baron Lee reported the following:

- March 2017 Statistics: There were 22 motor vehicle thefts, 9 burglaries, 140 thefts, 36 UEMVs (Unauthorized Entry into Motor Vehicle), 19 assaults, 2 sexual assaults, 4 graffiti incidents, and 28 drug offenses.
- Safety Tips – SCAM (Stop Criminals from Acquiring Your Money):
  - If stranger phones to tell you that you won lottery and asks to send money, don't.

- If in collision or accused and person demands cash for damages, call 911 and don't give money.
- If a stranger offers to do auto repair work that seems too-good-to-be-true, be weary of price jumps and poor workmanship. Decline the offer and if person persists call 911.
- If a stranger comes to your home and offers to do home repair work, ask for company identification and check references. Do not pay any money in advance.
- If a stranger phones to say that your relative has been arrested and needs bail money, check with other family members to confirm your relative's status.
- If someone claims to be an undercover officer and demands money from you, do not pay any money and call 911.

Questions, concerns, and comments followed:

1. Hurst raised concerns about a storage parking problem. There is a junk truck on Pensacola Street, but three (3) in the area around Sheraton Park. He says there is an increase in urban dumping since "Got-Junk" trucks have been in business. He said that if the truck owners are just informed about the law, they will continue to break it. He wants for more action to take place. Lieutenant Lee responded that there is a stipulation that they need to be identified as a commercial vehicle or be under the maximum weight and length allowable. If officers respond to scene they will run the license plate to check. Lieutenant Lee said HPD will check the area and informed the public to call 911 if they witness any illegal dumping.
2. Armstrong asked for updates on Club Sun incident. He knows the suspect is in custody and noted that the business is not in operation. Lieutenant Lee said the Vice Division and Patrol is monitoring the situation. He said that the business is not in operation because they are in a cooling off period.
3. Armstrong asked if HPD knew anything about the hit-and-run situations near Kapi'olani Park Boulevard. Lieutenant Lee responded that he did not know.

GOOD NEIGHBOR AWARDS

Charlie and Diana Lorenz – Charlie and Diana Lorenz were recognized by Chair Tam for their service to the Kaka'ako and greater Oahu Community for starting the non-profit organization Feeding Hawaii Together. Since 2002 Charlie and Diana have developed the infrastructure to distribute over 100,000 pounds of food per month in a respectful and dignified food pantry. It is a reputable achievement and has made a direct difference in over 56,000 households throughout Oahu every year and an indirect difference in countless other lives. Chair Tam thanked them for their service to the community.

Anthony Aalto – Armstrong presented the Good Neighbor Award to Anthony Aalto, a Honolulu-based filmmaker and journalist who used his skills to bring attention to the homeless problem in Kaka`ako. His film "No Room in Paradise" was an unflinching and personal look into the dismal state of homeless people in the neighborhood. The film reminded us that we cannot ignore the plight of others and still live Aloha. In 2013, he founded Green Island Films that creates films about our state and has had films shown at the Hawaii International Film Festival. He is chairperson of the Sierra Club of Hawai'i. Anthony Aalto graciously accepted the award and thanked Bob Armstrong, the Chair, the Board and the community. He said that he would frame the award and put it on his wall.

FILLING OF VACANCY IN SUBDISTRICT 1

Subdistrict 1 – Official Boundary Description: "Beginning at the junction of King Street and Kalākaua Avenue, southeast along Kalākaua Avenue to Kapi'olani Boulevard, thence west along Kapi'olani Boulevard to Ke'eaumoku Street, thence northeast along Ke'eaumoku Street to King Street, thence southeast along King Street to Kalākaua Avenue." Chair Tam noted that the term goes to Friday, June 30, 2017 and that there were two (2) more meetings until the election. As there were no volunteers or nominations, Chair Tam deferred this agenda item to the next meeting.

PRESENTATIONS

Keawe Street Green Infrastructure Retrofit – Jolie Wanger of Smart Trees Pacific (STP) explained how STP does urban forestry projects in Hawaii. STP manages State's urban and community forestry program. They are interested in a green infrastructure projects (using trees to help treat storm water and runoff pollution) to promote health and wellbeing in neighborhoods. They want to convert an underutilized area in the Kaka'ako Hawaii Community Development Association (HCDA) area into rain gardens to stop runoff from entering the ocean. She asked for a motion for support from the Board. Zehner asked what the funding sources would be. Wanger responded that they applied for funding from the Hawaii Community Foundation's Community Restoration Partnership. Hurst asked who

would be doing the maintenance for the garden. Wanger responded that it would be an opportunity for the community to get involved, as well as creating an adoption program for the garden. She mentioned that they would be planting low-maintenance native plants and trees. Hurst said that there would be a liability for volunteers maintaining the garden on public property. Wanger responded that they have liability coverage and that it would be on private property.

