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HAWAII COMMUNITY DEVELOPMENT AUTHORITY

KAKAAKO KALAELOA

David Y. Ige
Governor

John Whalen
Chairperson

Aedward Los Banos
Executive Director

July 12, 2019

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

Dear Mr. Glenn:

Subject: Final Environmental Assessment
Finding of No Significant Impact

With this letter, the Hawaii Community Development Authority hereby transmits the Final Environmental Assessment and Finding of No Significant Impact ("FEA-FONSI") for the proposed Kakaako Transpacific Broadband Conduit Tax Map Keys: (1)2-1-015:052, 2-1-060-008, and 009 Honolulu, Oahu, Hawaii project, for publication in the next available edition of *The Environmental Notice*.

Enclosed is a completed OEQC Publication Form, one copy of the FEA-FONSI, three Adobe Acrobat PDF files of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions regarding this matter, please contact our consultant, Mr. Keola Cheng, Associate Director of Planning, at Wilson Okamoto Corporation, at (808) 946-2277.

Sincerely,

Aedward Los Banos
Executive Director

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20-018

APPLICANT
PUBLICATION FORM

Project Name:	Kaka'ako Transpacifc Broadband Conduit
Project Short Name:	Kaka'ako Broadband
HRS §343-5 Trigger(s):	Use of State Lands/Funds
Island(s):	O'ahu
Judicial District(s):	Honolulu
TMK(s):	(1) 2-1-015: 052, 2-1-060-008, and 009
Permit(s)/Approval(s):	STATE: Enviornmental Assessment under Hawai'i Revised Statutes, Chapter 343, and Title 11, Chapter 200, Hawai'i Administrative Rules, Department of Health, State of Hawai'i
Proposing/Determining Agency:	Hawai'i Community Development Authority (HCDA)
Contact Name, Email, Telephone, Address	Amy Mutart, amy.mutart@hawaii.gov, (808) 594-0300 546 Queen Street Honolulu, Hawaii 96813
Accepting Authority:	(for EIS submittals only)
Contact Name, Email, Telephone, Address	
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__ FEA-FONSI

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 FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.

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

The Hawai'i Community Development Authority (HCDA) is proposing to construct a new Broadband Conduit in Kaka'ako Makai, within Urban Honolulu, on the island of O'ahu. The Broadband Conduit consists of a shorelanding conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line. It is anticipated that these future conduit landings would be constructed under public-private-parternships.

The subject project site is located in the Kaka'ako neighborhood of Honolulu on the island of O'ahu. The Broadband Conduit will span from two manholes located either on Lot C or the University of Hawai'i John A. Burns School of Medicine (JABSOM) campus within Kaka'ako Makai on one end, to Kaka'ako Waterfront Park in the area makai of Lot C (See Figure 1-1). The Broadband Conduit will cover portions of Tax Map Keys (TMK) [1] 2-1-015:052, and 2-1060-009, and 008 (See Figure 1-2).

The proposed project will supplement Hawai'i's existing broadband capacity and provide additional security and resiliency through redundancy. The proposed project will provide a foundation for the development of future terrestrial broadband initiatives in Hawai'i. The proposed action is in alignment with the vision outlined by the State of Hawai'i's Broadband Initiative and is intended to facilitate the future expansion of the State's broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high-tech industry within Honolulu's urban core.

20-018

Kakaʻako Transpacific Broadband Conduit
Final Environmental Assessment

June 2019

Prepared For

Department of Business, Economic Development & Tourism
Hawaii Community Development Authority

Prepared By

Wilson Okamoto Corporation

Engineers & Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

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ALB/GK/AM:km

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TABLE OF CONTENTS

Page

PREFACE P-1

SUMMARY S-1

1. INTRODUCTION 1-1
- 1.1 Background Information 1-1
- 1.2 Existing Uses 1-1
- 1.3 Surrounding Uses 1-2
- 1.4 Land Ownership 1-2

2. PROJECT DESCRIPTION 2-1
- 2.1 Purpose and Need 2-1
- 2.2 Project Description 2-1
- 2.3 Development Schedule 2-4
- 2.4 Project Costs 2-4

3. DESCRIPTION OF EXISTING ENVIRONMENT, IMPACTS, AND MITIGATION MEASURES 3-1
- 3.1 Climate 3-1
- 3.2 Physiography 3-2
  - 3.2.1 Geology and Topography 3-2
  - 3.2.2 Soils 3-2
- 3.3 Hydrology 3-3
  - 3.3.1 Surface and Coastal Waters 3-3
  - 3.3.2 Groundwater 3-6
- 3.4 Natural Hazards 3-8
  - 3.4.1 Sea Level Rise 3-8
  - 3.4.2 Flood and Tsunami Hazard 3-9
  - 3.4.3 Hurricane and Wind Hazard 3-9
  - 3.4.4 Seismic Hazard 3-15
- 3.5 Natural Environment 3-15
  - 3.5.1 Flora and Fauna 3-15
- 3.6 Historic and Archaeological Resources 3-16
- 3.7 Cultural Resources and Practices 3-18
- 3.8 Air Quality 3-18
- 3.9 Noise 3-19
- 3.10 Hazardous Materials 3-20
- 3.11 Traffic 3-23
- 3.12 Visual Resources 3-24
- 3.13 Socio-Economic Characteristics 3-25
- 3.14 Public Services and Facilities 3-28
  - 3.14.1 Police, Fire, and Medical Services 3-28
  - 3.14.2 Education 3-28
  - 3.14.3 Recreational Facilities 3-29
  - 3.14.4 Solid Waste Collection and Disposal 3-29
- 3.15 Infrastructure and Utilities 3-30

TABLE OF CONTENTS (Continued)

Page

3.15.1 Water System 3-30
3.15.2 Wastewater System 3-30
3.15.3 Drainage System 3-31
3.15.4 Electrical and Communications System....3-31
3.14.3 Drainage System 3-34
3.14.4 Electrical and Communications Systems....3-35

4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS 4-1
4.1 State Land Use Plans and Policies....4-1
4.1.1 Hawai‘i State Plan....4-1
4.1.2 State Land Use District 4-5
4.1.3 Hawai‘i Coastal Zone Management Program 4-5
4.1.4 Kaka‘ako Makai Area Plan and Makai Area Plan Rules 4-13
4.1.5 Special Management Area Designation....4-13
4.1.6 Kaka‘ako Transit Oriented Development Overlay Plan....4-17
4.1.7 Hawai‘i Broadband Strategic Plan 4-17
4.2 City and County of Honolulu Land Use Plans and Policies 4-19
4.2.1 City and County of Honolulu General Plan 4-19
4.2.2 Primary Urban Center Development Plan....4-26
4.2.3 City and County of Honolulu Zoning 4-27
4.3 Permits and Approvals....4-28

5. ALTERNATIVES....5-1
5.1 No Action Alternative 5-1
5.2 Alternative Conduit Station Locations....5-1

6. DETERMINATION OF FONSI 6-1

7. CONSULTATION....7-1
7.1 Pre-Assessment Consultation 7-1
7.2 Draft EA

8. REFERENCES....8-1

LIST OF FIGURES

Page

Figure 1-1 Location Map 1-3
Figure 1-2 TMK Map 1-4
Figure 1-3 Surrounding Uses 1-5

Figure 2-1 Project Site Plan 2-3
Figure 2-1 Conceptual Rendering 2-3

Figure 3-1 Soils Map 3-5
Figure 3-2 Aquifer Map 3-7
Figure 3-3 3.2 Feet Sea Level Rise Map 3-10
Figure 3-4 5 Feet Sea Level Rise Map 3-11
Figure 3-5 6 Feet Sea Level Rise Map 3-12
Figure 3-6 Flood Insurance Rate Map 3-13
Figure 3-7 Tsunami Evacuation Zone Map 3-14

Figure 4-1 Land Uses (Kaka'ako Makai Plan) 4-15
Figure 4-2 Special Management Area Map 4-16
Figure 4-3 TOD Neighborhood Map 4-21
Figure 4-4 TOD Street Typology Classification Map 4-22
Figure 4-5 City and County of Honolulu Zoning Map 4-29

LIST OF TABLES

Page

Table 3-1 Demographic Characteristics 3-27

LIST OF APPENDICES

Appendix A Archaeological Literature Review and Field Inspection
Cultural Surveys Hawaii

Appendix B Pre-Assessment Consultation Comment Letters and Responses

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PREFACE

This Final Environmental Assessment (EA) / 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 “agency action” involving the use of state lands and funds.

A Finding of No Significant Impact (FONSI) has been issued and filed with the State Office of Environmental Quality Control (OEQC) by the proposed agency, the Hawai‘i Community Development Authority (HCDA).

An Archaeological Literature Report and Field Inspection was conducted in conjunction with this EA, documentation of this effort is included herein as Appendix A.

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SUMMARY

Proposing Agency:	Hawai‘i Community Development Authority (HCDA), State of Hawai‘i Department of Business Economic Development and Tourism
Approving Agency:	Hawai‘i Community Development Authority (HCDA), State of Hawai‘i Department of Business Economic Development and Tourism
Location:	Kaka‘ako, O‘ahu, Hawai‘i
Tax Map Keys (TMKs):	(1) 2-1-015: 052, 2-1-060-008, and 009
Recorded Fee Owner:	State of Hawai‘i
Existing Use:	Presently, the site for the Shore-Landing Conduit is located within Kaka‘ako Waterfront Park, which is a 34-acre park whose ownership is being transferred to the City. The appropriate site for the proposed connecting conduit station has yet to be determined. The two primary candidate sites that are being considered for the proposed conduit station are Lot C and the University of Hawai‘i (UH) John A. Burns School of Medicine (JABSOM) campus. Lot C is a 5.511-acre parcel that is currently being used as a paved parking lot, serving the UH JABSOM campus, UH Cancer Center (UHCC) and the surrounding area. Most recently, HCDA has completed the construction of its Entrepreneur’s Sandbox Facility on Lot C. Construction of the Sandbox was completed in February 2019.
State Land Use Classification:	Urban
HCDA Makai Area Plan Land Use Designation:	Mixed-Use Zone
County Zoning Designation:	According to the City and County of Honolulu Department of Planning and Permitting (DPP), the project area lies within the Kaka‘ako Development District (Kak) zone.
Proposed Action:	The State is proposing to construct a new Broadband Conduit in Kaka‘ako Makai, within Urban Honolulu. Specifically, the Broadband Conduit, or rather, the proposed action, consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line. The shore-landing conduit will be located within the Kaka‘ako Waterfront Park, makai (seaward) of

Lot C, and the conduit station will be located somewhere in either Lot C or the UH JABSOM campus, both of which are within Kaka'ako Makai. The proposed action is in alignment with the vision outlined by the State of Hawai'i's Broadband Strategic Plan and is intended to facilitate the future expansion of the State's broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high tech industry within Honolulu's urban core.

.

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. Further consultation and coordination with applicable agencies will assure that construction activities can avoid impacts to existing utility lines.

Determination: Finding of No Significant Impact (FONSI)

Parties Consulted During Pre-Assessment:

Federal Agencies
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
U.S. Department of the Interior, Fish and Wildlife Service

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
University of Hawai‘i at Mānoa Environmental Center

City Council
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

Utility Companies
Hawai‘i Gas
Spectrum Hawai‘i
Hawaiian Telcom
Hawaiian Electric Company

Other Interested Parties and Individuals
Ala Moana/Kaka‘ako Neighborhood Board No. 11
Honolulu Seawater Air Conditioning, LLC
Kamehameha Schools

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1. INTRODUCTION

1.1 Background Information

The State is proposing to construct a new Broadband Conduit in Kakaʻako Makai, within Urban Honolulu, on the island of Oʻahu. Specifically, the Broadband Conduit, or rather, the proposed action, consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line.

The proposed project site is located in the Kakaʻako neighborhood of Honolulu on the island of Oʻahu. The Broadband Conduit will span from two manholes located either on Lot C or the University of Hawaiʻi John A. Burns School of Medicine (JABSOM) campus within Kakaʻako Makai on one end, to Kakaʻako Waterfront Park in the area makai of Lot C (See Figure 1-1). The Broadband Conduit will cover portions of Tax Map Keys (TMK) [1] 2-1-015:052, and 2-1-060-009, and 008 (See Figure 1-2).

The proposed project will supplement Hawaiʻi's existing broadband capacity and provide additional security and resiliency through redundancy. The proposed project will provide a foundation for the development of future terrestrial broadband initiatives in Hawaiʻi. The proposed action is in alignment with the vision outlined by the State of Hawaiʻi's Broadband Initiative and is intended to facilitate the future expansion of the State's broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high-tech industry within Honolulu's urban core.

1.2 Existing Uses

Lot C is currently used as a surface parking lot for the nearby JABSOM campus and UHCC with a capacity of approximately 414 parking stalls, and is where the conduit station may be situated. The southern portion of the property is leased for tenant use and includes surface parking and a small portable building. The ʻEwa edge (westerly direction) of Lot C serves as an access driveway to the neighboring Office of Hawaiian Affairs (OHA) property. Several existing utilities cross Lot C in the mauka-makai direction (from inland towards the sea). Lot C is bisected mid-block by a 10-foot wide sewer easement, a 25-foot wide Hawaiian Electric Company (HECO) overhead utility right-of-way, a concrete storm drain structure, as well as a water main. In addition, a 25-foot wide sewer easement spans the entire length of the Diamond Head property line (easterly direction). Lot C is also populated with existing light poles, overhead cables, and fire hydrants. Most recently, construction of the Entrepreneur's Sandbox Facility on Lot C was completed in February 2019.

Kakaʻako Waterfront Park is a 34-acre park owned by the State south of Lot C, and is where the shore-landing conduit will be situated. It contains an oceanfront promenade, amphitheater, and is adjacent to the University of Hawaiʻi JABSOM campus. It is situated along Oʻahu's southern shoreline, between Kewalo Basin and Honolulu Harbor. The area sits largely on manmade land as the park was once a former landfill site that ended operations in the 1960s and opened back up to the public in 1992. The shore landing conduit will be located within the Kakaʻako Waterfront Park in the area makai of Lot C.

The University of Hawaiʻi JABSOM campus is a 9.89-acre parcel identified by TMI [1] 2-1-060-009, adjacent to Kakaʻako Waterfront Park, where the conduit station may be situated.

JABSOM is a world-class education and research complex consisting of an Educational/Administration Building and a Bio-Medical Research Facility.

1.3 Surrounding Uses

The area surrounding the subject project site is traversed by a grid of streets including north/south (*mauka/makai*) trending streets (from west to east), Forrest Avenue, Keawe Street, Coral Street, Cooke Street, and 'Ohe Street; and, east/west ('Ewa/Diamond Head) trending streets (from north to south), Ala Moana Boulevard, Ilalo Street, and Kelikoi Street near the Children's Discovery Center Museum (See Figure 1-3).

Major enterprises in the area include Fort Armstrong with the U.S. Immigration and Customs Enforcement, Pier 1, the City's historic Kaka'ako Pump Station, the City's Ala Moana Wastewater Pump Station, UHCC, the former Gold Bond Building (677 Ala Moana Boulevard), and the Children's Discovery Center Museum. Kewalo Basin, located approximately 2,000 feet to the southeast of the site is one of Honolulu's major commercial boat harbors.

In November of 2015, the Hawai'i Technology Development Corporation (HTDC) proposed to relocate their operations from the University of Hawai'i at Mānoa, to new facilities slated for construction on Lot C within Kaka'ako Makai.

Ala Moana Boulevard provides the primary transportation access to and from Kaka'ako and lies one block makai of Lot C. The site is directly served by Ilalo Street which acts as the principal collector street for vehicles and pedestrians in the Makai Area. The nearest public transit is the existing bus stop near former Gold Bond Building. When the Honolulu Rail Transit system is further completed, the project site will be served by the Civic Center Station planned at Halekauwila Street between South and Keawe Streets. Keawe Street is also designated in the Hawai'i Community Development Authority's (HCDA) Makai Area Plan with a bike path.

1.4 Land Ownership

The project area lands are owned and administered by the State. However, the Kaka'ako Waterfront Park ownership is currently in the process of being transferred to the City.

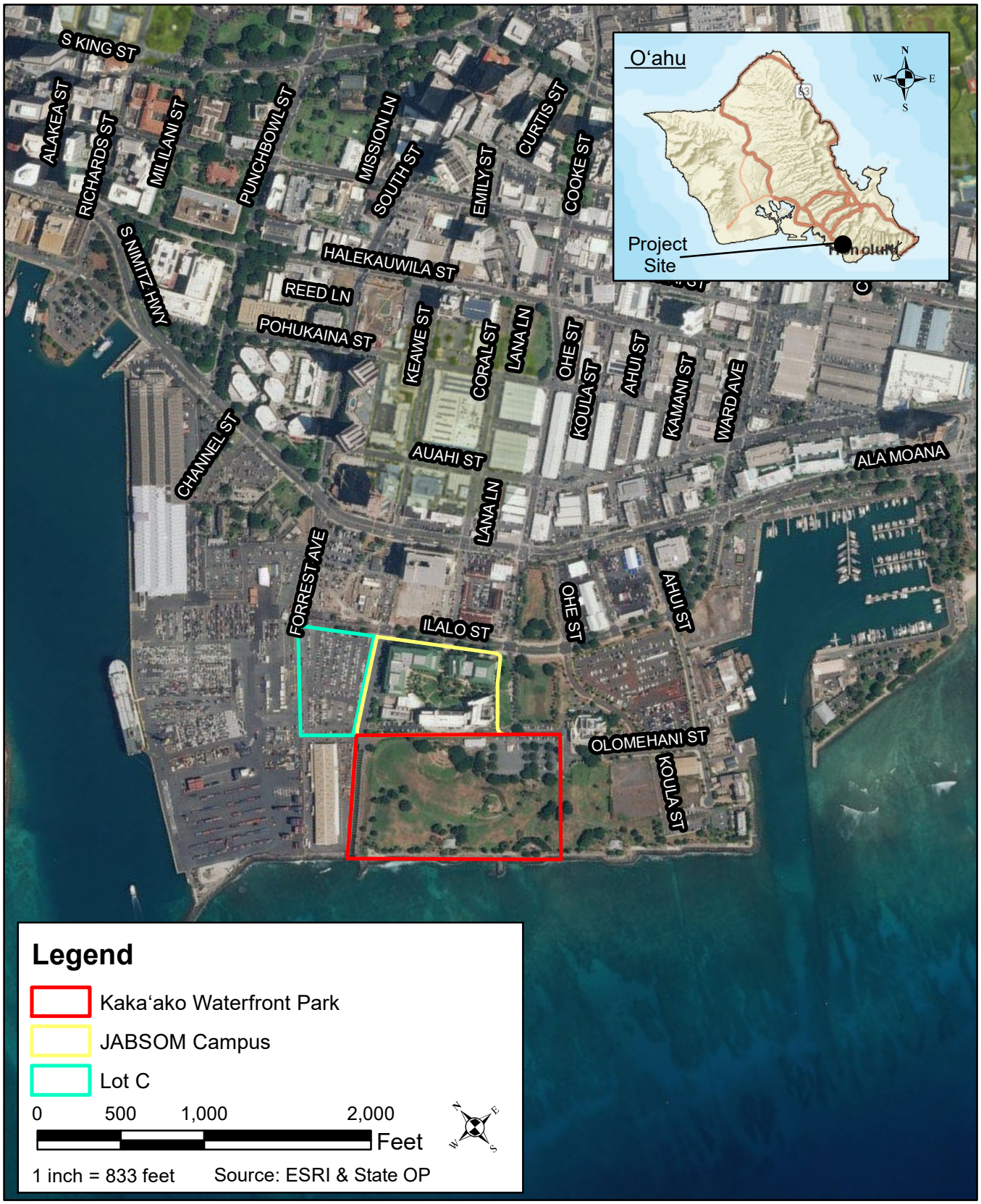
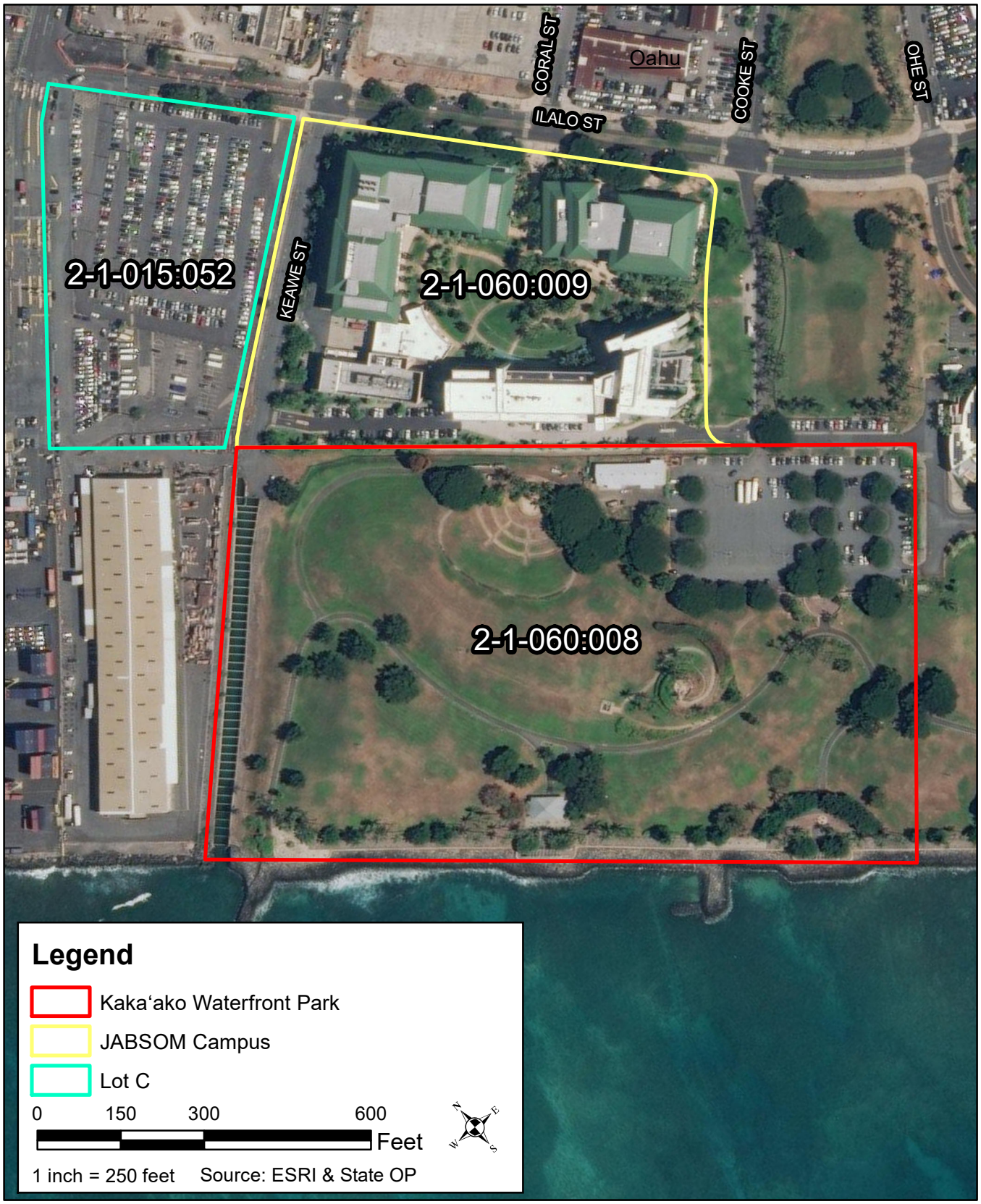


FIGURE 1-1

Project Location Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

WILSON OKAMOTO CORPORATION



WILSON OKAMOTO CORPORATION

FIGURE 1-2

TMK Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

WILSON OKAMOTO CORPORATION

FIGURE 1-3

Surrounding Uses Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

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2. PROJECT DESCRIPTION

2.1 PURPOSE AND NEED

Technology is a key driving force behind 21st century economic growth and development and has largely shaped the form and function of everyday life. Modern economies are critically dependent upon the rapid and secure transmission and exchange of data. Consequently, the availability and resilience of broadband data capacity is one of the most critical infrastructure challenges presented by the modern era.

Agency, institutional, and consumer demand for data has continued to grow at a rapid pace over the past decade, with future growth showing no sign of tapering off in the near, or even far future. Moreover, persistent data connectivity has become essential to the day-to-day function of so many important aspects of our lives. Consequently, the State of Hawai‘i’s strategy for building a vibrant, innovation-driven economy relies heavily upon the availability of affordable, secure, and reliable access to high-speed broadband for both consumers and businesses.

While presently adequate, Hawai‘i’s existing broadband infrastructure will need to expand, both in terms of capacity, as well as in terms of resilience and security. Doing so will build an innovative economy and position Hawai‘i as a leader in broadband and wireless communications and applications in the Pacific Region. In addition, as the Pacific Rim market and its broadband needs expand, Hawai‘i has an opportunity to become a communication hub for international and local service providers. In order to address this growing challenge and potential opportunity, the State is focused on developing opportunities to increase international and regional fiber capacity in order to serve as the basis for future terrestrial broadband expansion and support and facilitate future development of regional and local content and applications.

The proposed project is intended to accommodate a future additional transpacific fiber optic cable that would supplement Hawai‘i’s existing broadband capacity and provide additional security and resiliency through redundancy. It is also anticipated to provide a foundation for the development of future terrestrial broadband initiatives in Hawai‘i. By enhancing Hawai‘i’s capacity to serve as a strategically located marketplace for the exchange of communications traffic, data and content, the proposed project will create an environment conducive to modern, technology driven economic growth and development.

This future transpacific cable would be developed through a public-private partnership, and would be required to independently comply with the requirements set forth by Chapter 343, of the Hawai‘i Revised Statutes (HRS).

2.2 PROJECT DESCRIPTION

It is anticipated that the proposed transpacific cable will shore-land within the Kaka‘ako Waterfront Park and that a connecting conduit station will be constructed somewhere in either Lot C or on the JABSOM campus within in the Makai Area of the Kaka‘ako Community Development District (KCDD). Manholes will be placed on either end of the connecting conduit to facilitate future connections. In order to land the transpacific cable in the Kaka‘ako Waterfront Park and construct the shore-landing conduit, it is anticipated that horizontal directional drilling will be required.

Horizontal directional drilling is a construction method that is used for the installation of pipes and conduits, and is often used to construct installations under obstacles or environmentally sensitive areas. This construction method uses a drill rig at the ground surface and has three phases: 1) drilling the pilot hole; 2) reaming (enlarging the hole); and 3) pulling in the pipe through the hole. The pilot bore establishes the alignment of the conduit installation and the drill rig will drill the pilot bore from the surface. The entry angle into the ground will be at a shallow angle (typically 8 to 16 degrees), therefore a setback from the obstacle is required to reach the desired depth. As the pilot bore is extended underground, a drill pipe is added to the drill rig. As the drilling occurs, drilling mud is pumped into the hole to facilitate the drilling and maintain the drill hole. A construction area will be required for the drilling rig, drill pipe, drilling mud mixing, spoils handling, material storage, and pipe layout.

For optimal results, it is anticipated that the shore landing for the transpacific cable will be sited somewhere within the flat area on the ‘Ewa side of Kaka‘ako Waterfront Park to minimize distance to the targeted conduit site, where the connecting conduit and conduit station will be constructed. Kaka‘ako Waterfront Park has large mounds which are from the landfill below the surface. Avoiding this area is preferred due to the depth of the landfill and the fill material being undetermined. Such conditions could cause potential problems during the directional drilling phase of the project. The flat areas on the ‘Ewa and mauka edges of Kaka‘ako Waterfront Park provide the best areas for the construction.

The applicant has yet to determine an appropriate site for the proposed connecting conduit station. Lot C and the JABSOM campus are the two primary candidate sites that are being considered for the proposed conduit station.

Should it be decided that the conduit station will be developed on Lot C, a drainage channel (approximately 30’ wide and 20’ deep) would need to be crossed. Directional drilling is also anticipated to be required to allow for the crossing of the subject drainage channel. Construction of the Entrepreneur’s Sandbox on Lot C was completed in February 2019. Plans for on-going development on Lot C would limit the amount of available open space. Consequently, the proposed directional drilling effort may commence from the Kaka‘ako Water Park side as the greater availability of open space there would provide more room for construction staging. A maximum setback will be provided to allow for flexibility in crossing the drainage channel, which would allow for the drilling effort to adapt to unforeseen conditions.

On the other hand, construction of the conduit station within the JABSOM campus would eliminate the need for horizontal directional drilling to span the drainage canal, as the JABSOM campus is adjacent to the proposed shore-landing site (See Figure 2-1).

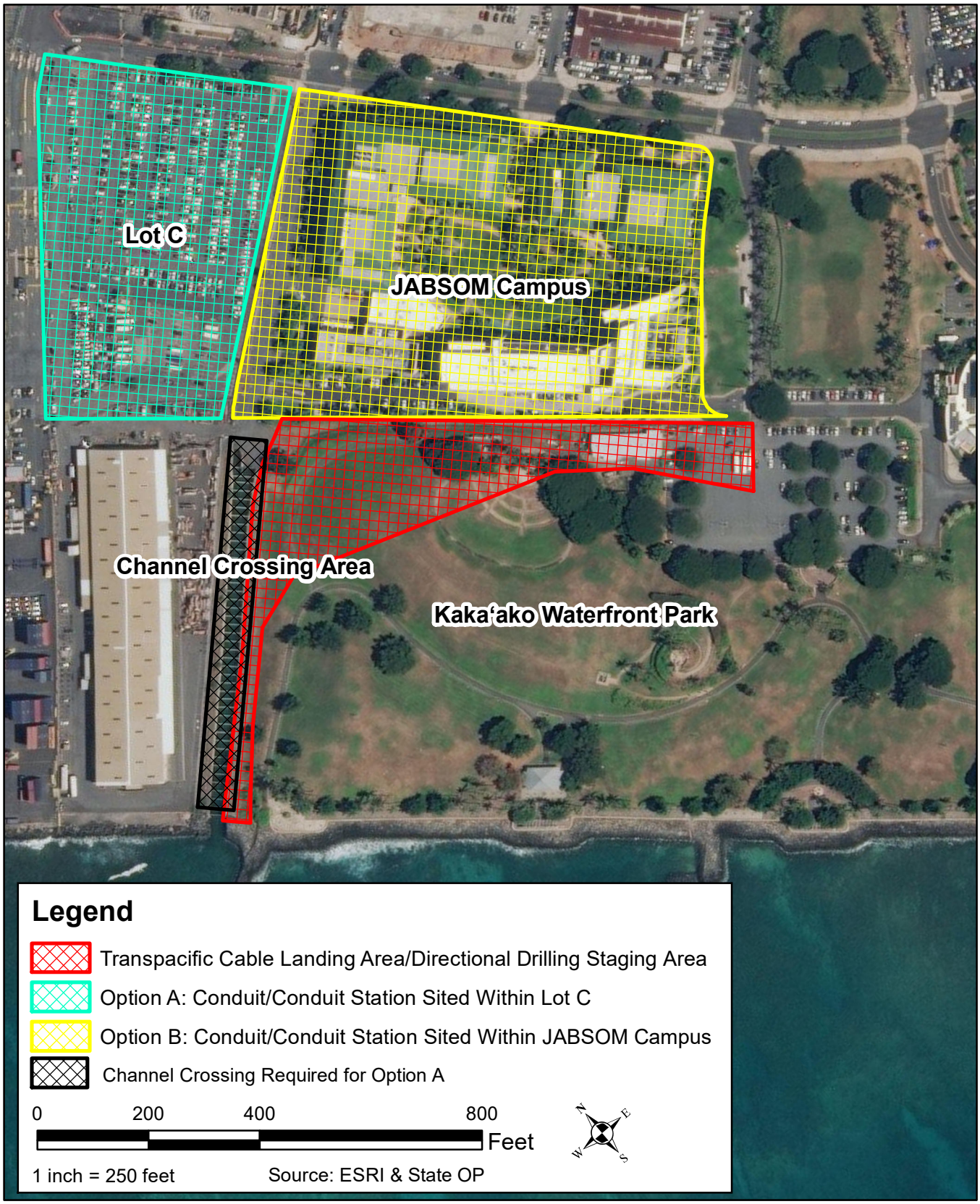

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FIGURE 2-1

Site Plan Map

Kakaʻako Transpacific Broadband Conduit
Honolulu, Oʻahu, Hawaiʻi

2.3 Development Schedule

The implementation of the proposed project is anticipated to occur over the course of a six to nine months period once construction is initiated. A commencement date for construction activities has yet to be scheduled.

2.4 Project Costs

It is anticipated that the construction of the proposed project improvements will cost approximately $1 million.

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.

The State of Hawai‘i is being impacted by a myriad of climatic changes through rising sea levels, an increase in ocean acidity, changing rainfall patterns, a decrease in stream base flow, changing wind and wave patterns, and changing habitats and species distribution. There is no consensus, however, about the exact nature, magnitude, and timing of how these changes will occur. Generally speaking, there is an expectation of a rise in air and sea surface temperatures, a decrease in the prevailing northeasterly trade winds, a decline in average rainfall resulting in the continued decline in stream base flow, an increase in ocean acidity, and sea level rise. There is an overall consensus that these climate changes are linked to global greenhouse gas (GHG) emissions from anthropogenic sources.

GHGs 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 exact nature of how the climate will change is unknown. New information will continually need to be incorporated within future assessments to identify where efforts should be focused when developing adaptation strategies to climatic changes.

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 area 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. Much of the area comprising Kaka‘ako Makai was originally submerged land.

With the exception of the landscaped mounds covering a former landfill and solid waste disposal site in what is presently a portion of the Kaka‘ako Waterfront Park, the terrain of Kaka‘ako Makai is relatively flat. The average elevation of the area is approximately 5 feet above mean sea level, and sloping gently towards the coastline.

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 will not involve any major land disturbing activities involving mass grading or significant revisions to site contours. Horizontal directional drilling construction methods will be required to construct the shore landing conduit and the connecting conduit. 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 area 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. The fill in the area includes materials dredged from the construction of Honolulu Harbor in the early 20th century.

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 area is a previously developed site within the urban core of Honolulu. The project will involve horizontal directional drilling construction methods to construct the shore landing conduit and the connecting conduit. A construction area will be required for the drilling rig, drill pipe, drilling mud mixing, and soils handling. 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. As applicable for each phase, these may include but are not 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 soils and erosion. 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 in the project area should it 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.

3.3 Hydrology

3.3.1 Surface and Coastal Waters

Southern O‘ahu’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 area is Nu‘uanu Stream, located about 1.2 miles north of the project area. Urbanization of the Kaka‘ako Makai 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. Stormwater runoff in the project area flows into a system of rain inlets that convey flow to box culverts. Those box culverts then empty into an open drainage canal that runs between the Kaka‘ako Waterfront Park and the Re-Use Hawai‘i building. In the case that the

proposed Conduit Station is constructed on Lot C, then this open drainage canal will need to be crossed.

The nearest coastal water offshore of the project area is Māmala Bay, located approximately 0.2-miles to the south of the project area. Pursuant to Hawai'i Administrative Rules (HAR) Title 11, Chapter 54, Water Quality Standards, the coastal waters in the vicinity of the project area 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."

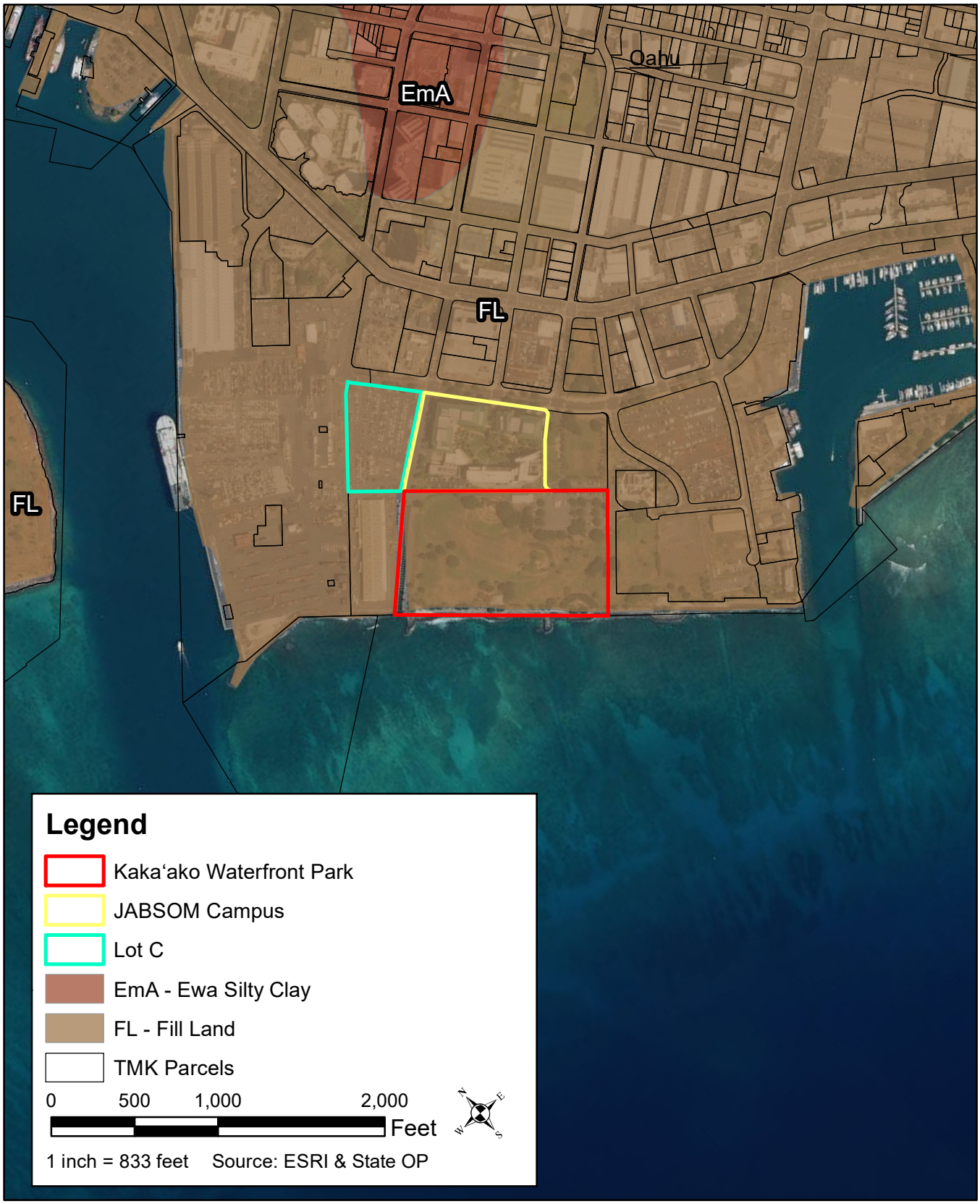
The Honolulu Channel entrance to Honolulu Harbor is located approximately 0.25-miles east of the project area. These waters are also classified as Class A marine waters.

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

The construction of the proposed project will involve horizontal directional drilling. Should it be decided that the Conduit Station be developed on Lot C, the drainage channel adjacent to Kaka'ako Waterfront Park will need to be crossed. Horizontal directional drilling is also anticipated to be required to allow for the crossing of the subject drainage channel. A maximum setback will be provided to allow for flexibility in crossing under the drainage channel, which would allow for the drilling effort to adapt to any unforeseen conditions.

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. Excavation and grading activities associated with the construction of the proposed project will be regulated by the County's grading ordinances and possible a NPDES permit administered by the State DOH. 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.



WILSON OKAMOTO CORPORATION

FIGURE 3-1

Soils Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

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. As previously mentioned, 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 in the project area should it 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, Chapters 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.

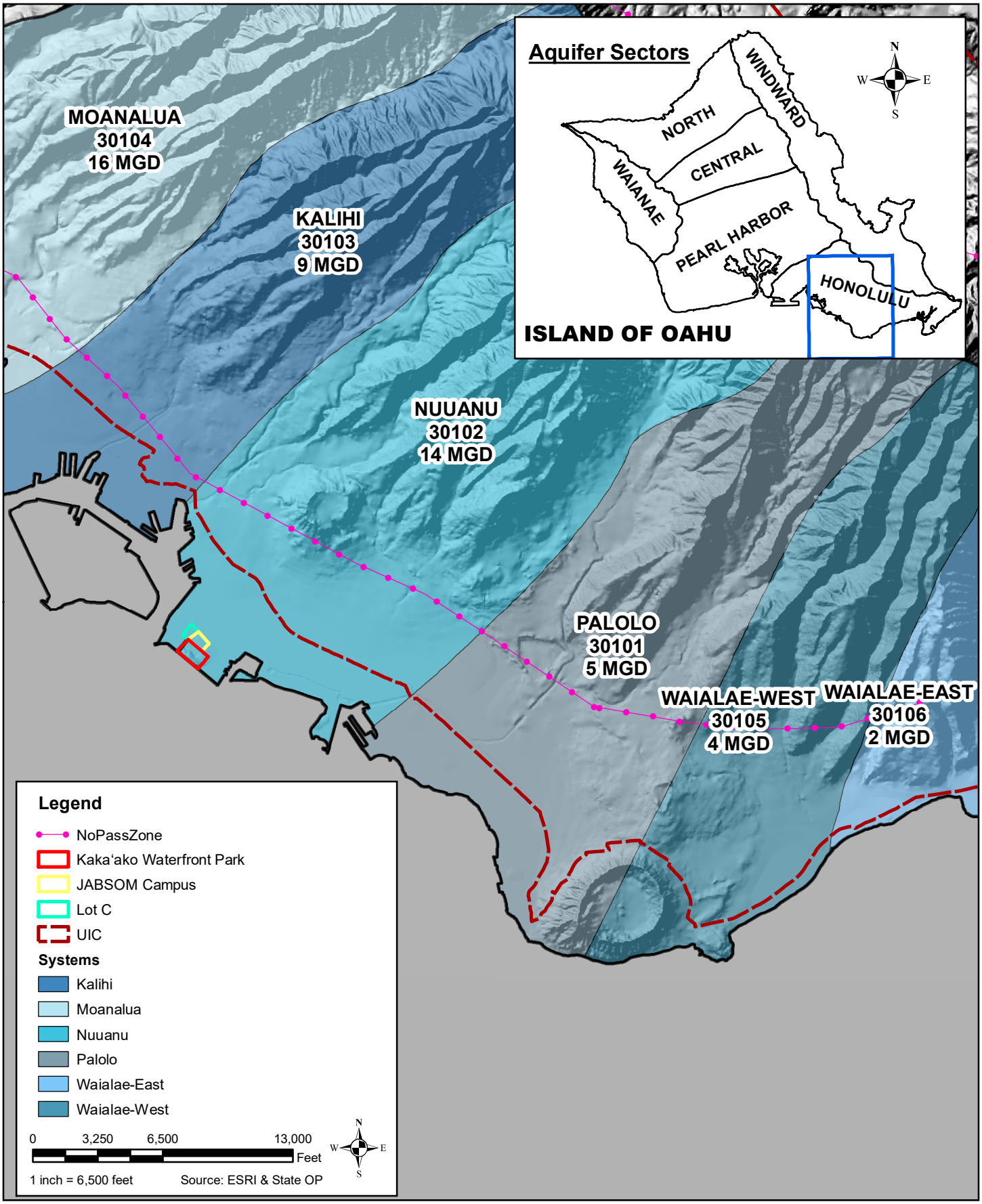
3.3.2 Groundwater

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 area is located within the Honolulu Sector Area which is comprised of six Aquifer System Areas identified as Wai'alae – East, Wai'alae – West, Pālolo, Nu'uanu, Kalihi and Moanalua. The project area is located within the Nu'uanu 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 area lies well 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 3-2).

Infiltration of water at the project area 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.



WILSON OKAMOTO CORPORATION

FIGURE 3-2

Aquifer Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

3.4 Natural Hazards

3.4.1 Sea Level Rise

The Earth’s climate has experience natural changes and variability throughout geologic time, however, the changes that have occurred over the past century are unprecedented. Anthropogenic GHG emissions are causing global warming and climate disruption. The concentration of carbon dioxide, as well as other GHG, are well outside the range of natural variability and are reaching the highest levels seen in at least 800,000 years (Hawai‘i Climate Change Mitigation and Adaptation Commission. 2017).

Sea level rise is largely driven by global warming of the atmosphere and thermal expansion of the Earth’s oceans which has resulted in melting of glaciers and ice sheets. Rising sea level and projections of stronger and more frequent El Nino events and tropical cyclones in waters surrounding Hawai‘i indicate a growing vulnerability to coastal flooding and erosion. If GHG emissions are maintained at its current rate of increase, the IPCC (2014) predicts up 3.2 feet of global sea level rise by the year 2100. However, recent observations and projections show that this magnitude of sea level rise could occur as early as year 2060 under recently published high-end scenarios (Sweet et al., 2017). There are questions and debate around the exact timing of that rise due largely to uncertainties around the future behavior of the Earth’s cryosphere and global GHG emission trajectories.

The project area is not located within the 3.2-foot area as depicted by the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise data (See Figure 3-3). However, at 5 feet of sea level rise, the project area would begin to experience inundation on the ‘Ewa edge of Kaka‘ako Waterfront Park, adjacent to the drainage canal. Under such conditions, the University of Hawai‘i JABSOM campus, and the majority of Lot C and Kaka‘ako Waterfront Park are not inundated (See Figure 3-4). However, at 6 feet of sea level rise, Lot C is entirely inundated, and the entire area of Kaka‘ako Waterfront Park where the proposed shore landing conduit will be located, along the ‘Ewa edge is inundated. The University of Hawai‘i JABSOM campus is inundated along its boundaries (See Figure 3-5).

Impacts and Mitigation Measures

No short- or long-term impacts on sea level rise are anticipated during construction or operation of the proposed project.