Tam moved and Armstrong seconded that the Ala Moana/Kaka'ako Neighborhood Board No. 11 support the Keawe Street Green Infrastructure Retrofit by Smart Trees Pacific. Before voting, Hurst wanted to know if they had support from HCDA. Wanger responded that they met and had preliminary support. As there were no objections, the Ala Moana/Kaka'ako Neighborhood Board No. 11 ADOPTED the motion by UNANIMOUS CONSENT by VOICE VOTE, 6-0-0 (**AYE**: Ammons, Armstrong, Foyt, Hurst, Tam, and Zehner; **NAY**: None; **ABSTAIN**: None)**.**

Biki Launch – Benjamin Travino of Bikeshare Hawaii gave update on program. They did outreach to business and residential buildings in Kaka'ako/Ala Moana neighborhood. They are launching on Saturday, July 1, 2017. They are doing their 100 station installations in the month of June spread from Diamond Head to Chinatown. There will be about 1,000 public bikes. There will be 20 to 30 stations in the Ala Moana/Kaka`ako area. Each station will have a self-service kiosk to sign up, but there is an option to sign up online. The main purpose is to open the public to an alternative form of transit.

Questions, concerns, and comments followed:

1. Pricing: Armstrong mentioned that it seemed like it would be priced for tourists and asked if there is a kama'aina rate. Travino mentioned that there was a monthly pricing option that would better suit the public. It is $15 per month as long as the ride is less than 30 minutes long.
2. Thomas Square: Armstrong asked if there would be a station on Thomas Square, and mentioned that if there were than the public would strongly oppose it. He recommended that they put a station across the street at Neal Blaisdell Center. Travino responded that there would not be a station in the park itself, but the station would technically be on Thomas Square property on the corner of Beretania Street and Ward Avenue to provide service to Makiki. He noted that if there were strong concerns about that station they would consider alternatives.
3. Theft: Member Hurst gave his input that bike thieves could easily break locks and that they could sell the bicycle parts. Travino said that they selected bike equipment that had features which deter theft. It is yet to be seen if the bikes will be stolen, but they are hoping for the best.
4. Safety: Foyt warned that traffic is dense and potentially unsafe for bikers not paying attention. She asked if there would be any education on the rules of the road. Travino answered that they partnered with the Hawaii Bicycling League to create programs for bike education. He noted that in other cities with bike share programs, if the residents know proper bicycling rules then they would teach the tourists. Also, the tourists would learn by observation. There would also be online resources and resources at the kiosk for bike education.
5. Size of Bike Station: Resident asked how the size of the station is determined. He also asked what would be the mix of local/tourist users. Travino answered that the size of the station was determined based on proximity to residential/employment hubs. They figure that the mix of local/tourist users would be 50/50.
6. Public Input: A resident asked how the public can offer input to Biki. Travino answered that they are holding many open houses in the months prior to the launch and that the public can come to Biki directly with any concerns.
7. Buses on Beretania Street: A resident said that there were buses on Beretania Street that could potentially harm riders. She also said that there should be diagrams at each kiosk to show bike routes. Travino answered that there is an unprotected bike lane on Beretania Street and that riders are allowed to ride on the right side of the road.
8. Specific Locations: Tam encouraged Biki to bring information on the specific locations of each station to next meeting.