No essential structures will be constructed in low-lying areas. The shore landing conduit will be located along the ‘Ewa edge of Kaka‘ako Waterfront Park that will experience inundation at 5 feet of sea level rise. However, the broadband conduit will not be impacted by sea level rise. Should the Conduit Station be placed in Lot C, it will be designed in a way that no essential equipment will be damaged by sea level rise.

However, the exact nature of how the sea level will rise is unknown. New information will continually need to be incorporated within future assessments to identify where efforts should be focused when developing adaptation strategies to sea level rise.

3.4.2 Flood and Tsunami Hazard

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

According to the Flood Insurance Rate Map (FIRM), (Community Panel Number 1500010115 B) prepared by the Federal Emergency Management Agency (FEMA), the project area is designated Zone X, an area determined to be outside of 500 year floodplain (See Figure 3-6). There are no base flood elevations or depths shown within this zone.

According to the Tsunami Evacuation Zone maps for O'ahu, the project area lies entirely within the tsunami evacuation zone, while the JABSOM campus partially lies within the Extreme Tsunami Evacuation Zone (See Figure 3-7).

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts on flood hazards in the project area are anticipated as the proposed improvements are not anticipated to increase flood risks or cause any adverse flood-related impacts at the project area or lower elevation properties.

To mitigate tsunami impacts for the development, all drainage improvements, will include appropriate engineering and development strategies relative to coastal inundation in consultation with the appropriate agencies during the project design, permitting, and construction. The project facility is likely to be a remotely monitored and operated system with infrequent manned maintenance activities. Part of the project site safety plan for maintenance will include proper notification for maintenance personnel as to the nearest evacuation route and tsunami safe zone.

3.4.3 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, 'Iwa in 1982 and 'Iniki in 1992. During hurricanes and storm conditions, high winds create 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.

FIGURE 3-3

3.2 Feet Sea Level Rise Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

FIGURE 3-4

5 Feet Sea Level Rise Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

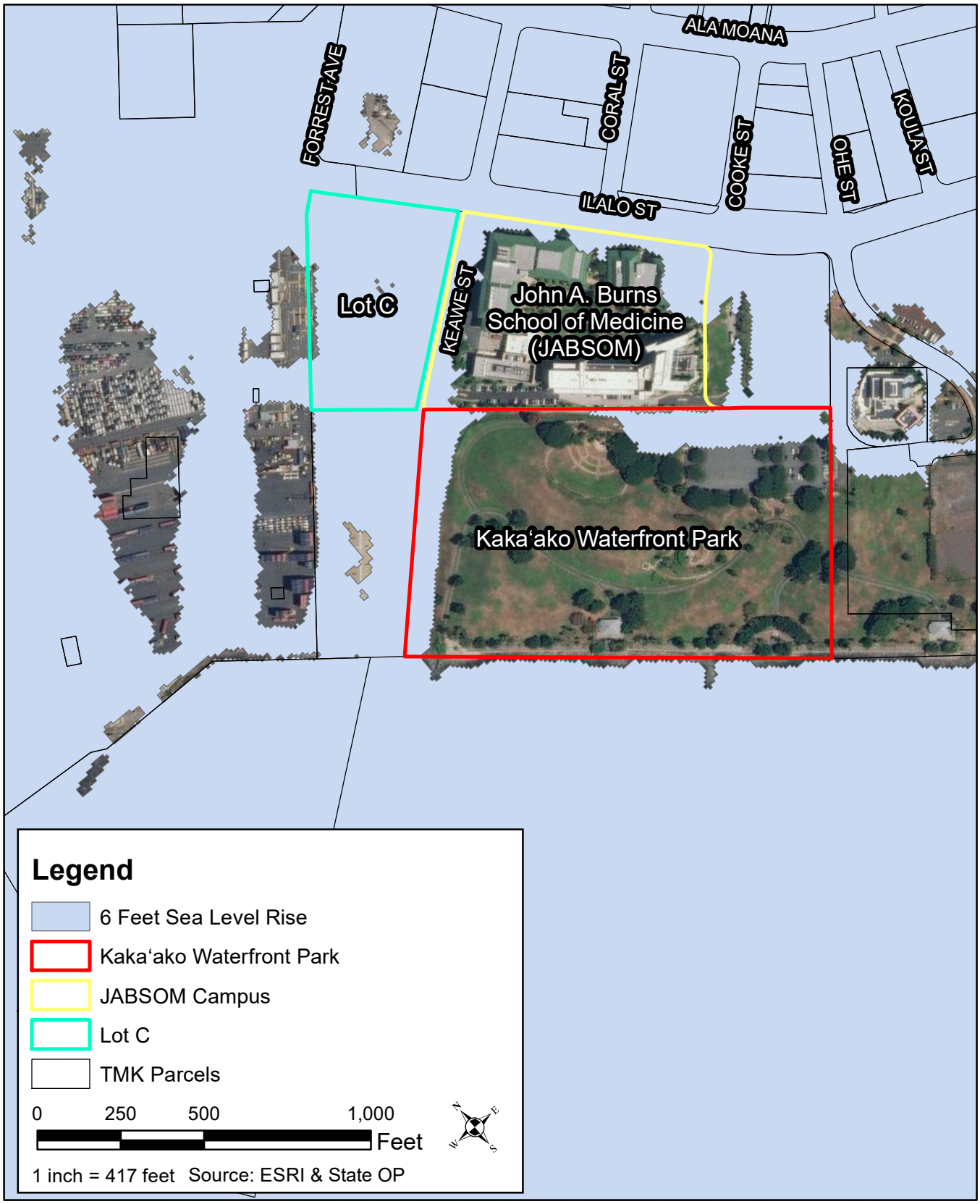


FIGURE 3-5

6 Feet Sea Level Rise Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

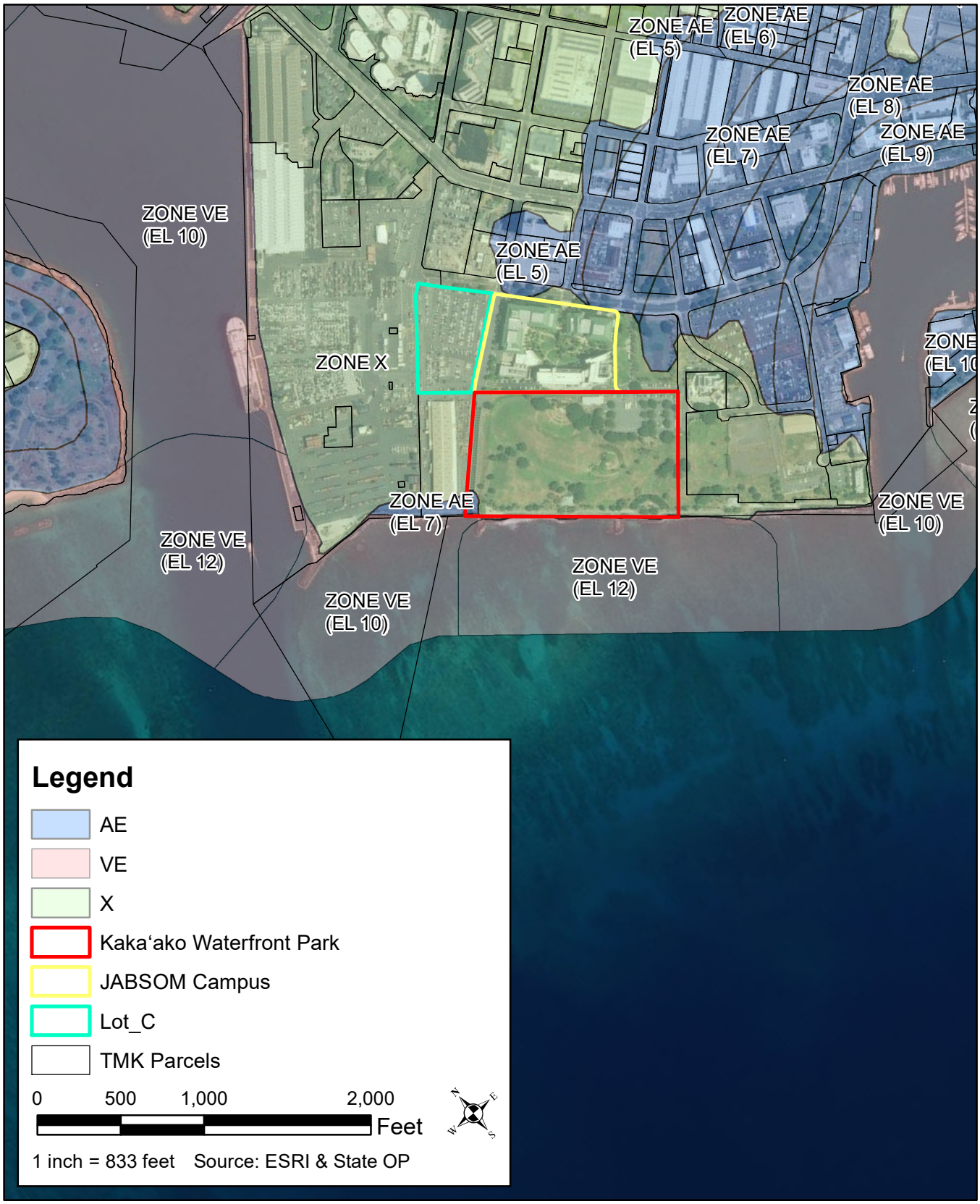


FIGURE 3-6

Flood Insurance Rate Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

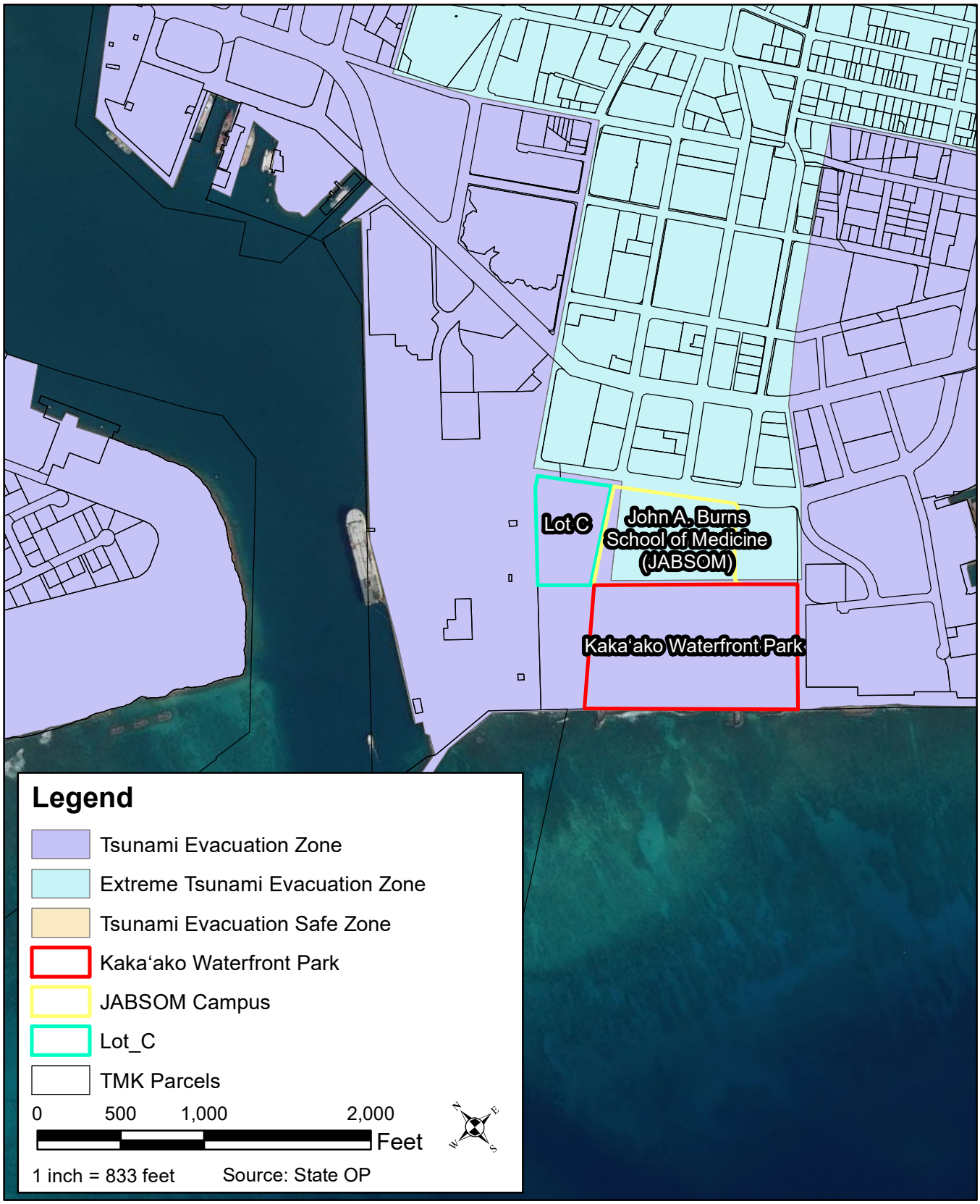


FIGURE 3-7

Tsunami Evacuation Zone Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

3.4.4 Seismic Hazard

The southern shoreline of O‘ahu lies within the Moloka‘i Seismic Zone. This region of O‘ahu 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

O‘ahu 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.

3.5 Natural Environment

3.5.1 Flora and Fauna

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

A Biological Assessment conducted prior to construction of the UH Cancer Center at JABSOM, also included the proposed project area (Rana Biological Consulting, Inc., April 2011). Field reconnaissance surveys reported that Lot C is completely paved over, and that no rare plants, or any species currently proposed, or listed under federal or State endangered species statutes were detected. Kaka‘ako Waterfront Park is a public park that sits on top of a landfill. It was determined that no rare plants, or any species currently proposed, or listed under federal or State endangered species statutes were detected.

It is expected that at least two indigenous migratory shorebird species, the Pacific Golden-Plover (Pluvialis fulva), and Ruddy turnstone (Arenaria interpris) use resources in the Kaka‘ako area on a seasonal basis, although in small numbers and most likely in parking lots and within Kaka‘ako Waterfront Park. Both species are indigenous migratory shorebird species that nest in the high Arctic during the late spring and summer months, returning to Hawai‘i and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai‘i for their trip back to the Arctic in late April or at the very early part of May each year. Neither of these species are currently listed as threatened or endangered.

In addition to the avian species listed in the Biological Assessment, one other indigenous avifauna species was mentioned during consultation with the Office of Planning in preparation of the State Special Management Area (SMA) permit for the UH Cancer Center. The Wedge-tailed Shearwater (‘Ua‘u kani – *Puffinus pacificus*) is an indigenous seabird species that occasionally overflies the Kaka‘ako Makai Area. Their breeding season begins in February and by November both adults and fledglings have migrated to the ocean. During this migration, fledglings may become disoriented by artificial lighting and can crash or fall. If they are not killed as a result of the collision, the injured fledglings become easy targets for predatory animals such as cats, dogs, and mongoose. On some neighbor islands, such disorientation by artificial lighting is of particular concern when it involves endangered

seabird species, specifically the Newell's Shearwater ('A'o - *Puffinus auricularis newelii*) and the Hawaiian Petrel ('Ua'u -*Pterodroma sandwichensis*). The Wedge-tailed Shearwater, however, is neither an endangered or threatened species, nor is it a rare species. Nevertheless, it is protected under Chapter 13, Section 124, HAR, which prohibits injuring or killing indigenous wildlife.

With the exception of the endangered Hawaiian Hoary bat (*Lasiurus cinereus semotus*), all terrestrial mammals currently found on the island of O'ahu are alien species, and most are ubiquitous. During a visit to the project area for the subject Biological Assessment, two dogs were being walked on leashes within the parking lot, and a small Indian mongoose (*Herpestes a. auropunctatus*) was observed running next to a dumpster. No rodents were seen, however, it is likely that at least three of the four established alien *muride* found on O'ahu, the roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), and European house mouse (*Mus musculus domesticus*) use various resources found within the general project area on a seasonal basis. No mammalian species that are currently proposed, or listed under State or federal endangered species statutes were encountered nor expected.

Impacts and Mitigation Measures

Potential adverse impacts on flora and fauna are not anticipated. The project area 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 Literature Review and Field Inspection for the project area was conducted by Cultural Surveys Hawai'i, Inc. in April 2019 to evaluate the presence of significant historic properties within the project area. The archaeological literature review included studies of archival sources, historic maps, Land Commission Awards (LCA) and previous archaeological reports to construct a history of land use and to determine if archaeological resources have been recorded on or near the project area. A field inspection of the project area followed to identify and surface archaeological resources and to investigate and assess the potential for impact to such sites. The inspection also sought to identify any sensitive areas that may require further investigation or mitigation before the project proceeds. The Archaeological Literature Review and Field Inspection report is included in Appendix A and is summarized below.

Historically, the area surrounding the project area (often referred to as Kewalo), formed a “break” between the heavily populated and cultivated centers of Honolulu and Waikīkī. The area was characterized by fishponds, trails connecting Honolulu and Waikīkī, the occasional lo‘i kalo (irrigated field), and habitation sites. The project area itself was located entirely in coastal shallows, approximately 500 feet offshore, until being filled in during the early 20th Century. Therefore, no in-situ subsurface cultural resources pre-dating 1890 would be expected.

By 1897, a seawall-bound enclosure was construct ed adjacent to the north corner of Lot C but the entirety of Lot C appears to have been coral reef underwater at high tide. By 1891 the extreme mauka edges of the project area may have been filled in and there was a powder magazine at the corner of Ilalo and Keawe Streets. The powder magazine is still shown at this location 20 years later in 1911. By 1919 all but the most southwestern portion of Lot C was filled in and appears to have been incorporated within Fort Armstrong. The JABSOM campus area appears to be infilled at the time but remained undeveloped. By the 1930s, Fort Armstrong was fully developed within Lot C, and the animal quarantine station was present within the JABSOM campus. The makai portions of the project area, including the entire Kaka‘ako Waterfront Park, remain ocean until the second half of the 20th century. The general configuration of Fort Armstrong remained until 1957. By 1961 however, the infrastructure was replaced by a warehouse district. This trend continued as warehouses eventually replace the animal quarantine station in the 1970s. The modern configuration of Lot C, the JABSOM campus, and the Kaka‘ako Waterfront Park is largely present by 2005.

It is possible that subsurface remnants of a seawall, dating close to the 20th Century, may extend along the seaward edge of the project area. The fill deposits that make up the present project area are believed to have originated from dredged material from the construction of Kewalo Basin and Honolulu Harbor and thus is relatively free of artifacts as might be found in terrigenous fill materials.

In addition, previous archaeological studies identified that while seaward portions of the Kaka‘ako area mauka of Ala Moana Boulevard have yielded cultural properties and/or human skeletal remains, no properties makai of Ala Moana Boulevard appear to have yielded subsurface cultural properties or human skeletal remains.

Impacts and Mitigation Measures

Based on the findings of the Archaeological Literature Review and Field Inspection, for Option A (Lot C), a determination of “effect, with proposed mitigation commitments” is appropriate for historic properties in the project area per HAR §13-275-7. For Option B (JABSOM Campus), a determination of “no historic properties affected” is appropriate as no impacts to historic, archaeological, and/or cultural resources are anticipated as a result of the construction and operation of the proposed project. When the proposed project alignment is determined, consultation will be coordinated with the State Historic Preservation Department to obtain a determination letter.

However, as the project area was once coastal shallows and is comprised of fill land makai of Ala Moana Boulevard, it is unlikely that there are any cultural properties

and/or human skeletal remains pre-dating 1890. Possible remnants of the powder magazine foundation at the extreme mauka edge would date to the 1890s. Subsurface structural remnants associated with the animal quarantine station are a possibility within the JABSOM campus, but in all likelihood obliterated during the construction of the school. No historic properties are expected within the Kaka'ako Waterfront Park as it was underwater until the 1950s when it became a landfill. The presence of additional components of SIHP # 8049, buried structural remnants and cultural deposits associated with the historic Fort Armstrong, a military fort present within the Lot C portion of the project area in the first half of the 20th century are likely. These may include building and wall foundations, former work surfaces, and features and artifacts from that time.

Should any significant archeological, cultural, or historic resources be found during construction activities, all work will cease and SHPD be immediately notified for appropriate response and action.

3.7 Cultural Resources and Practices

No cultural resources were identified by CSH in their field work subject Archaeological Literature Review and Field Inspection (see Appendix A). The project area and surrounding lands are not used for traditional, customary, or cultural practices. The entire project area is located on recent artificially created land comprised of mixed fill soils in an area that was submerged by the ocean and was approximately 500 feet off-shore. Plants found at the site are introduced grass species not associated with cultural gathering or use activities. The artificial creation and developed condition of the site is not conducive to the presence of wahi pana (storied place) or other sites associated with cultural practices.

Impacts and Mitigation Measures

Based on the above, potential adverse impacts to traditional and cultural practices in the vicinity of the project are 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 anthropogenic 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 crop burning, and natural sources, such as windblown dust 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 O'ahu, 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. Vehicular traffic on Nimitz Highway/Ala Moana Boulevard, however, has contributed to carbon monoxide levels that have occasionally exceeded State standards in the immediate vicinity of some busy intersections. Air quality at the project area, however, is generally considered to be good due to its distance from Ala Moana Boulevard and the typical flow of fairly constant northeasterly trade winds that disperse pollutants seaward.

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 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 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 area are expected, however, due to the generally prevailing trade winds, the emissions would be readily dissipated.

3.9 Noise

The existing noise environment at the project area 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.

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.

3.10 Hazardous Materials

A Phase I Environmental Site Assessment (ESA) was prepared by EnviroServices & Training Center LLC (ETC) in July of 2015 to assess the potential presence of hazardous materials within the vicinity of Lot C.

The purpose of this Phase 1 ESA was to conduct an inquiry to identify recognized environmental conditions (REC) in connection with Lot C. REC are defined as: the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; 3) under conditions that pose a material threat of a future release to the environment. *De Minimis* conditions are not recognized environmental conditions.

Visual observation for the use and/or storage of hazardous materials and hazardous waste was performed during this Phase 1 ESA. Other than petroleum staining typically associated with parking areas, there were no indications of petroleum impacts or hazardous materials on Lot C. Additionally, there were no indications of underground storage tanks (USTs), aboveground storage tanks (ASTs), or their associated piping. Five HECO-owned pole-mounted transformers were observed on Lot C. Two of the transformers were fair to poor condition with evidence of corrosion; however, no indications of a release from these transformers was observed. In a letter, dated June 1, 2015, HECO confirmed that the transformers are considered 'Non PCB'. Based on these findings, the observed transformers are not considered a recognized environmental condition (REC) for the project area. Stockpiles of apparent sweeping debris were observed along the eastern boundary of the project area. These stockpiles were not considered to be a significant concern.

ETC reviewed several files associated with the area-wide site known as the *Kaka'ako Brownfields (i.e. Unit 6, Unit 7, Unit 8, Historic Ala Moana Pump Station, and Makai Parcel).* Except for the Historic Ala Moana Pump Station and the Makai Parcel 1, the *Kaka'ako Brownfields* site generally includes multiple sites bound by 'Ohe Stree, Ilalo Street and the Kewalo Basin.

Review of the *Kaka'ako Pump Station (aka the Historic Ala Moana Pumping Station)* facility file indicated that the site is located north of Ilalo Street, which is topographically upgradient and adjacent to the northern boundary of Lot C. Document review indicated that detectable concentrations of petroleum constituents and metals in the soil and groundwater were identified within the active Ala Moana Waste Water Pump Station site and the northwest portion of the Historic Ala Moana Pumping Station property. The petroleum and metal contaminants were suspected to be associated with the historic land filling operations in the project area.

Additional Brownfields sites were included in the *Kaka'ako Brownfields* file (i.e. Unit 2, Unit 4, etc.). Investigative reports indicate that petroleum and heavy metal contaminants are present in the soil and/or groundwater throughout *Kaka'ako Brownfields*. In addition, review indicated that the impacts were suspected to be associated with the historic usage of the area and the former *Kewalo Incineratory/Ash Dump* site. Based on these findings, ETC cannot dismiss the possibility that residual contaminants associated with the historic use and suspect fill operations may be present on the project area. As such, this finding was considered a REC.

ETC also reviewed several client-provided environmental reports pertaining to the former Produce Center & Department of Agriculture (DOA) Facility located at 651 Ilalo Street, which is the current University of Hawai'i JABSOM campus site.

Historical information indicates that the former Foreign Trade Zone CEM Warehouse was formerly located on the project area at Lot C. Document review indicated that contaminant migration from the Foreign Trade Zone-managed property and the former Kewalo Incinerator Landfill were considered an 'area of concern' for the 651 Ilalo Street property (JABSOM). Document review also indicated that a separate Phase I ESA was completed for the Foreign Trade Zone property, which is in the project area. Its review indicated that several potential environmental concerns within the Foreign Trade Zone property were identified including 'former Underground Storage Tanks (UST) that were removed without proper soil sampling, visual observations of oil-stained ground surface, subsurface contamination originating from improper material storage, and potential USTs'.

The Foreign Trade Zone area was also historically part of Fort Armstrong and used as a military reservation. The western boundary of the 651 Ilalo Street site (JABSOM) was analyzed for potential petroleum contaminant migration from Lot C. Analytical results along the western boundary of the site indicated that detectable concentrations of Total Petroleum Hydrocarbons – Diesel (TPH-D), TPH-O (Organics), and toluene were noted in the subsurface soils. While no analytical data was found for Lot C, based on ETC's review findings coupled with its historical use, ETC cannot dismiss the possibility that residual contaminants associated with the historical use (i.e. former UST, storage practices, etc.) of the project area. Consequently, this finding is considered a REC.

In its conclusion, ETC states that it performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E1527-13 on the project area. The aforementioned potential presence of contaminants associated with the historical usage, operations (i.e. former UST, storage practices, etc.), and suspect fill operations on Lot C is the only REC identified by this Phase I ESA.

As a result of the site investigation findings, ETC prepared an Environmental Hazard Evaluation (EHE) and Environmental Hazard Management Plan within the project area in September 2017. The DOH HEER Office issued a letter, dated December 13, 2017, concurring with the procedures and protocols noted in the EHE/EHMP. Construction of the Entrepreneur’s Sandbox commenced in 2018. During construction activities, ETC sampled approximately 750-cubic yards generated during construction activities. Sample analytical results indicated that the soils appeared to be suitable for reuse off-site. In accordance with the September 2017 EHE/EHMP, the reuse of the site soils required DOH approval. Therefore, ETC submitted a Summary Letter, dated June 29, 2018, to the DOH HEER Office for review and approval. Subsequently, the DOH HEER Office issued a letter, dated July 1, 2018, indicating that stockpiled soils may be re-used off-site without restrictions. As such, approximately 650- cubic yards of soil was subsequently transported off-site for re-use.

ETC completed the EHE-EHMP within the project area in March 2019. The purpose of the this EHE-EHMP was to document contaminants in the soil and groundwater within the project area, identify potential environmental hazards associated with these contaminants, and describe appropriate measures to be used to mitigate these hazards.

Laboratory results indicated that TPH-D was detected in surface and subsurface soil layers. Arsenic impacts were noted in surface soil layers. All other COCs were either not detected above laboratory method detection limits and/or were below their corresponding default (lowest) DOH EALs. All groundwater constituent concentrations were either not detected above laboratory method detection limits and/or below their respective default DOH EALs. While ETC’s groundwater sampling results did not indicate significant impacts to the groundwater; previous groundwater data indicate that selenium may be present in the groundwater.

Moreover, the State of Hawai‘i, Department of Health (HDOH), Hazard Evaluation and emergency Response (HEER) office has overseen several investigations pertaining to soil and groundwater contamination in the Kaka‘ako Makai District project area for the past several years. Results of these previous investigations indicated elevated levels of contaminants as a result of previous activities conducted at the site. Based on historical information about various operations and the results of several investigations to date, the HDOH recommends that, in the absence of the specific local data that shows the area to be clean, all soils in the Kaka‘ako area be managed assuming they are contaminated and may pose hazards to construction workers.

Based on the proposed locations of the shore-landing conduit, the conduit station and the potential crossing the drainage canal, it is possible to potentially disrupt the cap and

encounter the contaminated refuse material, and the existing burial pit next to the Cancer Center where soil contaminated with PCB, DDT, Dieldrin and lead were buried as part of the Soil Management Plan for JABSOM.

Impacts and Mitigation Measures

Due to the identification of an REC by the Phase I ESA in 2015 for Lot C, the contaminants found in the Phase I ESA for the Foreign Trade Zone Property that was located in the project area, and THD-D and Arsenic found during the EHE-EHMP documentation process, additional investigation work may be warranted per consultation with the HDOH HEER.

A site-specific Safety and Health Plan (SSHP) should be generated to account for potential hazards to construction workers during future site activities. The SSHP should comply with the applicable regulations and the newest DOH HEER Office Technical Guidance Manuel.

HDOH requests that the State submit a Pre-Construction Environmental Hazard Management Plan (EHMP) that will describe proposed construction activities (e.g. drilling, trenching, excavation, stockpiling, pile caps, grading, etc.) and precautionary measures and practices to be implemented to prevent exposure and ensure safety of workers. The EHMP should also include procedure for groundwater handling and disposal of groundwater, as well as disposal of contaminated soil, if encountered during construction. The State will comply with the requests of HDOH HEER. The EHE-EHMP prepared in March 2019 should be reviewed and approved by the DOH HEER Office should it be determined that the project alignment to include Option A (Lot C).

Any hazardous materials that may be identified prior to or during construction of the proposed project will be handled in accordance with all applicable Federal, State and local regulations.

3.11 Traffic

The proposed project is located along Ilalo Street, Cooke Street, and Keawe Street. Kaka‘ako Waterfront Park is accessed by Cooke Street, which is located on the northeastern boundary of the park. The University of Hawai‘i JABSOM campus is bounded by Ilalo Street to the north, Cooke Street to the East, and Keawe Street to the west. Access to JABSOM is provided via driveways off Cooke Street and Keawe Street. Lot C is bounded by Ilalo Street to the north, Keawe Street to the east, and industrial uses to the south and west. Access to Lot C improvements will be provided via driveways off Ilalo Street and Keawe Street.

Lot C is currently used as a surface parking lot with a capacity of 414 parking stalls. Construction of the Entrepreneur’s Sandbox was recently completed in February 2019. . Traffic operations were expected to remain similar with the construction of the Entrepreneur’s Sandbox Facility on Lot C despite the addition of a site-generated vehicles to the surrounding area.

The proposed project will be located south of Ala Moana Boulevard in Kaka‘ako. In the vicinity of the project site, Ala Moana Boulevard is a predominately six-lane, two-way

roadway generally oriented in the east-west direction. Ala Moana Boulevard is the major thoroughfare in the area. The southern terminus of Keawe Street and Cooke Street intersect with Ala Moana Boulevard, which allow for access into the project area.

Impacts and Mitigation Measures

No short- and long-term significant impacts are anticipated on traffic conditions in the vicinity of the project.

Additional traffic would occur from construction workers traveling to and from the job site. The construction traffic management plan would identify appropriate parking areas for construction workers and constructions vehicles that will park within the project area and, thus will not affect traffic flow along adjoining roadways except while traveling to and from the site. Construction contractor(s) will be required to mitigate potential vehicular and pedestrian traffic impacts through appropriate traffic control measures and safety devices. Examples of such measures that may be implemented include:

- Publishing newspaper notices to alert the public of construction projects;
- Providing signage and other warning to alert approaching motorists and pedestrians to construction activities ahead;
- Providing barriers, cones, signage, lighting, non-skid covering over trenches, adequate and safe sidewalk widths, adequate intersection visibility and other provisions to promote safe passage of vehicles and pedestrians through construction zones;
- Restricting transport of construction vehicles during school and commuter peak traffic hours. To the extent possible, require construction vehicles to use available main routes/roads as alternate routes to the project site rather than local streets, to minimize impacts to area residents;
- Providing flaggers and/or police officers, when necessary, to control traffic and pedestrian flow;
- Notifying providers of emergency services (fire, ambulance, police) prior to implementation of any required detours or street closures;
- Coordinating with the City Department of Transportation Services (DTS) and O'ahu Transit Services of any detours or street closures; and,
- Providing appropriate barriers as necessary to deter the public from unauthorized entry into restricted or hazardous construction zones during working and nonworking hours.

Within the project area, provisions will be implemented for the safe passage of pedestrians around the project site during construction activities. The contractor may implement necessary measures such as temporary chain-link fences to protect materials and construction-related equipment areas would be clearly marked and temporary fences used to keep unauthorized persons out.

3.12 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 Kaka'ako Makai Area consists of low-rise structures with the exception of the ten-story former Gold Bond Building. Although there are pockets of open spaces in the Makai Area, the major open spaces are the Fort Armstrong area and the Kaka'ako Makai Area Gateway Park and Waterfront Park.

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.

Existing views identified in the Makai Area Plan include:

- Ala Moana Boulevard to Kewalo Basin
- Kewalo Basin Park along the shoreline
- Kaka'ako Waterfront Park along the shoreline
- Kaka'ako Waterfront Park lookout in all directions
- Mauka (mountain) views from local streets

The plan also calls for the creation of a mountain to sea view corridor along Cooke Street.

Impacts and Mitigation Measures

No short- and long-term significant impacts are anticipated on visual resources, as identified in the Makai Area Plan. The proposed project does not call for any buildings to be constructed. The proposed project will require a conduit station to be constructed that will not exceed the existing height limit. Seaward views from Ala Moana Boulevard, the nearest coastal highway, are already blocked by the Ala Moana Wastewater Pump Station and the Re-Use Hawai'i building.

3.13 Socio-Economic Characteristics

The project area 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 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.

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.

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

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

3.14 Public Services and Facilities

3.14.1 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, approximately 1 mile north of the project area.

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 0.5 miles northeast of the project area.

The closest hospital to the project area is The Queen’s Medical Center located approximately 1 mile northeast of the project area. The Queen’s Medical Center is the largest private hospital in Hawai‘i, 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 O‘ahu. 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.

3.14.2 Education

The project area is located within the State Department of Education’s (DOE) Kaimukī-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 McKinely High School. The Native Hawaiian emersion school ‘Ānuenue, the Education Laboratory Public Charter School, and Hālau Kū Māna Public Charter School are also located within the vicinity of the site. 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 have remained virtually flat over the course of the past decade, fluctuating less than 2% in growth/decline on an annual basis.

The closest DOE school is McKinley High School, located approximately a mile from the proposed project area. Also located on the adjoining block is the UH JABSOM campus, including the University of Hawai‘i Cancer Center.

Impacts and Mitigation Measures

In the short- and long-term, no significant impacts or increase in demand on schools are anticipated. There are no residences proposed so the project will not induce population growth. Therefore, it is not expected to affect student enrollment at public schools in the area.

3.14.3 Recreational Facilities

The primary recreational resource in the within the project area is the 30-acre Kaka‘ako Waterfront Park, the location of the shore landing conduit, which 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. Adjacent to the JABSOM campus to the southeast, 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 adjacent to the Kaka‘ako Waterfront Park to the southeast, and offers interactive educational exhibits for children and their families.

Impacts and Mitigation Measures

In the long-term, no significant impacts to recreational facilities are anticipated as a result of the construction and operation of the proposed project. The proposed project does not include residences that could generate demand for recreational facilities.

In the short-term, the construction will require that various areas of Kaka‘ako Waterfront Park be closed to the public. However, the park’s existing use would return to normal upon completion of the proposed project.

3.14.4 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 Wai‘anae.

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.

3.15 Infrastructure and Utilities

3.15.1 Water System

Lot C is traversed by a 12-inch buried waterline with three 6-inch stub-outs within the parcel. The University of Hawai'i JABSOM campus is traversed by an 8-inch waterline to supply its facilities. The Board of Water Supply (BWS) currently has its deep well cooling station, wells, pumps, and connecting pipelines at the University of Hawai'i JABSOM campus as well. The nearest Board of Water Supply potable water source in the vicinity of the project area is the Beretania Station.

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 not be required for the proposed project.

3.15.2 Wastewater System

A 21-inch municipal sewer line lies beneath Ilalo Steet fronting Lot C. That line, along with a 16-inch sewer line coming from the JAMSOM campus, beneath Ilalo Street, discharge into a 24-inch line near the intersection of Ilalo and Keawe Streets. The 24-inch line carries the combined flows to the City & County of Honolulu's Ala Moana (wastewater) Pump Station, which is located opposite Ilalo Street from the project area.

The pump station receives wastewater flows from Kaka'ako to Pauoa/Dowsett Highlands on the west to Niu Valley on the west. A 78-inch force main extends underground from the pump station and traverses the project area's eastern border, continuing through the Pier 1 area before crossing beneath Honolulu Harbor to the Sand Island Wastewater Treatment Plant where the wastewater is received for treatment and disposal.

There is a non-municipal wastewater service line that traverses beneath the project area to collect wastewater from areas makai of the project area.

Impacts and Mitigation Measures

Wastewater service is provided by the City and County of Honolulu's Department of Environmental Services (ENV). The proposed project will not generate any wastewater.

No significant impacts are anticipated on the existing wastewater system as a result of the construction and operation of the proposed project.

Due to the proximity of the Ala Moana Pump Station and force mains to the project area, there is a potential for odors and noise emanating from these facilities during periods of maintenance, construction work, or as a result of unexpected operational issues or emergencies that could impact the project area.

3.15.3 Drainage System

Stormwater runoff at the project area flows into a system of drain inlets that convey flows to box culverts located within the project area. Those culverts empty into an open drainage channel that runs between the Kaka‘ako Waterfront Park and the Re-Use Hawai‘i building.

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 area. 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 in the project area should it 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.

3.15.4 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.

Spectrum is the local CATV provider in the region.

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.

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

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

(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people.

(2) A steady growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.

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

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

(4) Expand existing markets and penetrate new markets for Hawaii's products and services

(6) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives

(9) Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.

(11) Maintain acceptable working conditions and standards for Hawaii's workers.

(13) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy.

(15) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.

(16) Foster a business climate in Hawai‘i – including attitudes, tax and regulatory policies, and financial and technical assistance programs – that is conductive to the expansion of existing enterprises and the creation and attraction of new business and industry.

Discussion:
In the short-term, project construction expenditures will confer positive benefits on the local economy. These benefits would be derived from the creation of construction and construction support jobs as well as revenues generated by the procurement of building supplies and materials.

As the State of Hawai‘i is becoming more of a networked state in a networked nation in a networked world, the availability, capacity, and performance of the supporting network infrastructure must operate at the highest possible capacity and be accessible to everyone, everywhere, at all times. Consequently, while presently adequate, Hawai‘i’s existing broadband infrastructure will need to expand, both in terms of capacity, as well as in terms of resilience and security. Doing so will build an innovative economy and position Hawai‘i as a leader in broadband and wireless communications and applications in the Pacific Region.

In the long-term, the proposed Kaka‘ako Transpacific Broadband conduit will serve the data needs of Hawai‘i’s economy.

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:

- *Prudent use of Hawai‘i’s land-based, shoreline, and marine resources.*
- *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:
The proposed project is located within close proximity to the waterfront of Kaka'ako.

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 area. Construction of the proposed project is not anticipated to 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, equipment wash down areas, and use of compost filter socks.

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. Soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the State DOH, will be required to control storm water discharges. 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 any potential construction activities, all nighttime lighting will be shielded and angled downward to reduce glare and disruption of bird flight.

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

Sec. 226-18 Objectives and policies for facility systems – energy/telecommunications.

(a) Planning for the State's facility systems with regard to energy/telecommunications shall be directed towards the achievement of the following objectives:

(1) Dependable, efficient, and economical statewide energy and telecommunication systems capable of supporting the needs of the people.

(b) To achieve the energy/telecommunication objectives, it shall be the policy of this State to ensure the provision of adequate, reasonable priced, and dependable power and telecommunication services to accommodate demand.

(d) To further achieve the telecommunication objective, it shall be the policy of this State to:

(1) Facilitate research and development of telecommunication systems and resources.

(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunication planning.

Discussion

In telecommunications, broadband is wide bandwidth data transmission which transports multiple signals and traffic types. The proposed project in to construct a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line.

The proposed project will supplement Hawai'i's existing broadband capacity and provide additional security and resiliency through redundancy. The proposed project will provide a foundation for the development of future terrestrial broadband initiatives in Hawai'i. The proposed action is in alignment with the vision outlined by the State of Hawai'i's Broadband Initiative and is intended to facilitate the future expansion of the State's broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high-tech industry within Honolulu's urban core. By enhancing Hawai'i's capacity to serve as a strategically located marketplace for the exchange of communications traffic, data and content, the proposed project will create an environment conducive to modern, technology driven economic growth and development.

While presently adequate, Hawai'i's existing broadband infrastructure will need to expand, both in terms of capacity, as well as in terms of resilience and security. Doing so will build an innovative economy and position Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region. In addition, as the Pacific Rim market and its broadband needs expand, Hawai'i has an opportunity to become a communication hub for international and local service providers. In order to address this growing challenge and potential opportunity, the State is focused on developing opportunities to increase international and regional fiber capacity in order to serve as the basis for future terrestrial broadband expansion and support and facilitate future development of regional and local content and applications.

Moreover, this future transpacific cable would be developed through a public-private partnership

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 area 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 O'ahu, the City & County of Honolulu, Department of Planning and Permitting would generally administer zoning regulations under its Land Use Ordinance. The project area, 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 area 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 Kaka'ako Waterfront Park, located approximately 200 feet to the south of the proposed project area.

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 area. 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. Soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the State DOH, will be required to control storm water discharges. 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 Literature Review and Field Inspection for the project area was conducted for the property in April 2019. Based on the findings of the Archaeological Literature Review and Field Inspection, no impacts to historic, archaeological, and/or cultural resources are anticipated as a result of the construction and operation of the proposed project.

As the entire project area was once coastal shallows, approximately 500 feet offshore, it is unlikely that there are any cultural properties and/or human skeletal remains. Possible remnants of the powder magazine foundation at the extreme mauka edge would date to the 1890s. Subsurface structural remnants associated with the animal quarantine station are a possibility within the JABSOM campus, but in all likelihood obliterated during the construction of the school. No historic properties are expected within the Kaka'ako Waterfront Park as it was underwater until the 1950s when it became a landfill. The presence of additional components of SIHP # 8049, buried structural remnants and cultural deposits associated with the historic Fort Armstrong, a military fort present within the Lot C portion of the project area in the first half of the 20th century are likely. These may include building and wall foundations, former work surfaces, and features and artifacts from that time.

Should any significant archeological, cultural, or historic resources be found during construction activities, all work will cease and SHPD be notified immediately.

(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 Makai Area Plan. The proposed conduit housing to be constructed will stand no higher than one story and is located within the 100-foot height limit established by the Makai Area Plan. Seaward views from Ala Moana Boulevard, the nearest coastal highway, are blocked by the Ala Moana Wastewater Pump Station and the Re-Use Hawai'i building.

(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 area is Māmala Bay, located approximately 0.2-miles to the south of the project area.

During construction of the proposed improvements, storm water runoff may carry increased amounts of sediment into the storm drain system due to erosion from soils exposed during excavation and drilling. This runoff could potentially impact the water quality of coastal waters in the area. However, excavation and drilling activities associated with the construction of the proposed project will be regulated by the County ordinances. In addition, any soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the State DOH, will be required to control storm water

discharges. 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. 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 in the project area should it 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.

(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 Innovation Block at Lot C Master Plan will allow for the growth and diversification of O'ahu's economic base through the incubation and development of commercial high technology industry in Hawai'i. HTDC operations and programs contribute to the economic and social well-being of O'ahu residents by

providing a range of job opportunities in fields that would otherwise not exist in the islands. HTDC efforts include, but are not limited to:

(1) Developing and encouraging industrial parks as high technology innovation centers and developing or assisting with the development of projects within or outside of industrial parks, including participating with the private sector in such development;

(2) Providing financial and other support and services to Hawai'i based high technology companies;

(3) Collecting and analyzing information on the state of commercial high technology activity in Hawaii;

(4) Promoting and marketing Hawai'i as a site for commercial high technology activity; and

(5) Providing advice on policy and planning for technology based economic development.

The proposed project will support the proposed Innovation Block at Lot C Master Plan by providing additional broadband infrastructure and capacity.

(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 area 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 O'ahu, the project area lies entirely within the 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 area 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. The proposed improvements are also subject to the State Special Management Area (SMA) permit process as discussed in Section 4.1.5. Applicable State and County requirements will be adhered to in the design and construction phases of the proposed improvements.

(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. The proposed project will also require a Special Management Area permit that will evaluate its consistency with the CZM objectives and policies and require a public hearing.

(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 area. 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 area 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.

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 Makai Area Plan and Makai Area Rules

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 Makai Area was adopted by the HCDA in 2005. Land uses established by the plan are shown in Figure 4-1.

The proposed project is being designed to conform to the Makai Area Plan and Rules. The Makai Area Plan designates the project area as being within the Mixed-Use Zone (MUZ). The MUZ allows for the development of commercial uses, such as offices and retail establishments. The purpose of this zone is to foster a wide range of development options. The proposed improvements will conform to density, yard, and open space requirements set forth in the Makai Area Plan and Rules. The maximum height of the proposed conduit housing structure will be within the 100-foot maximum allowable height limit as established in the Makai Area Plan and Rules.

4.1.5 Special Management Area Designation

Pursuant to the Hawai‘i CZM Program, Chapter 205A, HRS, the counties have enacted ordinances establishing 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 4-2) requires an SMA Use Permit. Although normally administered by the City and County of Honolulu, because the project area is located within the HCDA Kaka‘ako Community Development District, the approving agency for an SMA permit in this area would be the State Office of Planning. The SMA boundary is shown in Figure 4-2.

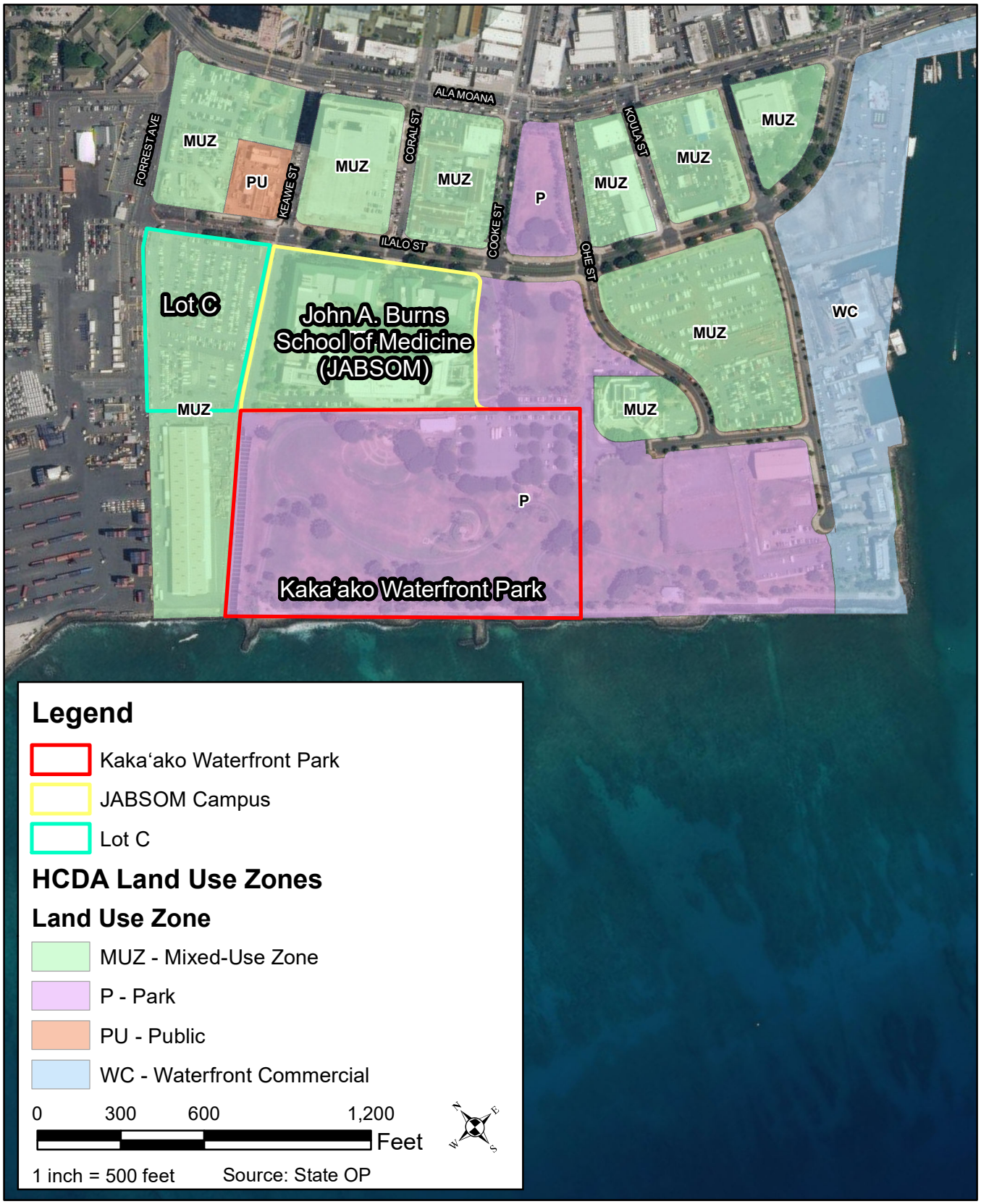

FIGURE 4-1

Land Uses (Kaka'ako Makai Plan) Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

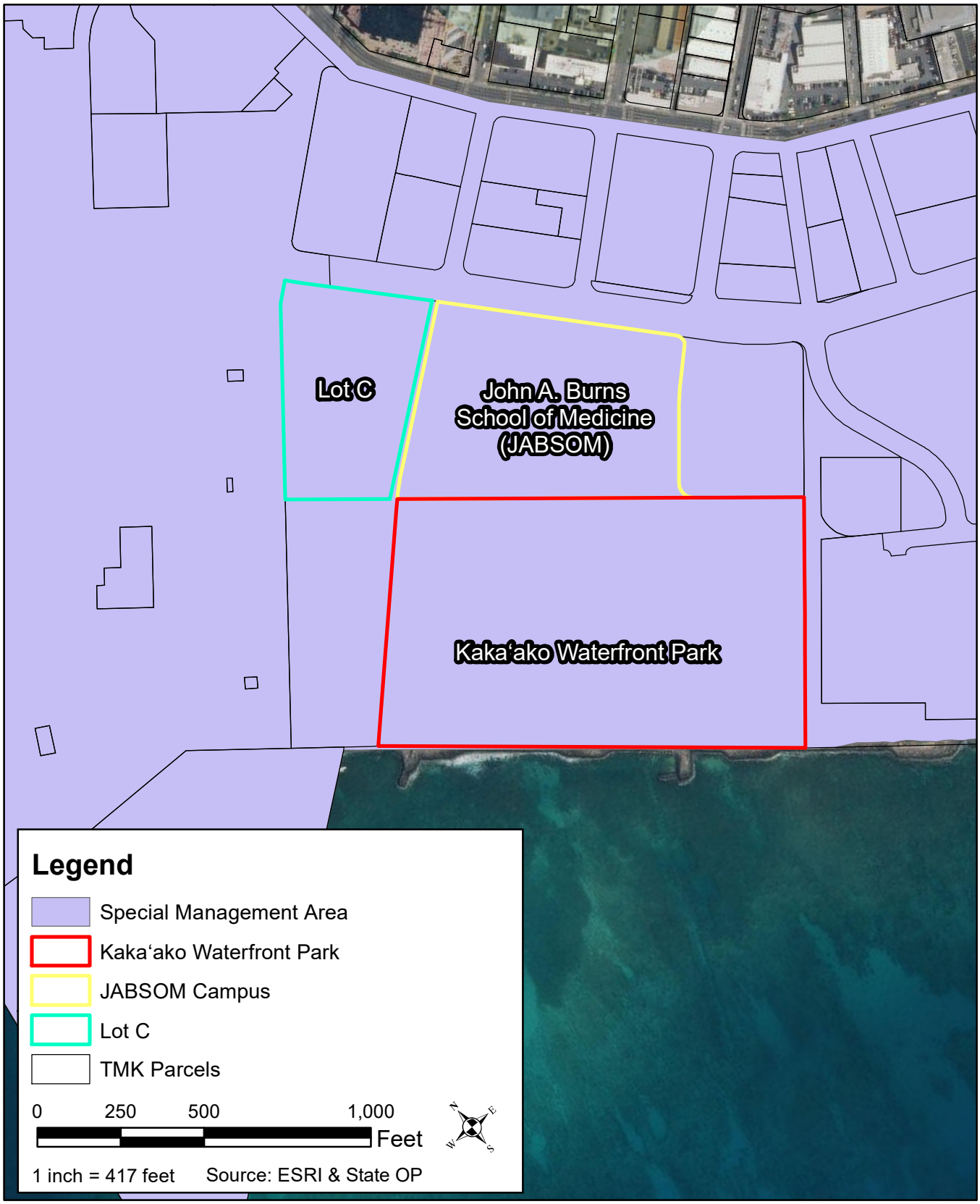

FIGURE 4-2

Special Management Area Map

Kaka'ako Transpacific Broadband Conduit
Honolulu, O'ahu, Hawai'i

4.1.6 Hawai‘i Broadband Strategic Plan

In August 2011, the State of Hawai‘i launched its Hawai‘i Broadband Strategic Plan (HBI) with the ultimate purpose of ensuring that all of Hawai‘i’s citizens have access to ultra high-speed broadband at affordable prices. The HBI provides an overview of broadband and the State’s current broadband landscape, which includes available information on current broadband infrastructure, broadband availability across the State, and home adoption. The HBI also sets forth goals, objectives, and recommended actions to advance the State’s broadband vision in three areas: *Availability, Adoption, and Application*. The following summarizes the applicable recommended goals and objectives to advance the State’s efforts in each of these three areas:

Availability – Physical Infrastructure

Goal 1: Ensure Availability of Broadband to All Hawai‘i Residents at Affordable Prices

Objective 1.1 Create A Roadmap To Bridge Broadband Infrastructure Gaps to Unserved And Underserved Areas

- *Align and leverage State and county broadband infrastructure related projects and activities.*

Objective 1.3 Utilize Government Resources/Partnerships to Deploy Government Broadband Infrastructure and to Lower Costs to Expand and Upgrade Private Networks.

- *Seek State commitment to recognize broadband as critical infrastructure with accompanying commitment to invest in infrastructure through policies, incentives, and investment in shared open-access infrastructure to provide access to broadband services at speeds and prices comparable to those of the leading economies in the world.*

- *Plan for and potentially create fully redundant and survivable fiber optic infrastructure on each island. Seek partnerships and leverage existing systems and programs to create full fiber rings around each island.*

- *Monitor issues related to access to existing interisland cables, costs of connection, and meeting future interisland connectivity needs.*

Discussion

The State is proposing to construct a new Broadband Conduit in Kaka‘ako Makai, within Urban Honolulu, on the island of O‘ahu. Specifically, the Broadband Conduit, or rather, the proposed action, consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line.

The proposed project will supplement Hawai‘i’s existing broadband capacity and provide additional security and resiliency through redundancy. The proposed project will provide a foundation for the development of future terrestrial broadband initiatives

in Hawai'i. The proposed action is in alignment with the vision outlined by the State of Hawai'i's Broadband Initiative and is intended to facilitate the future expansion of the State's broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high-tech industry within Honolulu's urban core. By enhancing Hawai'i's capacity to serve as a strategically located marketplace for the exchange of communications traffic, data and content, the proposed project will create an environment conducive to modern, technology driven economic growth and development.

While presently adequate, Hawai'i's existing broadband infrastructure will need to expand, both in terms of capacity, as well as in terms of resilience and security. Doing so will build an innovative economy and position Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region. In addition, as the Pacific Rim market and its broadband needs expand, Hawai'i has an opportunity to become a communication hub for international and local service providers. In order to address this growing challenge and potential opportunity, the State is focused on developing opportunities to increase international and regional fiber capacity in order to serve as the basis for future terrestrial broadband expansion and support and facilitate future development of regional and local content and applications.

Moreover, this future transpacific cable would be developed through a public-private partnership

Applications: Broadband Applied For Economic Growth

Goal 3: Promote Broadband Industries and Applications For Economic Development

Objective 3.1 Support Ultra High Speed Broadband Access Sites and Areas on Each Island To Foster A Creativity and Innovation Economy.

- *Identify and prioritize key broadband development locations. Create county-designated broadband improvement zones on each island with access to ultra high speed broadband services. Coordinate infrastructure projects between the State and counties to create areas for deployment of ultra high speed broadband zones for businesses.*

Discussion

The State is proposing to construct a new Broadband Conduit in Kaka'ako Makai, the proposed action, consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line.

The proposed project site is located in the Kaka'ako neighborhood of Honolulu on the island of O'ahu. The Broadband Conduit will span from two manholes located in Lot C within Kaka'ako Makai on one end to Kaka'ako Waterfront Park in the area makai of Lot C, which is Kaka'ako's proposed Innovation Block that will be home to the Entrepreneurs' Sandbox and Innovation Hale.

The proposed Innovation Block at Lot C Master Plan will allow for the growth and diversification of O‘ahu’s economic base through the incubation and development of commercial high technology industry in Hawai‘i. HTDC operations and programs contribute to the economic and social well-being of O‘ahu residents by providing a range of job opportunities in fields that would otherwise not exist in the islands.

The proposed project will support and complement the Innovation Block at Lot C.

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 and amended its General Plan in October of 2002. However, the last updated version of The General Plan for the City and County of Honolulu is currently being revised. 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.

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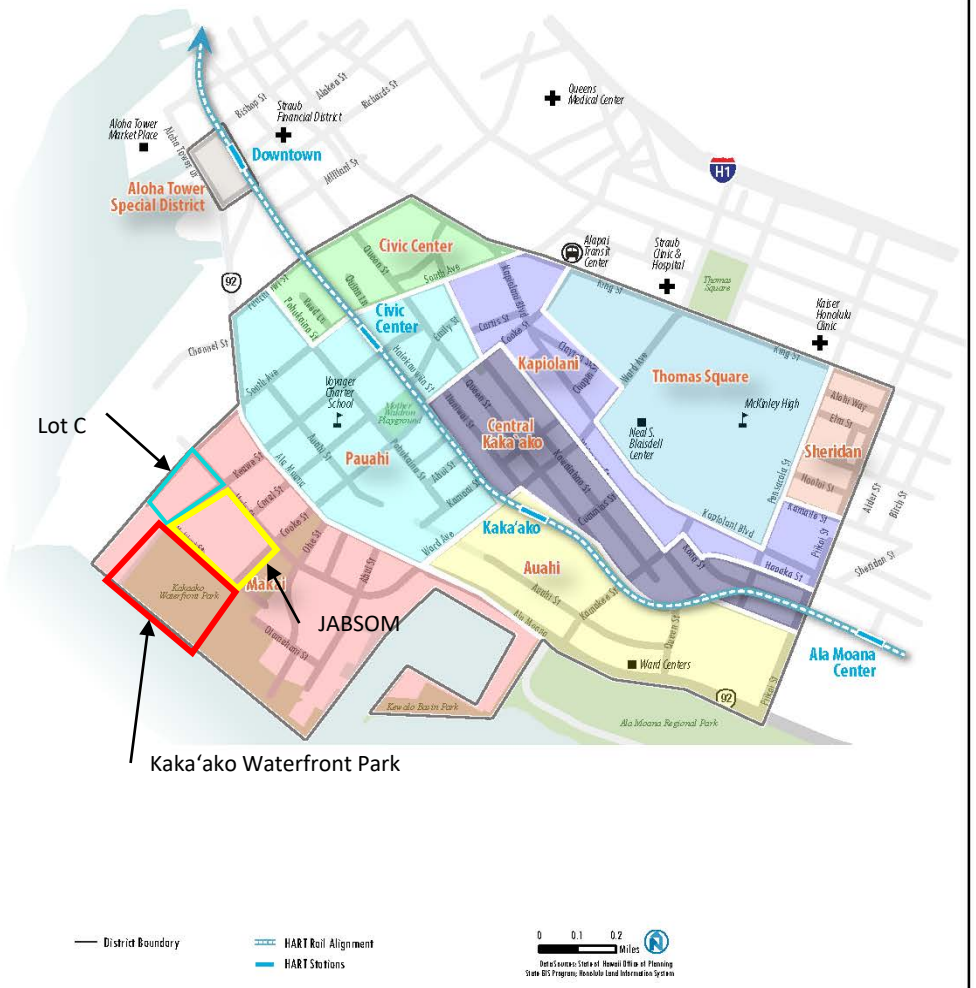

Source: HCDA TOD Overlay Plan

WILSON OKAMOTO CORPORATION	Kaka'ako Transpacific Broadband Conduit	FIGURE
	TOD NEIGHBORHOOD MAP	4-3

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*:

II. Economic Activity

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

Policy 1
Encourage the growth and diversification of O‘ahu’s economic base.

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

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

Policy 4
Encourage the development of local, national, and world markets for the products of O‘ahu-based industries.

Discussion:
In the long-term, the proposed Kaka‘ako Broadband Conduit will facilitate the growth and diversification of O‘ahu’s economic base through providing data capacity essential to the incubation and development of Hawai‘i’s economy.

III. Natural Environment

Objective A
To protect and preserve the natural environment.

Policy 4
Require developmental projects to give due consideration to natural features such as slope, flood and erosion hazards, water-recharge areas, distinctive land forms, and existing vegetation.

Objective B
To preserve and enhance the natural monuments and scenic views of O'ahu for the benefit of both residents and visitors.

Policy 3
Locate roads, highways, and other public facilities and utilities in areas where they will least obstruct important views of the mountains and the sea.

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 area. Construction of the proposed project is not anticipated to 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, equipment wash down areas, and use of compost filter socks.

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. Soil disturbances in excess of one acre would require an NPDES Individual Permit for Storm Water Associated with Construction Activity, administered by the State DOH, will be required to control storm water discharges. 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:

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

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

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 Makai Area Plan. The proposed conduit housing to be constructed will stand no higher than one story and is located within the 100-foot height limit established by the Makai Area Plan. Seaward views from Ala Moana Boulevard, the nearest coastal highway, are blocked by the Ala Moana Wastewater Pump Station and the Re-Use Hawai‘i building.

IX. Health and Education

Objective B
To provide a wide range of educational opportunities for the people of O‘ahu

Policy 4
Encourage the construction of school facilities that are designed for flexibility and high levels of use.

Policy 5
Facilitate the appropriate location of learning institutions from the preschool through the university levels.

Discussion:
In the long-term, the proposed project will provide data capacity that would serve a range of educational interests in affiliation with schools, businesses, and other organizations that would individually as well as collaboratively provide both specialized and diverse educational opportunities to the people of Hawai‘i and the island of O‘ahu.

XI. Government Operations and Fiscal Management

Objective A
To promote increased efficiency, effectiveness, and responsiveness in the provision of government services by the City and County of Honolulu

Policy 1
Maintain City and County government services at the level necessary to be effective.

Policy 2
Promote consolidation of State and City and County functions whenever more efficient and effective delivery of government programs and services can be achieved.

Discussion:
In the long-term, the proposed project will provide data capacity that would serve a range of governmental interests as government services and democratic participation are shifting to digital platforms. Increasing the broadband capacity would allow the government to use the Internet to increase its own transparency and make more of its

data available online, which would in turn promote civic engagement for the people of Hawai‘i and the island of O‘ahu.

4.2.2 Primary Urban Center Development Plan

The project area 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 O‘ahu’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 City’s Land Use Map indicates that the project area lands are designated for Institutional uses. The proposed project is consistent with the following guidelines, policies and principles contained in the PUC Development Plan:

<u>3.2.2.4 Shopping and Retail Business Districts</u>

- *District Commercial.*
- *District Commercial includes a wide variety of commercial uses located in the core areas of the Primary Urban Center. These districts typically have larger facilities and serve larger populations than community/neighborhood commercial districts. They may include major office buildings, shopping centers, and older commercial streets that serve a district-wide, regional or island-wide population. Mixed uses, including medium to higher density residential uses where appropriate, and higher densities are encouraged in these areas. Downtown should have the tallest buildings on O‘ahu. In other areas, maximum building heights should he established on the basis of view-plane studies to preserve views of natural landmarks.*

<u>Discussion:</u>

As the State of Hawai‘i is becoming more of a networked state in a networked nation in a networked world, the availability, capacity, and performance of the supporting network infrastructure must operate at the highest possible capacity and be accessible to everyone, everywhere, at all times. Consequently, while presently adequate, Hawai‘i’s existing broadband infrastructure will need to expand, both in terms of capacity, as well as in terms of resilience and security. Doing so will build an innovative economy and position Hawai‘i as a leader in broadband and wireless communications and applications in the Pacific Region.

In the long-term, the proposed Kaka‘ako Transpacific Broadband conduit will serve the data needs of Hawai‘i’s economy and support various industries in the State and on O‘ahu.

<u>3.4.2.3 Technology Businesses, Office Facilities</u>

- *Stimulate development of high technology and knowledge-based industries which includes taking advantage of Honolulu’s active urban ambience to attract high-technology businesses. Use State land in Kaka‘ako for a campus dedicated to biomedical research and other high-technology businesses. Encourage investment in infrastructure in commercial buildings to accommodate and attract high-technology and biotechnology businesses.*

Discussion:
The proposed project will promote the expansion of information technology and innovation to foster economic diversification and high quality job creation. Moreover, the proposed Innovation Block at Lot C Master Plan will allow for the growth and diversification of O'ahu's economic base through the incubation and development of commercial high technology industry in Hawai'i. HTDC operations and programs contribute to the economic and social well-being of O'ahu residents by providing a range of job opportunities in fields that would otherwise not exist in the islands.

The proposed project will support and complement the Innovation Block at Lot C.

4.4 Telecommunications Facilities

- *Telecommunication facilities are defined as broadcasting and receiving structures associated with telecommunications services. In general, antennas and other facilities should be required to "blend in" with the surrounding environment. Visually obtrusive installations, such as locating in the middle of an open area or silhouetting antennas on top of ridges, should be avoided.*

Discussion:
The State is proposing to construct a new Broadband Conduit in Kaka'ako Makai, within Urban Honolulu, on the island of O'ahu. Specifically, the Broadband Conduit, or rather, the proposed action, consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line.

No short- and long-term significant impacts are anticipated on visual resources, as identified in the Makai Area Plan. The proposed project does not call for any buildings to be constructed. The proposed project will require a conduit station to be constructed that will be relatively small in scale. The conduit station will either be located on Lot C, which is location of the proposed Innovation Block, or at the UH JABSOM campus. The conduit station will "blend" in with the surrounding uses and environment as it is a highly altered urban area.

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 area lies within the Kaka'ako Development District (Kak) zone (See Figure 4-5). On O'ahu, the City & County of Honolulu, Department of Planning and Permitting would generally administer zoning regulations under its Land Use Ordinance. The project area, 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 following is a list of permits, approvals, and reviews that may be required prior to construction and operation of the proposed project.

Federal

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

State of Hawai'i

Department of Land and Natural Resources

- Chapter 6E, HRS, State Historic Preservation Law

Department of Health

- National Pollutant Discharge Elimination System

Office of Planning

- Special Management Area Permit

Hawai'i Community Development Authority

- Development Permit

City and County of Honolulu

Department of Planning and Permitting

- Building Permit
- Grading Permit/Trenching Permit

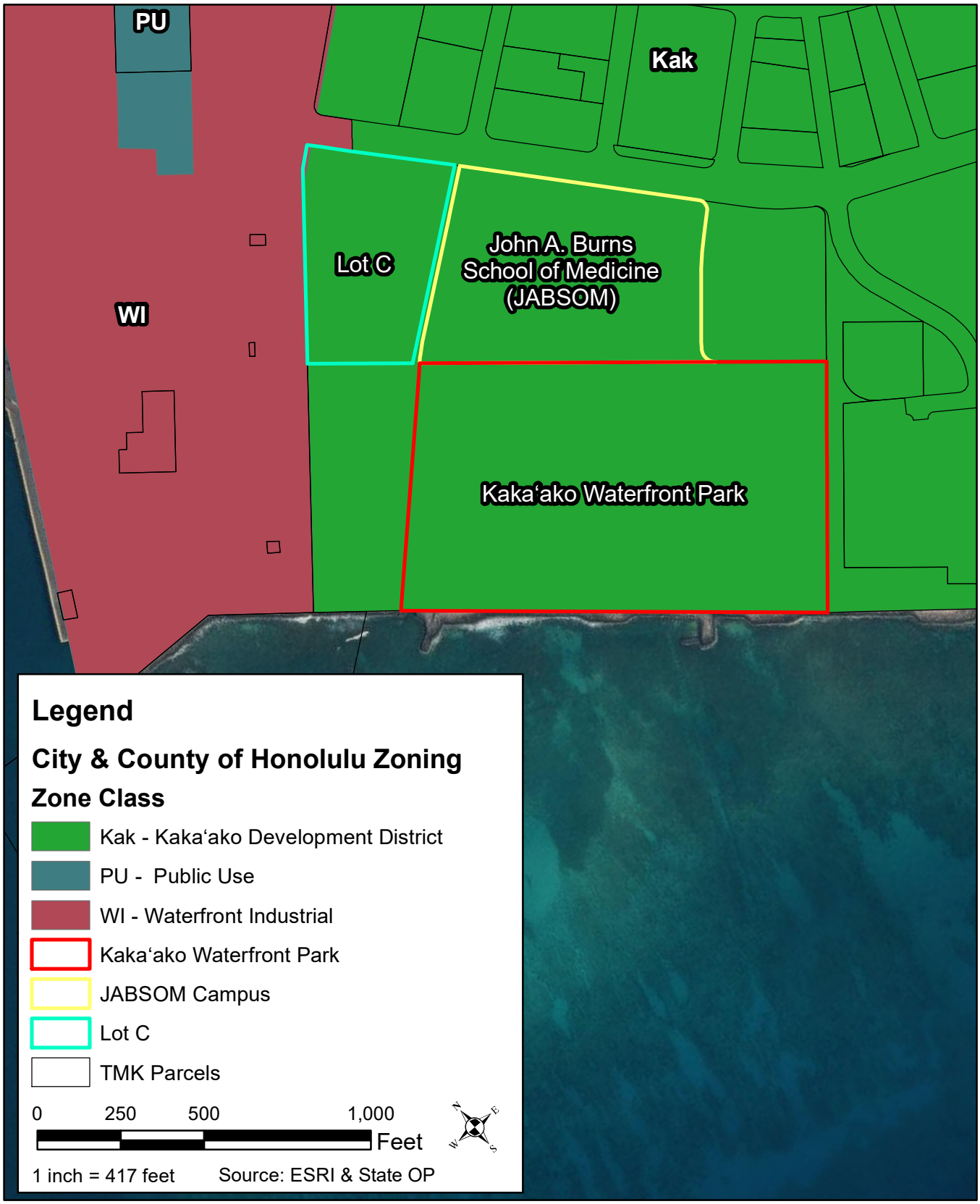

FIGURE 4-5

City and County of Honolulu Zoning Map

Kaka‘ako Transpacific Broadband Conduit
Honolulu, O‘ahu, Hawai‘i

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5. ALTERNATIVES

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.

Alternatives eliminated from consideration include no action, and alternative site schemes.

5.1 No Action Alternative

Under the No Action Alternative, the proposed shore-landing conduit housing, and conduit station, would not be constructed and the project area would remain in its existing condition.

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. The no-action alternative would also avoid insignificant environmental impacts that would occur as a result of implementing the proposed project along with appropriate mitigation measures, as discussed in Chapter 3.

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

5.2 Alternative Conduit Station Locations

In the course of developing the proposed project, the design team considered different alternative strategies for locating the conduit station. The alternative sites explored are described below.

The applicant has yet to determine a preferred site for the proposed connecting conduit station. Lot C and the JABSOM campus are the two primary candidate sites that are being considered for the proposed conduit station.

The Lot C alternative would require the drainage channel (approximately 30 feet wide and 20 feet deep) separating Lot C and Kaka‘ako Waterfront Park to be crossed. Directional drilling is anticipated to be required to allow for the crossing of the subject drainage channel. The build out of the Lot C Master Plan is expected to be underway. This on-going development effort would limit the amount of available open space on Lot C. Consequently, the proposed directional drilling effort will commence from the Kaka‘ako Water Park side as the greater availability of open space there would provide more room for construction staging. A maximum setback will be provided to allow for flexibility in crossing under the drainage channel, which would allow for the drilling effort to adapt to unforeseen conditions. Moreover, several existing utilities cross Lot C in the mauka-makai direction. Lot C is bisected mid-block by a 10-foot-wide sewer easement, a 25-foot-wide Hawaiian Electric Company (HECO) overhead utility right-of-way, a concrete storm drain structure, as well as a water main. In addition, a 25-foot-wide sewer easement spans the entire length of the Diamond Head property line. Lot C is also populated with existing light poles, overhead cables, and fire hydrants.

The University of Hawai‘i JABSOM campus option is located on a 9.89-acre parcel identified by TMK [1] 2-1-060-009, adjacent to Kaka‘ako Waterfront Park, where the shore-landing conduit will be situated. JABSOM is a world-class education and research complex consisting of an Educational/Administration Building and a Bio-Medical Research Facility. It is anticipated that this alternative would also require directional drilling to connect the shore-landing conduit to the conduit station by a dry-line.

The site selection process will evaluate each site's pros and cons, taking into account site topography, drainage and sewer challenges, sea level rise, cost, and other potential issues.

6. 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;

As discussed previously in Chapter 3, based on the findings of the Archaeological Literature Review and Field Inspection, for Option A (Lot C), a determination of "effect, with proposed mitigation commitments" is appropriate for historic properties in the project area per HAR §13-275-7. For Option B (JABSOM Campus), a determination of "no historic properties affected" is appropriate as no impacts to historic, archaeological, and/or cultural resources are anticipated as a result of the construction and operation of the proposed project. When the proposed project alignment is determined, consultation will be coordinated with the State Historic Preservation Department to obtain a determination letter.

However, as the project area was once coastal shallows and is comprised of fill land makai of Ala Moana Boulevard, it is unlikely that there are any cultural properties and/or human skeletal remains pre-dating 1890. Possible remnants of the powder magazine foundation at the extreme mauka edge would date to the 1890s. Subsurface structural remnants associated with the animal quarantine station are a possibility within the JABSOM campus, but in all likelihood obliterated during the construction of the school. No historic properties are expected within the Kaka'ako Waterfront Park as it was underwater until the 1950s when it became a landfill. The presence of additional components of SIHP # 8049, buried structural remnants and cultural deposits associated with the historic Fort Armstrong, a military fort present within the Lot C portion of the project area in the first half of the 20th century are likely. These may include building and wall foundations, former work surfaces, and features and artifacts from that time.

Should any significant archeological, cultural, or historic resources be found during construction activities, all work will cease and SHPD 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. The Kaka'ako Community Development District Makai Area Plan designates the site for development as a Mixed-Use Zone.

(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 a platform that will facilitate the growth and development of the tech industry in Hawai'i.

(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.
With the presence of an REC at the Lot C site, and a subsurface landfill at the nearby Waterfront Park, a Pre-Construction Environmental Hazard Management Plan (EHMP) will be prepared for the proposed project. This EHMP will describe proposed construction activities (e.g. drilling, trenching, excavation, stockpiling, pile caps, grading, etc.) and precautionary measures and practices to be implemented to prevent exposure and ensure safety of workers. This EHMP will review procedures for groundwater handling and disposal of groundwater, as well as disposal of contaminated soil, if encountered during construction. The proposed project will comply with the requirements set forth by HDOH HEER. The EHMP prepared in March 2019 should be reviewed and approved by the DOH HEER Office should it be determined that the project alignment will include Option A (Lot C).

Any hazardous materials that may be identified prior to or during construction of the proposed project will be handled in accordance with all applicable Federal, State and local 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 have served the urban/industrial center of Sand Island for many years, and 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 trade winds, 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 in the project site should it 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 trade winds, the emissions would be readily dissipated.

Land disturbing activities include horizontal directional drilling which will be used for the installation of the conduits. This construction method will involve drilling the pilot

hole, reaming (enlarging the hole), and pulling in the pipe through the hole. The construction of the conduit station will require demolition and foundation work.

(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;

Flood and Tsunami Hazard: Honolulu is vulnerable to flooding from inland streams, hurricane and tropical storm surge, and seasonal high waves. Nu'uanu stream and Honolulu, in general, have historically experienced widespread flooding (Fletcher et al. 2002).

According to the Flood Insurance Rate Map (FIRM), (Community Panel Number 1500010115 B) prepared by the Federal Emergency Management Agency (FEMA), the project area is designated Zone X, an area determined to be outside of 500 year floodplain (See Figure 3-6). There are no base flood elevations or depths shown within this zone.

According to the Tsunami Evacuation Zone maps for O'ahu, the project area lies entirely within the tsunami evacuation zone, while the JABSOM campus partially lies within the Extreme Tsunami Evacuation Zone (See Figure 3-7).

In the short- and long-term, no significant impacts on flood hazards in the project area are anticipated as the proposed improvements are not anticipated to increase flood risks or cause any adverse flood-related impacts at the project area or lower elevation properties.

To mitigate tsunami impacts for the development, all drainage improvements, will include appropriate engineering and development strategies relative to coastal inundation in consultation with the appropriate agencies during the project design, permitting, and construction. The project facility is likely to be a remotely monitored and operated system with infrequent manned maintenance activities. Part of the project site safety plan for maintenance will include proper notification for maintenance personnel as to the nearest evacuation route and tsunami safe zone.

Sea Level Rise: Sea level rise is driven by the global warming of the atmosphere and thermal expansion of the Earth's oceans which has resulted in melting of glaciers and ice sheets. Rising sea level and projections of stronger and more frequent El Nino events and tropical cyclones in waters surrounding Hawai'i indicate a growing vulnerability to coastal flooding and erosion. If GHG emissions are maintained at its current rate of increase, the IPCC (2014) predicts up 3.2 feet of global sea level rise by the year 2100.

The project area is not located within the 3.2-foot area as depicted by the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise data. However, at 5 feet of sea level rise, the project area would begin to experience inundation on the 'Ewa edge of Kaka'ako Waterfront Park, adjacent to the drainage canal. Under such conditions, the University of Hawai'i JABSOM campus, and the majority of Lot C and Kaka'ako Waterfront Park would not be inundated. However, at 6 feet of sea level

rise, Lot C would be entirely inundated, and the entire area of Kaka'ako Waterfront Park where the proposed shore landing conduit will be located, along the 'Ewa edge would also be inundated.

No essential structures will be constructed in low-lying areas. The shore landing conduit will be located along the 'Ewa edge of Kaka'ako Waterfront Park that will experience inundation at 5 feet of sea level rise. However, the broadband conduit will not be impacted by sea level rise. Should the Conduit Station be placed in Lot C, it will be designed in a way that no essential equipment will be damaged by sea level rise.

However, the exact nature of how the sea level will rise is unknown. New information will continually need to be incorporated within future assessments to identify where efforts should be focused when developing adaptation strategies to sea level rise.

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

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 project will not degrade lateral coastal views or mauka-makai views from areas in the vicinity of the site. The vertical components of the proposed conduit station will be consistent with the visual character of the surrounding uses.

(13) Requires substantial energy consumption.

The construction and operation of the proposed project will not require a significant level of energy consumption. The primary demand for energy will be for night-time security lighting.

7. CONSULTATION

7.1 Pre-Assessment Consultation

The following agencies and organizations were consulted during the preparation of the Draft EA. Of the 11 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

✓✓ U.S. Army Corps of Engineers
✓✓ U.S. Department of the Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency

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, Environmental Quality Control
Department of Health, Environmental Management Division
✓✓ Department of Health, Hazard Evaluation and Emergency Response Division
✓✓ Department of Land and Natural Resources
Department of Land and Natural Resources, Historic Preservation Division
Department of Transportation
Hawai'i State Library
Office of Environmental Quality Control
Office of Hawaiian Affairs
✓✓ Office of Planning
University of Hawai'i at Mānoa Environmental Center
University of Hawai'i at Mānoa JABSOM

City Council

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

Utility Companies
✓✓ Hawai‘i Gas
✓ Hawaiian Electric Company
✓✓ Hawaiian Telcom
Spectrum Hawai‘i

Other Interested Parties and Individuals
Ala Moana – Kaka‘ako Neighborhood Board No. 11
✓✓ Honolulu Seawater Air Conditioning, LLC
Kamehameha Schools

7.2. Draft EA

No comments were received for the Draft EA during the 30 day public comment period.

8. 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.

Hawai'i Community Development Authority. 2015. *Innovation Block at Lot "C" Master Plan Final Environmental Assessment*. Prepared by Wilson Okamoto Corporation.

Hawai'i Climate Change Mitigation and Adaptation Commission. 2017. Hawai'i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai'i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai'i Department of Land and Natural Resources Contract No: 64064.

State of Hawai'i Department of Commerce and Consumer Affairs. 2012. *Hawaii Broadband Strategic Plan.*

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 Literature Review and Field Inspection Report for the Kakaako *Makai* (Lot C) Broadband Cable Conduit Project, Kakaʻako Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-1-015:005, [1] 2-1-060:008, and 009

Draft
Archaeological Literature Review and Field Inspection Report for the Kakaako *Makai* (Lot C) Broadband Cable Conduit Project, Kakaʻako Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-1-015:05, 2-1-060:008 and 009

Prepared for
Wilson Okamoto Corporation

Prepared by
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and
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Cultural Surveys Hawaiʻi, Inc.
Kailua, Hawaiʻi
(Job Code: KAKAAKO 243)

April 2019

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Management Summary

Reference	Archaeological Literature Review and Field Inspection Report for the Kakaako *Makai* (Lot C) Broadband Cable Conduit Project, Kaka‘ako Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMKs: [1] 2-1-015:052, 2-1-060:008 and 009 (Blahut et al. 2019)
Date	April 2019
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KAKAAKO 243
Investigation Permit Number	CSH conducted the archaeological monitoring fieldwork under archaeological fieldwork permit number 19-07, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-282.
Agencies	SHPD, Hawaii Community Development Authority (HCDA)
Project Proponent	Wilson Okamoto Corporation on behalf of the HCDA
Project Funding	HCDA
Land Jurisdiction	HCDA
Project Location	The project area is located in central coastal Honolulu within the area known as Kaka‘ako *Makai* (seaward). The project area is bounded on the *mauka* (inland) edge by Ilalo Street and includes Lot C, the John A. Burns School of Medicine campus, and a portion of the Kaka‘ako Waterfront Park. The project area is depicted on a portion of a 1998 Honolulu U.S. Geological Survey (USGS) topographic quadrangle.
Project Description	The HCDA is proposing to construct a new Broadband Conduit in Kaka‘ako *Makai*, within urban Honolulu. The proposed action consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line. The proposed action is in alignment with the vision outlined by the State of Hawai‘i’s Broadband Initiative and is intended to facilitate the future expansion of the state’s broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high-tech industry within Honolulu’s urban core. It is anticipated that the proposed transpacific cable will shore-land within the Kaka‘ako Waterfront Park and that a connecting conduit station will be constructed somewhere in either Lot C (Option A) or on the University of Hawai‘i John A. Burns School of Medicine (JABSOM) campus (Option B) within the *makai* area of the Kaka‘ako Community Development District (KCDD). Manholes will be placed on either end of the connecting conduit to facilitate future connections. In order to land the transpacific cable in the Kaka‘ako Waterfront Park and construct the shore-landing conduit, it is anticipated that horizontal directional drilling will be required.

Project Acreage	The project area comprises approximately 20.12 acres (8.14 hectares). The project area is comprised of the following parcels: • Kaka‘ako Waterfront Park portion (3.78 acres) • Lot C (Option A) (5.51 acres) • Drainage channel (Option A) (0.94 acres) • JABSOM campus (Option B) (9.89 acres)
Document Purpose	This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s environmental review compliance under Hawai‘i Revised Statutes (HRS) §343. As a state project on state lands, the project may be subject to the State of Hawai‘i historic preservation review legislation under HRS §6E-8 and HAR §13-275. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276. Consequently, this report cannot be used to make formal recommendations for SHPD review and acceptance.
Fieldwork Effort	CSH archaeologists Sara Blahut, M.A., and Michelle Clark, B.A. (Project Director) conducted the field inspection on 8 April 2019 under the direction of Douglas Borthwick, B.A. (Project Manager), and the general supervision of Hallett H. Hammatt, Ph.D. (Principal Investigator). This work required approximately 3 person-hours to complete.
Results Summary	No surface archaeological historic properties were identified during the field inspection. Background research indicates a subsurface historic property is present within Lot C: State Inventory of Historic Places (SIHP) # 50-80-14-8049, buried structural remnants and cultural deposits associated with Fort Armstrong. Subsurface structural remnants associated with the animal quarantine station are a possibility within the JABSOM campus, however, due to the recent and extensive development associated with JABSOM, any evidence of such minor structures (dog kennels, corrals, etc.) is unlikely. No historic properties are expected within the Kaka‘ako Waterfront Park as it was under water until it became a landfill in the 1950s.
Recommendations	Based on the findings of this LRFI for Option A, a determination of “effect, with proposed mitigation commitments” is appropriate for historic properties in the project area per HAR §13-275-7. It should be anticipated that the SHPD may require an archaeological inventory survey consisting of subsurface testing and/or archaeological data recovery in the form of archaeological monitoring. Early consultation

	with the SHPD is recommended to obtain a determination letter (as per HAR §13-275-3). Based on the findings of this literature review and field inspection (LRFI) for Option B, a determination of “no historic properties affected” is appropriate for historic properties in the project area per HAR §13-275-7. Early consultation with the SHPD is recommended to determine what (if any) further archaeological study is indicated and to obtain a determination letter (as per HAR §13-275-3).

Table of Contents

Management Summary i

Section 1 Introduction 1

1.1 Project Background 1
1.2 Document Purpose 1
1.3 Environmental Setting 6
1.3.1 Natural Environment 6
1.3.2 Built Environment 7

Section 2 Methods 9

2.1 Field Methods 9
2.2 Research Methods 9

Section 3 Background Research 10

3.1 Pre-Contact to Early Nineteenth Century 10
3.5 Previous Archaeological Research 59
3.5.1 Yent 1985 59
3.5.2 Pfeffer et al. 1993 59
3.5.3 McIntosh and Cleghorn 2000 59
3.5.4 Borthwick and Hammatt 2001 59
3.5.5 Winieski and Hammatt 2001 66
3.5.6 Shideler 2002 66
3.5.7 McElroy 2008 66
3.5.8 Petrey et al. 2009 66
3.5.9 Hammatt et al. 2010 66
3.5.10 Hammatt and Shideler 2010 67
3.5.11 Pammer and Hammatt 2010 67
3.5.12 Fechner et al. 2012 67
3.5.13 Hammatt 2013 67
3.5.14 Tulchin and Hammatt 2013 67
3.5.15 Tulchin et al. 2014a 68
3.5.16 Tulchin et al. 2014b 68
3.5.17 Tulchin et al. 2015 68
3.5.18 Lash and Spear 2015 68
3.5.19 Enanoria and Hammatt 2016 69
3.5.20 Hammatt and Shideler 2016 69
3.5.21 Turran et al. 2016 69
3.5.22 Rivera and Monahan 2017 69
3.5.23 Sroat et al. 2017 69
3.5.24 Pammer et al. 2018 70
3.5.25 Blahut and Hammatt 2018 70
3.5.26 Desilets and Byerly 2018 70
3.5.27 Zapor and Hammatt 2018 70
3.6 Background Summary and Predictive Model 70

Section 4 Results of Fieldwork 72

Section 5 Summary and Recommendations 84

5.1 Summary 84
5.2 Recommendations 84
5.2.1 Option A 84
5.2.2 Option B 84

Section 6 References Cited 85

Appendix A SHPD Correspondence 94

List of Figures

Figure 1. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle showing the location of the project area 2
Figure 2. TMK: [1] 2-1-015 showing the project area (Hawai‘i TMK Service 2018) 3
Figure 3. TMK: [1] 2-1-060 showing the project area (Hawai‘i TMK Service 2014) 4
Figure 4. Aerial photograph showing the location of the project area (Google Earth Imagery 2018) 5
Figure 5. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle with overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972; USDA SSURGO 2001), indicating soil types within and surrounding the project area 8
Figure 6. Portion of 1817 map by Otto von Kotzebue, commander of the Russian ship *Rurick*, showing study area; this early map probably should be understood as schematic sketch (map reprinted in Fitzpatrick 1986:48–49) 12
Figure 7. Portion of 1825 map of “South Coast of Woahoo and Honorurou Harbour” by Lt. Charles Malden, showing study area; this and later nineteenth century maps show the natural dry land coastline very close to the present Ala Moana/Nimitz alignment 13
Figure 8. Portion of 1855 map of Honolulu by Lt. Joseph de LaPasse of the French vessel, *L’Eurydice*; project area adjacent to area labeled “*Pecheries*” (“Fishponds”) (map reprinted in Fitzpatrick 1986:82–83) 14
Figure 9. 1876 Lyons map of Kaakaukukui and Puunui, salt pans characterize the area inland of the present study area 15
Figure 10. Portion of 1881 Oahu Island Government survey map by R. Covington, showing study area; note extensive “Kakaako Salt Works” just inland of the present study area 16
Figure 11. 1884 map of Honolulu, Kewalo Section map, by Sereno Bishop, showing Land Commission Awards near the study area 17
Figure 12. This sketch of “Honolulu Beach” by G.H. Burgess in the mid-1850s (from Scott 1968:575) portrays a scene just west of the present study area roughly between Pier 5 (foreground) and Fort Armstrong (at extreme right); note the dense thatched houses are constructed surprisingly close, within 10 m or so of the high tide line 19
Figure 13. 1887 map of Honolulu and vicinity by W.A. Wall, showing lack of road and residential development in the Kaka‘ako area in the late nineteenth century 22
Figure 14. 1897 M.D. Monsarrat map of Honolulu, Hawaiian Islands, showing study area still indicated as “coral reef” 23
Figure 15. *Kinau* steamer on Lyle and Sorenson’s “Marine Railway” constructed ca. 1885 for the haul out of ships; note the extensive shallow mudflat (original photograph at Hawai‘i State Archives, reprinted in Scott 1968:209) 25
Figure 16. 1887 photograph of the Kaka‘ako Saluting Battery and flagstaff (original photograph taken by Karl Kortum and archived at the San Francisco Maritime Museum; reprinted in Scott 1968:176) 25

Figure 17. 1891 Dodge map of Kaakaukukui, Kakaako Section (the southeast portion of this map is believed to show planned rather than actual streets), note powder magazine at east corner of the Lot C parcel....26
Figure 18. View of the King’s (Kalākaua’s) Boathouse 400 m north of the study area ca. 1890; this land would soon be filled in to create the Pier 1 area (Ray Jerome Baker Collection, Kamehameha Schools Archives)....27
Figure 19. 1909 Monsarrat map of O‘ahu fisheries, Waikiki Section , the project area is depicted as offshore....28
Figure 20. In this 1894 photograph of the Honolulu waterfront taken from the top of Punchbowl (Kawaiaha‘o Church and ‘Iolani Palace are clear landmarks) the new seawall is quite pronounced at the upper left (photograph from Scott 1968:266)....29
Figure 21. 1911 G. Podmore map of “Honolulu, Kewalo Section,” showing study area; note the seawall running through the project area is only “proposed,” depths indicate the *mauka* portion of the project area has been filled by this time, the powder magazine is still visible in east corner of Lot C....30
Figure 22. Portion of 1919 U.S. Army War Department fire control map, Honolulu quadrangle, showing study area....32
Figure 23. Portion of 1920 Monsarrat map of Honolulu, showing study area....33
Figure 24. Colorized postcard (ca. 1911-1920) of Fort Armstrong (original black and white photograph at Hawai‘i State Archives; reprinted in Wisniewski 1984:18)....34
Figure 25. 1921 map of Fort Armstrong....35
Figure 26. 1931 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)....36
Figure 27. 1931 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)....37
Figure 28. 1931 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)....38
Figure 29. 1932 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)....39
Figure 30. 1938 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)....40
Figure 31. 1938 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)....41
Figure 32. 1939-1941 U.S. Army Air Corps Kakaako Coast aerial photograph....42
Figure 33. Portion of 1933 U.S. Army War Department fire control map, Honolulu quadrangle, showing study area....43
Figure 34. 1921 photograph of a city worker supervising open burning of trash near Kewalo Basin (original photograph by Ray Jerome Baker, Kamehameha Schools Archives, reprinted in Scott 1968:578)....44
Figure 35. 1922 Olds map showing squatters dwellings east of the study area....45
Figure 36. Portion of 1943 U.S. Army War Department terrain map, Honolulu quadrangle, showing study area....46
Figure 37. 1944 Ryan map of the Animal Quarentine [*sic*] Station, Kaakaukukui....48
Figure 38. Portion of 1953 Honolulu USGS topographic quadrangle, showing project area....49

Figure 39. 1954 Kakaako Coast aerial photograph (UH SOEST) showing project area.....50
Figure 40. 1957 Hashimoto map of Kaakaukukui with a 1957 Kakaako coast aerial photograph (UH SOEST).....51
Figure 41. Portion of 1959 Honolulu USGS topographic quadrangle; note seaward portions of study area are still underwater.....52
Figure 42. 1961 Kakaako Coast aerial photograph (UH SOEST).....53
Figure 43. Portion of 1969 Honolulu USGS topographic quadrangle; note land fill within the study area was completed in the 1960s.....54
Figure 44. 1974 Kakaako Coast aerial photograph (UH SOEST).....55
Figure 45. 1982 Kakaako Coast aerial photograph (UH SOEST).....56
Figure 46. 2005 Kaka‘ako Coast aerial photograph (UH SOEST).....57
Figure 47. Progression of in-filling of Kaka‘ako *makai* between Honolulu Harbor and Kewalo Basin Harbor, data compiled from historic maps and aerial photographs 58
Figure 48. Previous archaeological studies in the vicinity of the project area 60
Figure 49. Previously identified historic properties in the vicinity of the project area; all site numbers begin with 50-80-14- 61
Figure 50. Aerial photograph (Google Earth 2018) showing location and direction of photographs taken during the field inspection, shown in Figure 51 through Figure 69 73
Figure 51. The recently completed Entrepreneur’s Sandbox occupying the northeast corner of Lot C, view to west.....74
Figure 52. The JABSOM campus at the corner of Ilalo Street and Keawe Street, view to south.....74
Figure 53. JABSOM campus, UH Cancer Center in center background, view to southwest.....75
Figure 54. JABSOM campus looking down Ilalo Street, view to northwest.....75
Figure 55. JABSOM campus central courtyard, view to south 76
Figure 56. JABSOM campus central courtyard, view to west.....76
Figure 57. JABSOM campus looking in toward the central courtyard, view to northwest.....77
Figure 58. Parking area behind JABSOM campus, adjacent to Kaka‘ako Waterfront Park, view to northwest.....77
Figure 59. Parking area for Kaka‘ako Waterfront Park and single-story structure, view to west 78
Figure 60. Asphalt path along the northwest boundary of Kaka‘ako Waterfront Park, view to southeast.....78
Figure 61. Northwest boundary of Kaka‘ako Waterfront Park and adjacent drainage canal, view to southwest.....79
Figure 62. Northwest boundary of Kaka‘ako Waterfront Park and adjacent drainage canal, view to north 79
Figure 63. View from atop grassy hill in north corner of Kaka‘ako Waterfront Park, looking toward Lot C, view to north.....80
Figure 64. Keawe Street between the JABSOM campus and Lot C, view to northeast.....80
Figure 65. Keawe Street between the JABSOM campus and Lot C, view to southwest.....81
Figure 66. Lot C from the north corner of the study area, view to south 81
Figure 67. Central portion of Lot C, utility corridor, view to northeast 82
Figure 68. *Makai* end of Lot C looking toward JABSOM campus, view to southeast 82

Figure 69. Southeast edge of Lot C looking toward recently constructed Entrepreneur's Sandbox, view to north 83

List of Tables

Table 1. Previous archaeological studies in the vicinity of the project area.....62

Section 1 Introduction

1.1 Project Background

At the request of Wilson Okamoto Corporation, Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this literature review and field inspection report (LRFI) for the Kakaako *Makai* (Lot C) Broadband Cable Conduit project, Kaka‘ako Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMKs: [1] 2-1-015:052, 2-1-060:008 and 009. The project area is located in central coastal Honolulu within the area known as Kaka‘ako *Makai* (seaward). The project area is bounded on the *mauka* (inland) edge by Ilalo Street and includes Lot C, the John A. Burns School of Medicine campus, and a portion of the Kaka‘ako Waterfront Park. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax map plats (Figure 2 and Figure 3), and a 2018 aerial photograph (Figure 4).