Nohono Hale Affordable Micro Housing Project (630 Cooke Street) – Marian Gushiken of EAH Housing introduced the Nohono Hale housing project. Selected by HCDA to develop affordable housing at the 630 Cooke Street site which used to be a parking lot. The building will have 111 affordable micro-units with front lanais (300 square feet studios). There will be two (2) podium levels with community areas. The outdoor space will feature community tenant gardens. There will be 14 floors of residential units with eight (8) units per floor and two (2) elevators. Project will be financed with tax credits and bonds as well as some state subsidy funding which has been secured. They are serving households at 60% of Area Median Income. A one (1)-person household should have a maximum

income of $43,980 and a two (2)-person household should have a maximum income of $50,220. Eleven units will serve households at 30% of AMI. Thus, a one (1)-person household will have a maximum income of $22,000 and a two (2)-person household will have a maximum income of $25,150. There would not be more than two (2) occupants per unit. Maximum rent for the 60% units, as governed by federal regulations, would be $1,053 but they are underwriting to a lower level. They want to keep the rent below $1,000. For the 30% units, maximum rent would be no more than $503. These are adjusted for income limits applicable once they build the property. They want to close next spring with an 18-month construction period.

Questions, concerns, and comments followed: Parking: Armstrong raised concerns about how parking would be handled. Gushiken said that it would be a Transit Oriented Development (TOD) property. There are many other modes of transportation nearby. There will be five (5) parking stalls that primarily serve staff. They want to dedicate one (1) of the stalls to a car sharing program. There will be plenty bicycle and moped parking. Hurst said that there could be potentially 50 automobiles without parking which would just park on the street. Gushiken said that residents would self-select, consider whether they want to move in if there is no parking available or make other arrangements. Zehner said he estimates that someone who could afford $1,000 a month rent can also afford a car.

Armstrong motioned in favor of Ala Moana/Kaka'ako Neighborhood Board No. 11 supporting the housing development. No one seconded. The motion died for lack of a second.

Thomas Square Project Update – Director Guy Kaulukukui from the Department of Enterprise Services (DES) shared the five (5) phase renovation. They are now in the first phase which was funded last fiscal year. The first phase involves changing out the irrigation system and planting new grass. The construction barriers that have been up since December 2016 will be up until June, July 2017 at the latest. The second phase includes a flag pole with the State flag flown 24/7 with lights on at night, the State Motto, and interpretive panels that give information on the five (5)-month period of time when the Hawaiian Monarchy in 1843 was illegally overthrown by a Captain of the British Navy, then restored by Admiral Thomas of the British Navy from whom the Square got its name. They will add a statue of Kamehameha III. They will do additional irrigation work as necessary and install electrical conduits. Phase 2 will be in Fiscal Year 2018. They asked for $4.7 million, but the present amended budget has reduced that amount. Future, unfunded, proposed phases will include an upgrade to the restroom to make it Americans with Disabilities Act (ADA)-approved. They will make a bike path on the Ward Avenue side to go through the park and not take up a lane of traffic. They will upgrade the upper terrace on Beretania Street and the staircase which leads down into the park. They will add a performance stage. They will remove four (4) diseased trees and have significant trimming of Banyan trees, after being permitted by the Department of Urban Forestry. They want to cut the inner circle of the Banyan trees so more light comes in. They want to down-light the Banyan trees. In Fiscal Year 2018 Capital Investment Project (CIP) request they have money requested in the budget for lighting of the Banyan trees, lighting of the upper terrace, doing some ADA improvements, a concession or storage building. The concession and performance stage has not been received very well and may or may not be included. They may host food truck events either by having food trucks parked on Victoria Street or by creating a hardened surface inside Thomas Square. There is a planned restoration of the fountain. They want to add "British Jack" paths on the mauka side, completing the paths that are on the makai side in the present phase. They want to remove parking on King Street and replace it with a grass strip, then have the existing bike path down King Street come through the park. They will include multi-modal paths on Ward Avenue and Victoria Street. Planters will be removed in a future phase.

Questions, concerns, comments followed:

1. Armstrong said that there was an extensive development of sidewalks mentioned in previous meetings. This would be in the second phase. All of those sidewalks would not be a part of the unveiling around Monday, July 31, 2017. He mentioned that Honolulu City Council has tried to get Thomas Square away from the Department of Enterprise Services, and the Democratic Party voted overwhelmingly to support City Council's decision. It is hard for the community to support DES because they want to get rid of the grass and the park and make it into an enterprise. Director Kaulukukui asked for the specific issues Armstrong is referring to that has not been mentioned or addressed. Armstrong says that the community wants it to be a park that they are proud of. They do not want to see a performance space or a retail spot. Director Kaulukukui responded that the idea of a performance stage and concession stands are in a future phase and still under consideration. He continued to say that the food concessions would be similar to ones in other parks, which are presently allowable in parks.
2. Hurst raised concerns about losing parking after the park is developed. Foyt reiterated the parking issue.
3. A resident raised concerns about the park transfer from the Department of Parks and Recreation (DPR) to the DES, which needs to be financially self-sustaining. He mentioned a State statute that requires Thomas Square remain a public park and that it was given over to the City in an Executive Order by Governor Ben