The Hawaii Community Development Authority (HCDA) is proposing to construct a new Broadband Conduit in Kaka‘ako *Makai*, within urban Honolulu. The proposed action consists of a shore-landing conduit housing, which would have the capacity to accommodate multiple conduit landings, and a conduit station connected by a dry-line. The proposed action is in alignment with the vision outlined by the State of Hawai‘i’s Broadband Initiative and is intended to facilitate the future expansion of the state’s broadband infrastructure to meet existing and future data needs, as well as to catalyze the development of the high-tech industry within Honolulu’s urban core.

It is anticipated that the proposed transpacific cable will shore-land within the Kaka‘ako Waterfront Park and that a connecting conduit station will be constructed somewhere in either Lot C (Option A) or on the University of Hawai‘i John A. Burns School of Medicine (JABSOM) campus (Option B) within the *makai* area of the Kaka‘ako Community Development District (KCDD) (See Figure 1 through Figure 4). Manholes will be placed on either end of the connecting conduit to facilitate future connections. In order to land the transpacific cable in the Kaka‘ako Waterfront Park and construct the shore-landing conduit, it is anticipated that horizontal directional drilling will be required.

1.2 Document Purpose

This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s environmental review compliance under Hawai‘i Revised Statutes (HRS) §343. As a state project on state lands, the project may be subject to the State of Hawai‘i historic preservation review legislation under HRS §6E-8 and Hawai‘i Administrative Rules (HAR) §13-275. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-276. Consequently, this report cannot be used to make formal recommendations for State Historic Preservation Division (SHPD) review and acceptance.

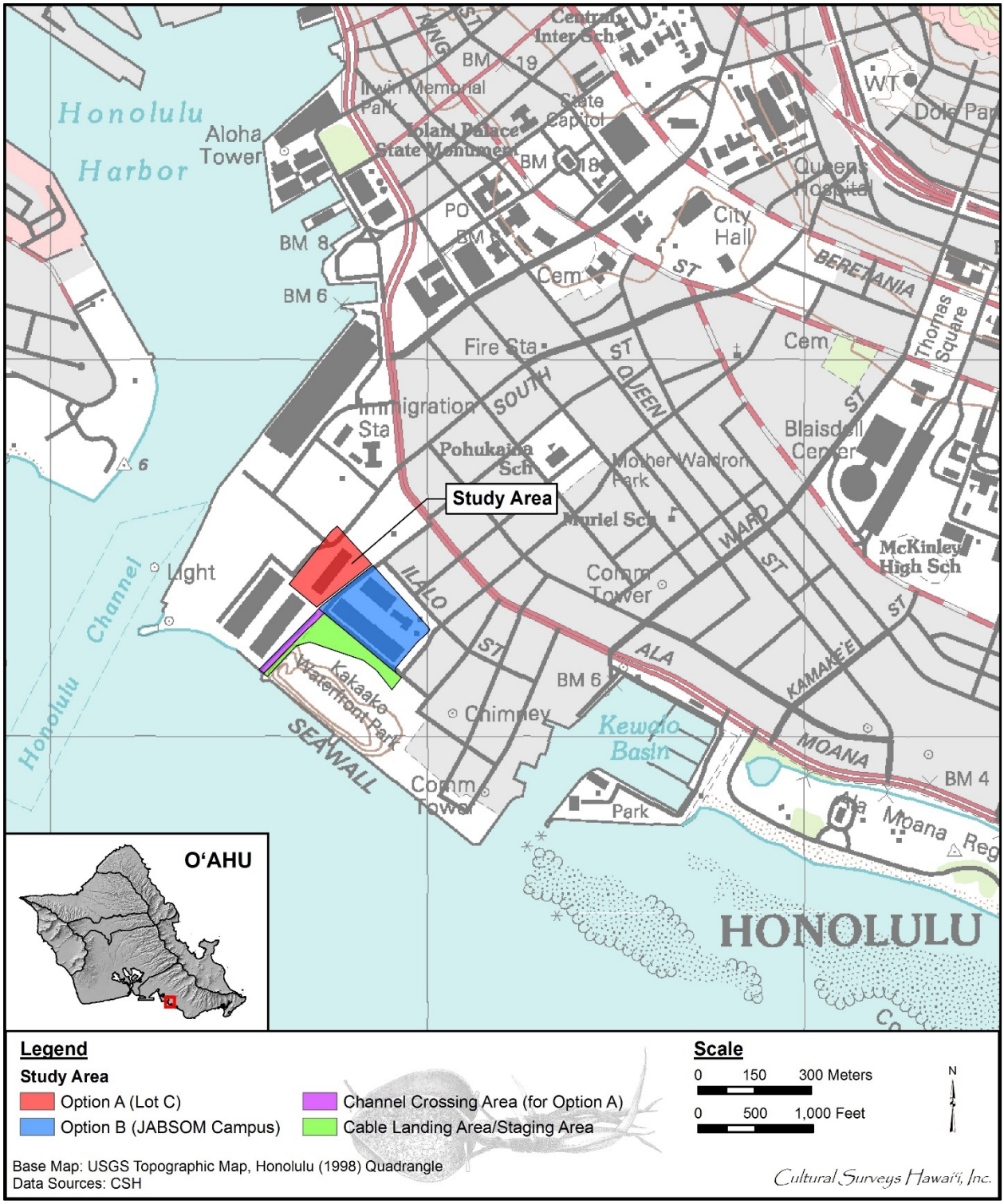


Figure 1. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle showing the location of the project area

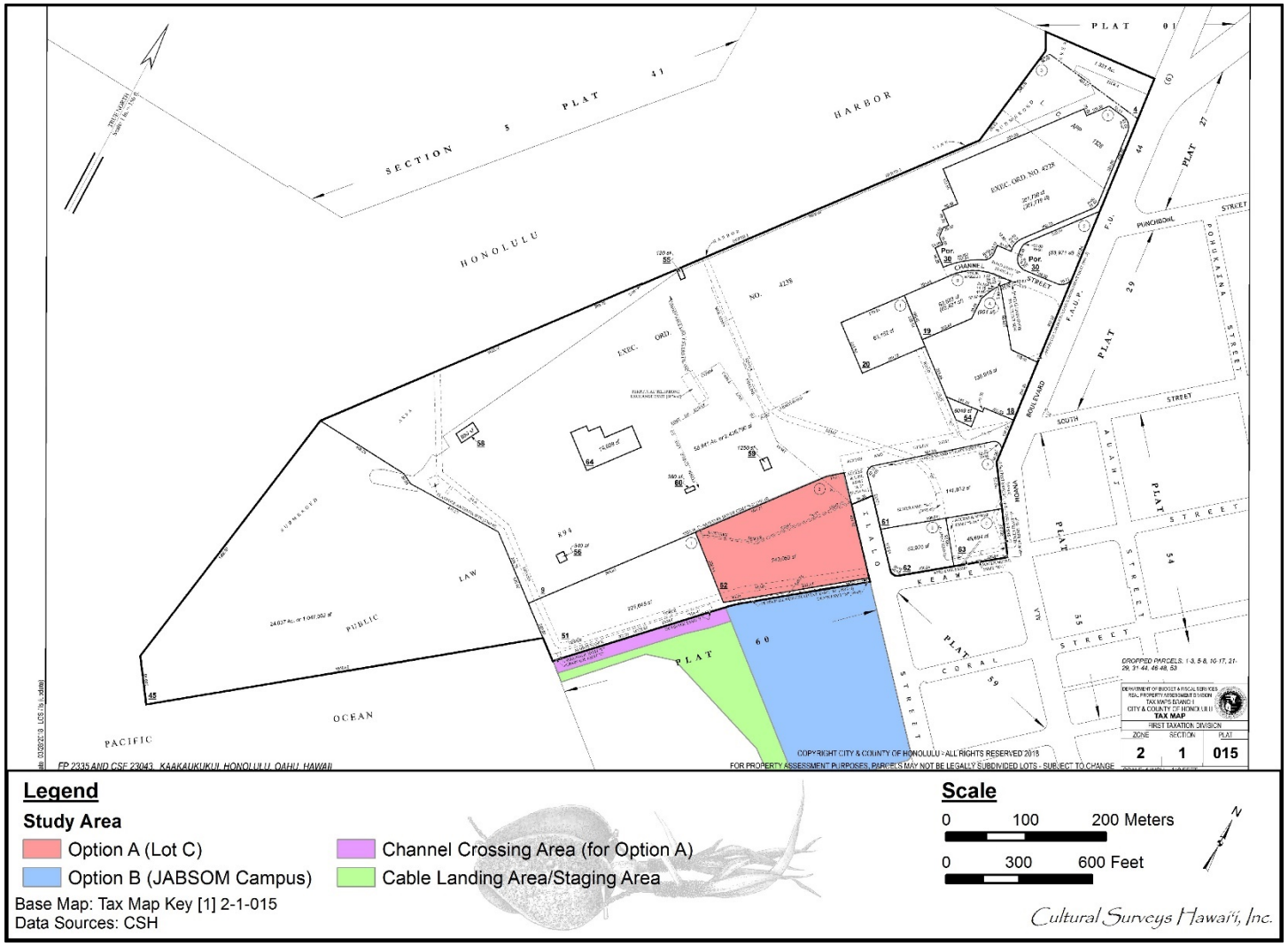


Figure 2. TMK: [1] 2-1-015 showing the project area (Hawai‘i TMK Service 2018)

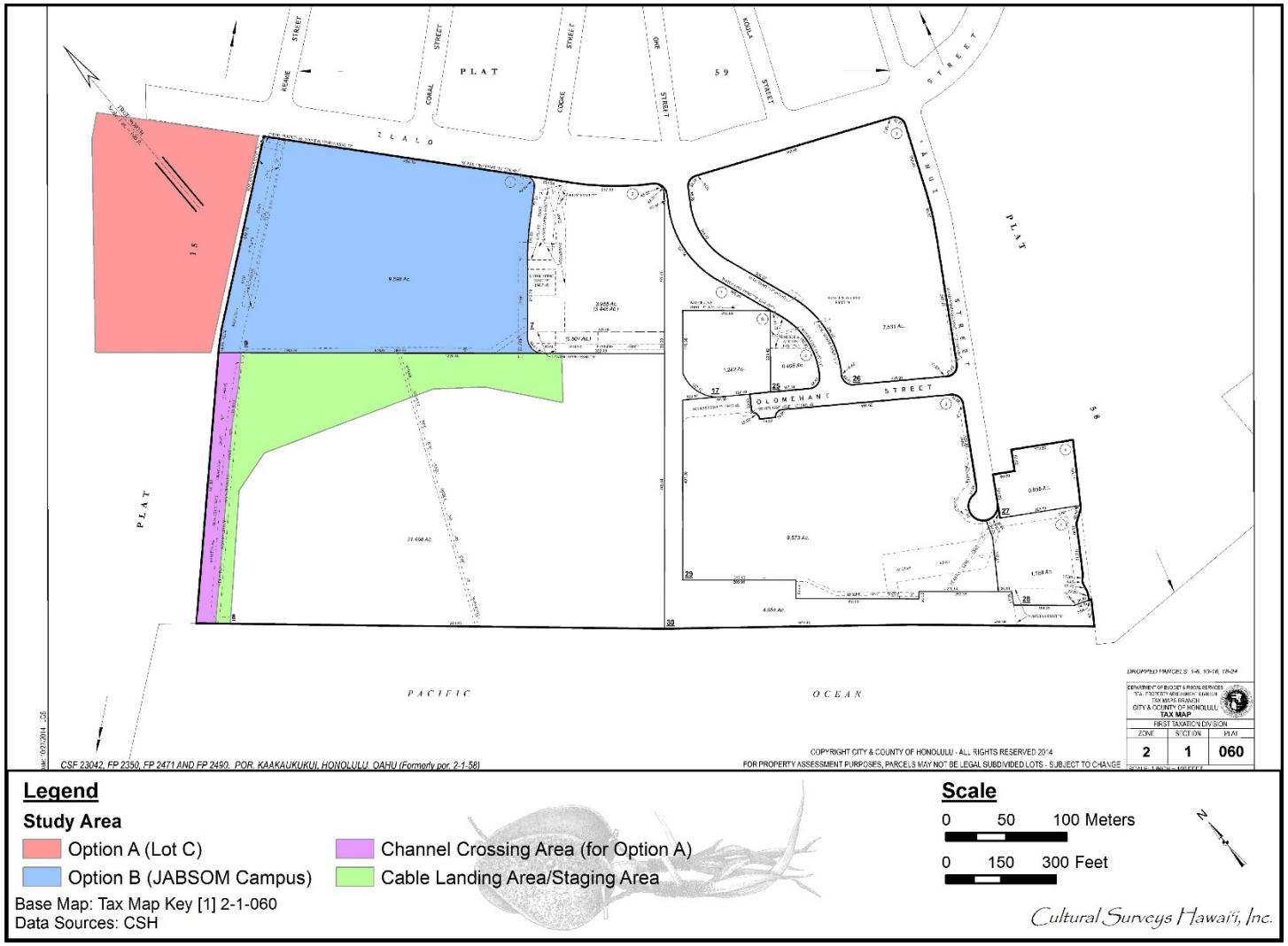


Figure 3. TMK: [1] 2-1-060 showing the project area (Hawai‘i TMK Service 2014)

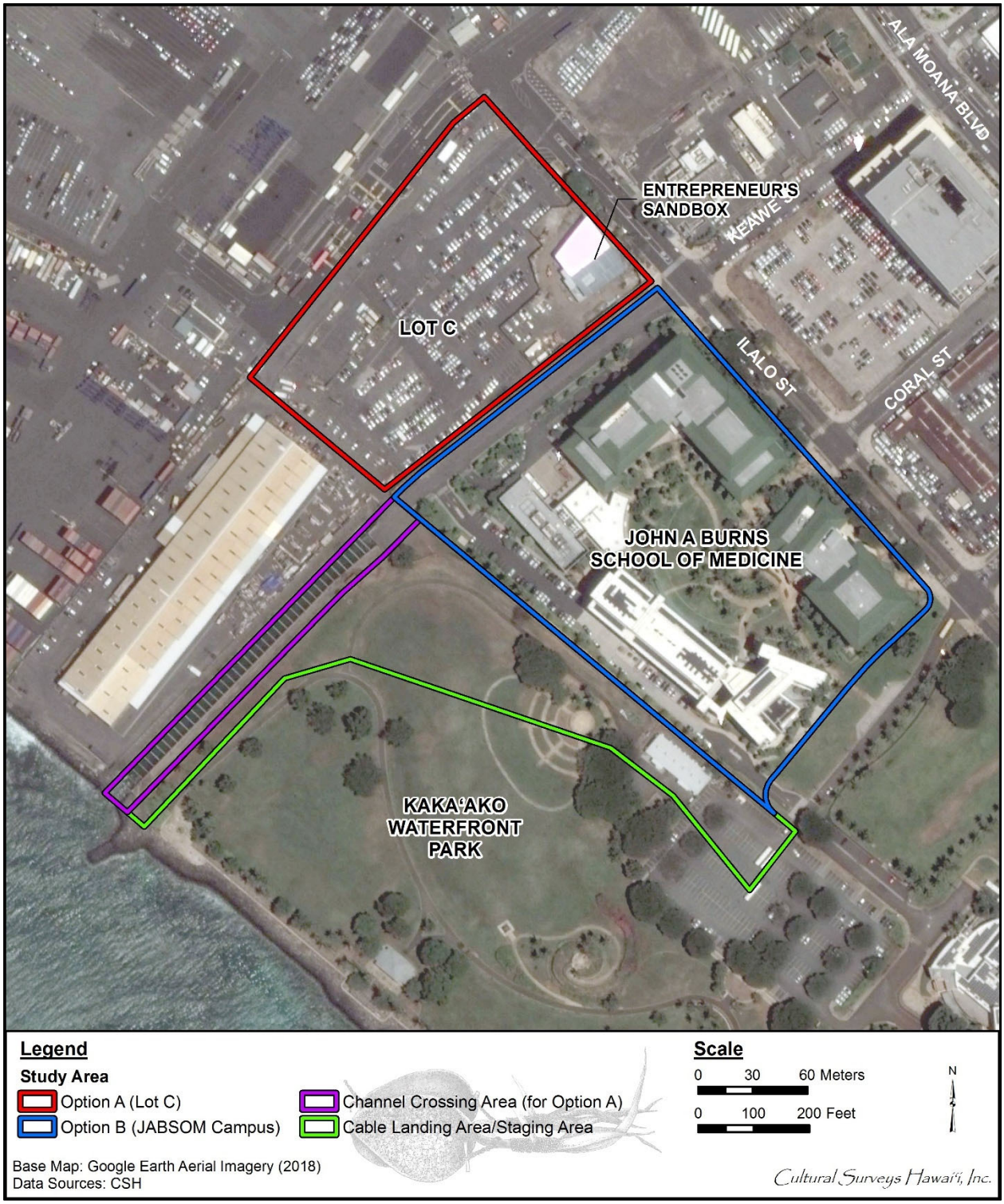


Figure 4. Aerial photograph showing the location of the project area (Google Earth Imagery 2018)

1.3 Environmental Setting

1.3.1 Natural Environment

The project area lies on filled coral flats *makai* of a topographic section 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 Jaucas sand or terrigenous deposits (formed from erosion of rocks on land), and stream-fed alluvial deposits (material deposited by running water) (Armstrong 1983:36). The top soil stratum consists of Fill land, mixed (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 ca. 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 ca. 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 current 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 (particles derived from pre-existing rock by weathering or erosion) 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). 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 longshore 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 locations for the deposition of fill. These “reclaimed” areas provided valuable new land near the heart of growing urban Honolulu.

The undeveloped natural condition of the Kaka‘ako area consisted of low-lying marshes, tidal flats, fishponds, and reef areas. Beginning in the late nineteenth century, these low-lying areas were filled in and then developed, which permanently changed the area into its present fully urbanized character. In this area of the Honolulu District, rainfall averages less than 30 inches per year (Armstrong 1973:62). 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).

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils consist of Fill (FL) lands (Figure 5).

Fill (FL) soils are described as follows:

> 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]

1.3.2 Built Environment

The entire study area lies on land created relatively recently. While many residents of Honolulu may think of this Kaka‘ako *makai* area as dominated by parking lots, warehouses, and office buildings, in fact much is dedicated to parks including the large Kaka‘ako Waterfront Park on which a portion of the project area resides. A second portion of the project area is occupied by the John A. Burns School of Medicine campus. The third portion of the project area, Lot C, hosts the newly developed Entrepreneur's Sandbox as well as an asphalt parking lot for the surrounding area. Nearby Kewalo Basin Harbor, located to the southeast of the project area, is one of the major commercial boat harbors of Honolulu, and Pier 1 to the northwest serves as Honolulu Harbor's foreign container terminal.

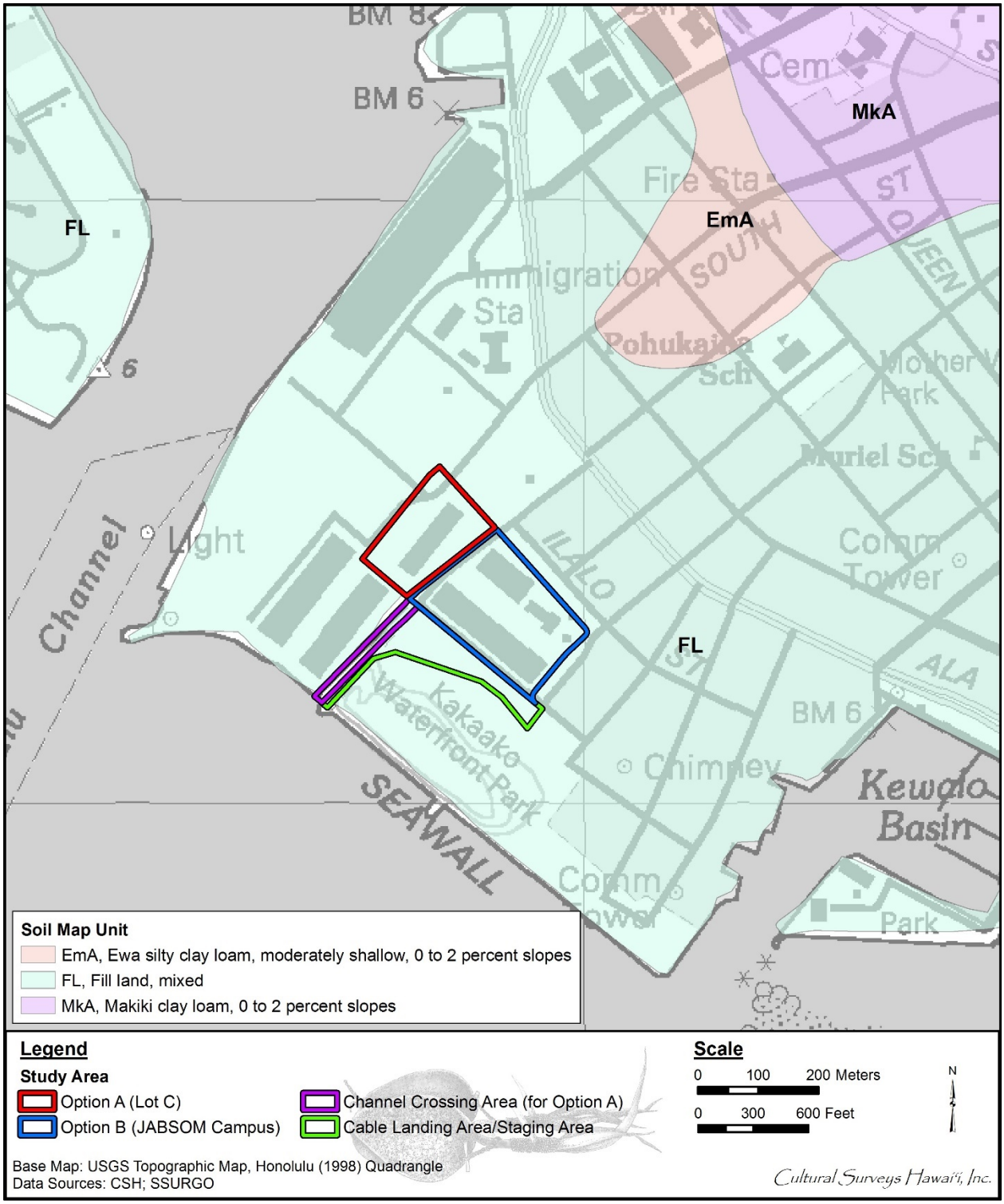


Figure 5. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle with overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972; USDA SSURGO 2001), indicating soil types within and surrounding the project area

Section 2 Methods

CSH completed the fieldwork component of this study under archaeological fieldwork permit number 19-07, issued by the SHPD pursuant to HAR §13-282. CSH archaeologists Sara Blahut, M.A. and Michelle Clark, B.A. (Project Director) conducted the field inspection on 8 April 2019 under the direction of Douglas Borthwick, B.A. (Project Manager), and the general supervision of Hallett H. Hammatt, Ph.D. (Principal Investigator). This work required approximately 3 person-hours to complete.

2.1 Field Methods

A pedestrian field inspection of the project area was undertaken to assess current project area conditions, to identify and document any surface archaeological historic properties, and to assess the potential for subsurface historic properties. Photographs were taken to document general project area conditions. Results of the field inspection are presented in Section 4.

2.2 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.

Section 3 Background Research

The project vicinity is located in an area today often called Kewalo, due to its proximity to Kewalo Basin. On early historic maps, the project vicinity is more specifically identified with the place names “Kukuluāe‘o” on the east (roughly east of an imaginary *mauka* [inland] extension of ‘Āhui Street) and “Ka‘ākaukukui” on the west (roughly west of an imaginary *mauka* extension of ‘Āhui Street). The traditional area called Kewalo was generally considered the area *mauka* of Kukuluāe‘o and Ka‘ākaukukui, although it had a small beach area near the eastern terminus of Queen Street (two blocks west of Ala Moana Center). For the purpose of this study, the name Kewalo is used as it is the name most often used today for the area in general.

3.1 Pre-Contact to Early Nineteenth Century

Kewalo was situated between two centers of population and activity on the southern shore of pre-Contact O‘ahu: Kou and Waikīkī. In Waikīkī, a system of irrigated taro *lo‘i* fed by streams descending from Makiki, Mānoa, and Pālolo valleys blanketed the plain, and networks of fishponds dotted the shoreline. Similarly, Kou—the area of downtown Honolulu on the east side of Nu‘uanu Stream and extending to the southeast adjacent to the harbor—possessed shoreward fishponds and irrigated fields watered by ample streams descending from Nu‘uanu and Pauoa valleys.

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 1981:92–93]

The Kewalo region would have been in Bingham’s view as he stood at “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, 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 suggests preliminarily that the Kewalo region *mauka* of the present study area is within a "not greatly cultivated" region of Honolulu perhaps extending from Puowaina (Punchbowl crater) at the north through Kaka‘ako to the Kālia portion of Waikīkī in the east. Kewalo is named in John Papa ‘Ī‘ī's account of the death in 1810 of Isaac Davis, an American sailor who had settled in the Hawaiian Islands, becoming a confidant of Kamehameha:

> Many chiefs and notables mourned Davis, including Kamehameha and the company of warriors who watched over him. The funeral procession went from Davis' dwelling at Aienui to Kewalo, where his body was deposited on the land of Alexander, a haole who had died earlier. At the time of his death, Davis was an old man with white hair and other signs of age. [‘Ī‘ī 1959:85]

The distance inland (perhaps in the vicinity of the King and Pi‘ikoi Street intersection) supports the notion that the place name "Kewalo" was widely used to refer to areas further inland than we associate with the place name today. An article about Davis in *The Friend* of February 1862 mentions only that his grave was "in a burying place of the Europeans, near Hana-rura," suggesting the Kewalo region and the "burying place" were outside the limits of Honolulu both at the time of Davis's death and 42 years later when the article was written.

An early, somewhat generalized depiction of the pre-Contact Native Hawaiian shaping of Waikīkī, Honolulu, and the Kewalo region—along with a possible location of the "burying place of the Europeans" within Kewalo (southeast of Punchbowl)—is given on an 1817 map (Figure 6) by Otto von Kotzebue, commander of the Russian ship *Rurick*, who had visited O‘ahu the previous year. The map shows taro *lo‘i* (the rectangles) massed around the streams descending from Nu‘uanu and Mānoa valleys. The depicted areas of population and habitation concentration (indicated by the trapezoids), however, probably reflect distortions caused by the post-Contact shift 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.

Kotzebue's map (see Figure 6) suggests the land between Puowaina (Punchbowl crater) and the shoreline—which would include the Kewalo area—formed a "break" between the heavily populated and cultivated centers of Honolulu and Waikīkī; the area is only characterized by fishponds, trails connecting Honolulu and Waikīkī, and occasional taro *lo‘i* and habitation sites. We believe the quite early (1817) Kotzebue map erroneously portrays the east side of Honolulu Harbor too far to the west, but a geo-referenced overlay of the present project area does place it within coastal shallow. The Malden map of 1825 (Figure 7) shows a high degree of consistency in depictions of the natural coastline as very close to the present Ala Moana/Nimitz alignment.

Most maps of the nineteenth century (Malden 1825, see Figure 7; LaPasse 1855, Figure 8; Lyons 1876, Figure 9; Covington 1881, Figure 10; Bishop 1884, Figure 11) show the present project area and vicinity quite similarly. Most notably these maps show the present study area as being in the water (albeit mostly within a shallow reef flat that may have been partially exposed at low tide). *Mauka* of the project area near the former coast, these maps often show polygons or

Figure 6. Portion of 1817 map by Otto von Kotzebue, commander of the Russian ship *Rurick*, showing study area; this early map probably should be understood as schematic sketch (map reprinted in Fitzpatrick 1986:48–49)

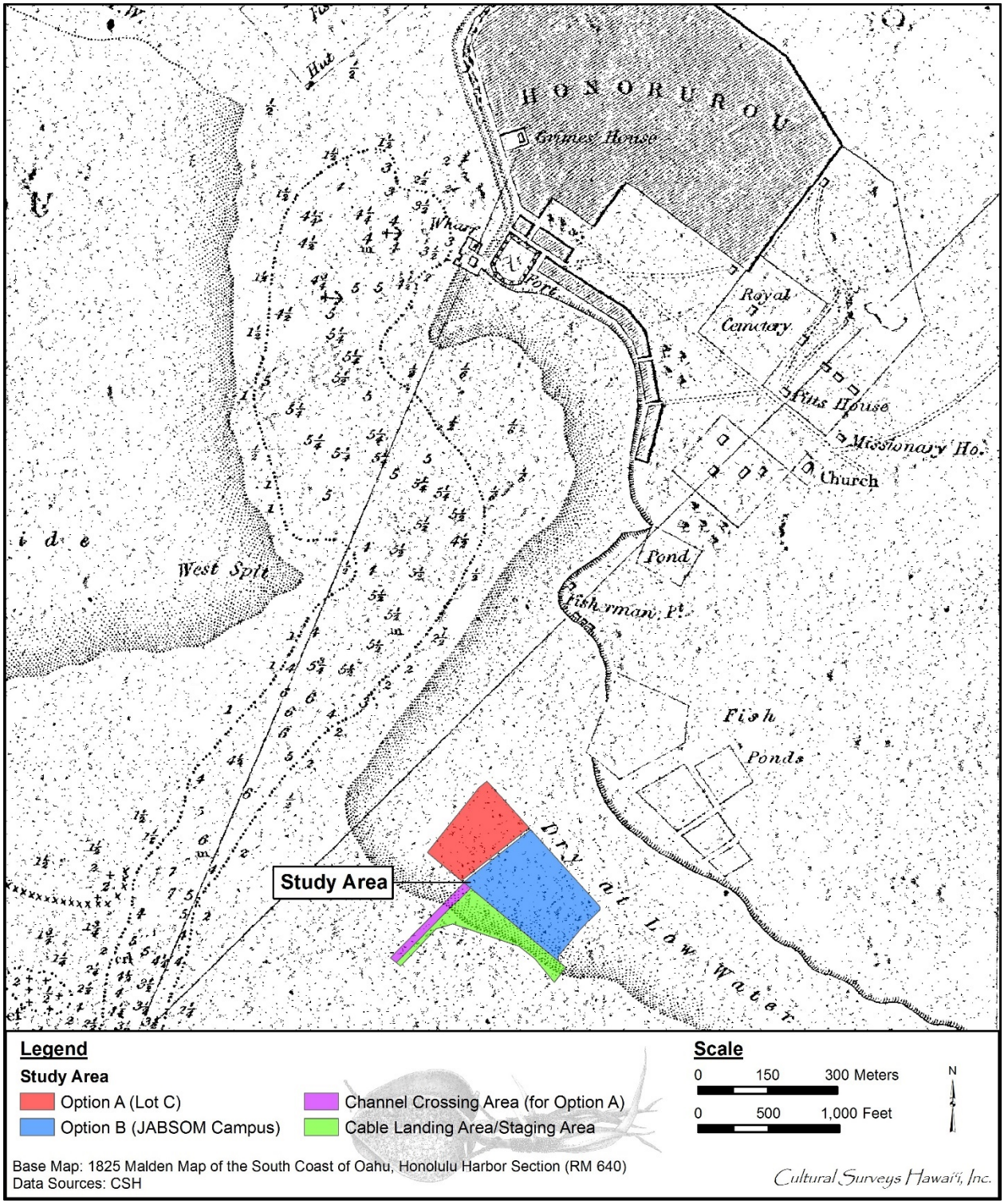


Figure 7. Portion of 1825 map of “South Coast of Woahoo and Honorurou Harbour” by Lt. Charles Malden, showing study area; this and later nineteenth century maps show the natural dry land coastline very close to the present Ala Moana/Nimitz alignment

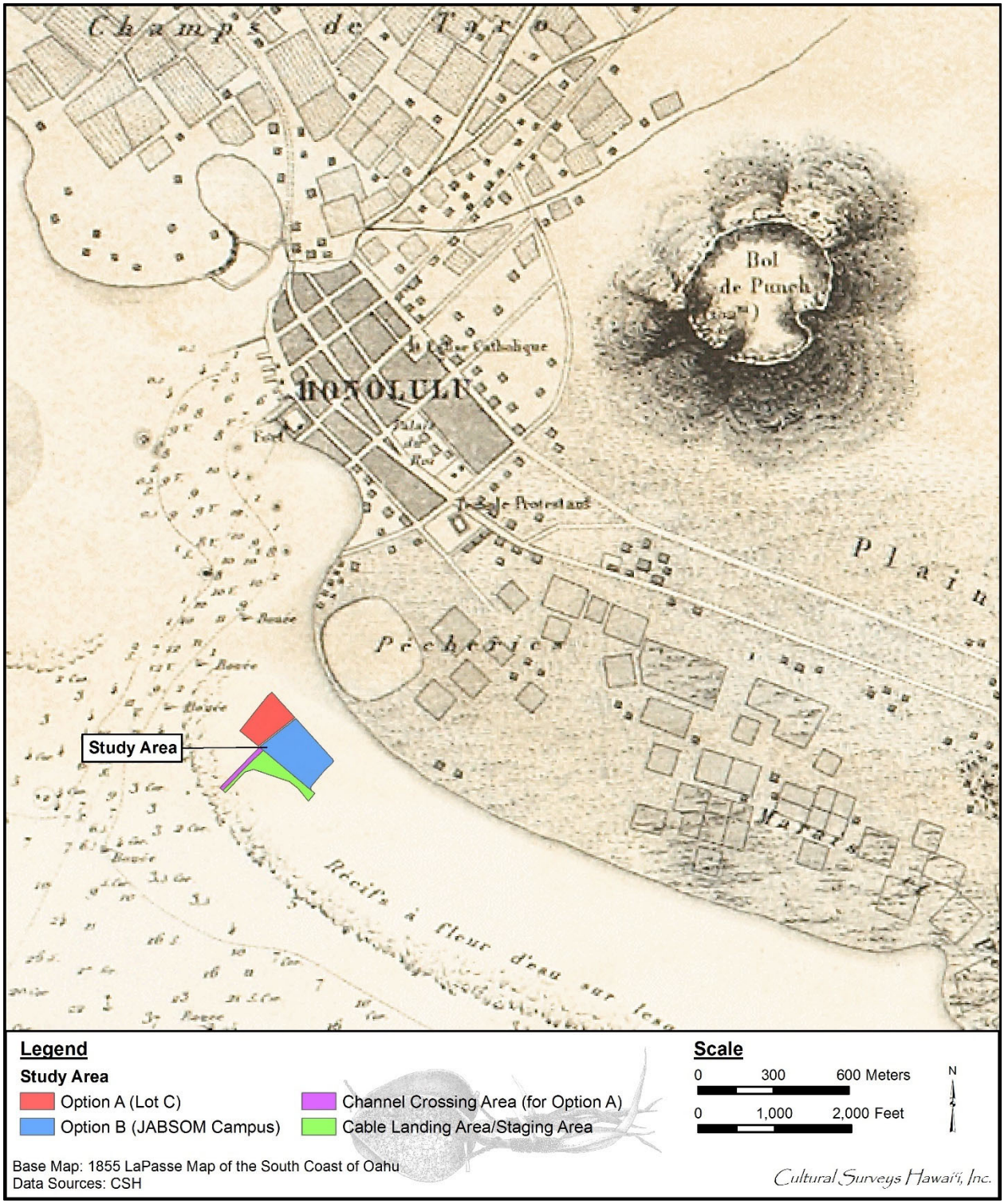


Figure 8. Portion of 1855 map of Honolulu by Lt. Joseph de LaPasse of the French vessel, *L'Eurydice*; project area adjacent to area labeled "*Pecheries*" ("Fishponds") (map reprinted in Fitzpatrick 1986:82–83)

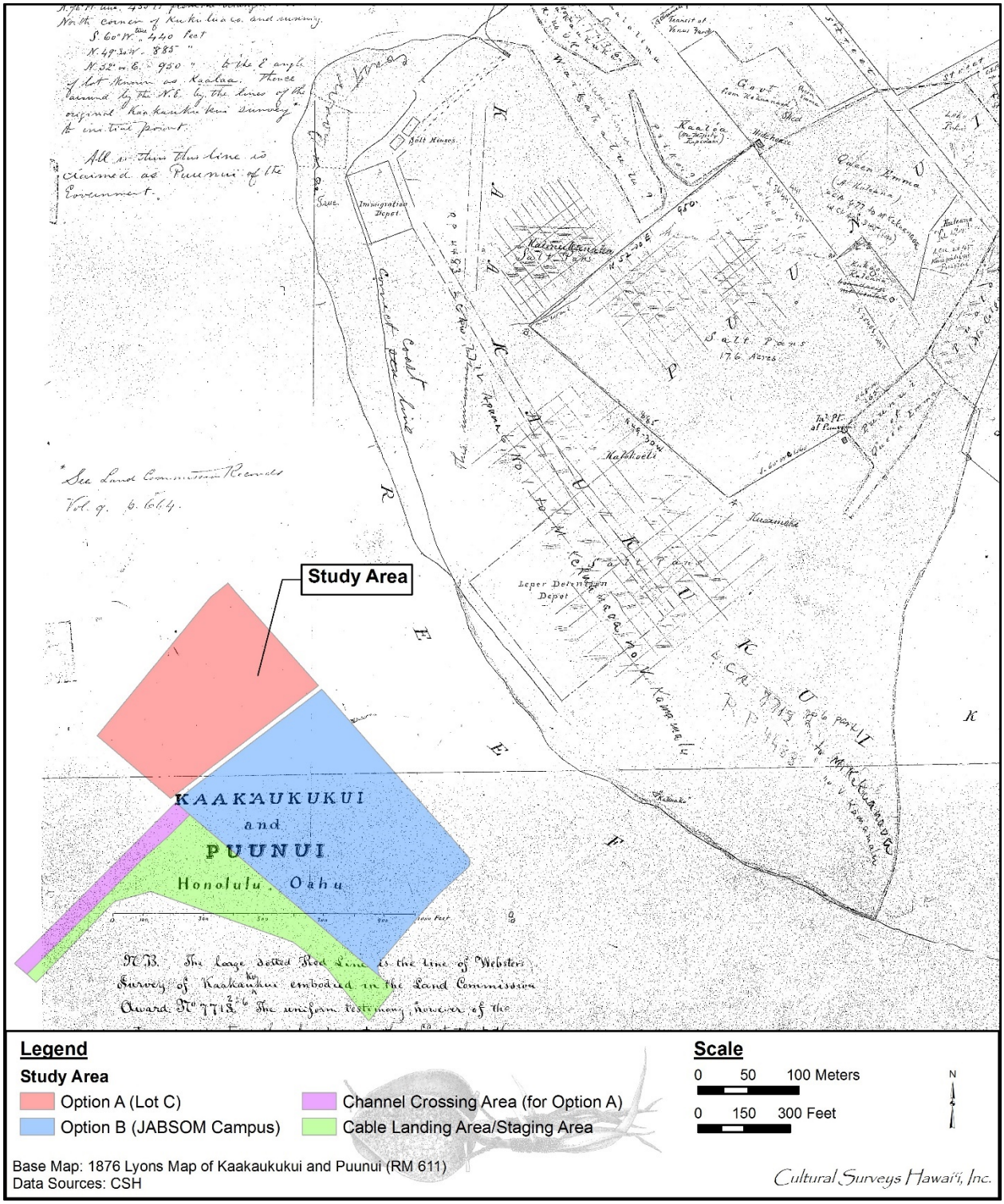


Figure 9. 1876 Lyons map of Kaakaukukui and Puunui, salt pans characterize the area inland of the present study area

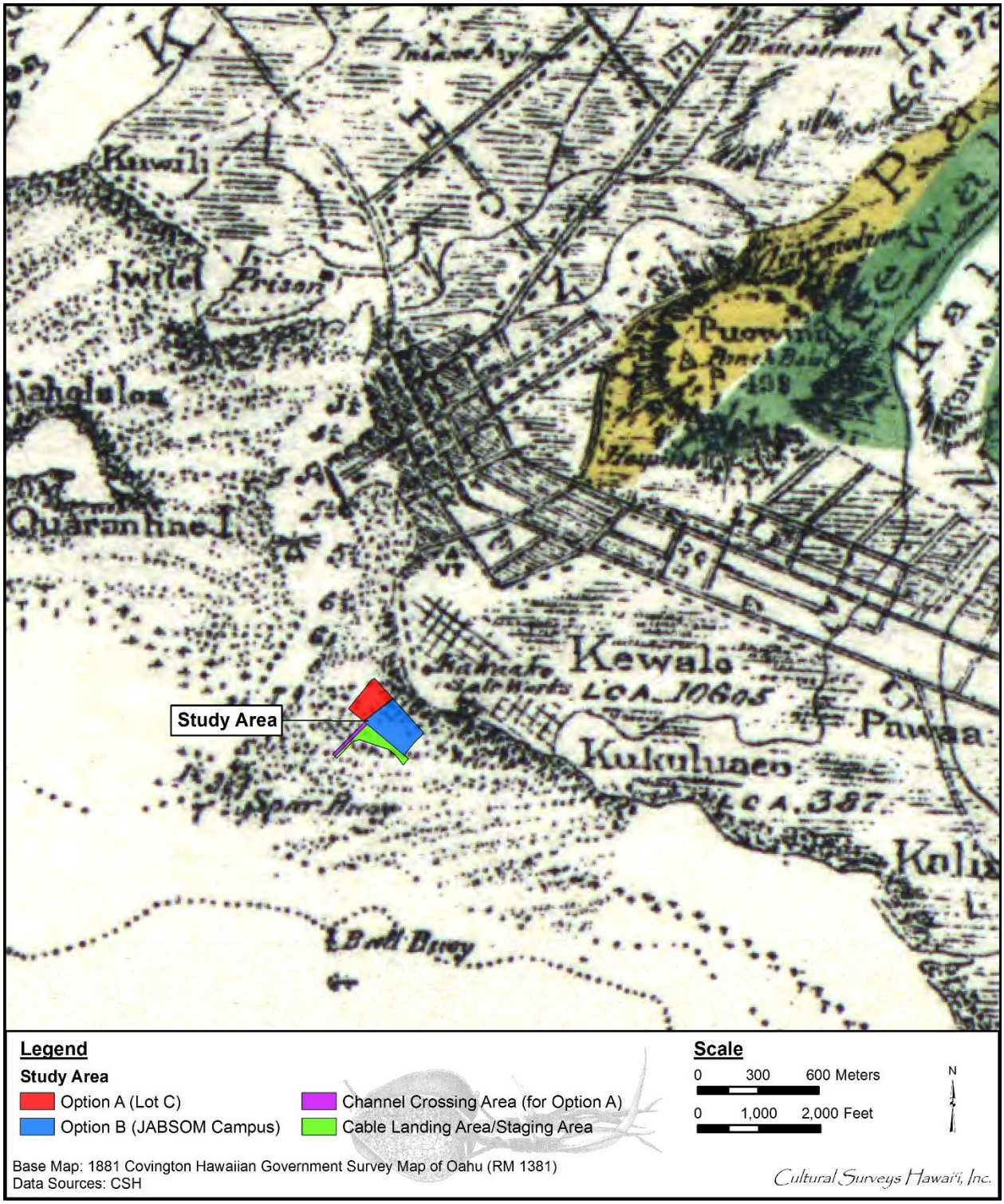


Figure 10. Portion of 1881 Oahu Island Government survey map by R. Covington, showing study area; note extensive “Kakaako Salt Works” just inland of the present study area

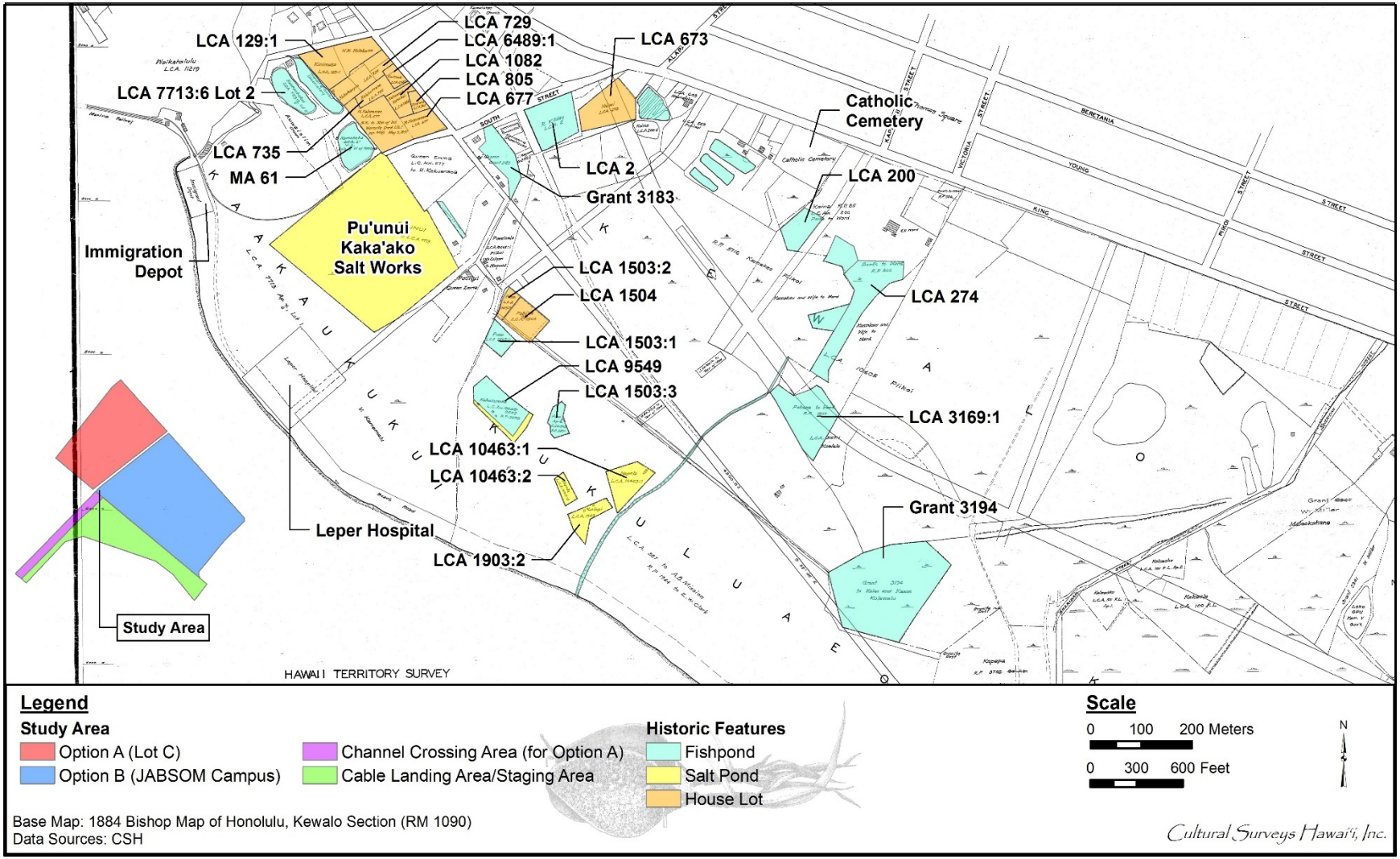


Figure 11. 1884 map of Honolulu, Kewalo Section map, by Sereno Bishop, showing Land Commission Awards near the study area

hatching that do not appear to relate to the cartographer's conventions for fishponds or taro *lo‘i*. At least a partial explanation is suggested by the Lyons map of 1876 (see Figure 9) and the Oahu Island Government Survey 1881 map (see Figure 10) that show a quite extensive "Kaka‘ako Salt Works" just inland (northeast) of the present study area. The salt works continued until well into the twentieth century. This suggests that even the lands well inland of the present study area were quite low-lying until overlain with fill.

While the low-lying lands to the northeast of the project area may have been somewhat bleak salt flats and "salt works," it appears a vibrant coastal community may have existed 400 m north of the present study area. It seems likely the community depicted in the sketch of "Honolulu Beach" by G.H. Burgess in the mid-1850s (Figure 12) relates to the coastal houses depicted on the 1855 LaPasse map.

3.2 Mid-Nineteenth Century and the Māhele

Among the first descriptions of Kaka‘ako and Kewalo by Hawaiians themselves are testimonies recorded during the 1840s in documents associated with land awards and awardees of the Māhele, the division of lands conducted by the government that introduced a system of private property into Hawaiian society. A portion of a modern tracing of an 1884 map by S.E. Bishop (see Figure 11) shows the disposition of Land Commission Awards (LCAs) granted in the environs of the study area. The tracing includes some modern streets not present in 1884. These additions, however, permit an accurate positioning of the study area on the 1884 map. This general depiction is believed to be quite accurate, with the annotated "Beach Road" that runs along the edge of the sea becoming the present-day Ala Moana Boulevard/Nimitz Highway alignment.

The *‘ili* (land division smaller than an *ahupua‘a*) of Ka‘ākaukukui (LCA 7713) was awarded to Victoria Kamāmalu, sister of Kamehameha IV and Kamehameha V. There were no awards to commoners in this *‘ili*, which seems to have consisted entirely of land used for salt making. No residences are shown in this area until the twentieth century. The largest settlement in the vicinity was the village of Honuakaha, at the corner of Punchbowl and King streets. A large number of house lots were awarded to commoners in this area, and late nineteenth century and early twentieth century maps always show a cluster of houses here.

The *‘ili* of Kukuluāe‘o was originally awarded to the king as LCA 387, but he returned it to the government. The *‘ili* was then awarded to the American Board of Commissioners for Foreign Missions (ABCFM) (see Figure 11). Initially this land was associated with Punahou School in Mānoa Valley, as Chief Boki gave the Punahou lands to Hiram Bingham, pastor of Kawaiaha‘o Church in 1829 (DeLeon 1978:3). In the Māhele, however, this land became "detached" from the Mānoa award and was instead given to the pastor of the Kawaiaha‘o Church (Foster 1991).

Testimonies describe the land—identified as "Punahou" (relating to the main ABCFM holding)—and the background of the ABCFM's claim to it:

> The boundaries of that part which lies on the sea shore we cannot define so definitely, but presume there will be no difficulty in determining them, as it is commonly known as pertaining to Punahou. This part embraces fishing grounds, coral flats and salt beds.

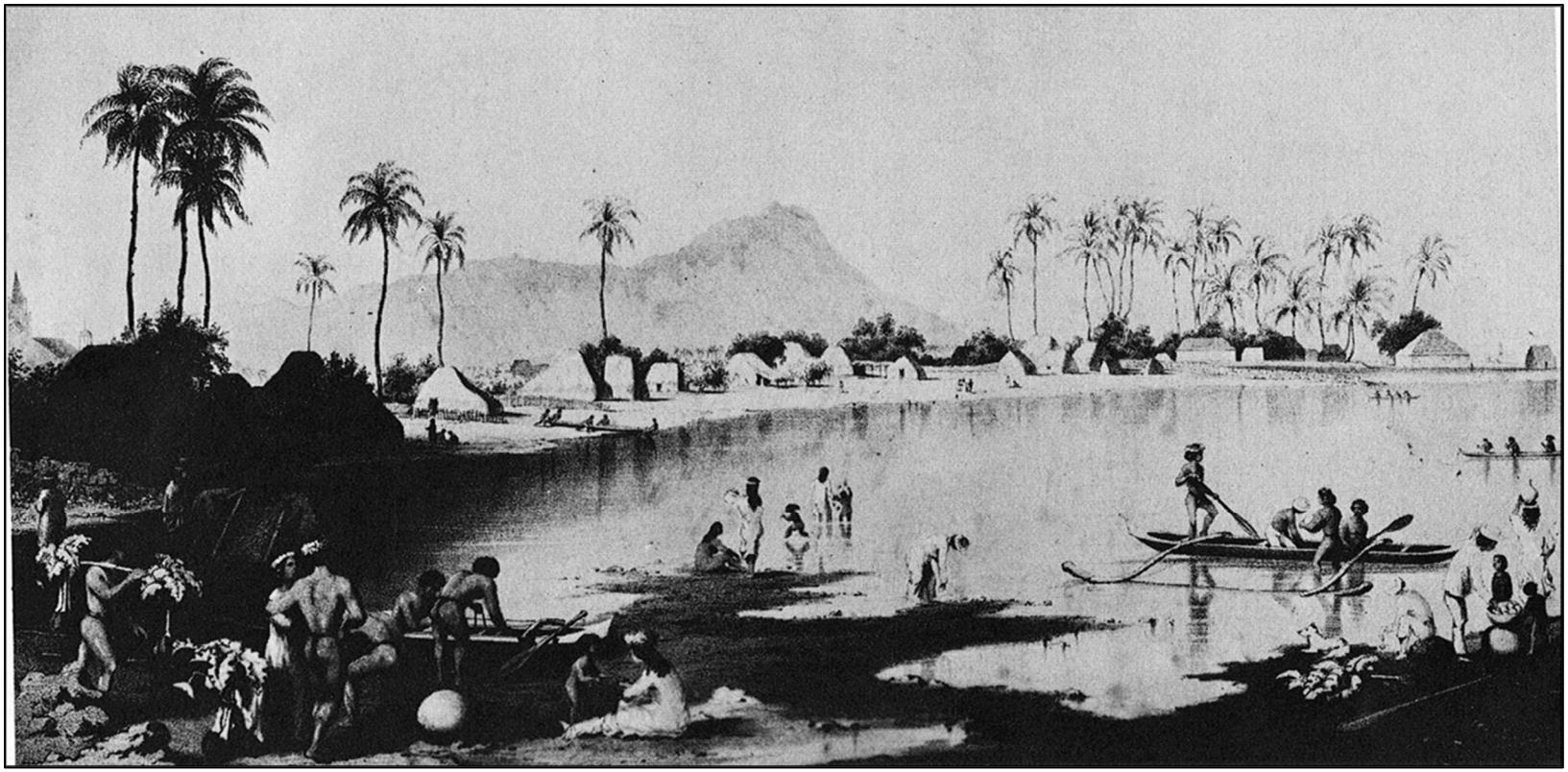


Figure 12. This sketch of “Honolulu Beach” by G.H. Burgess in the mid-1850s (from Scott 1968:575) portrays a scene just west of the present study area roughly between Pier 5 (foreground) and Fort Armstrong (at extreme right); note the dense thatched houses are constructed surprisingly close, within 10 m or so of the high tide line

> The above land was given by Boki to Mr. Bingham, then a member of the above named Mission and the grant was afterwards confirmed by Kaahumanu. [*Foreign Register* 1842:2:33]
>
> The *Makai* part of Punahou is bounded *Mauka* by ‘Kewalo’ and ‘Koula’, Waititi side by ‘Kalia’, seaward it extends out to where the surf breaks. Honolulu side by ‘Honolulu.’
>
> This land was given to Mr. Bingham for the Sandwich Island Mission by Gov. Boki in 1829 . . . From that time to these the S.I. Mission have been the only Possessors and Konohikis of the Land.
>
> The name of the *Makai* part is Kukuluaeo. There are several tenants on the land of Punahou whose rights should be respected. [*Foreign Testimony* 1848:3:115]

The *‘ili* of Kewalo (LCA 10605) was awarded to Kamake‘e Pi‘ikoi, wife of Jonah Pi‘ikoi (awardee of Pualoalo ‘Ili), as part of LCA 10605, *‘āpana* (lot) 7. The award was shared between husband and wife (Kame‘eleihiwa 1992:269). Kewalo was a large 270.84-acre land section extending from Kawaiaha‘o Church to Sheridan Street. This land section had numerous large fishponds, which were awarded as part of the claim to Pi‘ikoi.

That the area inland of the present study area was indeed exposed coral flats dotted with salt pans and fishponds well into the nineteenth century is corroborated in the testimonies recorded for individual *kuleana* awards to some of the commoners on that land “whose rights should be respected.”

LCA 1503 to Puaa is recorded as consisting of three fishponds and a house lot.

LCA 1504 to Pahiha (Pahika on the 1884 map) explicitly defines the general area:

> Peka W. [wahine] sw. I know this place. It is on the salt plains of Honolulu, used for making salt.
>
> *Mauka* is a stream of salt water. Waititi is several salt ponds—Napela, Kuniae and others own them. *Makai*—Gov’t road. Honolulu—Peka Kaula, Lilea, Bolabola, Poe.
>
> Claimant recd this land from his father who died last year and held it a long time back in Kinau’s time. [*Foreign Testimony* 1848:3:220]

LCA 9549 to Kaholomoku comprised “three ponds, a salt mo‘o” (*Native Register* 1847:4:477).

LCA 10463 to Napela is recorded as consisting of “two ponds, a ditch, two deposits, a house site and a salt land section in two pieces” (*Native Testimony* 1848:10:445).

Within Kewalo itself is LCA 3169 to Koalele:

> Mahoe, sworn, says he knows the land of Claimant in ‘Kewalo’. It consists of some *kalo* patches *mauka* and some Lokos *makai*.
>
> The *kalo* patches are bounded *mauka* by Kealoha; bound Waikiki side by Kuaipaka’s, *makai* by the konohiki, Ewa side by J. Booth.

> The fish ponds are bounded *mauka* by the konohiki. Waikiki and *makai* side, the same. Honolulu side by J. Booth.
>
> Clt received his land from Kapihi in the life time of Kinau and he has held the same without dispute till the present time. [*Foreign Testimony* 1848:3:507]

The *mauka* portion of Koalele's claim, which includes the taro patches, is not shown on the 1884 map; it is likely somewhere immediately *mauka* of King Street. The *makai* portion—the "Lokos" or fishponds—is shown located northeast of the present study area.

The LCA records thus help clarify both the pre-Contact and mid-nineteenth century pictures of the study area vicinity. They suggest the traditional Hawaiian usage of the Kewalo region and its environs may have been confined to salt making and farming of fishponds, with minimal wetland agriculture in those areas *mauka* or toward Waikīkī at the very limits of the field system descending from Makiki and Mānoa. The characterization by a Native Hawaiian of the expanse within the present study area as the "salt plains of Honolulu" itself suggests the environmental limitations that would have made the general region less desirable for long-term permanent habitation by any sizeable population. However, the testimonies do indicate the area was lived on and was shaped by Hawaiians before the nineteenth century.

The LCA records also reveal that, midway through the nineteenth century, taro cultivation and the traditional salt making and fishpond farming activities continued within the environs *mauka* of the present study area. These activities and the land features that supported them would be eliminated during the remainder of the nineteenth century by the increasing expansion of urbanized Honolulu.

The 1884 Honolulu Kewalo Section map (see Figure 11) and an 1887 Wall Government Survey map (Figure 13) show the nascent traces of the future development in the grid of roads *mauka* of the project area vicinity. Until quite late in the 1800s, this grid was focused north of King Street and west of Punchbowl Street owing to the low-lying marshy nature of the land.

3.3 Late Nineteenth Century

Of note are changes to the coastal lands starting to the northwest of the project area. In 1857, Honolulu Fort was demolished and its walls became a 2,000-ft retaining wall used to extend the land out onto the shallow reef in the harbor. The remaining materials were used as fill to create what came to be known as the "Esplanade" (Wong-Smith and Rosendahl 1990:12), largely built on properties known as Waikahalu‘u that had been owned by Queen Hakaleleponi Kalama (wife of Kauikeaouli Kamehameha III). Between 1857 and 1870, 22 acres of reef land between Fort Street and Alakea Street were filled in with material dredged from the harbor (Rush 1957:14). Filling activity then continued to the east, seaward of Richard and Punchbowl streets, extending west of the present study area in 1887. The 1887 Wall map (see Figure 13) shows the brand new, in-progress, layout of streets in the area between Richards and Punchbowl streets (near the Prince Kūhiō Federal Building). Thus by 1886/1887 the filling of the shallow seas in the vicinity of the project area had begun but none of the project area was filled at that time.

An 1897 Monsarrat map (Figure 14) indicates there had been very little filling of the coastal shallows in the previous decade. This map shows the development of the coastal area, with commercial wharfs and recreational boathouses built out over the low reef. In 1884–1887, a

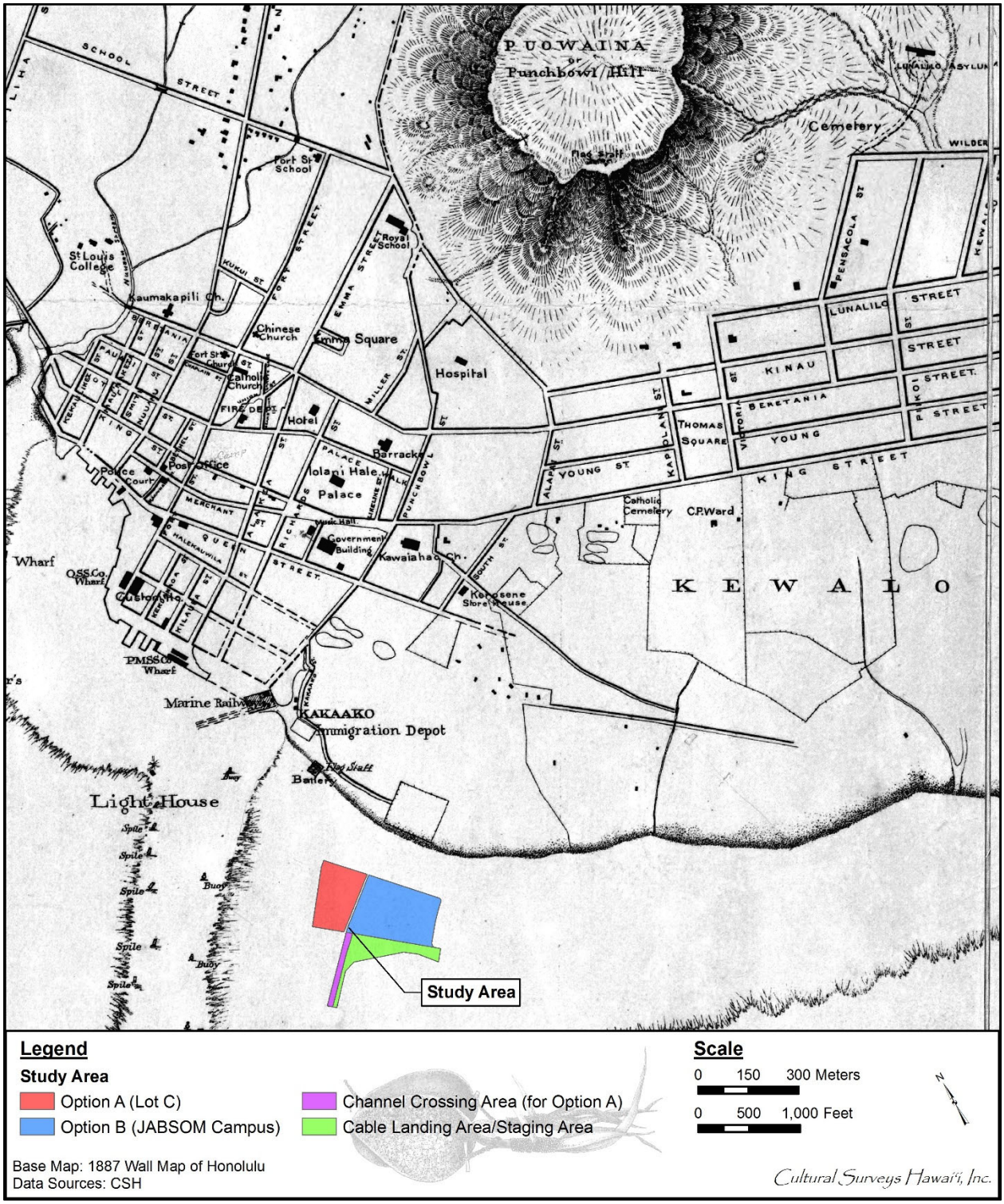


Figure 13. 1887 map of Honolulu and vicinity by W.A. Wall, showing lack of road and residential development in the Kaka‘ako area in the late nineteenth century

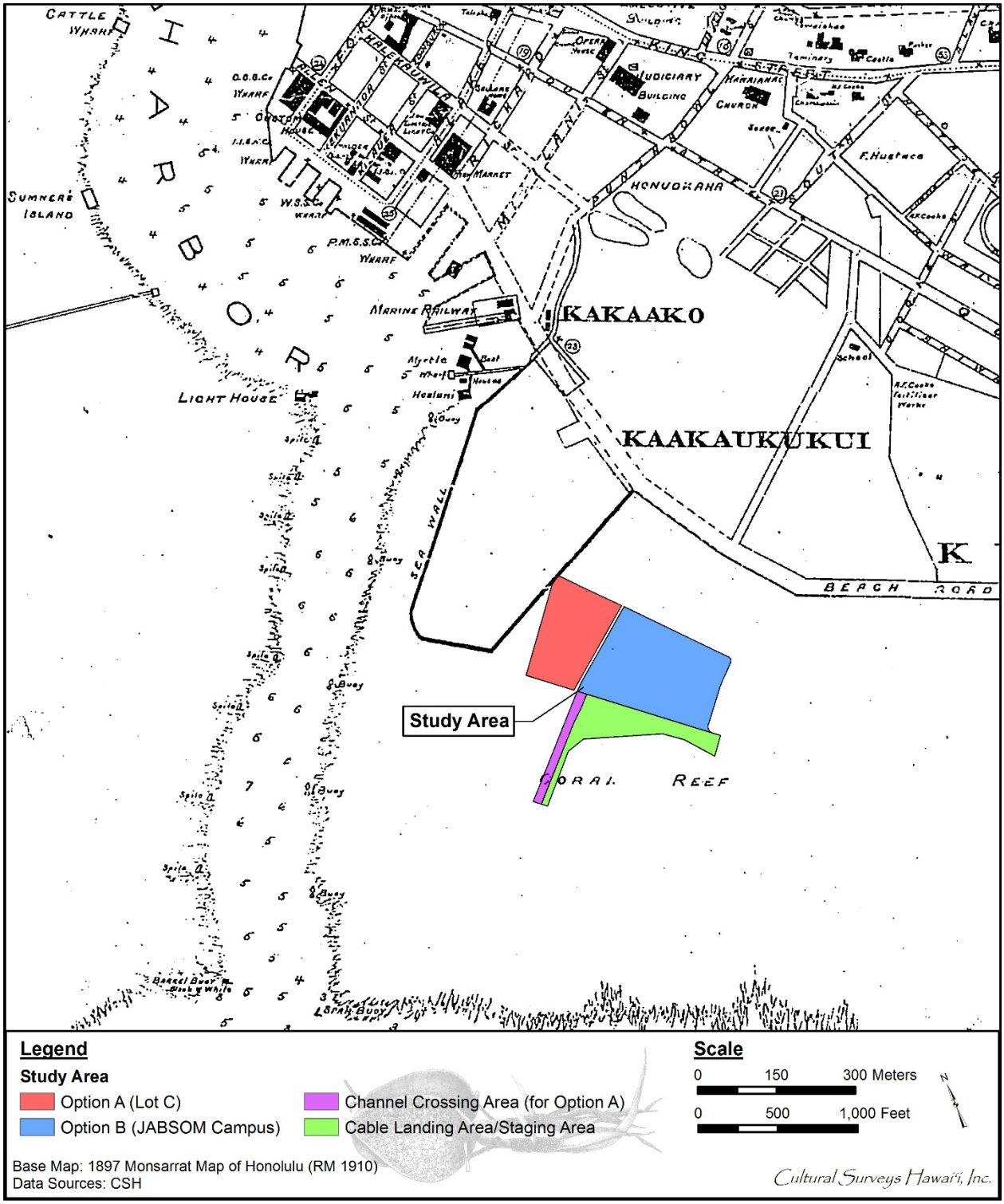


Figure 14. 1897 M.D. Monsarrat map of Honolulu, Hawaiian Islands, showing study area still indicated as “coral reef”

“Marine Railway” was developed by Lyle and Sorenson north of the present study area (Figure 15) that facilitated the haul out of ships for bottom scraping and propeller checks.

An 1891 Dodge map shows a powder magazine at what is now the corner of Ilalo and Keawe streets indicating the northeastern edge of the project area may have been filled at this time (Figure 17). However, many of the streets still appear to be planned rather than actual. During the monarchy, the point at Kaka‘ako was the location for a battery, with three cannons (see Figure 13, Figure 16, and Figure 17) used to salute visiting naval vessels, which responded with their own cannon salutes (located approximately 200 m north of the present project area). Other saluting batteries were at the top of Punchbowl Crater and at the Honolulu Fort (Dukas 2004:163). The *Hawaiian Annual and Almanac for 1887* (Thrum 1886:37) reported that $4,500 had been spent to build the battery. It was used for gun salutes up to at least the overthrow of the monarchy in 1893 (Judd 1975:57).

Also of interest is the establishment of a long pier in the waters to the north of the present study area that had branching piers leading to the King’s (Kalākaua’s) Boat House (see Figure 14, Figure 17, and Figure 18), Myrtle Boat House (club), and Healani Boat Club House. While outrigger canoes were paddled and sailed, and five-oared whaleboats were raced, the main sport for the rival Myrtle and Healani boat clubs was six-oared sliding-seat “barges”—“in addition to things hanky-panky” (Scott 1968:195).

3.4 Twentieth Century

After the annexation of the Islands by the United States in 1899, the U.S. Congress began to plan for the coastal defenses of their new territory. In 1905, the National Coastal Defense Board, also known as the Taft Board, was organized to analyze the coastal defense of the United States and her possessions. By 1908, it was decided that a number of coastal defense fortifications would be built to protect O‘ahu’s harbors (Dorrance 1995). The major batteries were placed at Pearl Harbor and in Waikīkī, but a small reservation was also set up on the Ka‘ākaukukui Reef to protect Honolulu Harbor.

In 1909, Executive Order 1008 (General Order No. 17, W.D.) transferred a portion of the previously designated U.S. Naval Reservation on Ka‘ākaukukui Reef to the War Department (U.S. Army War Department 1916). The reservation was named Fort Armstrong after General Samuel Chapman Armstrong (1839–1893) who was born on Maui, graduated from Punahou, and was a hero of the Union defense of Cemetery Ridge at Gettysburg (Pukui et al. 1974). Fort Armstrong would eventually consist of approximately 64 acres, about half of which were submerged lands to be used as a submarine minefield in time of war. The fort had a single battery (Battery Tiernon), with two 3-inch m1903 guns, completed in 1911. Battery Tiernon protected the minefield and took over the job of saluting visiting naval vessels once performed by the Kaka‘ako battery (Dorrance 1995; Williford and McGovern 2003).

Of note on the 1909 Monsarrat map is a large U-shaped sea wall just south of the boat house pier that may have extended into the northwest corner of Lot “C” (Figure 19). This sea wall is also visible in an 1894 view from Punchbowl (Figure 20). The 1911 Podmore map (Figure 21) shows this area being rapidly developed through land fill (largely filled with sand and coral from Honolulu Harbor dredging operations) to accommodate a U.S. Naval Reservation, U.S.

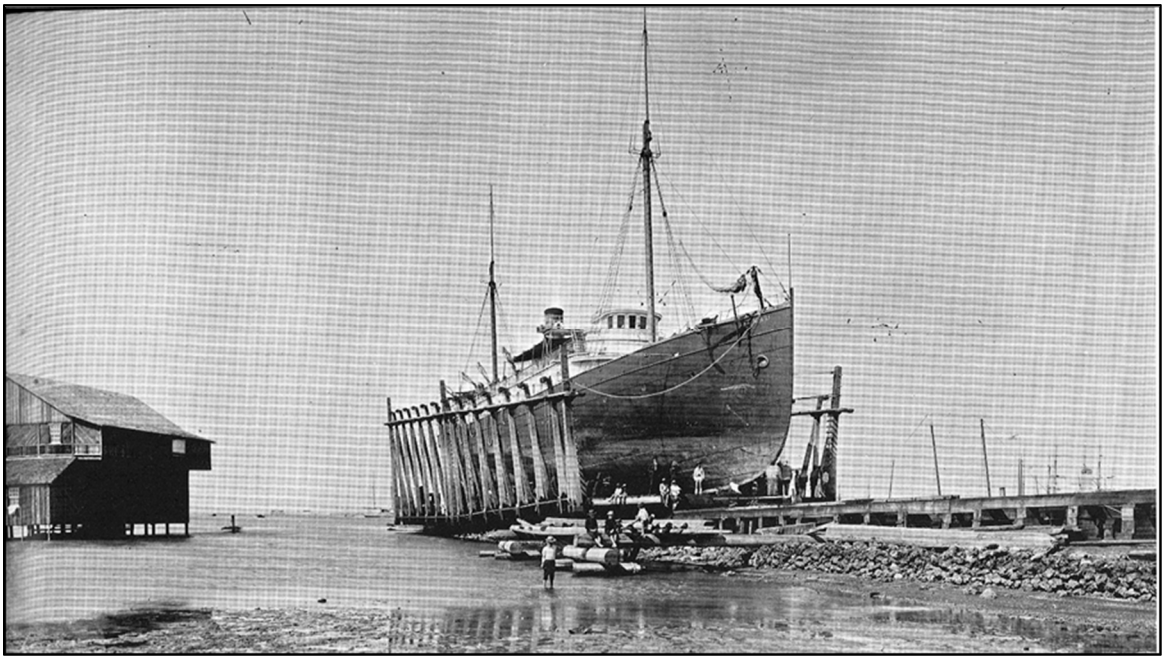


Figure 15. *Kinau* steamer on Lyle and Sorenson’s “Marine Railway” constructed ca. 1885 for the haul out of ships; note the extensive shallow mudflat (original photograph at Hawai‘i State Archives, reprinted in Scott 1968:209)

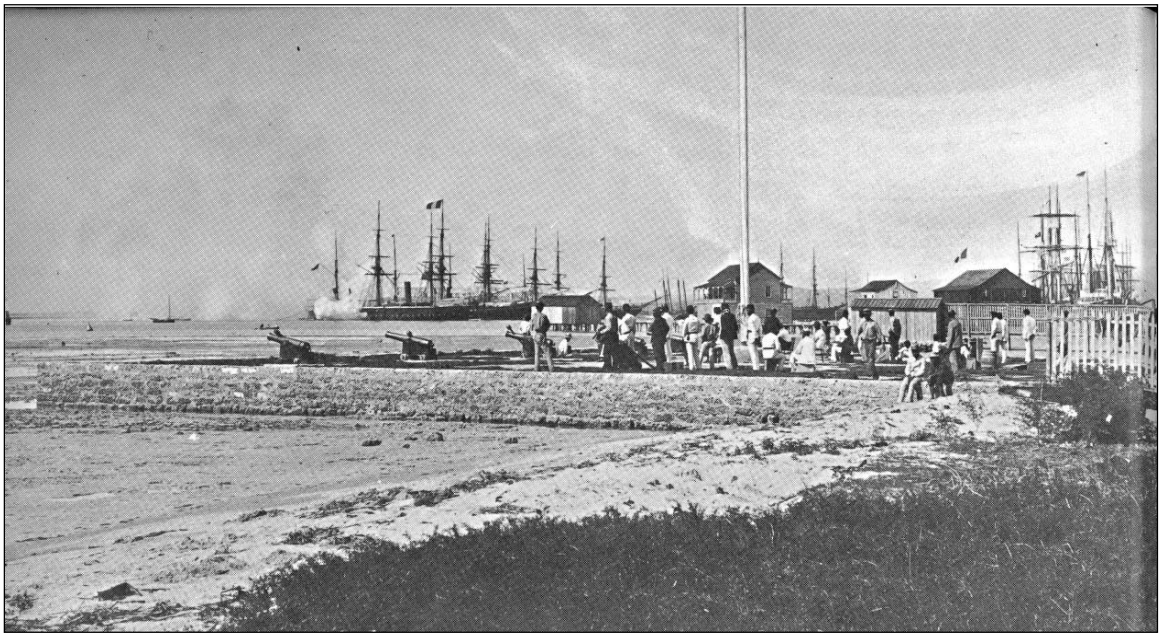


Figure 16. 1887 photograph of the Kaka‘ako Saluting Battery and flagstaff (original photograph taken by Karl Kortum and archived at the San Francisco Maritime Museum; reprinted in Scott 1968:176)

Figure 17. 1891 Dodge map of Kaakaukukui, Kakaako Section (the southeast portion of this map is believed to show planned rather than actual streets), note powder magazine at east corner of the Lot C parcel

Figure 18. View of the King’s (Kalākaua’s) Boathouse 400 m north of the study area ca. 1890; this land would soon be filled in to create the Pier 1 area (Ray Jerome Baker Collection, Kamehameha Schools Archives)

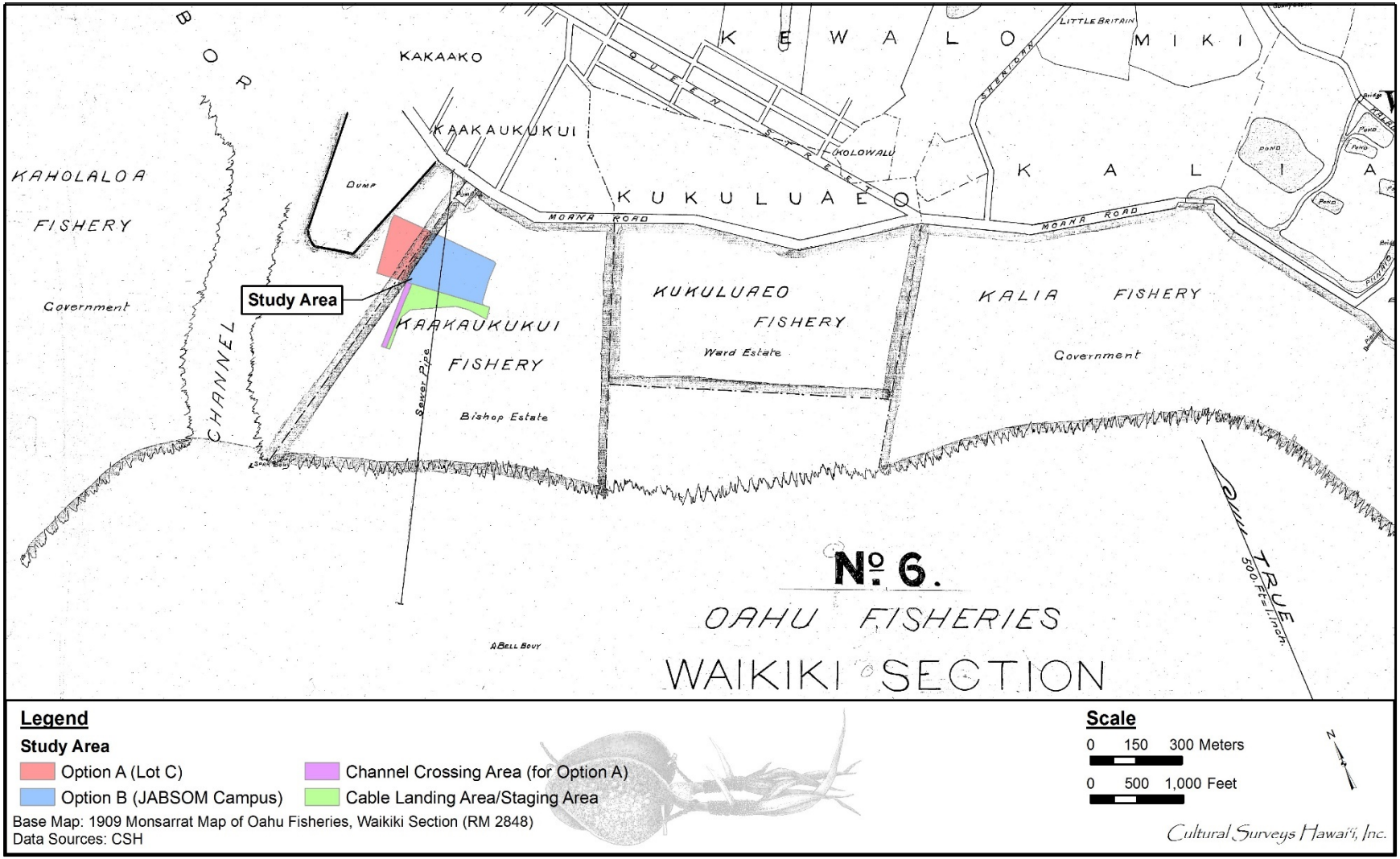


Figure 19. 1909 Monsarrat map of O‘ahu fisheries, Waikiki Section , the project area is depicted as offshore

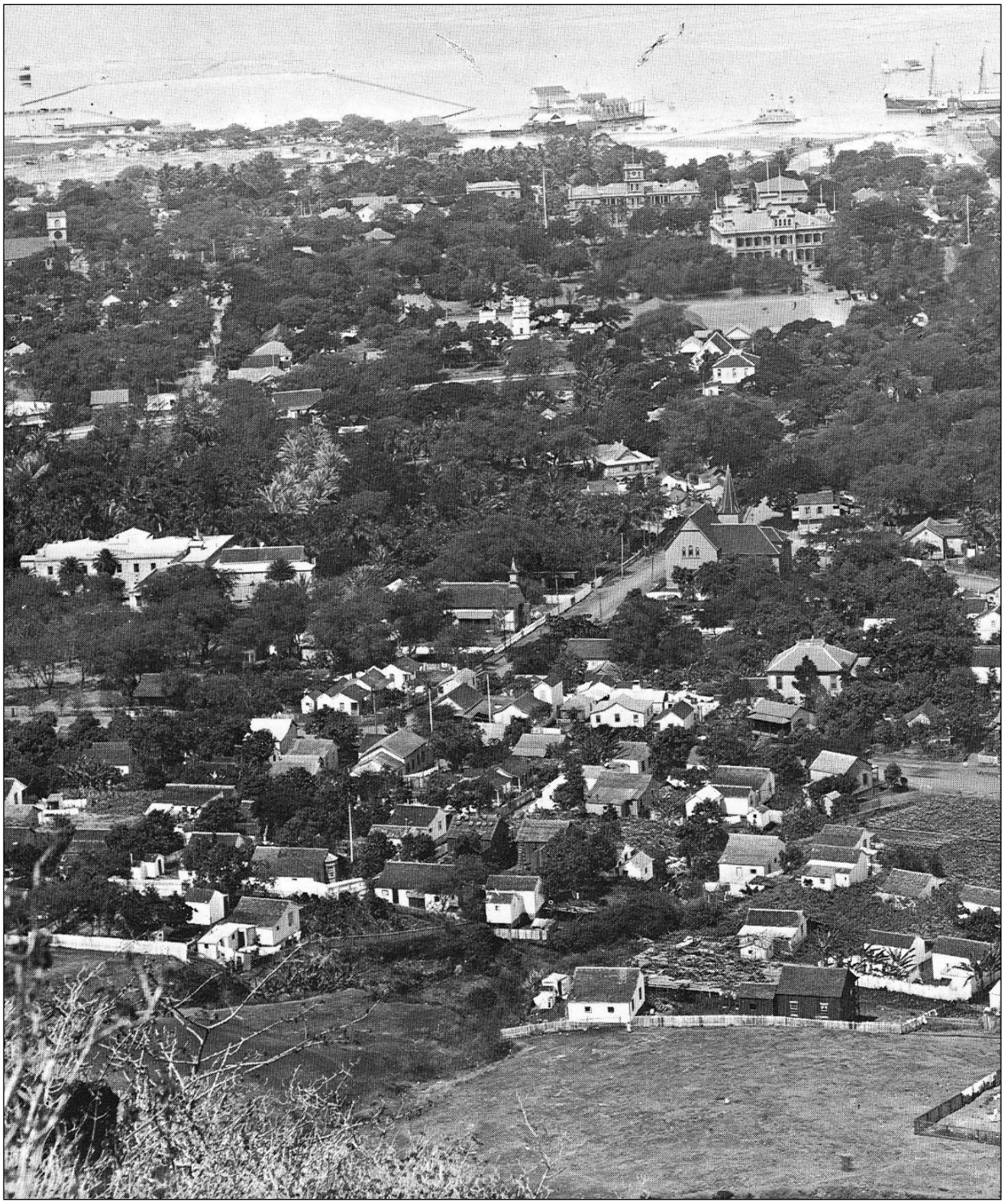


Figure 20. In this 1894 photograph of the Honolulu waterfront taken from the top of Punchbowl (Kawaiaha‘o Church and ‘Iolani Palace are clear landmarks) the new seawall is quite pronounced at the upper left (photograph from Scott 1968:266)

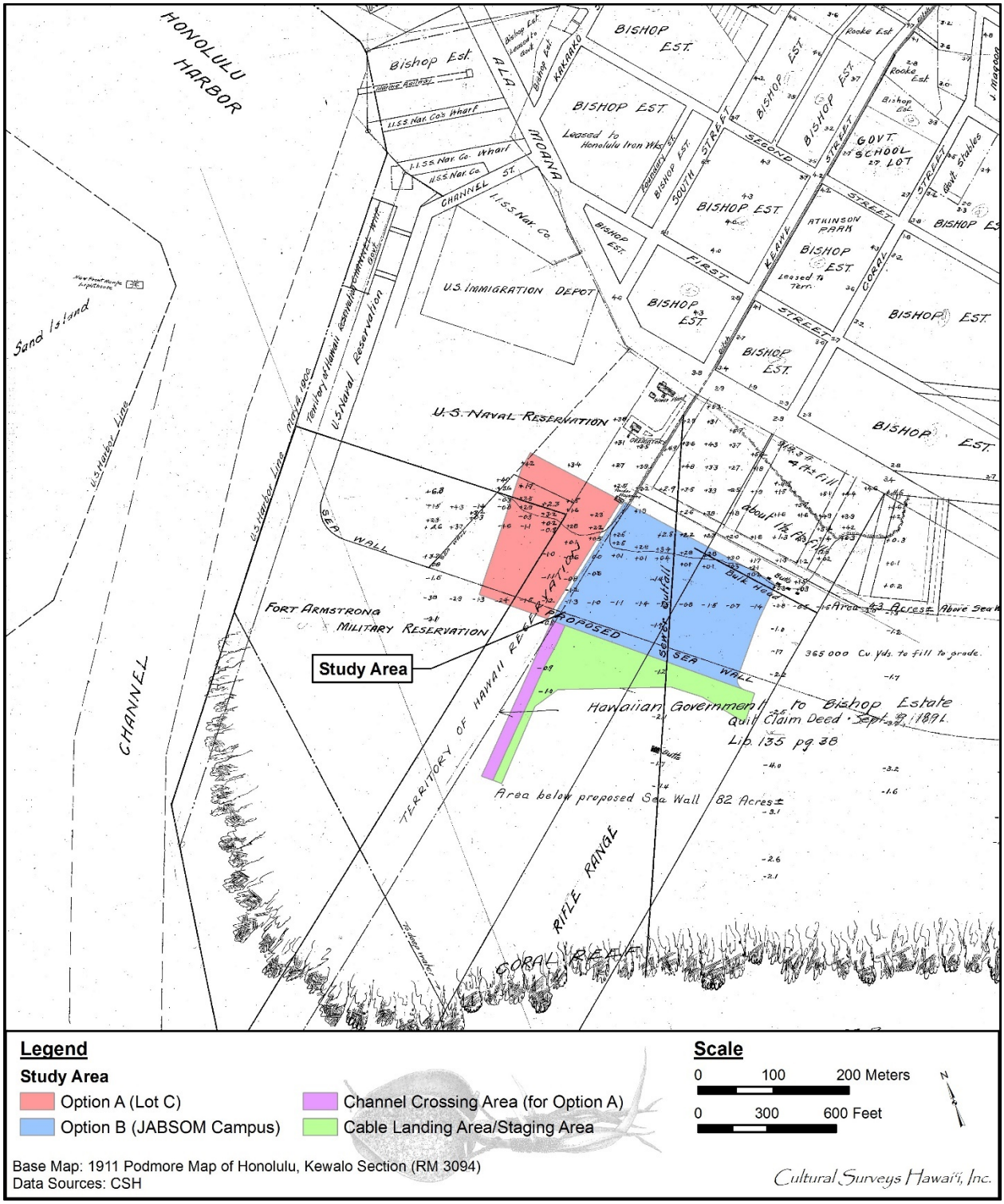


Figure 21. 1911 G. Podmore map of “Honolulu, Kewalo Section,” showing study area; note the seawall running through the project area is only “proposed,” depths indicate the *mauka* portion of the project area has been filled by this time, the powder magazine is still visible in east corner of Lot C

Immigration Depot, and Fort Armstrong Military Reservation. The Podmore map indicates a “proposed sea wall” extension extending southeast from the initial seawall and roughly parallel to the coast.