Cayetano in 2001. In April 2016 he said that DES asked the head of the State Department of Land and Natural Resources (DLNR) to modify the Executive Order (EO) to allow DES to develop the park. He said that in January of 2017 they responded that they would not modify the Executive Order. He asked if the plan for the park has been vetted and endorsed by corporate or legal consul and why it is legal for DES to develop the park as is presently planned. Director Kaulukukui said that they did ask the Chair of DLNR whether it was necessary to amend the EO to develop Thomas Square and that the Chair's response was that it was not necessary to amend the EO. DLNR has confirmed that both the transfer of the park and the planned programming is consistent with their understanding of what constitutes a public park. He said that the park would be a free public program and it would host free events. They would host cultural/ethnic festivals very similar to ones held in Thomas Square currently.

4. A resident raised concerns about DES cutting down the wrong tree and did not properly care for one of the trees on the Beretania Street side. She raised concerns about cementing over grass to make space for food trucks. She said that even though current administration may not want to cement over grass parcels, future administrations have the right to do so against the will of the public. Director Kaulukukui said that Thomas Square will remain a park. They want to attract more people to the park and give it multiple uses, since Thomas Square is a unique park, where the sovereignty of a nation was restored and they want to honor that difference.
5. Tam asked if there were other zoning regulations that would ensure that Thomas Square remains a park. Director Kaulukukui did not know, but said that even if there were none, Thomas Square would still remain a park.
6. For further questions, contact Director Kaulukukui at – guy.kaulukukui@honolulu.gov or 768-5444.

As there were no objections, Chair Tam moved item 11.1 to item 5.6

Makakilo/Kapolei/Honokai Hale Neighborhood Board No. 34 Maglev Proposal – Chair Tam moved Item 11.1 to item 5.6 to discuss changes to HCDA Reserved Housing Rules.

Changes to HCDA Reserved Housing Rules – Executive Director Jesse Souki of HCDA presented the changes to the housing rules of Kaka`ako. The proposed final rules and hearing notice are on the website. There will be a formal hearings on Wednesday, May 3, 2017, Wednesday, May 17, 2017 and Wednesday, May 31, 2017. There are three (3) programs that relate to housing affordability. The first relates to subsidizing affordable housing projects on State land with government money like the 630 Cooke Street Project which was presented earlier in the agenda. However, the rule changes are on the two other programs: the Required Reserved Housing Program and Voluntary Workforce Housing Program. The Required Reserved Housing Program pertains to anyone who wants to build a residential project in the Ala Moana/Kaka'ako district. They must set aside 20% of the units at 140% of the Adjusted Median Income (AMI). Under the new rules, they will make it more affordable. So, they will bring the AMI limit down from 140% to 120%. There is also a shared equity and buyback provision in the Required Reserved Housing Program. Shared equity helps the public regain equity if the building is resold and the price goes up. The buyback provision requires that HCDA gets first consideration when the property goes up for sale, so that they can keep it as affordable housing. The Voluntary Workforce Housing Program pertains to any landowner or developer who wants to build a project. They want to bring the AMI limit from 140% to 120% for this project as well. HCDA will apply the shared equity and buyback provision to the Voluntary Workforce Housing Program.

Questions, concerns, and comments followed:

1. Armstrong would like the HCDA to engage more with Ala Moana-Kaka'ako Neighborhood Board No. 11 and explore the option of having a seat on the HCDA Board for a Neighborhood Board member.
2. Armstrong asked if Executive Director Souki would show up to the hearing on Wednesday, May 3, 2017.
3. A resident was confused between the Reserved Housing and Workforce Housing. She asked if it can be grouped together into one (1) program. Executive Director Souki responded that it cannot be grouped into one (1).

RESIDENTS' AND COMMUNITY CONCERNS

Hurst moved and Zehner seconded to add presentation of the Lantern Floating Ceremony to the agenda. As there were no objections, the Ala Moana/Kaka'ako Neighborhood Board No. 11 ADOPTED the motion by UNANIMOUS CONSENT, by VOICE VOTE, 6-0-0 (**AYE**: Ammons, Armstrong, Foyt, Hurst, Tam, and Zehner; **NAY**: None; **ABSTAIN**: None).