A 1919 fire control map (Figure 22) by the U.S. Army Corps of Engineers indicates that into the 1920s large portions of Kewalo were yet to be developed. It appears, however, that the southeast extension of the seawall seen in the Podmore map of 1911 (see Figure 21) had been partially developed with Fort Armstrong largely completed on the northwest side and the southeast end of the seawall enclosure still undeveloped (and perhaps largely still under water). The bulk of Lot “C” thus appears to have been in-filled between 1911 and 1919. The 1919 map (see Figure 22) shows the Ilalo Street alignment along the *mauka* or north side of the project area and the Keawe Street alignment being developed between Lot C and the JABSOM campus. A 1920 Monsarrat map shows active road development to the east of the project area and sewer infrastructure running *mauka-makai* through the project area (Figure 23). The new southeastern sea wall extension (built to promote land reclamation) appears to be complete.

During the 1920s and 1930s, Fort Armstrong actively encompassed the Lot C portion of the project area (Figure 24). A 1921 map of Fort Armstrong (Figure 25) shows multiple structures within Lot C. A series of aerial photographs of Fort Armstrong dating throughout the 1930s (Figure 26 through Figure 32) demonstrate the small changes in the fort’s infrastructure. In the 7 December 1941 attack on the Islands, the fort escaped relatively unscathed; only one motor pool structure was hit. Antiaircraft shells were fired from the fort but were ineffective; at least one hit the town rather than any aircraft (Richardson 2005:34). In the 1950s, the federal government returned most of Fort Armstrong to the Territory of Hawaii, which used the area to expand the shipping piers of the harbor.

A 1933 U.S. Army War Department fire control map (Figure 33) shows much of the present Kaka‘ako *makai* area land filled in west of Kewalo Basin but the fill is so recent that the layout of streets is ongoing. Kewalo Basin has been dredged by this time but the east side is still in reef flats. Whereas much of the fill in the northwest portion of Kaka‘ako *makai* was relatively clean coral and sand dredge material, much of the fill in the southeast portion of Kaka‘ako *makai* came from decades of open trash burning (Figure 34).

In the case of Kewalo Basin, most of the land between it and Fort Armstrong to the northwest had been previously filled (ca. 1900–1920). The area between Kewalo Basin and Fort Armstrong *makai* of Ala Moana became a part of Kaka‘ako called “Squattersville” (Figure 35). “All Squattersville, like Gaul, is divided into three parts. There is the original settlement at Kewalo Basin Point, there is a tiny offshoot of this, and there is the later settlement along Ala Moana” (Johnson 1991:111). The later (ca. 1925–1930) dredging and filling created Ala Moana Beach Park and commercial dock space at the Ala Wai and Kewalo Basins.

The 1943 U.S. Army War Department map (Figure 36) shows remarkably little urban development of the Kaka‘ako *makai* area in the preceding ten years (compare with the 1933 map; see Figure 33) but we do see the completion of part of the east side of Kewalo Basin as a result of the creation of Ala Moana Park. Barely discernible on the west side of Kewalo Basin is the Honolulu City and County incinerator built in 1930 (and replaced in 1946; the surf break is still called “Incinerators”). It is understood that the products from incineration were generally used in the immediate area as land fill.

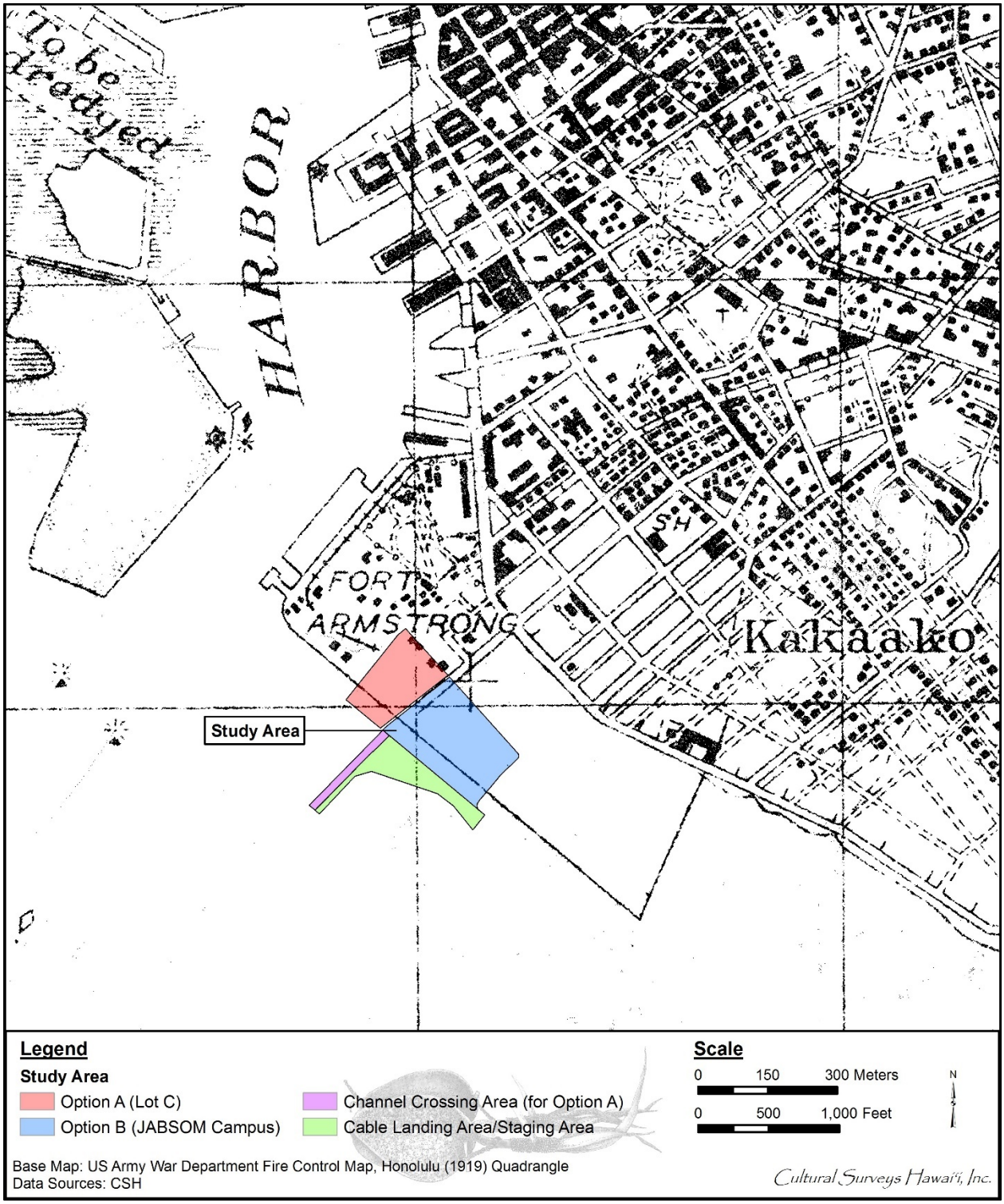


Figure 22. Portion of 1919 U.S. Army War Department fire control map, Honolulu quadrangle, showing study area

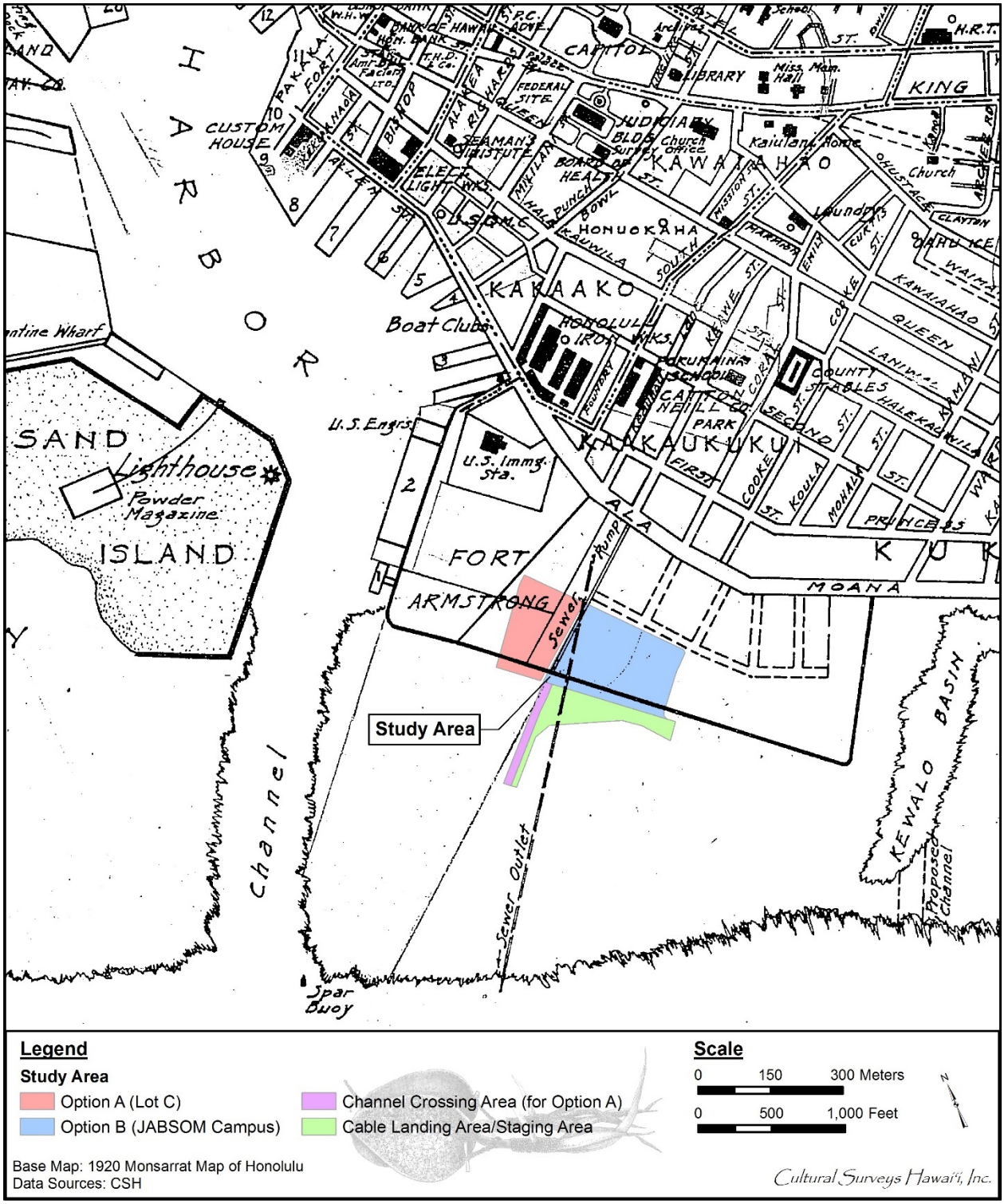
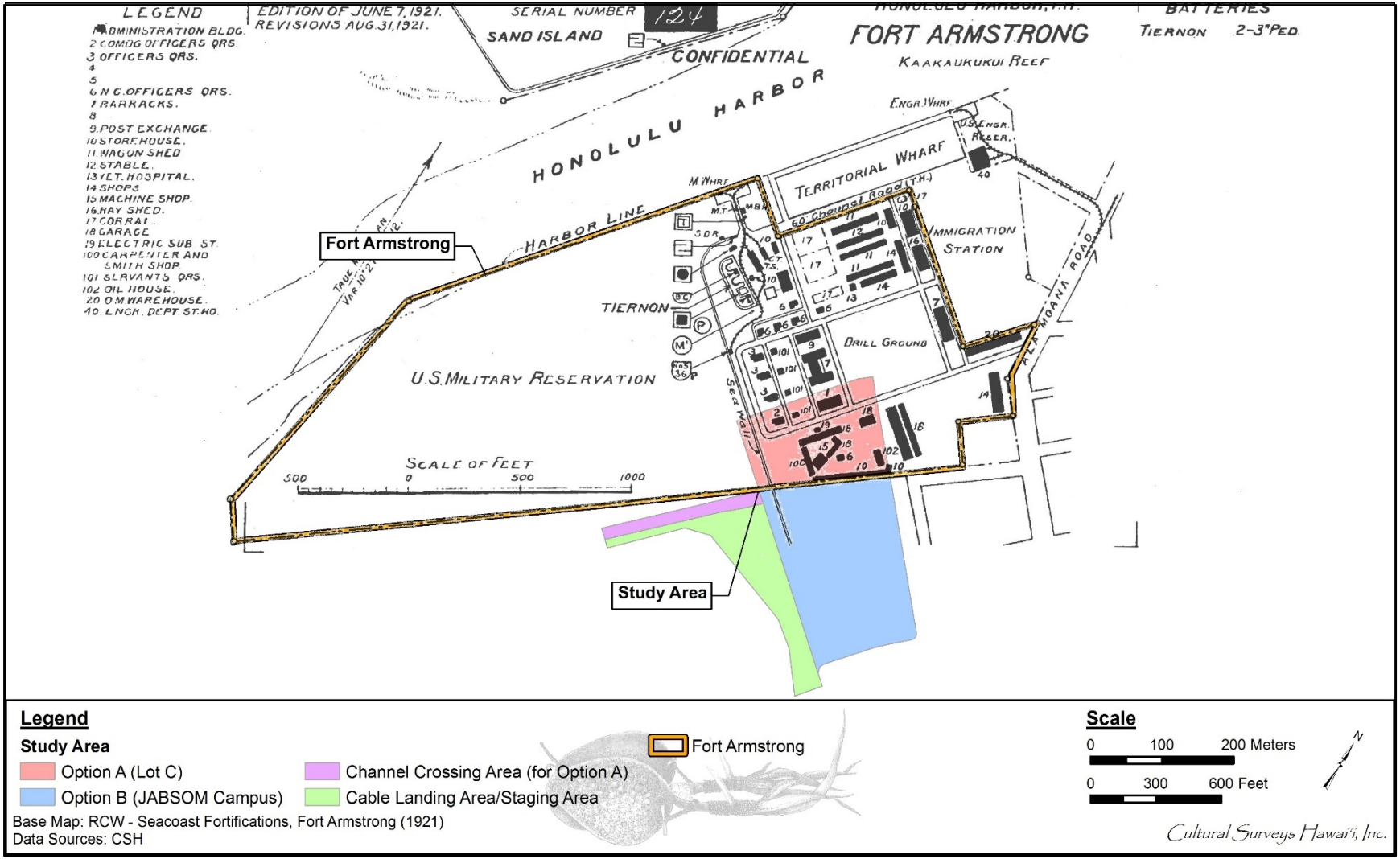


Figure 23. Portion of 1920 Monsarrat map of Honolulu, showing study area

Figure 24. Colorized postcard (ca. 1911-1920) of Fort Armstrong (original black and white photograph at Hawai‘i State Archives; reprinted in Wisniewski 1984:18)



Legend

Study Area

- Option A (Lot C)
- Option B (JABSOM Campus)
- Channel Crossing Area (for Option A)
- Cable Landing Area/Staging Area
- Fort Armstrong

Base Map: RCW - Seacoast Fortifications, Fort Armstrong (1921)
Data Sources: CSH

Scale

0 100 200 Meters

0 300 600 Feet

Cultural Surveys Hawai‘i, Inc.

Figure 25. 1921 map of Fort Armstrong

Figure 26. 1931 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)

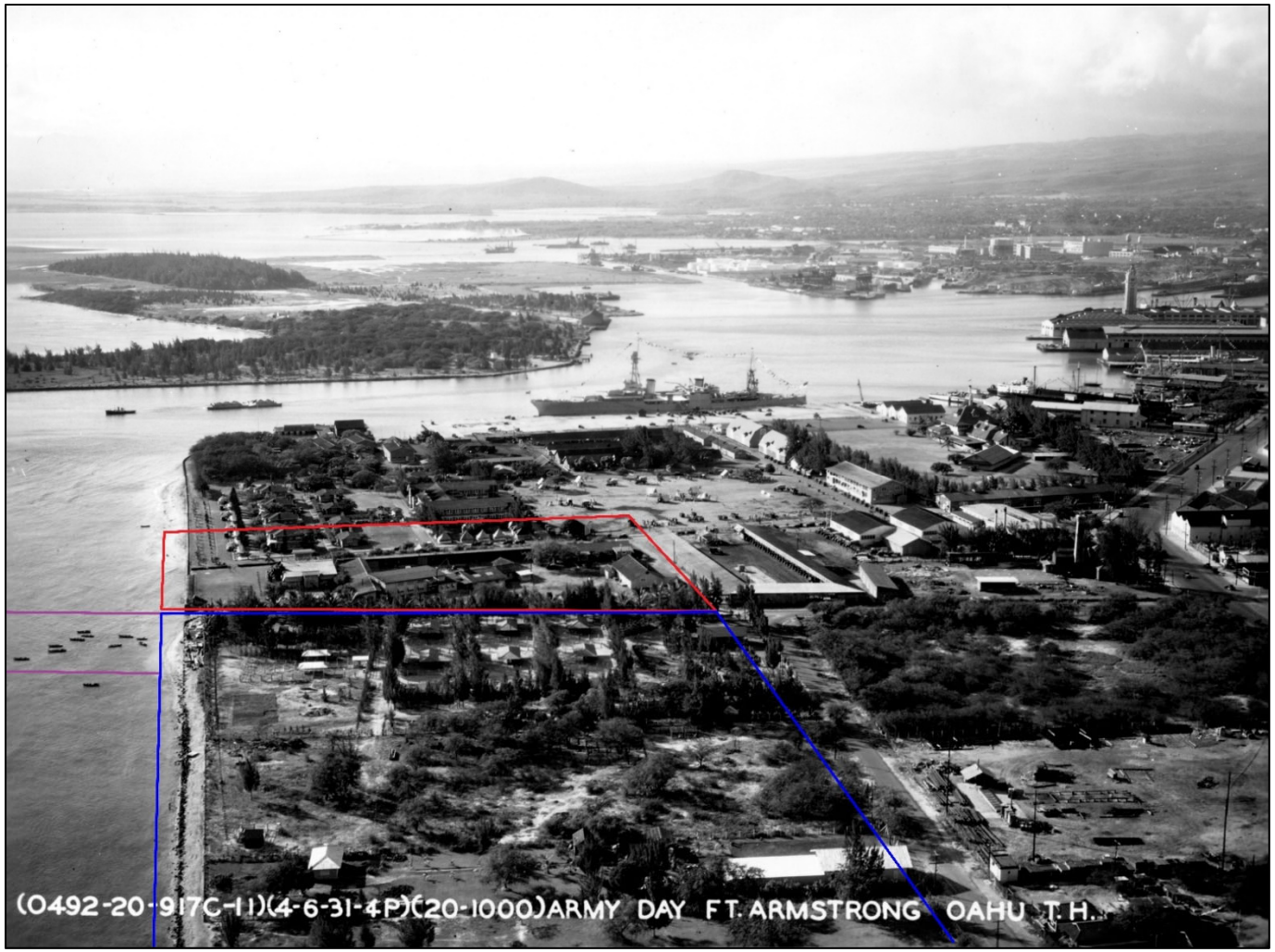


Figure 27. 1931 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)

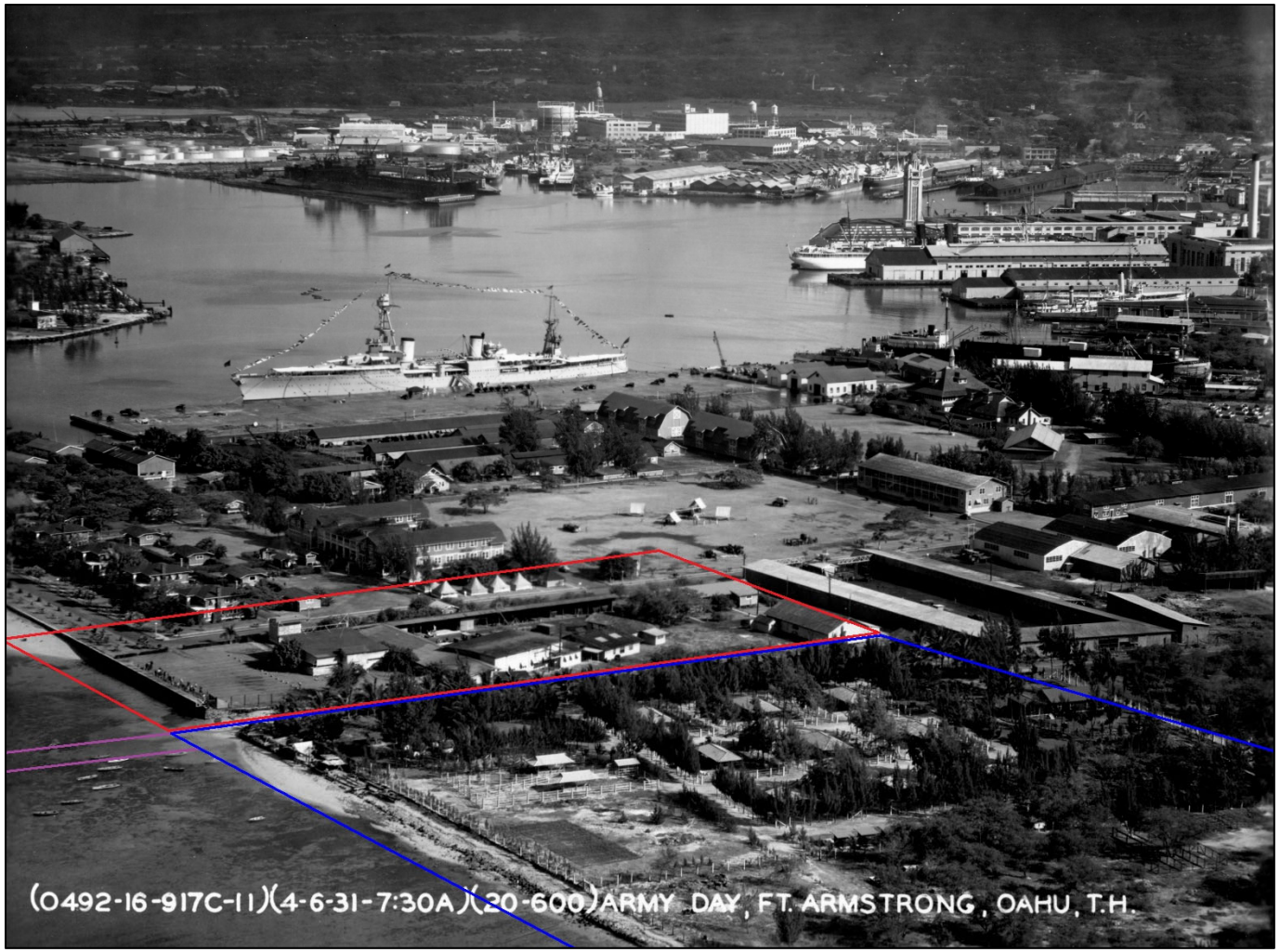


Figure 28. 1931 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)

Figure 29. 1932 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)

Figure 30. 1938 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)

Figure 31. 1938 aerial photograph of Fort Armstrong, with project area highlighted (U.S. Army Air Corps, Washington D.C.)

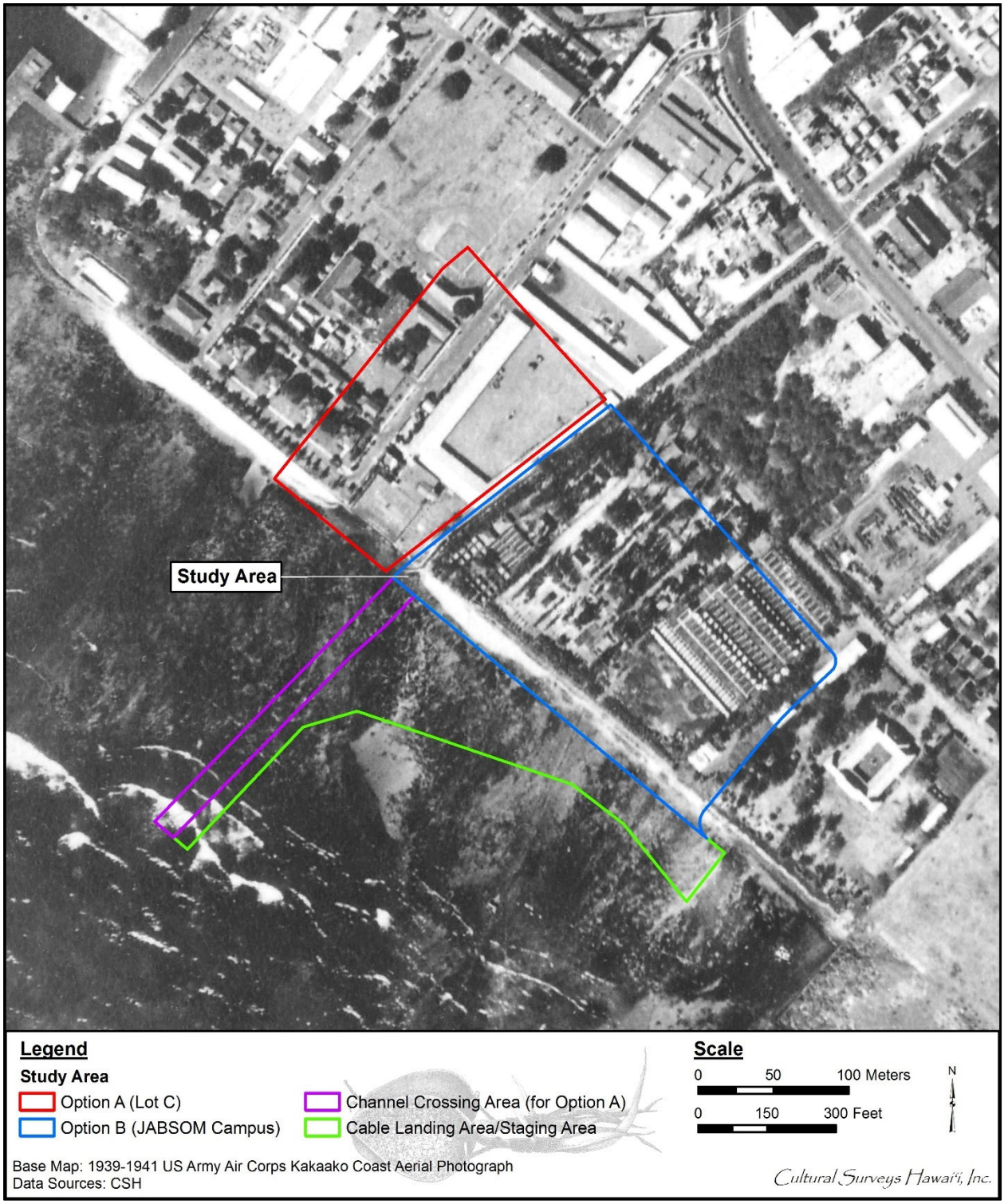


Figure 32. 1939-1941 U.S. Army Air Corps Kakaako Coast aerial photograph

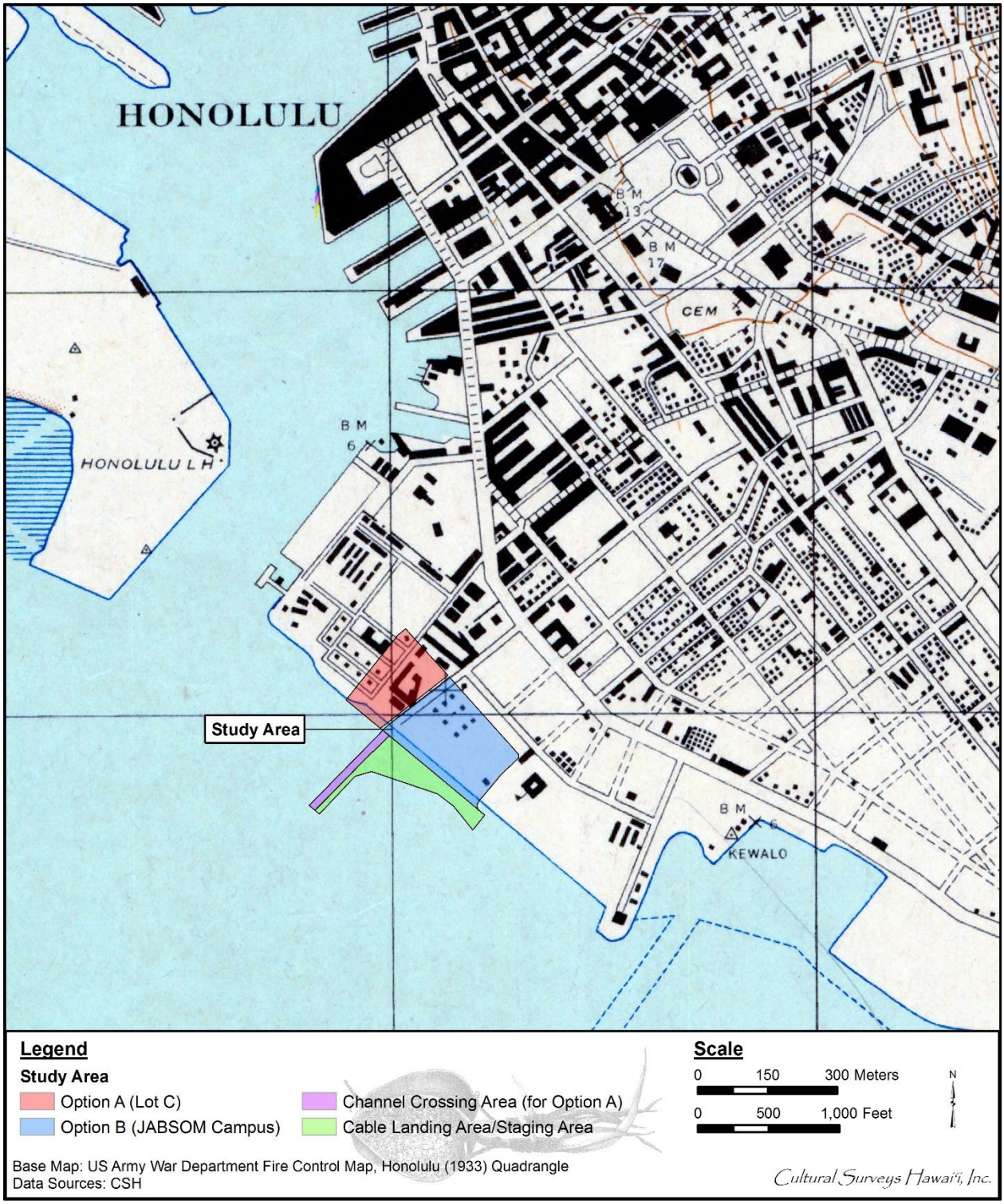


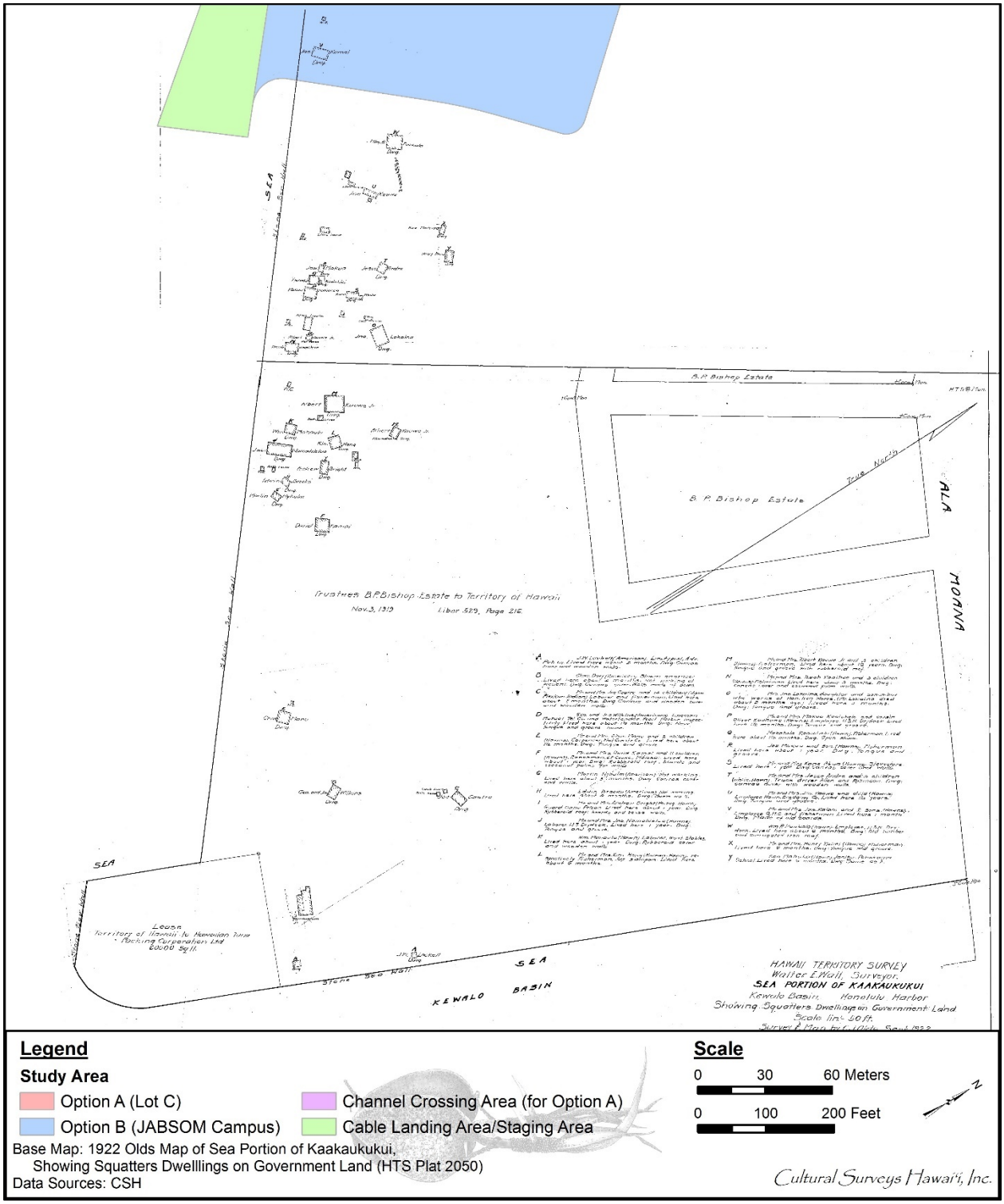
Figure 33. Portion of 1933 U.S. Army War Department fire control map, Honolulu quadrangle, showing study area

R. J. Baker

DAY AND NIGHT—A COLUMN OF SMOKE

"The desert waterfront of Honolulu where there is a perpetual volcano," described this forsaken stretch of scrub covered coral wasteland between what would become the Ala Wai and Kewalo Basin. In the center of this desolation stood a refuse dump where, day and night, columns of smoke rose into the Hawaiian sky.

Figure 34. 1921 photograph of a city worker supervising open burning of trash near Kewalo Basin (original photograph by Ray Jerome Baker, Kamehameha Schools Archives, reprinted in Scott 1968:578)



Legend

Study Area

- Option A (Lot C)
- Option B (JABSOM Campus)
- Channel Crossing Area (for Option A)
- Cable Landing Area/Staging Area

Base Map: 1922 Olds Map of Sea Portion of Kaakaukukui,
Showing Squatters Dwelllings on Government Land (HTS Plat 2050)
Data Sources: CSH

Scale

0 30 60 Meters

0 100 200 Feet

N

Cultural Surveys Hawai‘i, Inc.

Figure 35. 1922 Olds map showing squatters dwellings east of the study area

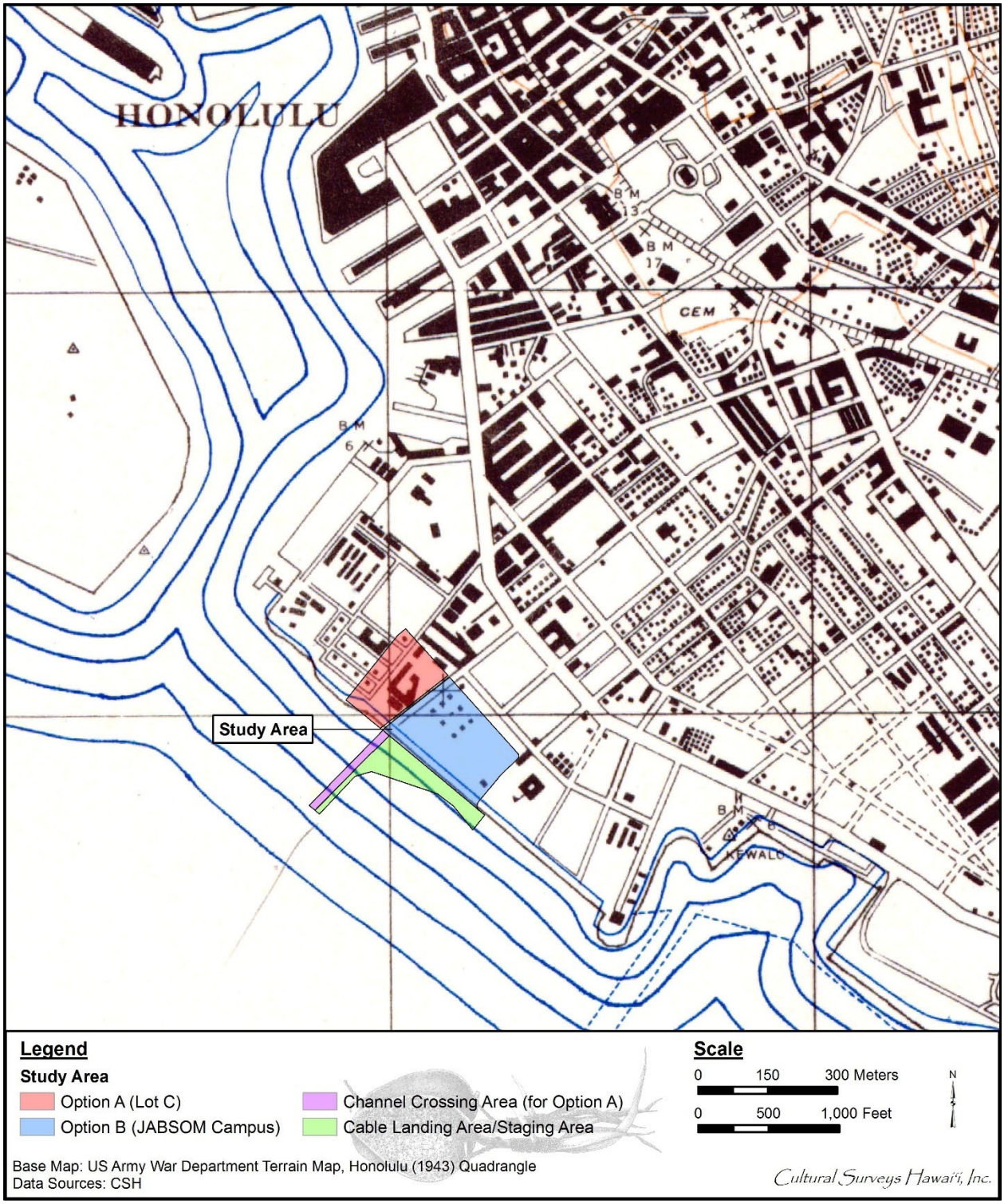


Figure 36. Portion of 1943 U.S. Army War Department terrain map, Honolulu quadrangle, showing study area

The 1944 Ryan map of the Animal Quarantine Station (Figure 37) shows the area that would eventually become the present day JABSOM Campus. The area is utilized as an animal quarantine station and incudes numerous corrals and dog kennels. Portions are designed for military use including “Area A: Army Quarentine [*sic*] Section” and “Area B: Army Dog training Section.”

The 1953 USGS map (Figure 38) and 1954 aerial photograph (Figure 39) show a very substantial expansion seaward that had occurred in the previous decade west of Kewalo Basin. This is understood as part of Honolulu City and County landfill that, while far more sanitary than the open burning of the 1920s, still may have been less than what we would call sanitary today. The surf break “Flies” off the west end of Kaka‘ako Waterfront Park is said to have been named by Joe Kuala in 1963 “for all of the flies at the landfill” (Clark 2002:74). Clark (2002:74) relates the surf site “was the home of many aggressive black flies that bit the surfers and fishermen.”

The 1957 Hashimoto map (Figure 40) shows much the same scene: Lot C still hosts Fort Armstrong, the JABSOM campus is still characterized by the animal quarantine station, and Kaka‘ako Waterfront Park is in the process of being infilled and hosts a maintenance yard for the Department of Public Works and Territory Highway Department. The 1959 USGS map (Figure 41) clearly shows the infilling behind the new (present day) seawall was actively ongoing at statehood. The present land configuration on the southeast side of Kewalo Basin appears to have been completed in the 1956/1959 timeframe. The infilling of a portion of the dredge channel had formerly been continuous from the dredge channel fronting Ala Moana Beach Park to the dredged Kewalo Basin. As late as this 1959 map (see Figure 41), there is no indication of the landfill seaward of Fort Armstrong having been initiated. As late as 1961 (Figure 42), an aerial photograph shows the seaward edge of Lot C as a seawall smack on the sea (in fact the seaward portion of Lot C is still ocean in 1961). The 1961 aerial also depicts the arrival of a large rectangular warehouse and the transformation of Fort Armstrong into a shipping and warehouse district. The area of the JABSOM campus and the Kaka‘ako Waterfront Park looks largely the same, with additional progress made on the landfill.

In the 1969 USGS map (Figure 43) we finally see the landfill configuration extant today with substantial fill activities having taken place on the seaward side of Fort Armstrong in the 1960s. This late landfill seaward of Fort Armstrong affected the surf:

> . . . there was another place to surf in Kaka‘ako that we called Armstrong’s. It was in front of Fort Armstrong. The shore there was different too—it was a shallow reef, and there were many military homes on the beach. We surfed in front of the homes. The landfill on the reef that made Piers 1 and 2 destroyed Armstrong’s. [related by Rawlins “Sonny” Kauhane in Clark 2002:121]

Aerial photographs from 1974 and 1982 (Figure 44 and Figure 45) show the large rectangular warehouse still standing within Lot C, and the development of large warehouses with the JABSOM campus. By 2005 (Figure 46), big changes have occurred and the area looks much the same as it does today. The warehouse at Lot C has been removed and replaced by a large parking lot, the *mauka* portions of the JABSOM campus have been developed, and the landfill has been transformed into Kaka‘ako Waterfront Park. Figure 47 shows a compilation of data gathered from the historic maps and aerial photographs discussed in this section to provide a comprehensive view of the in-filling of Kaka‘ako between Honolulu and Kewalo Basin harbors.