Lantern Floating Ceremony – Hurst summarized a letter from Alan Hichfelsen, Production Manager for Lantern

Floating Ceremony Hawaii 2017. The ceremony is held at Ala Moana Beach Park for the last 14 years. The theme is "Many Rivers, One Ocean" and it reflects the diversity and harmony of Hawaii.

Hurst moved and Zehner seconded that the Ala Moana/Kaka'ako Neighborhood Board No. 11 supports the Lantern Floating Ceremony. The Ala Moana/Kaka`ako Neighborhood Board No. 11 ADOPTED the motion by a VOICE VOTE of 5-0-1 (**AYE**: Ammons, Foyt, Hurst, Tam, Zehner; **NAY**: None; **ABSTAIN**: Armstrong).

COMMITTEE REPORTS

Health and Public Safety – Hurst reiterated that bike thieves can break through chains. He said that community should be aware when walking around in public. Armstrong added that the neighborhood around Ala Moana shopping center is reviving their Neighborhood Watch Patrols. They meet on the first and second Thursdays of the month at 6:00 p.m. at the corner of Waimanu Street and Queen Street. Hurst told Armstrong to invite them to the next Neighborhood Board meeting as there is already an Ala Moana Neighborhood Watch called the Sheridan Citizens Patrol. They meet at Sheridan Community Park at 7:00 p.m. on Mondays and Tuesdays. Hurst said the new high-rise building at the end of Kamakee Street (presumably 1108 Auahi Street, Honolulu, HI 96814) has no red lights at the top, which could be a risk for helicopters.

Community Relations – Armstrong reported that there were letters sent to 24 high-rise condominiums late last month to have micro-listening sessions with residents. So far, only one (1) building has responded and Armstrong will have a resolution concerning this next month. Armstrong mentioned that perhaps in July 2017, when the Neighborhood Board elections are over, that the Board could move the meeting to 6:30 p.m. or 6:00 p.m. so that it is not rushing through the agenda.

Hawaii Community Development Authority (HCDA) – A representative from HCDA made an announcement about having a community garden at the Kaka'ako Waterfront Park from the Diamond Head-side of the Keawe Street water channel. They would like the community to be involved. They will have a community meeting on Wednesday, May 24, 2017 at 5:30 p.m. at the HCDA office.

Legislation – There was no report.

Parks and Water – There was no Board of Water Supply report.

Transportation – Armstrong informed the community of the Citizens Advisory Committee (CAC) of the Oahu Metropolitan Planning Organization (OahuMPO). There is a left-turn phase study that will hopefully be implemented. There was a report on the need to study alternatives such as an H-4 route, linking the North Shore to Waipahu through the mountains.

Homelessness Committee – Ammons said there was nothing new to report.

Education Committee – Foyt reported that the Department of Education (DOE) requests public comments by Thursday, May 18, 2017 on the second draft of Hawaii's Consolidated State Plan for federal funding under Every Student Succeeds Act (ESSA). The Board of Education will submit the Plan to the Federal Department of Education in September 2017. The plan is on the website at: http://www,hawaiipublicschools.org/VisionForSuccess/AdvancingEducation/StriveHIPerformanceSystem/Pages/Hawaii-ESSA-plan.aspx.

REPORTS OF MEMBERS' ATTENDANCE AT OTHER MEETINGS

On Wednesday, April 12, 2017 Chair Tam attended the Kuleana Kaka'ako meeting. They talked about Reserved Housing and some other projects.

ELECTED OFFICIALS

Mayor Kirk Caldwell's Representative – The O'ahu News for May 2017 was distributed. Deputy Director Ian Santee, of the Honolulu Emergency Services Department (HESD) reported the following:

- Sports Complex at the Ala Wai Golf Course – Deputy Director Ian Santee addressed a concern from March 2017 about a proposal in regards to the Ala Wai Golf Course and the U.S. Army Corps of Engineers drafting

a master plan to build a sports complex. He answered that there is no plan to develop a sports complex at the Ala Wai Golf Course.

- Annual Mayor's Memorial Day Ceremony – This year the ceremony will be a joint venture between Governor David Ige and Mayor Kirk Caldwell in Punchbowl at the National Memorial Cemetery of the Pacific on the morning of Monday, May 29, 2017. They will not allow personal vehicles at the site, so guests must take the bus at the Alapai Transit Center, if they want to attend. Deputy Director Santee will confirm if parking is available at City Hall.
- Hōkūle'a Homecoming – Director Mel Kaku of the Emergency Management Department (DEM) was not able to attend tonight's meeting. The Hōkūle'a will return on Saturday, June 17, 2017 and he will make a presentation at next month's meeting about it.

Councilmember Carol Fukunaga – A newsletter was provided. Councilmember Fukunaga thanked Chair Tam for supporting the budget amendments. She wanted to highlight something she learned from an opposing testimony submitted by a DOE representative that the DOE and the Hawaii Housing Finance Development Corporation have been working to develop a school as part of the affordable housing project at 690 Pohukaina Street. So, the area they had previously identified for a Dog Park may then be turning into an access roadway. However, they will still pursue the appropriation for a fenced Dog Park. They are open to recommendations for sites. They are looking for input on pedestrian safety features in and around the Kaka'ako area.

Questions, concerns, and comments followed: Bill 23 – A resident asked the status of Bill 23 that passed the initial reading. It would prevent the DES from turning any new property that they get into an entertainment facility. Councilmember Fukunaga will get back to him with an answer at a later time.

Councilmember Ann Kobayashi – Councilmember Kobayashi explained the controversial Bill 78. A donation was made for a scoreboard for a gym in Kalihi. Someone offered to donate, but they wanted their name on it for acknowledgement. People are concerned about billboards or large signs. Councilmember Kobayashi reiterated concerns about Thomas Square. She wants it to be left in the Department of Parks and Recreation. With more condominiums with no yard like traditional homes, the children need access to parks.

Questions, concerns, and comments followed: Traffic Signals – Hurst mentioned that Sheridan Street and Makaloa Street needs signalization. He wants four (4) poles and a control box. He said that Walmart was able to provide the wires for this. Councilmember Kobayashi said that since it is a government project, Hurst could not expect the signalization to be put up really fast. Foyt reiterated concerns about parks.

Councilmember Trevor Ozawa – Kenny Amazaki mentioned that Bill 23 passed its second reading. He had nothing more to add.

State Representative Tom Brower – No representative was present; a newsletter was provided.

State Representative Scott Saiki – No representative was present; a newsletter was provided.

State Senator Brickwood Galuteria – No representative was present.

Governor David Ige's Representative – The Capitol Connection April 2017 was distributed by Cindy McMillian. She reminded everyone that April is Earth Month. The Capitol Connection highlighted what the State is doing to ensure sustainable Hawaii. It also explained how citizens can help and get involved. It shows which sunscreens are harmful to sea life, how to report invasive species, and protecting watersheds. She encouraged everyone to go to Honolulu Biennial, which will stay open until Monday, May 8, 2017. Many of the art on display involves the artists' and community's relationship with the environment.

UNFINISHED BUSINESS

General Plan Update – Chair Tam explained that the resolution supports the proposed policies for the general plan. However, there are some changes to the language.

Hurst moved and Armstrong seconded that the Ala Moana/Kaka'ako Neighborhood Board No. 11 provide comments on the General Plan. Discussion explained that there were word additions and some striking, but no fundamental difference. **As there were no objections, the Ala Moana/Kaka'ako Neighborhood Board No, 11**

ADOPTED the motion by UNANIMOUS CONSENT by VOICE VOTE, 6-0-0 (**AYE**: Ammons, Armstrong, Foyt, Hurst, Tam, and Zehner; **NAY**: None; **ABSTAIN**: None).

Board Member Conference and Training – The Board member supporting this resolution was not present. Chair Tam deferred this item until the next meeting.

NEW BUSINESS

Makakilo/Kapolei/Honokai Hale Neighborhood Board No. 34 Maglev Proposal – Chair Tam moved Item 11.1 to item 5.6 to discuss changes to HCDA Reserved Housing Rules. There was clarification as to when the Maglev proposal was discussed, which was moved up to Transportation Report.

BOARD ADMINISTRATION

Selection of Board Officers – There were no nominations for the position of Secretary. Chair Tam deferred this item to the next meeting.

Approval of March 28, 2017 Regular Meeting Minutes – Minutes were not available.

Treasurer's Report – Member Foyt reported that the Board spent $140.78 in April 2017, leaving a balance of $475.00. The Treasurers' Report was filed.