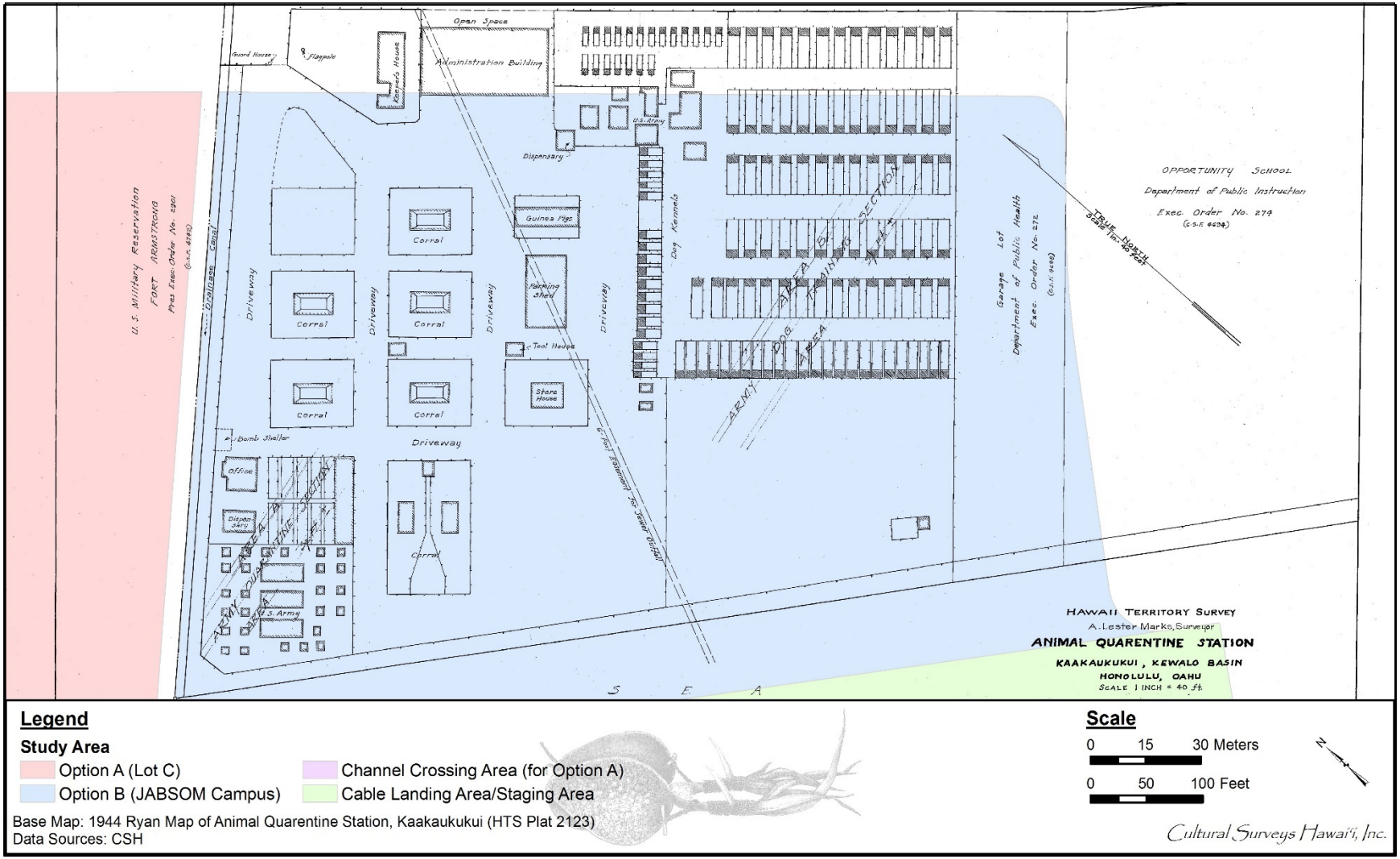


Figure 37. 1944 Ryan map of the Animal Quarentine [*sic*] Station, Kaakaukukui

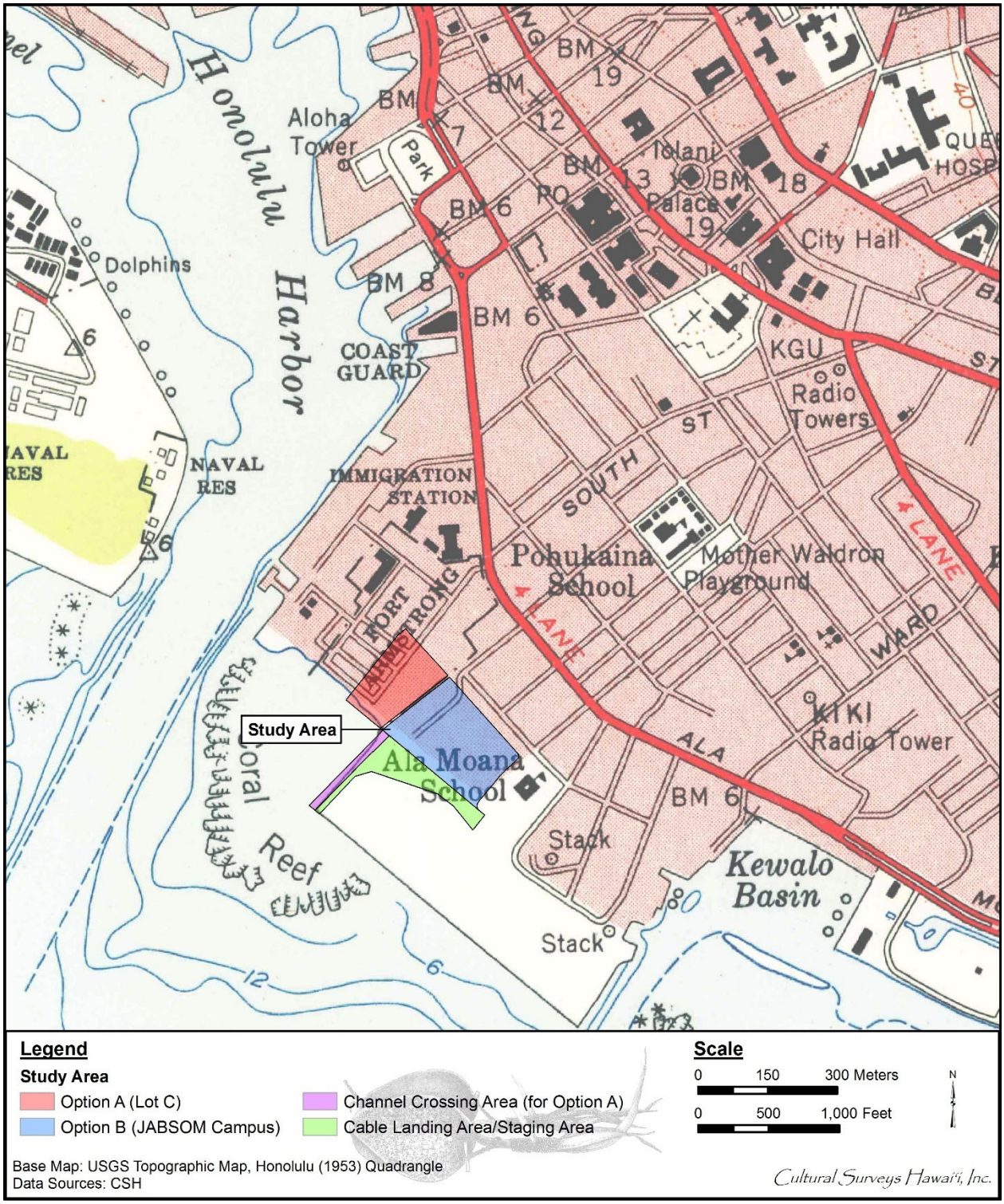


Figure 38. Portion of 1953 Honolulu USGS topographic quadrangle, showing project area

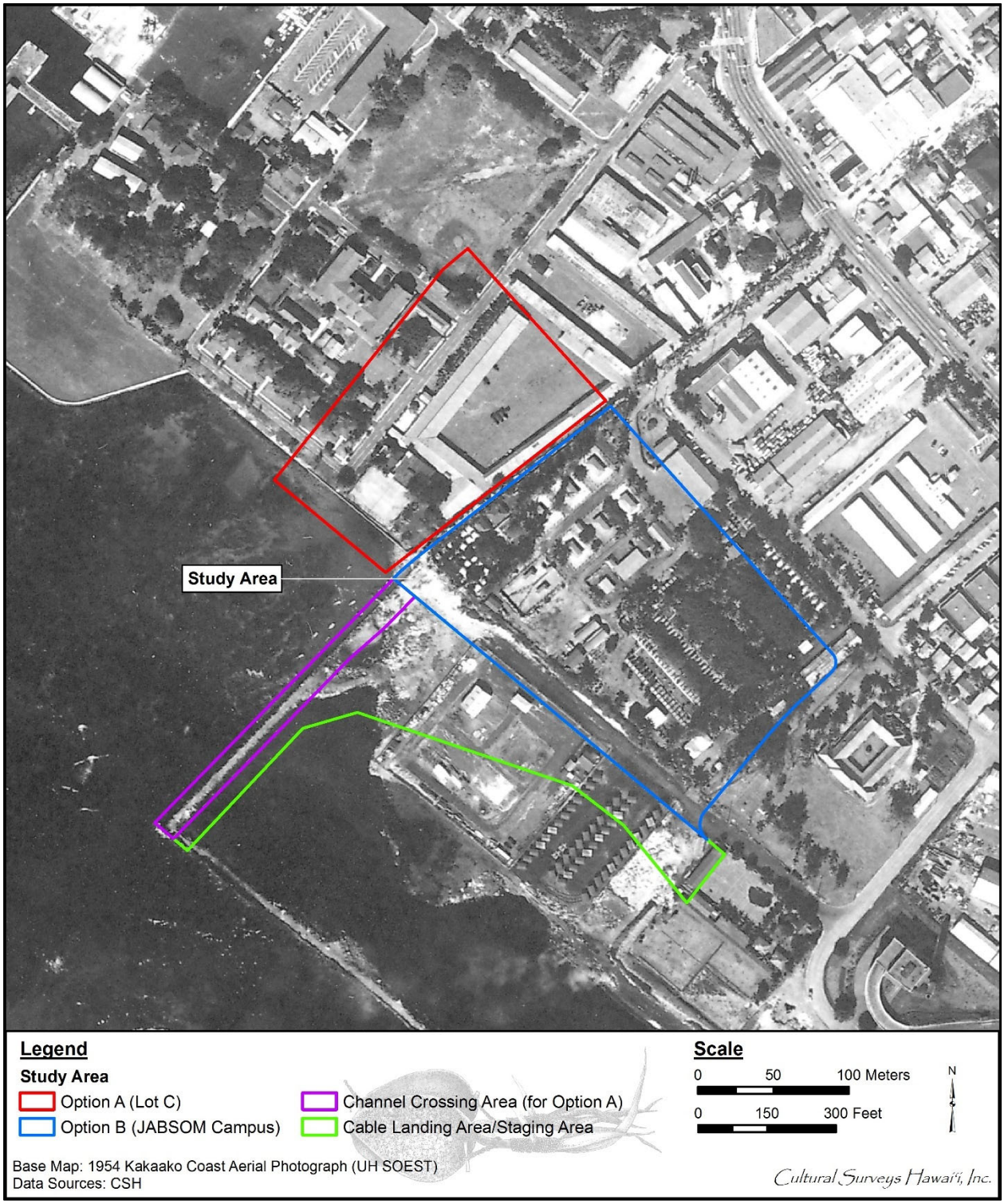


Figure 39. 1954 Kakaako Coast aerial photograph (UH SOEST) showing project area

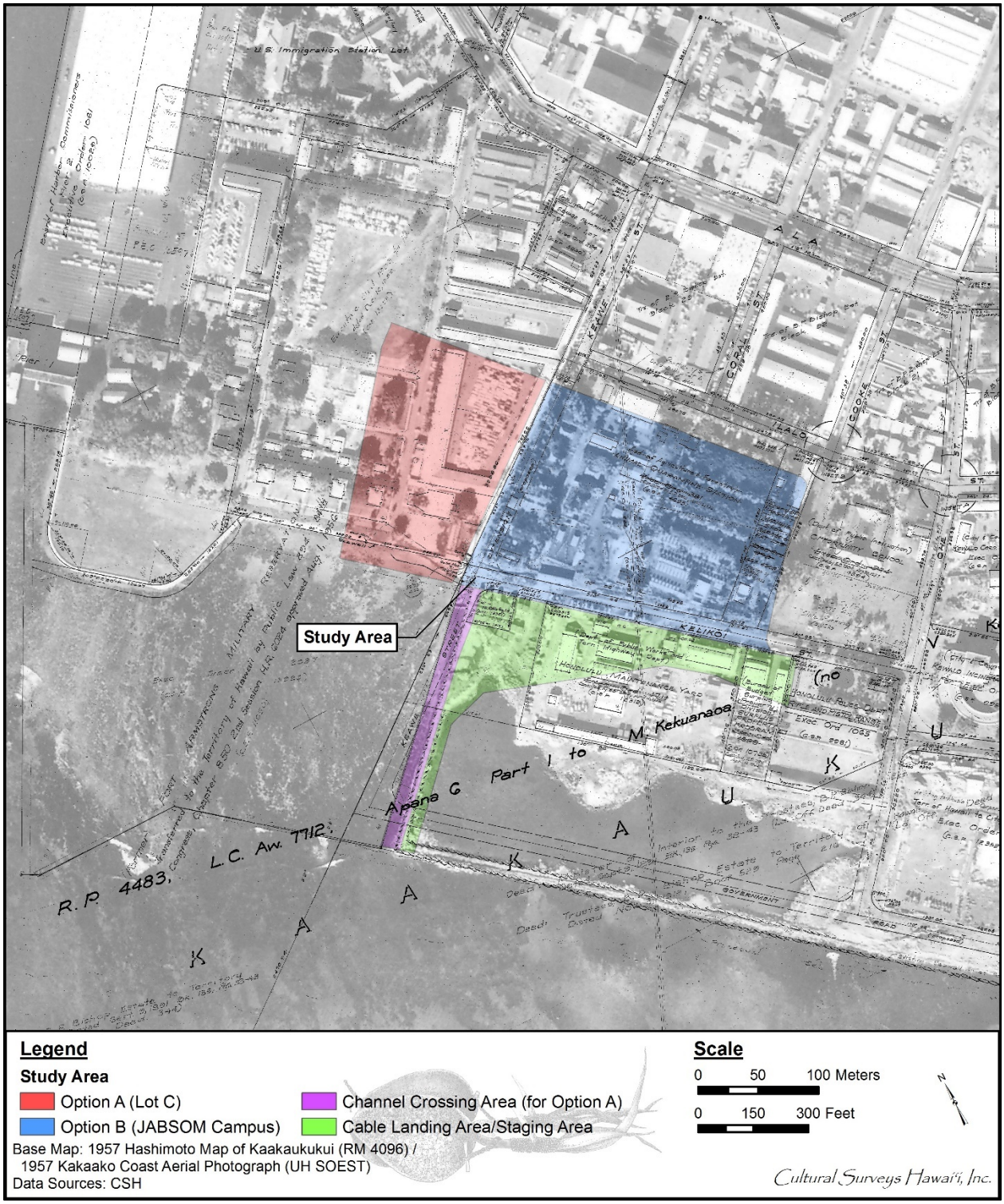


Figure 40. 1957 Hashimoto map of Kaakaukukui with a 1957 Kakaako coast aerial photograph (UH SOEST)

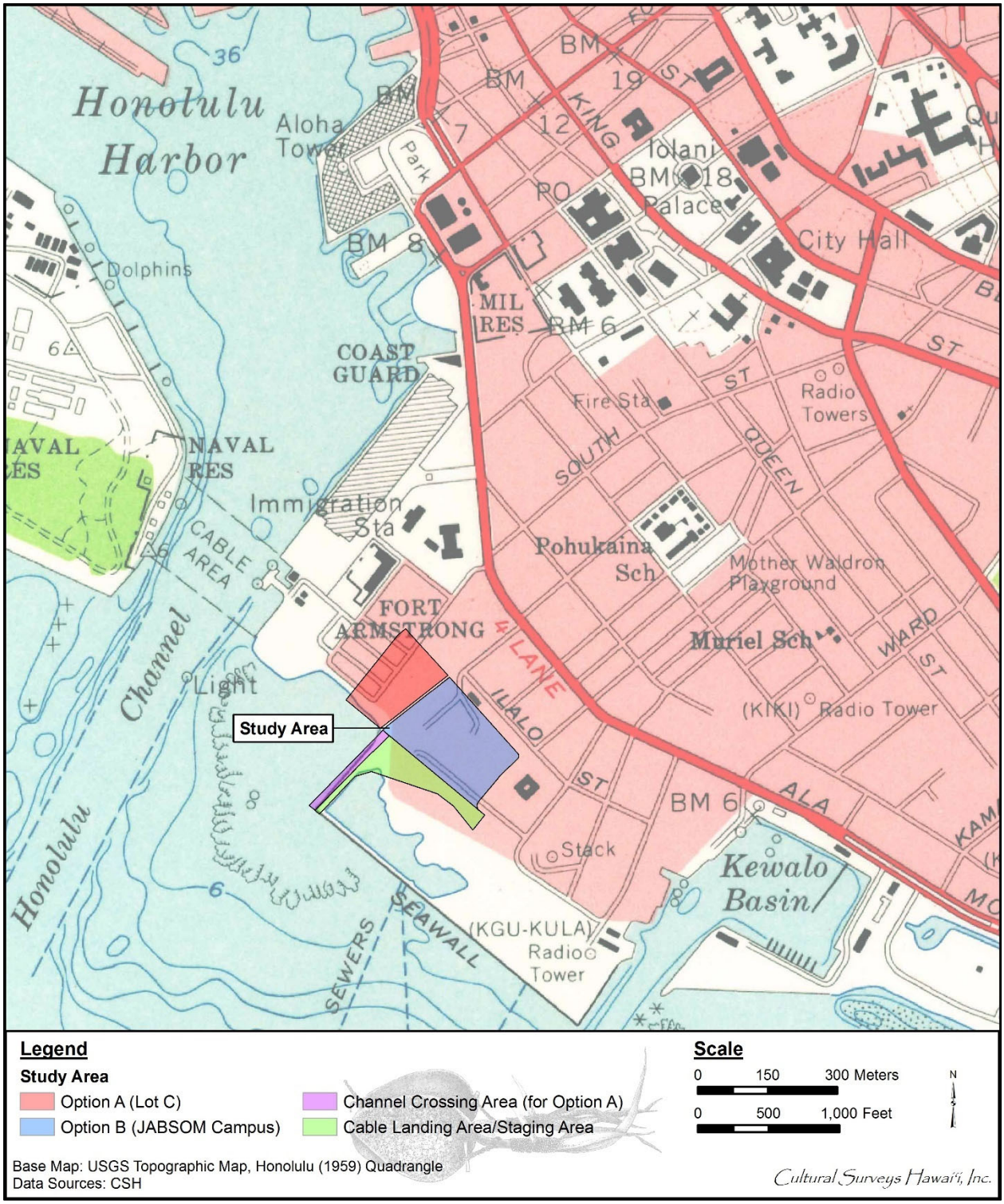


Figure 41. Portion of 1959 Honolulu USGS topographic quadrangle; note seaward portions of study area are still underwater

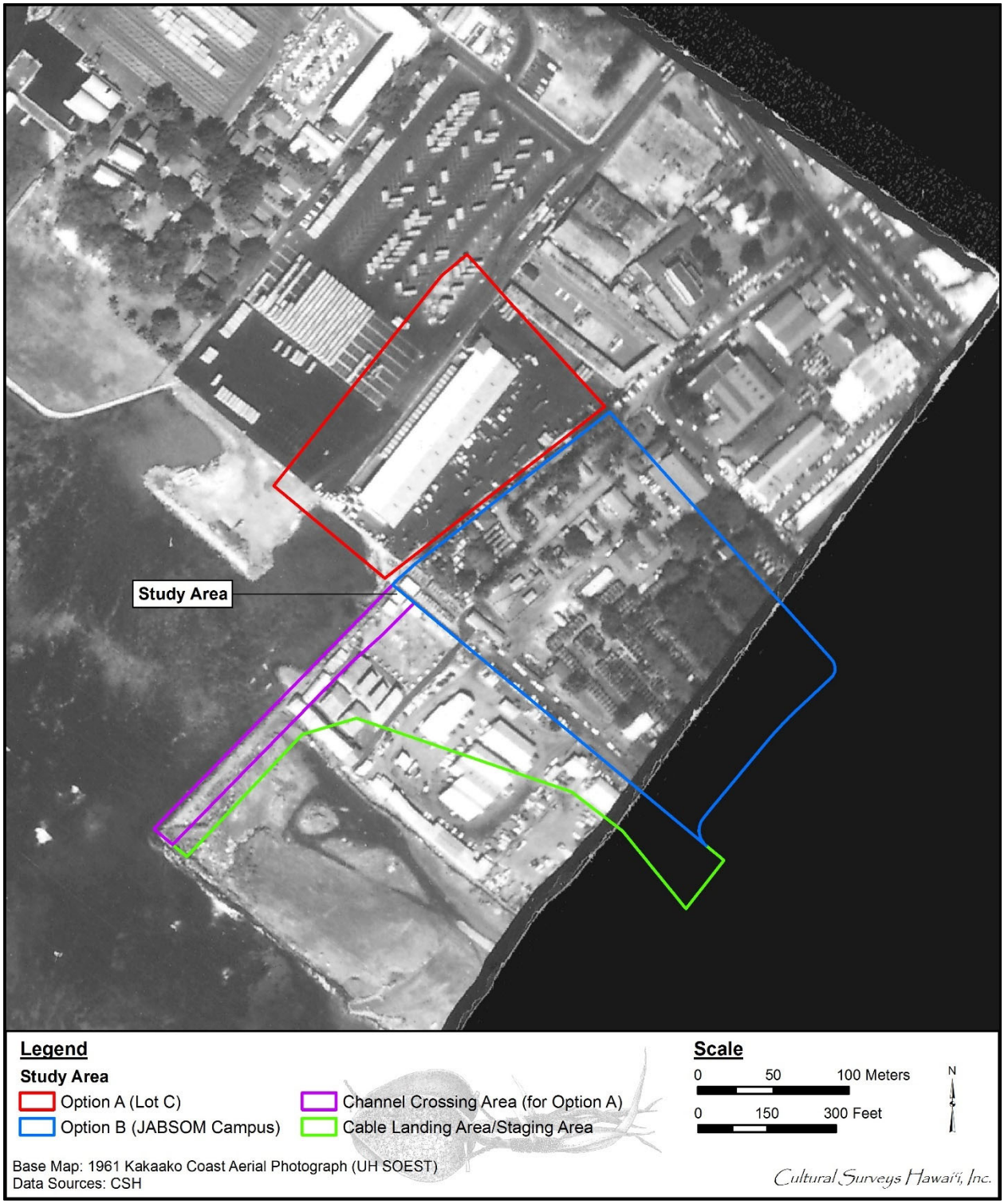


Figure 42. 1961 Kakaako Coast aerial photograph (UH SOEST)

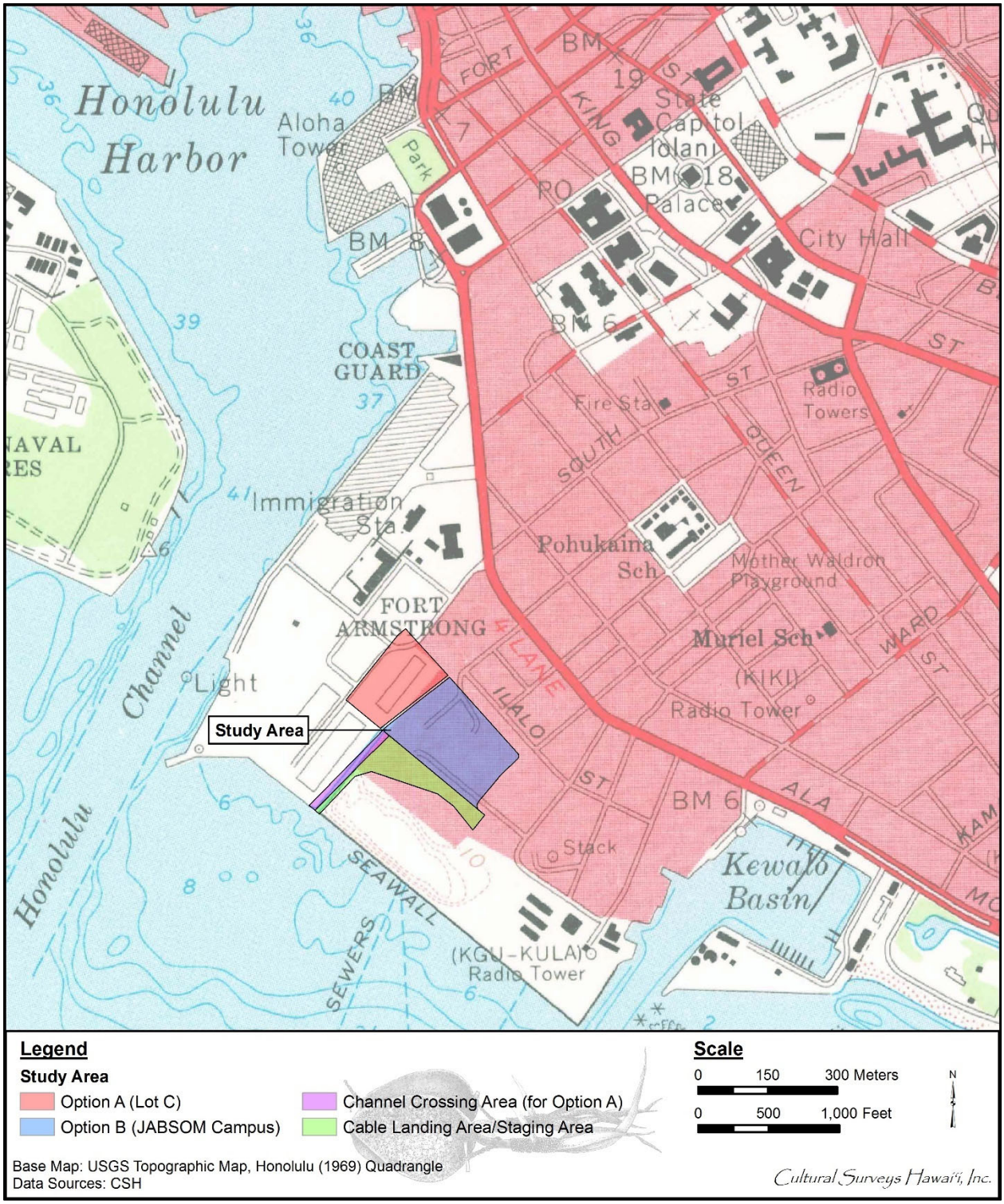


Figure 43. Portion of 1969 Honolulu USGS topographic quadrangle; note land fill within the study area was completed in the 1960s

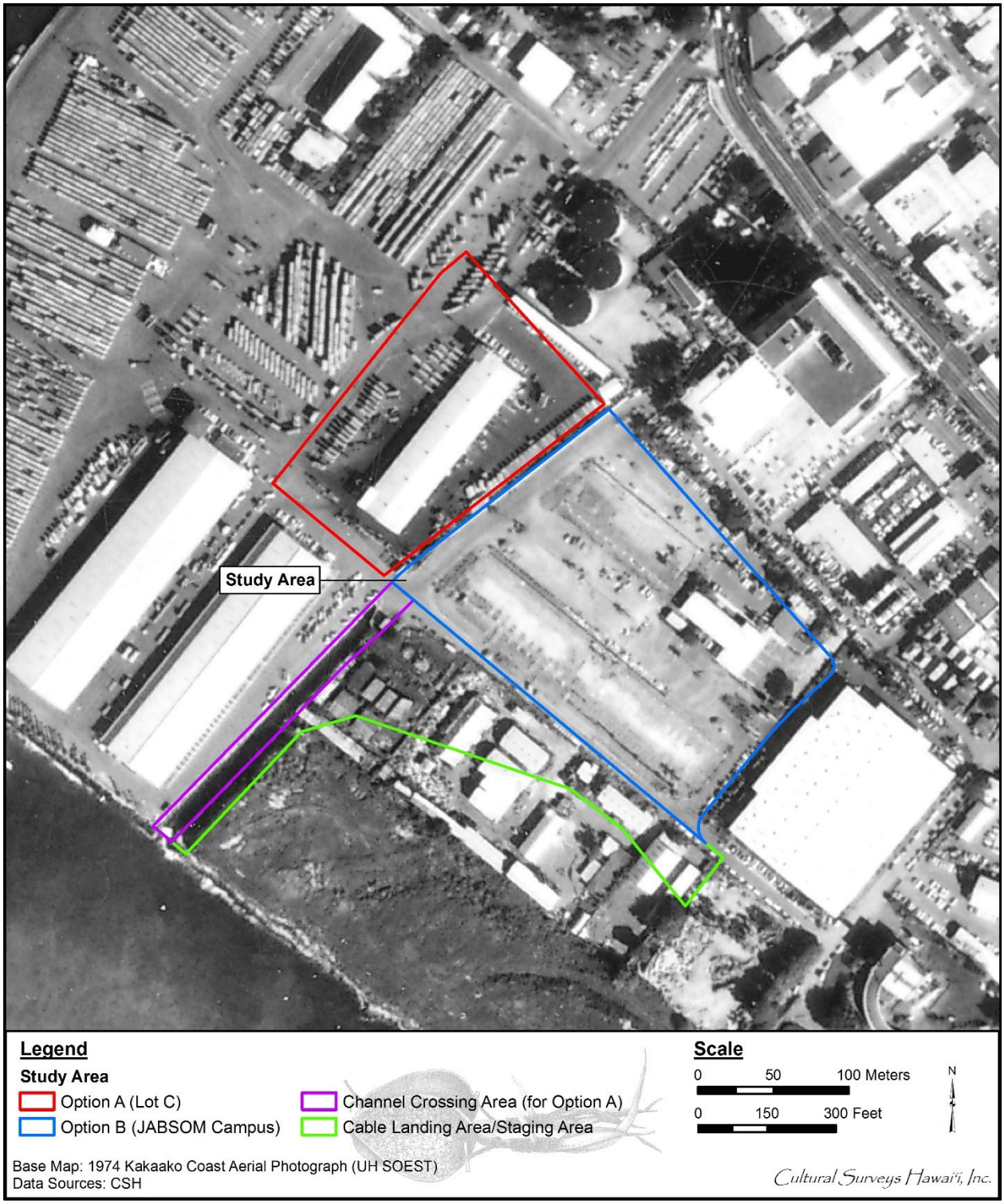


Figure 44. 1974 Kakaako Coast aerial photograph (UH SOEST)

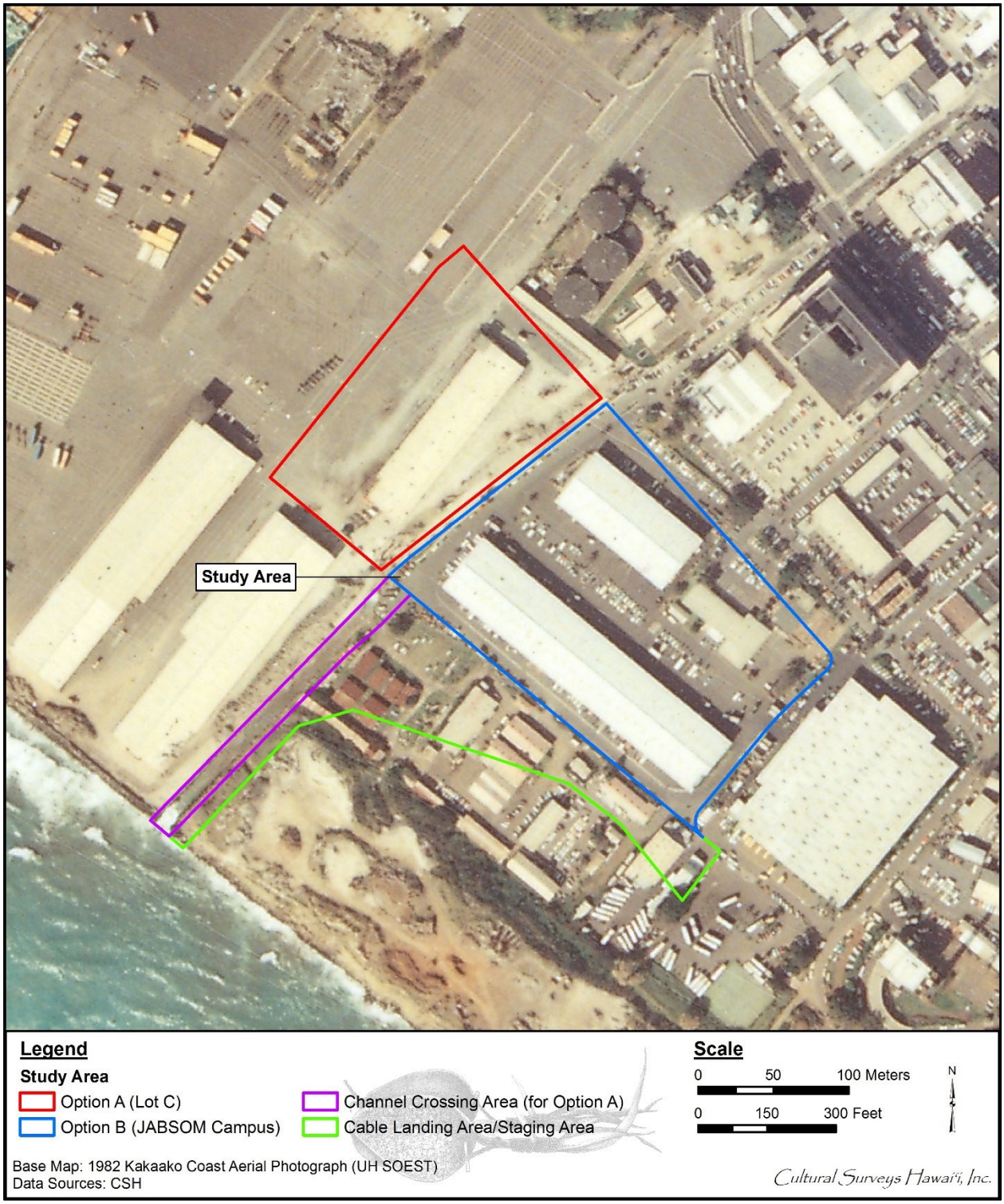


Figure 45. 1982 Kakaako Coast aerial photograph (UH SOEST)

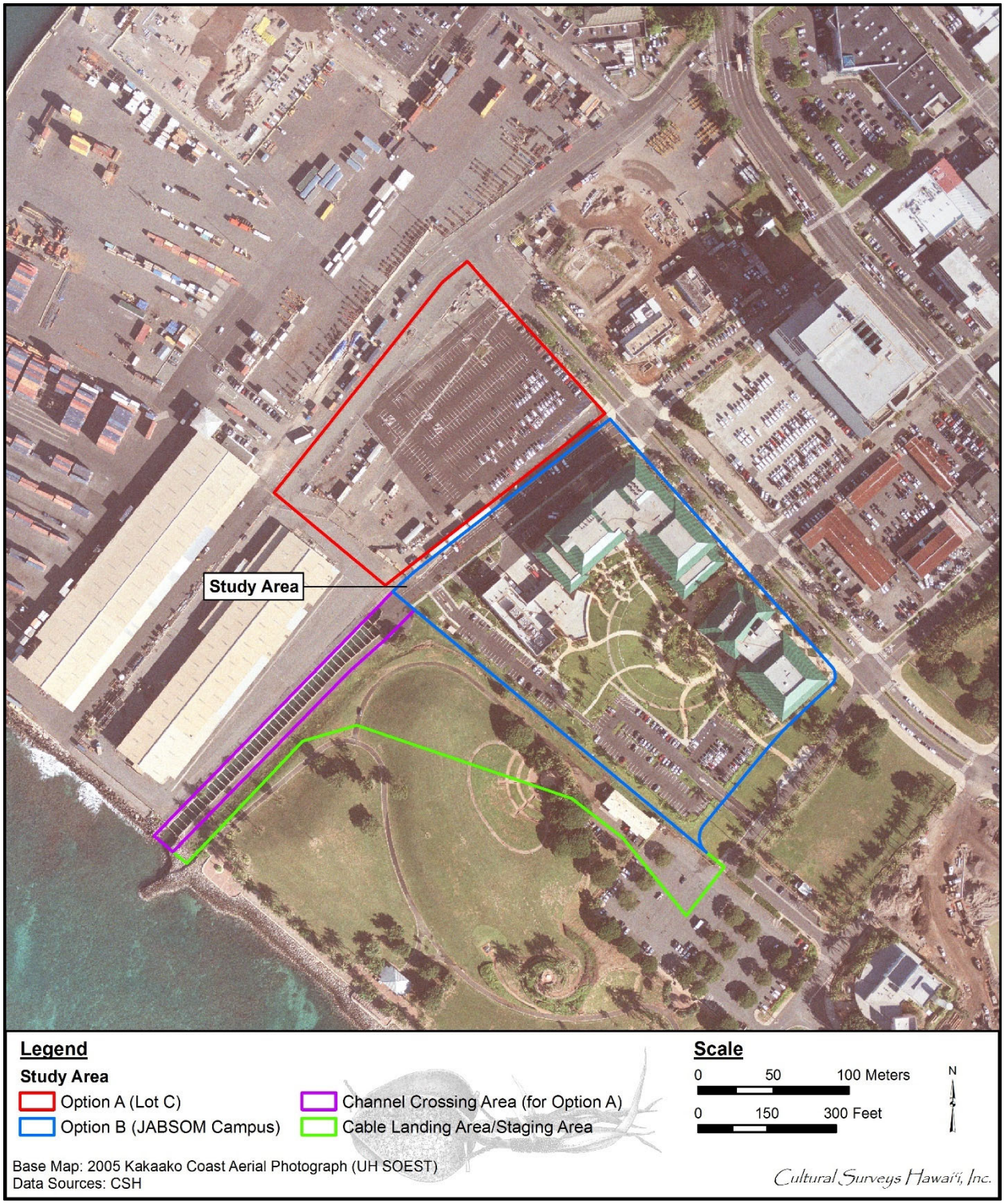


Figure 46. 2005 Kaka‘ako Coast aerial photograph (UH SOEST)

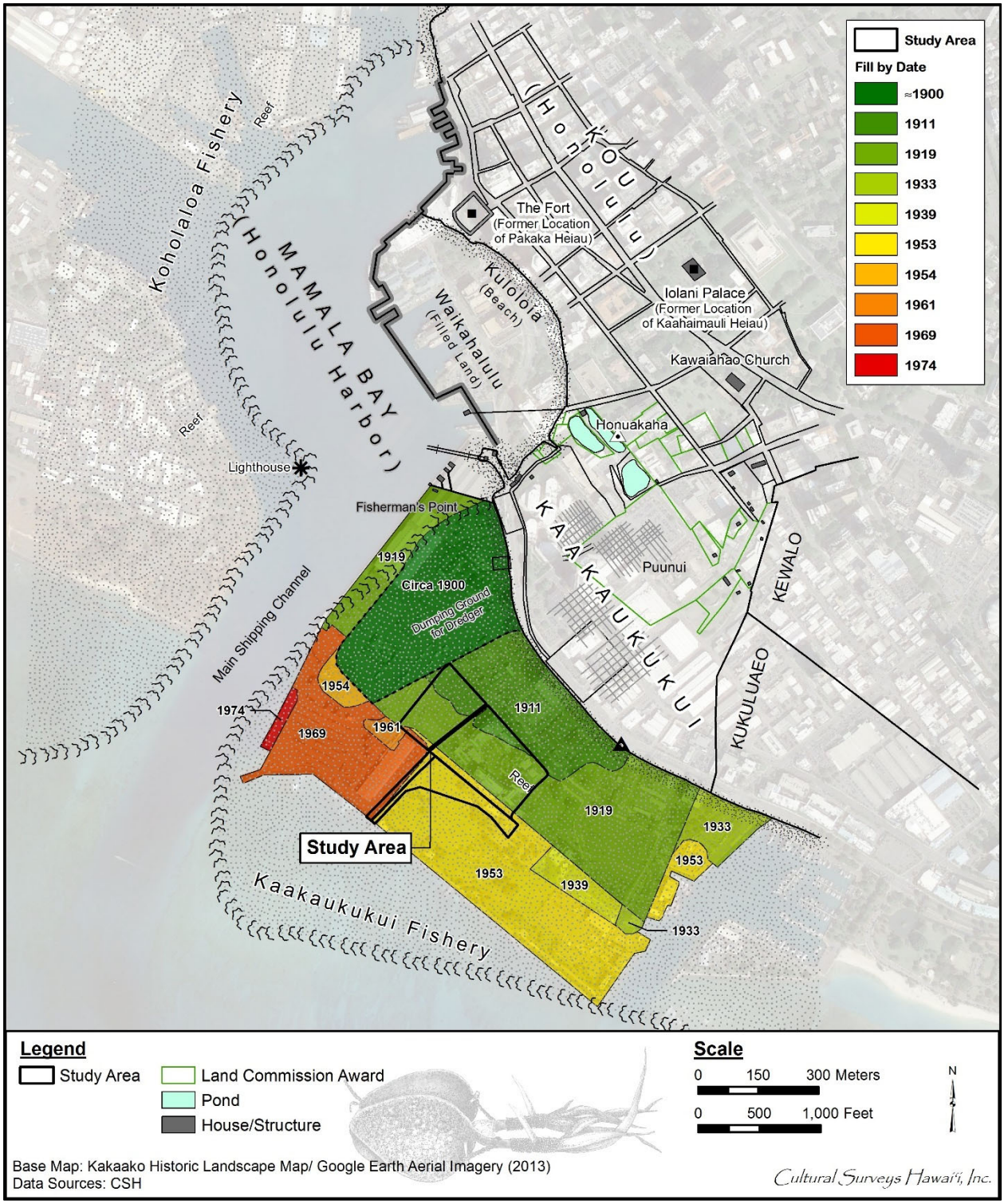


Figure 47. Progression of in-filling of Kaka‘ako *makai* between Honolulu Harbor and Kewalo Basin Harbor, data compiled from historic maps and aerial photographs

3.5 Previous Archaeological Research

Figure 48 depicts previous archaeological studies in the vicinity of the project area. Previously identified historic properties in the vicinity are depicted on Figure 49. These studies are summarized in Table 1 and are discussed in greater detail in the following text. While portions of Kaka‘ako *mauka* of the Ala Moana/Nimitz alignment have yielded cultural properties and/or human skeletal remains, no projects *makai* of the Ala Moana/Nimitz alignment appear to have yielded subsurface cultural properties or human skeletal remains.

3.5.1 Yent 1985

Martha Yent (1985) of State Parks reported on burial excavations for the recovery of six burials at the former Honolulu Ironworks construction project area at the corner of Punchbowl and Pohukaina streets (TMK: [1] 2-1-029:001). Only a discussion of designated burials # 5 and # 6 are presented. Several other bones believed to be dog are mentioned. The antiquity of the burials is unclear. The disposition of the burials is not stated. These were later designated collectively as State Inventory of Historic Places (SIHP) # 50-80-14-2918.

3.5.2 Pfeffer et al. 1993

CSH (Pfeffer et al. 1993) produced an archaeological monitoring summary for a variety of improvement projects in Kaka‘ako Improvement District 1 (TMKs: [1] 2-1-029 through 2-1-032, 2-1-046 through 1-2-048, 2-1-051, 2-1-054, and 2-1-055) including the results of archaeological monitoring for the recovery of 31 burials from an 1853-1854 Honuakaha Smallpox Cemetery (SIHP # -3712) at Quinn Lane, one historic burial from Punchbowl Street (SIHP # -4532), one possibly pre-Contact burial from Halekauwila Street (SIHP # -4533), and 116 historic burials from Kawaiaha‘o Cemetery (SIHP # -4534) at Queen Street (used from 1825–1920). The closest finds to the present project area were the single burial from Halekauwila Street (SIHP # -4533) 41.2 m (135 ft) ‘Ewa of South Street and the finds along South Street near Quinn Lane.

3.5.3 McIntosh and Cleghorn 2000

Pacific Legacy (McIntosh and Cleghorn 2000) prepared an *Archaeological Report for the Oahu Commercial Harbors 2020 Master Plan-Immediate Phase Environmental Impact Statement* addressing five discrete areas in southeast Honolulu Harbor including Pier 2, which is located adjacent to the western boundary of Fort Armstrong (Pier 2 at TMKs: [1] 2-1-015:029 and 030). A literature review and archaeological surface survey concluded no significant cultural deposits were present in the area. It was noted that although Pier 2 was not greater than 50 years old (built in 1953) it did represent a good example of 1950s industrial architecture and should be documented prior to demolition. No SIHP site numbers were assigned.