PERMIT REVIEWS / HEARINGS

Liquor Commission Hearings – Thursday, May 18, 2017, 711 Kapi'olani Boulevard, 6th Floor, 4:00 p.m.

- Lucky Strike Honolulu (1450 Ala Moana Boulevard) – Category 2 (Live entertainment/dancing)

HCDA Development Permits under Review and Hearings – (547 Queen Street, 2nd Floor)

- Kaka'ako Reserved Housing Rules – Public Hearings on Wednesday, May 3, 2017 at 9:00 a.m., Wednesday, May 17, 2017 at 9:00 a.m., Wednesday, May 31, 2017 at 9:00 a.m.; Decision-Making hearing on Wednesday, May 31, 2017 at 1:00 p.m.
- Construction of a new thatched Hale Pili at Hawaii Mission Houses, 533 South King Street – Decision-making hearing on Wednesday, June 7, 2017 at 1:00 p.m.

UPCOMING EVENTS

- "Finding Value(s) in the Hawai'i Democratic Party" Panel Discussion – Saturday, May 6, 2017 at 10:00 a.m., 888 Mililani Street, Hawaii Government Employees Association (HGEA) meeting room. One (1) of the speakers is Attorney General Doug Chin. Public is invited free of charge.
- Beer Mile Fun Run – Saturday, June 24, 2017, 5:00 p.m. to 7:00 p.m. They will close Cooke Street (Ala Moana Boulevard to Pohukaina Street).
- "H3T – Race to the Base" – Saturday, October 21, 2017, 6:30 a.m., Ala Moana Beach Park.
  - A resident wanted to know the route and how it was approved. She did not agree with it.

ANNOUNCEMENTS

- Neighborhood Board Elections – Friday, April 28, 2017 to Friday, May 19, 2017. If you voted in the 2016 State elections, you are automatically eligible to vote in the 2017 Neighborhood Board elections. Registered voters, including military personnel, military family members, and legal resident aliens, will be mailed an electronic code, which can then be used to submit an online ballot.
- Next Meeting – The next regular meeting of the Ala Moana/Kaka'ako Neighborhood Board No. 11 is scheduled for Tuesday, May 23, 2017, 7:00 p.m. at Makiki Christian Church, 829 Pensacola Street.

ADJOURNMENT – As there was no further business before the Neighborhood Board, Chair Tam adjourned the meeting at 9:00 p.m.

Submitted by: Sultan White, Neighborhood Assistant
Reviewed by: Dylan Whitsell and K. Russell Ho, Neighborhood Assistants
Final Review by: Ryan Tam, Chair

RESOLUTION PROVIDING COMMENTS ON THE GENERAL PLAN

WHEREAS, the General Plan of the City and County of Honolulu sets forth both the City's long-range objectives for the general welfare and prosperity of the people of O`ahu and also the broad policies needed to attain these objectives; and

WHEREAS, the Department of Planning Permitting is currently updating the 2002 General Plan and has published a second public review draft which incorporates comments from the first public review draft, published in November 2012; and

WHEREAS, the second public review draft includes 103 proposed statement revisions and 144 proposed new objectives and policies, and 81 statements which are proposed to be deleted; and

WHEREAS, the proposed language for Chapter VII, Objective C, Policy 6 is: "Facilitate the redevelopment of Kaka`ako as a major mixed-use residential, office, and commercial area that provides housing, jobs, recreational facilities, pedestrian safety, and other amenities and services that are needed by the area's residents and workers. , ~~as well as commercial and light industrial area~~."; and

WHEREAS, the proposed language for Chapter VII, Objective A, Policy 2 is: "Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and other public ~~safety~~ facilities and services."; and

WHEREAS, the proposed language for Chapter VII, Objective B, Policy 3 is: "Prepare for the anticipated impacts of sea level rise on existing communities and facilities through remediation, adaptation, and other measures."; and now therefore,

BE IT RESOLVED, the Ala Moana/Kaka`ako Neighborhood Board No. 11 ("the Board") supports these policies for the Oahu General Plan; and

BE IT FINALLY RESOLVED, that copies of this resolution be distributed electronically to the Department of Planning and Permitting, all Neighborhood Boards, and the Hawaii Community Development Authority.

Nohona Hale
Affordable Rental Micro-unit Housing
Draft Environmental Assessment

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