3.5.4 Borthwick and Hammatt 2001

CSH (Borthwick and Hammatt 2001) wrote an archaeological monitoring report for Kaka‘ako Improvement District 6 (TMKs: [1] 2-1-056, 058, 059, and 060), an irregularly shaped approximately 7.7-acre project area bounded by Ala Moana Boulevard on the north, ‘Āhui Street on the west, Kewalo Basin on the east, and extending approximately 200 ft seaward of Halo Street on the south. During monitoring work, the types of material observed included varieties of fill and

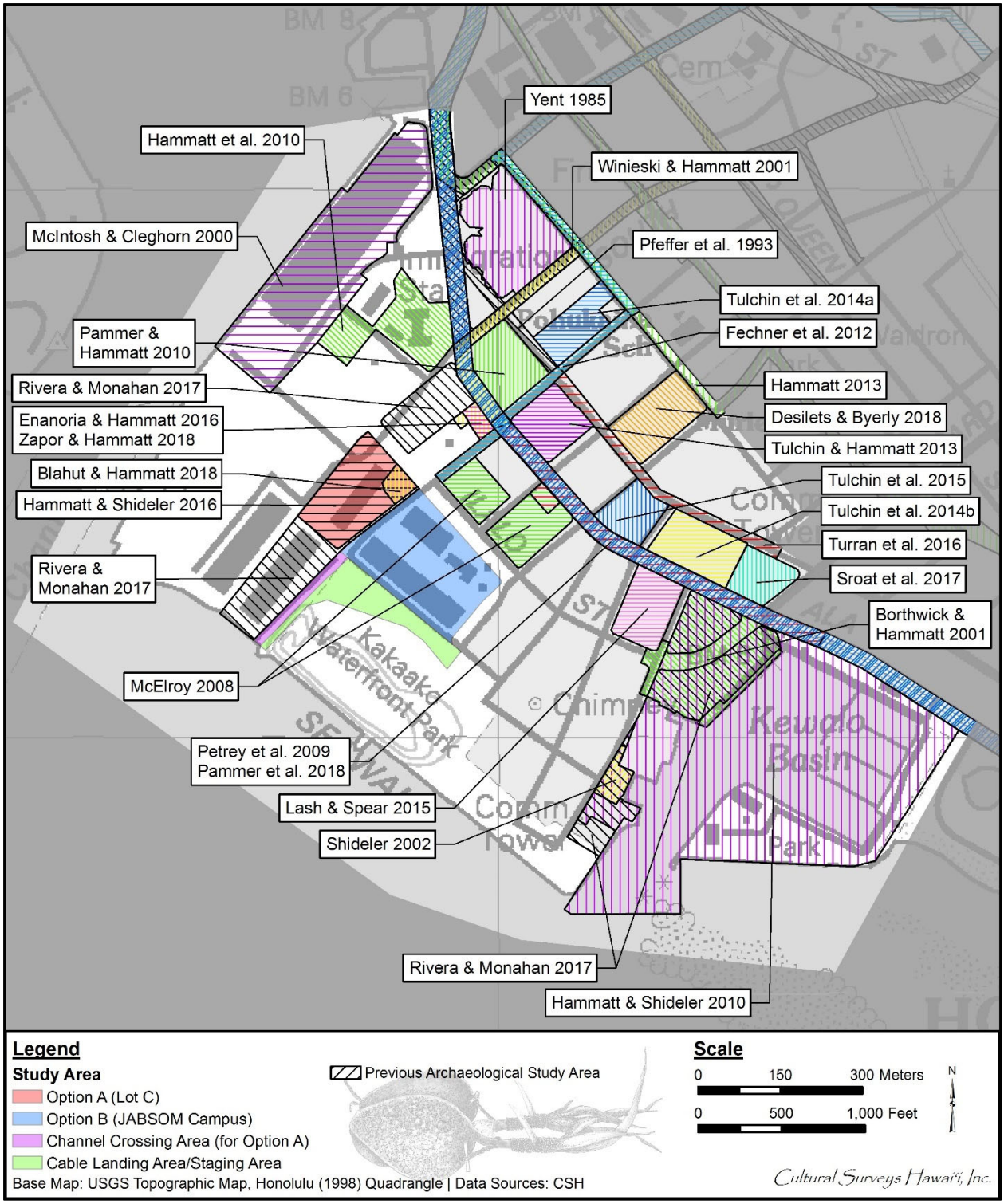


Figure 48. Previous archaeological studies in the vicinity of the project area

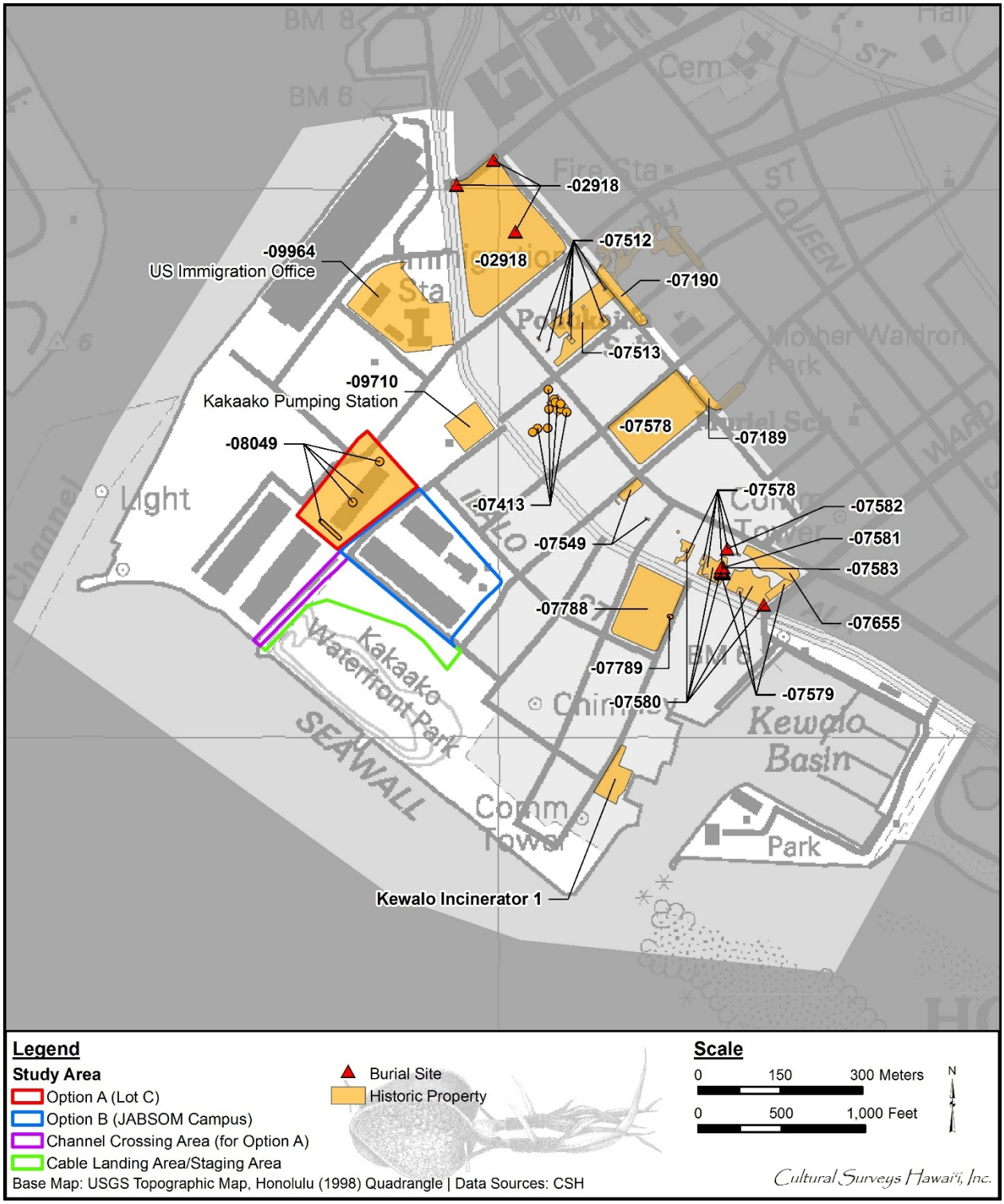


Figure 49. Previously identified historic properties in the vicinity of the project area; all site numbers begin with 50-80-14-

Table 1. Previous archaeological studies in the vicinity of the project area

Author	Nature of Study	General Location	Description and Results (SIHP # 50-80-14)
Yent 1985	Burial excavations	Honolulu Ironworks construction site	Ka‘ākaukukui Cemetery (SIHP # -2918) at Honolulu Ironworks project area; six burials (SIHP # -2918)
Pfeffer et al. 1993	Archaeological monitoring summary	Kaka‘ako Improvement District 1, TMKs: [1] 2-1-029 through 032, 046 through 048, 051, 054, and 055	31 burials from 1853-1854 Honuakaha Smallpox Cemetery (SIHP # -3712) at Quinn Lane, one historic burial from Punchbowl St (SIHP # -4532), one possibly pre-Contact burial from Halekauwila St (SIHP # -4533), and 116 historic burials from Kawaiaha‘o Cemetery (SIHP # -4534) at Queen St (used from 1825–1920)
McIntosh and Cleghorn 2000	Literature review and surface survey	Five discrete areas in SE Honolulu Harbor including western Fort Armstrong (Pier 2), TMKs: [1] 2-1-015:029 and 030	Overview of cultural history and previous archaeology; discusses mitigation for demolition of Pier 2 shed (built in 1953), no SIHP numbers assigned
Borthwick and Hammatt 2001	Archaeological monitoring	Kaka‘ako Improvement District 6, TMKs: [1] 2-1-056, 058, 059, and 060	No significant historic properties or cultural material identified
Winieski and Hammatt 2001	Archaeological monitoring	Nimitz Hwy reconstructed sewer, TMKs: [1] 1-7-002, 003 and 2-1-002, 013–016, 025, 027, and 029–032	Identified historic brick alignment at intersection of Queen St; historic brick-lined manhole and remnant of light gauge trolley rail (SIHP # -5942) observed at intersection of Queen St and Nimitz Hwy
Shideler 2002	HABS documentation	121 ‘Āhui St	Incinerator Number One (Old Kewalo Incinerator) built in 1930; concluded Incinerator Number One achieves state and local significance in areas of maritime and social history, as well as engineering and architecture

Author	Nature of Study	General Location	Description and Results (SIHP # 50-80-14)
McElroy 2008	Archaeological inventory survey (recorded as an archaeological assessment)	3.10-acre property bounded by Coral St, Ilalo St, Cooke St, and Ala Moana Blvd, TMKs: [1] 2-10-059:011 and 012	No significant historic properties or cultural material identified
Petrey et al. 2009	Archaeological monitoring	Nimitz Hwy and Ala Moana Blvd resurfacing project, TMKs: [1] 2-1-014 and 027	No significant historic properties or cultural material identified; project excavations generally to depths of 0.6 m or less below existing surface
Hammatt et al. 2010	Archaeological literature review and field inspection	U.S. Immigration and Customs Enforcement (ICE) Master Plan, TMKs: [1] 2-1-015:018 and 020	Concluded study area is twentieth century fill atop tidal flats (except for late nineteenth century seawall potentially abutting northeast edge of project lands)
Hammatt and Shideler 2010	Archaeological literature review and field inspection	Kewalo Basin Repairs project, TMK: [1] 2-1-058	At least 95% of study area is twentieth century fill; potential cultural deposit bearing soils within 10 m seaward of seaward curb of Ala Moana Blvd
Pammer and Hammatt 2010	Archaeological inventory survey (recorded as an archaeological assessment)	Former Comp USA Parcel, Kaka‘ako	No significant historic properties or cultural material identified
Fechner et al. 2012	Archaeological monitoring	Kaka‘ako and downtown Honolulu	No significant historic properties or cultural material identified
Hammatt 2013	Archaeological inventory survey	City Center (Section 4) of Honolulu High-Capacity Transit Corridor project	Identified three archaeological historic properties near present project area: SIHP # -2918, a subsurface cultural deposit and human burials SIHP # -7189, a subsurface burnt trash deposit SIHP # -7190, subsurface salt pan remnants

Author	Nature of Study	General Location	Description and Results (SIHP # 50-80-14)
Tulchin and Hammatt 2013	Archaeological inventory survey	Kamehameha Schools Kaka‘ako Block F, TMKs: [1] 2-1-055:003, 006, 021, 026, and 038	Two historic properties identified: SIHP # -7412, post-Contact cultural layer associated with construction and utilization of Kaka‘ako Leper Detention Depot SIHP # -7413, post-Contact trash layers and structural remnants associated with construction and utilization of Hawaiian Sugar Planters Association Immigration Station
Tulchin et al. 2014a	Archaeological inventory survey	Kamehameha Schools Kaka‘ako Block B, TMKs: [1] 2-1-054:025, 027, 028 (por.), and 032	Two historic properties identified: SIHP # -7512, post-Contact structural remnants associated with early to mid-twentieth century development SIHP # -7513, post-Contact trash layer associated with early twentieth century land reclamation
Tulchin et al. 2014b	Archaeological inventory survey	Kamehameha Schools Kaka‘ako Block I, TMKs: [1] 2-1-056:002, 007, and 008	Six historic properties identified: SIHP # -7578, twentieth century cultural layer SIHP # -7579, twentieth century fill deposit and building foundations SIHP # -7580, pre-Contact to post-Contact cultural layer with a historic burial cluster SIHP # -7581, a pre-Contact traditional Hawaiian bundle burial SIHP # -7582, disarticulated human skeletal remains within a non-burial context SIHP # -7583, disarticulated human skeletal remains within a non-burial context
Tulchin et al. 2015	Archaeological inventory survey	Kamehameha Schools Kaka‘ako Block H	SIHP # -7549, buried structural remnants associated with early to mid-twentieth century industrial activity
Lash and Spear 2015	Archaeological inventory survey	805 Ala Moana Blvd, TMKs: [1] 2-1-059:001, 003	Two historic properties identified: SIHP # -7788, post-Contact structural remnants associated with 1920s through 1960s expansion of Kaka‘ako SIHP # -7789, a subsurface seawall associated with infill of Kaka‘ako tidelands

Author	Nature of Study	General Location	Description and Results (SIHP # 50-80-14)
Enanoria and Hammatt 2016	Archaeological inventory survey	Kaka‘ako Pumping Station, 653 Ala Moana Blvd	Ala Moana (Kaka‘ako) Pumping Station (# 80-14-9710) listed on State and National Registers of Historic Places; listed on National Register 4 October 1978 (#78001022); placed on Hawai‘i Register 17 August 1997
Hammatt and Shideler 2016	Literature review and field inspection	Lot C	Project area was coral flats until being filled in the early twentieth century; no surface historic properties identified; very little subsurface archaeology expected
Turran et al. 2016	Archaeological monitoring	Ala Moana Blvd/Auahi St sewer rehabilitation	No significant historic properties or cultural material identified
Rivera and Monahan 2017	Archaeological monitoring	Kaka‘ako *Makai* parcels A, E, and I	No significant historic properties or cultural material identified
Sroat et al. 2017	Archaeological inventory survey	Block A of Ward Neighborhood Master Plan	Three historic properties identified: SIHP # -7579, buried structural remnants SIHP # -7580, subsurface cultural deposits including human burials SIHP # -7655, subsurface post-Contact salt pan remnants
Blahut and Hammatt 2018	Archaeological inventory survey	Lot C	One new historic property identified: SIHP # -8049, subsurface remnants and deposits associated with Fort Armstrong; includes three intact features of Fort Armstrong
Desilets and Byerly 2018	Archaeological inventory survey	Kamehameha Schools Kaka‘ako Block I, TMKs: [1] 2-1-054:001	One previously identified historic property: SIHP # -7578, subsurface early-twentieth century occupational layer
Pammer et al. 2018	Archaeological monitoring	Nimitz Hwy/ Ala Moana Blvd between Fort St and Kalākaua Ave	Four historic properties identified: SIHP # -4573, subsurface remnants of pond deposits (Loko Kaipuni) SIHP # -7435, human skeletal remains (Features A–D) SIHP # -7436, human skeletal remains SIHP # -8037, buried historic surfaces
Zapor and Hammatt 2018	Archaeological monitoring	Kaka‘ako Pumping Station, 653 Ala Moana Blvd	Identified one new feature (stacked brick and mortar wet-well) of SIHP # -9710, Ala Moana (Kaka‘ako) Pumping Station

natural tidal flats material. The fill material ranged from crushed coral to marine clays related to the pumped sludge-like dredged material. The pumped dredged material generally made up the lower course of fill, with the drier crushed coral fill on top. Concrete pads or asphalt made up the uppermost or surface layer throughout most of the project area. No burials, traditional Hawaiian or early historic cultural layers, or large historic to modern trash pits were observed during any monitoring phase. The finds were, as anticipated, fill materials over tidal flats strata.

3.5.5 Winieski and Hammatt 2001

CSH (Winieski and Hammatt 2001) conducted archaeological monitoring for a Nimitz Highway reconstructed sewer project. No traditional Hawaiian cultural materials or features were identified. No pre-Contact or historic burials were encountered. A historic period soda bottle was encountered in an historic fill layer at the intersection of Pohukaina and South streets. A historic brick alignment was observed at the intersection of Queen Street. A historic brick-lined manhole and a remnant of light gauge trolley rail (SIHP # -5942) were observed at the intersection of Queen Street and Nimitz Highway. Historic rubbish was found scattered through a fill layer at the intersection of Maunakea Street and Nimitz Highway. No other cultural features or materials were encountered within the project area.

3.5.6 Shideler 2002

CSH (Shideler 2002), working with Mason Architects Inc. and David Franzen (photographer), produced Historic American Buildings Survey (HABS) documentation of Incinerator Number One (Old Kewalo Incinerator) at 121 ‘Āhui Street built in 1930. The study notes Incinerator Number One was one of two facilities constructed by the City and County of Honolulu to dispose of waste from the nearby Ala Moana dump. The ash from the incinerator facilities was used to fill the seawall constructed over the shallow reef at Ka‘äkaukukui in the late 1940s. By 1956, 29 acres of new land were added to the shoreline, dramatically altering Honolulu’s coastal landscape. It was concluded that Incinerator Number One achieves state and local significance in the areas of maritime and social history, as well as engineering and architecture under Criteria A and C.

3.5.7 McElroy 2008

Garcia and Associates (McElroy 2008) conducted an archaeological inventory survey (AIS) of a 3.10-acre property bounded by Coral Street, Ilalo Street, Cooke Street, and Ala Moana Boulevard (TMKs: [1] 2-10-059:011 and 012) in Kaka‘ako. Four test pits were excavated on the *mauka* ends of the two parcels documenting modern historic fill deposited directly on former shallow reef. Stratigraphy at all test pit locations confirmed there are no buried terrestrial deposits on the parcels.

3.5.8 Petrey et al. 2009

CSH (Petrey et al. 2009) conducted archaeological monitoring for a Nimitz Highway and Ala Moana Boulevard resurfacing project (TMKs: [1] 2-1-014 and 027). While no historic properties or burials were encountered in the project excavations, this may have been due to the fact that project excavations were generally to depths of 0.6 m or less below the existing surface.

3.5.9 Hammatt et al. 2010

CSH (Hammatt et al. 2010) prepared an archaeological literature review and field inspection study for a U.S. Immigration and Customs Enforcement (ICE) Master Plan (TMKs: [1] 2-1-015:018 and 020). It appeared the study area is twentieth century fill atop tidal flats, excepting a

late nineteenth century seawall potentially abutting the northeast edge of the project lands. The study noted that bomb shelters (manifest on the surface by rectilinear mounds) were excavated in the eastern lawn of the Immigration Station during World War II.

3.5.10 Hammatt and Shideler 2010

CSH (Hammatt and Shideler 2010) prepared an archaeological literature review and field inspection report for a Kewalo Basin repairs project (TMK: [1] 2-1-058.) The study concluded at least 95% of the study area is twentieth century fill. Some question remained whether there may be potentially cultural-deposit-bearing soils within 10 m seaward of the seaward curb of Ala Moana Boulevard.

3.5.11 Pammer and Hammatt 2010

CSH (Pammer and Hammatt 2010) conducted an AIS for the approximately 4.7-acre former Comp USA parcel (TMKs: [1] 2-1-055:004, 009, and 017) bound by Auahi Street to the north, Keawe Street to the east, Ala Moana Boulevard to the south, and South Street to the west. Five test excavations were undertaken. Trenches 2–5 contained only fill material down to the coral shelf. Trench 1 contained a thin sand layer, but no cultural materials were found within the sand.

3.5.12 Fechner et al. 2012

In 2011, Pacific Legacy, Inc. completed an AIS for the Honolulu Seawater Air Conditioning project in Kaka‘ako and downtown Honolulu. Thirty-four keyhole excavations were conducted to locate subsurface utilities. Historic artifacts including metal, ceramic, glass, and faunal bone were found within nine of the keyholes. No significant historic properties, pre-Contact cultural material, or human remains were identified.

3.5.13 Hammatt 2013

CSH (Hammatt 2013) conducted an archaeological inventory survey for the City Center (Section 4) of the Honolulu High-Capacity Transit Corridor project. The project area included Dillingham Boulevard, Ka‘aahi Street, Nimitz Highway, Ala Moana Boulevard, Halekauwila Street, Queen Street, and Kona Street. While 19 archaeological historic properties were identified within, or immediately adjacent to, the City Center AIS study area, only three of these were close to the present study area: SIHP # -2918 is a previously identified subsurface cultural deposit and 30 features located along Punchbowl Street near the Ala Moana intersection, and *makai* of Pohukaina Street between Punchbowl and South streets. This historic property was first identified in 1985 by Martha Yent of State Parks as consisting of at least five burial pits located at the Honolulu Ironworks construction site (Yent 1985). SIHP # -7189 is a subsurface burnt trash deposit previously identified (Pammer et al. 2011) within the block bounded by Halekauwila, Keawe, Pohukaina, and South streets. SIHP # -7190 consists of previously identified (Pammer et al. 2011) subsurface salt pan remnants (including possible berms) located southwest (*makai*) of Halekauwila Street, between South and Keawe streets.

3.5.14 Tulchin and Hammatt 2013

CSH (Tulchin and Hammatt 2013) conducted an AIS for the Kamehameha Schools Kaka‘ako Block F, the block bounded by Ala Moana Boulevard, Keawe Street, Auahi Street, and Coral Street (TMKs: [1] 2-1-055:003, 006, 021, 026, and 038). Two archaeological historic properties were identified: SIHP # -7412, post-Contact cultural layer associated with the construction and

utilization of the Kaka‘ako Leper Detention Depot, and SIHP # -7413, post-Contact trash layers and structural remnants associated with the construction and utilization of the Hawaiian Sugar Planters Association Immigration Station.

Additionally, Mason Architects, Inc. conducted an architectural inventory survey for “Kaka‘ako Mauka” that includes the project area (Mason Architects 2009). Seven buildings were described. Three buildings were evaluated as eligible or potentially eligible for listing on the National Register of Historic Places: 331 Keawe Street (TMK: [1] 2-1-055:038), constructed 1914; 660 Ala Moana (TMK: [1] 2-1-055:003), constructed 1962; and 680 Ala Moana (TMK: [1] 2-1-055:021), constructed 1960.

3.5.15 Tulchin et al. 2014a

CSH (Tulchin et al. 2014a) conducted an AIS for the 2.5-acre Kamehameha Schools Kaka‘ako Block B bounded by Pohukaina, Keawe, Auahi, and South streets (TMKs: [1] 2-1-054:025, 027, 028 [por.], and 032). Thirty-nine test locations were excavated, documented, and sampled. Two archaeological historic properties were identified consisting of SIHP # -7512, post-Contact structural remnants associated with early to mid-twentieth century development, and SIHP # -7513, post-Contact trash layer associated with early twentieth century land reclamation.

3.5.16 Tulchin et al. 2014b

CSH (Tulchin et al. 2014b) conducted an archaeological inventory survey for the 3.4-acre Kamehameha Schools Kaka‘ako Block I, within the block bounded by Auahi Street, Ward Avenue, Ala Moana Boulevard, and Koula Street (TMKs: [1] 2-1-056:002, 007, and 008). Six archaeological historic properties were identified consisting of SIHP # -7578, twentieth century cultural layer; SIHP # -7579, a twentieth century fill deposit and building foundations; SIHP # -7580, pre- to post-Contact cultural layer with a historic burial cluster; SIHP # -7581, a pre-Contact traditional Hawaiian bundle burial; SIHP # -7582, disarticulated human skeletal remains within a non-burial context; and SIHP # -7583, disarticulated human skeletal remains within a non-burial context.

3.5.17 Tulchin et al. 2015

In 2013, CSH completed an AIS for the Kamehameha Schools Kaka‘ako Block H project located in the block bounded by Auahi Street, Koula Street, Ala Moana Boulevard, and Cooke Street. Twenty-six test trenches were excavated resulting in the identification of SIHP # -7549. SIHP # -7540 consists of buried structural remnants associated with early to mid-twentieth century industrial activity presenting as three noncontiguous features: a large buried concrete slab (Feature 1), buried concrete slabs and footings (Feature B), and a buried asphalt pavement (Feature C). No pre-urban development land surfaces were observed.

3.5.18 Lash and Spear 2015

In 2014, Scientific Consultant Services, Inc. (SCS) completed an AIS for the Cutter Mazda Property—805 Ala Moana Boulevard project. Twelve subsurface test units were excavated to the water table or coral shelf. Two historic properties were identified. SIHP # -7788 consists of both surface and subsurface structural remnants including 13 concrete slabs and a rock wall associated with development of the Kaka‘ako area from the 1920s to 1960s. SIHP # -7789 consists of a

subsurface seawall constructed of basalt stones and cement mortar associated with the infilling of Kaka‘ako *makai* of Ala Moana Boulevard.

3.5.19 Enanoria and Hammatt 2016

In 2015, CSH completed an AIS for the Kaka‘ako Pumping Station (SIHP # -9710) project at 653 Ala Moana Boulevard. Four test trenches were excavated and no subsurface historic properties or cultural material were identified. One previously identified surface historic property was observed. The Ala Moana (Kaka‘ako) Pumping Station is listed on the State and National Registers of Historic Places (# 80-14-9710); it was placed on the National Register on 4 October 1978 (#78001022) and on the Hawai‘i Register on 17 August 1997. SIHP # -9710 is an architectural site rather than an archaeological site; and is listed under the National Register under Criteria A and C.

3.5.20 Hammatt and Shideler 2016

In 2015, CSH completed a literature review and field inspection for Lot C. Background research found that the project area was coral flats and therefore underwater until infilling activity beginning in the early twentieth century. Subsurface fills are believed to primarily consist of crushed coral and sandy material obtained from dredging of Honolulu Harbor and Kewalo Basin. Few subsurface historic properties would be expected. Surface inspection revealed no surface archaeological properties.

3.5.21 Turran et al. 2016

In 2014, CSH completed archaeological monitoring for the Ala Moana Boulevard/Auahi Street Sewer Rehabilitation Phase 2 and Phase 3 project. The project included work along Auahi Street., Keawe Street, and Ala Moana Boulevard. Stratigraphy observed during ground disturbance included multiple layers of imported fill overlaying naturally deposited marine sand atop limestone bedrock (i.e., the coral shelf). No significant historic properties or cultural material were identified.

3.5.22 Rivera and Monahan 2017

In 2016, TCP Hawai‘i completed archaeological monitoring in support of Phase II Environmental Site Assessments for Kaka‘ako *Makai*. Four hundred and twenty soil cores were monitored from non-contiguous Kaka‘ako *Makai* Parcels A, E, and I. No historic properties were identified. In 62 of the 420 samples, the core met an impenetrable layer, and in some cases it is likely due to the presence of a buried seawall. The entire project area was interpreted as consisting of imported fill deposits down to the water table.

3.5.23 Sroat et al. 2017

In 2015, CSH completed an AIS for the Block A project, a discrete project within the greater Ward Neighborhood Master Plan. Thirty-nine test trenches were excavated. In general, the documented stratigraphy consisted of modern commercial surfaces and various layers of post-Contact fill, overlying natural sand dune or low-lying marine deposits. Three previously identified archaeological historic properties were observed: SIHP # -7579, twentieth century subsurface structural remnants; SIHP # -7580, pre-Contact to post-Contact subsurface cultural deposits including human burials; and SIHP # -7655, subsurface post-Contact salt pan remnants.

3.5.24 Pammer et al. 2018

Between 2011 and 2016, CSH completed archaeological monitoring for the Nimitz Highway and Ala Moana Boulevard Resurfacing and Highway Lighting Replacement project. The project extended approximately 4.65 km along Nimitz Highway and Ala Moana Boulevard between Fort Street and Kalākaua Avenue. Four historic properties were identified during archaeological monitoring for the current project: one previously identified site, SIHP # -4573 (buried pond deposits), and three newly identified sites, SIHP # -7435 Features A–D (human burial site), SIHP # -7436 (isolated human bone), and SIHP # -8037 (buried concrete slab).

3.5.25 Blahut and Hammatt 2018

In 2017, CSH completed an AIS for the Entrepreneur’s Sandbox project located in the east corner of Lot C. The project had originally been proposed for the entirety of Lot C and was later revised to consist only of the Entrepreneur’ Sandbox project area. However, subsurface testing fieldwork occurred prior to this change and therefore eight test trenches were completed throughout Lot C. In general, the observed stratigraphy consists of fills associated with the current surface, overlying fills associated with historic Fort Armstrong and land reclamation activities, atop the coral shelf. One new historic property was identified, SIHP # -8049, buried structural remnants and cultural deposits associated with Fort Armstrong. Three intact structural remnants of SIHP # -8049 were identified during the course of AIS fieldwork and designated as features: Feature 1, a basalt boulder and coral cobble sea wall; Feature 2, a polished concrete floor; and Feature 3, a former oil-rolled surface overlaid with crushed coral gravel. The remaining test excavations exhibited a layer and/or evidence of debris likely associated with the demolition of Fort Armstrong.

3.5.26 Desilets and Byerly 2018

In 2017, GANDA completed an AIS for the Kamehameha Schools Kaka‘ako Block C project, bounded on the northeast by Pohukaina Street, on the northwest by Coral Street, on the southeast by Cooke Street, and on the southwest by Auahi Street. Thirty-eight test trenches were excavated. General stratigraphy consisted of four main layers including the overlying recent fill layers, an early twentieth century occupation/habitation layer, historic period land reclamation fills, and natural marshland deposits. One previously identified historic property was observed and documented: SIHP # -7578 subsurface early twentieth century occupational layer.

3.5.27 Zapor and Hammatt 2018

In 2016, CSH completed archaeological monitoring for the Kaka‘ako Pumping Station project at 653 Ala Moana Boulevard. Associated project-related ground disturbance included grubbing, grading, and excavations for subsurface utilities. The Ala Moana (Kaka‘ako) Pumping Station (SIHP # -9710) is a previously identified historic property, listed on the State and National Registers of Historic Places (#78001022). During archaeological monitoring, one new feature was identified. SIHP # -9710, Feature 1 consists of a stacked brick and mortar wet-well with a concrete cap and cast iron pipes leading from the Kaka‘ako Pumping Station.

3.6 Background Summary and Predictive Model

In summary, in 1887 the project area was not only entirely ocean but was approximately 500 ft off shore (see Figure 13). By 1897, a seawall-bound enclosure was constructed adjacent to the

north corner of Lot C but the entirety of Lot C appears to have been coral reef underwater at high tide (see Figure 14). By 1891 the extreme *mauka* edges of the project area may have been filled in and there was a powder magazine at the corner of Ilalo and Keawe streets (see Figure 17). The powder magazine is still shown at this location 20 years later in 1911 (see Figure 21). By 1919 all but the most southwestern 20% of Lot C was filled in and appears to have been incorporated within Fort Armstrong (see Figure 22 and Figure 23). The JABSOM campus area appears to be infilled at the time but remains undeveloped. By the 1930s, Fort Armstrong was in full swing within Lot C, and the animal quarantine station was present within the JABSOM campus. The *makai* portions of the project area, including the entire Kaka‘ako Waterfront Park, remained ocean until their infilling with landfill material in the second half of the twentieth century. The general configuration of Fort Armstrong remained until 1957 (see Figure 40). By 1961, however, this infrastructure is replaced by a warehouse district (see Figure 42). This trend continues as warehouses eventually replace the animal quarantine station during the 1970s. The modern configuration of Lot C, the JABSOM campus, and the Kaka‘ako Waterfront Park is largely present by 2005 (see Figure 46).

No in situ cultural deposits would be anticipated in the current project area pre-dating 1890. Possible remnants of the powder magazine foundation at the extreme *mauka* edge would date to the 1890s. Subsurface structural remnants associated with the animal quarantine station are a possibility within the JABSOM campus, but in all likelihood were obliterated during the development of the school. No historic properties are expected within the Kaka‘ako Waterfront Park as it was underwater until the 1950s when it became a landfill. The presence of additional components of SIHP # -8049, buried structural remnants and cultural deposits associated with the historic Fort Armstrong, a military fort present within the Lot C portion of the project area in the first half of the twentieth century, are likely. These may include building and wall foundations, former work surfaces, and features and artifacts from the time.

Section 4 Results of Fieldwork

CSH archaeologists Sara Blahut, M.A., and Michelle Clark, B.A. (Project Director) conducted the field inspection on 8 April 2019 under the direction of Douglas Borthwick, B.A. (Project Manager), and the general supervision of Hallett H. Hammatt, Ph.D. (Principal Investigator). This work required approximately 3 person-hours to complete.

A pedestrian survey was conducted to identify potential surface historic properties and to further assess the probability of any potential subsurface historic properties. Locations and directions of photographs showing the general project area can be seen in Figure 50. These photographs are presented in Figure 51 through Figure 69.

The study area consists of three parcels: a portion of the Kaka‘ako Waterfront Park, Lot C, and the JABSOM campus. It is anticipated that the proposed transpacific cable will shore-land within the Kaka‘ako Waterfront Park and that a connecting conduit station will be constructed somewhere in either Lot C (Option A) or on the JABSOM campus (Option B).

The portion of the Kaka‘ako Waterfront Park within the project area consists of the northwestern edge, the north corner, and the northeastern edge of the park (see Figure 4). The east end is characterized by a portion of the general parking lot and a single story structure with a “Ka Pa‘alana Preschool” banner (see Figure 59). Moving west, the project area intersects the park amphitheater and follows an asphalt path around a large grassy hill in the north corner (see Figure 60 and Figure 63). Moving *makai* along the northwestern edge, the park abuts an open drainage channel (see Figure 61 and Figure 62). In the case of Option A, this channel will need to be crossed using horizontal directional drilling.

The JABSOM campus borders the northeastern boundary of the Kaka‘ako Waterfront Park (see Figure 52 through Figure 54). The campus hosts an Educational/Administrative Building and a Bio-Medical Research Facility both completed in 2005, and the UH Cancer Center completed in 2013. The center of the campus contains a large courtyard with paved paths and landscaped areas (see Figure 55 through Figure 57). Small parking lots bound the southwest and northwest edges of the campus (see Figure 58).

Lot C borders the northwest edge of the JABSOM campus (see Figure 64, Figure 65, and Figure 68). It serves primarily as a surface parking lot for the campus although HCDA’s Entrepreneur’s Sandbox was recently completed in early 2019 and occupies the northeast corner of the parcel (see Figure 51 and Figure 69). A large utility corridor runs the length (northeast to southwest) through the center of Lot C (see Figure 67).

No surface archaeological historic properties were identified during the pedestrian inspection of the study area.

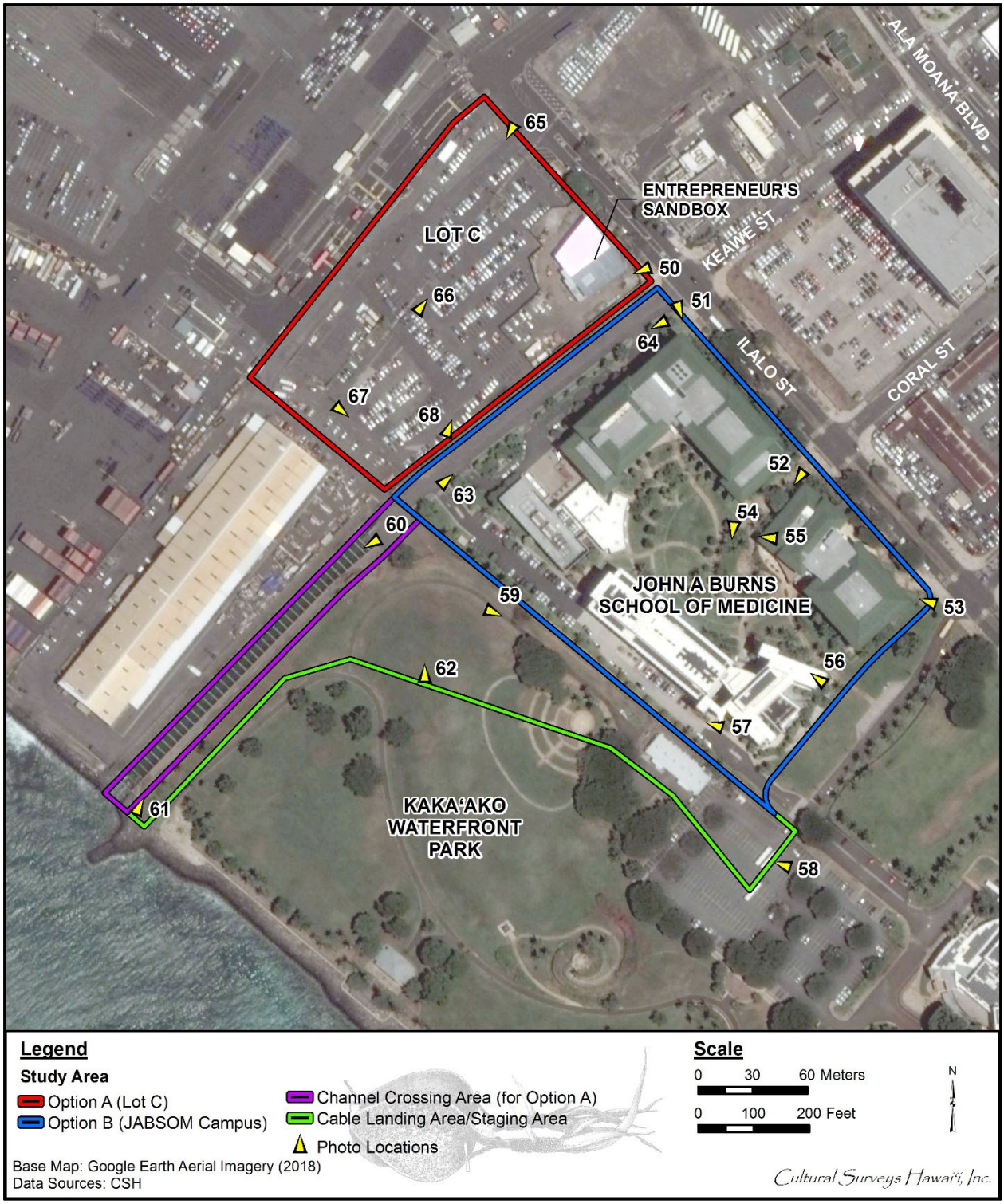


Figure 50. Aerial photograph (Google Earth 2018) showing location and direction of photographs taken during the field inspection, shown in Figure 51 through Figure 69

Figure 51. The recently completed Entrepreneur’s Sandbox occupying the northeast corner of Lot C, view to west

Figure 52. The JABSOM campus at the corner of Ilalo Street and Keawe Street, view to south

Figure 53. JABSOM campus, UH Cancer Center in center background, view to southwest

Figure 54. JABSOM campus looking down Ilalo Street, view to northwest

Figure 55. JABSOM campus central courtyard, view to south

Figure 56. JABSOM campus central courtyard, view to west

Figure 57. JABSOM campus looking in toward the central courtyard, view to northwest

Figure 58. Parking area behind JABSOM campus, adjacent to Kaka‘ako Waterfront Park, view to northwest

Figure 59. Parking area for Kaka‘ako Waterfront Park and single-story structure, view to west

Figure 60. Asphalt path along the northwest boundary of Kaka‘ako Waterfront Park, view to southeast

Figure 61. Northwest boundary of Kaka‘ako Waterfront Park and adjacent drainage canal, view to southwest

Figure 62. Northwest boundary of Kaka‘ako Waterfront Park and adjacent drainage canal, view to north

Figure 63. View from atop grassy hill in north corner of Kaka‘ako Waterfront Park, looking toward Lot C, view to north

Figure 64. Keawe Street between the JABSOM campus and Lot C, view to northeast

Figure 65. Keawe Street between the JABSOM campus and Lot C, view to southwest

Figure 66. Lot C from the north corner of the study area, view to south

Figure 67. Central portion of Lot C, utility corridor, view to northeast

Figure 68. *Makai* end of Lot C looking toward JABSOM campus, view to southeast

Figure 69. Southeast edge of Lot C looking toward recently constructed Entrepreneur’s Sandbox, view to north

Section 5 Summary and Recommendations

At the request of Wilson Okamoto Corporation, CSH has prepared this LRFI for the Kakaako *Makai* (Lot C) Broadband Cable Conduit Project, Kaka‘ako Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMKs: [1] 2-1-015:052, 2-1-060:008 and 009. The LRFI consisted of background research and a pedestrian field inspection.

5.1 Summary

No surface archaeological historic properties were identified during the field inspection. Background research indicates a subsurface historic property is present within Lot C: SIHP # -8049, buried structural remnants and cultural deposits associated with Fort Armstrong. Three features of SIHP # -8049 have been previously identified: Feature 1, a basalt boulder and coral cobble sea wall; Feature 2, a polished concrete floor; and Feature 3, a former oil-rolled surface overlaid with crushed coral gravel. Subsurface structural remnants associated with the animal quarantine station are a possibility within the JABSOM campus, however, due to the recent and extensive development associated with JABSOM, any evidence of such minor structures (dog kennels, corrals, etc.) is unlikely. No historic properties are expected within the Kaka‘ako Waterfront Park as it was underwater until it became a landfill in the 1950s.

5.2 Recommendations

The proposed project has two options for project area location. It is anticipated that the proposed transpacific cable will shore-land within the Kaka‘ako Waterfront Park and that a connecting conduit station will be constructed somewhere in either Lot C (Option A) or on the JABSOM campus (Option B). In the case of Option A, the drainage channel will need to be crossed using horizontal directional drilling. Recommendations are provided below for each option.

5.2.1 Option A

Based on the findings of this LRFI for Option A, a determination of “effect, with proposed mitigation commitments” is appropriate for historic properties in the project area per HAR §13-275-7. It should be anticipated that the SHPD may require an archaeological inventory survey consisting of subsurface testing and/or archaeological data recovery in the form of archaeological monitoring. The SHPD acceptance letter (Log No.: 2018:00236, Doc. No.: 1801JA02, see Appendix A) for the *Archaeological Inventory Survey Report for the Innovation Center at Lot “C,” Makai Area of the Kaka‘ako Community Development District, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu TMK: (1) 2-1-015:052* (Blahut and Hammatt 2018) states that “any future projects proposing construction of additional facilities elsewhere on Lot C shall require consultation with SHPD regarding historic preservation review requirements.” Early consultation with the SHPD is recommended to obtain a determination letter (as per HAR §13-275-3).

5.2.2 Option B

Based on the findings of this LRFI for Option B, a determination of “no historic properties affected” is appropriate for historic properties in the project area per HAR §13-275-7. Early consultation with the SHPD is recommended to determine what (if any) further archaeological study is indicated and to obtain a determination letter (as per HAR §13-275-3).

Section 6 References Cited

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

Athens, Stephen J. and Jerome V. Ward
1991 *Paleoenvironmental and Archaeological Investigations, Kawainui Marsh Flood Control Project, O‘ahu Island, Hawai‘i*. Micronesian Archaeological Research Services, Guam.

Bingham, Hiram
1981 *A Residence of Twenty-One Years in the Sandwich Islands.* Charles E. Tuttle Company, Rutland, Vermont.

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

Blahut, Sara M. and Hallett H. Hammatt
2018 *Archaeological Inventory Survey Report for the Entrepreneur’s Sandbox, Makai Area of the Kaka‘ako Community Development District, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMK: [1] 2-1-015:052.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

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

Borthwick, Douglas and Hallett H. Hammatt
2001 *An Archaeological Monitoring Report for Kaka‘ako Improvement District 6 Honolulu, Hawai‘i (TMK 2-1-58, 2-3, 2-3-01 thru 05).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Burgess, G.H.
1850 “Honolulu Beach” [sketch]. In *The Saga of the Sandwich Islands,* by Edward Scott. Sierra Tahoe Publishing Company, Lafayette, Indiana.

Clark, John R.K.
2002 *Hawai‘i Place Names: Shores, Beaches, and Surf Sites*. University of Hawai‘i Press, Honolulu.

Covington, R.
1881 Hawaiian Government Survey Map. Registered Map 1381. Hawai‘i Land Survey Division, Department of Accounting and General Services, 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.

DeLeon, David

1978 *A Short History of Manoa Valley from 1800 to Present*. University of Hawai‘i at Mānoa, Hamilton Library, Honolulu.

Desilets, Michael and David Byerly

2018 *Archaeological Inventory Survey Kaka‘ako Block C, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu Island, Hawai‘i TMK (1) 2-1-054:001.* Garcia and Associates, Honolulu.

Dodge, F.S.

1891 Map of Kaakaukukui, Kakaako Section. Registered Map 1587. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Dorrance, William H.

1995 Land Defenses of O‘ahu’s Forts, 1908-1920. *Hawaiian Journal of History*. 29:147–161.

Dukas, Neil Bernard

2004 *A Military History of Sovereign Hawai‘i.* Mutual Publishing, 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.

Enanoria, Brittany and Hallett H. Hammatt

2016 *Archaeological Inventory Survey Report for the Kaka‘ako Pumping Station (SIHP # 50-80-14-9710) Project, 653 Ala Moana Boulevard, Kaka‘ako Makai, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMK: [1] 2-1-015:063.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Fechner, Caleb C., Paul L. Cleghorn, Sara Collins, Maria E. Orr, and Valerie Park

2012 *Archaeological Inventory Survey Report for the Honolulu Seawater Air Conditioning Project in Portions of Kaka‘ako and Downtown Honolulu Pauoa Ahupua‘a, Honolulu (Kona) District, O‘ahu, Hawai‘i TMK (1) 2-1-various; 2-1-001:056; 2-1-002:009, 013, 016; 2-1-010:004; 2-1-011:009; 2-1-012:004, 006; 2-1-013:006; 2-1-014:001, 004; 2-1-016:001, 011, 015; 2-1-017:001, 003, 005, 008, 010, 011, 019; 2-1-018:001; 2-1-024:001, 008; 2-1-025:001, 002, 004; 2-1-027:002; 2-1-029:001; 2-1-030:003; 2-1-032:012; 2-1-033:007, 010, 025; 2-1-035:010; 2-1-042:004, 013; 2-1-059:012, 013.* Pacific Legacy, Inc., Kailua, Hawai‘i.

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.

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, Government Printing Office, Washington, D.C.

Foreign Register

1842 *Foreign Register of Kuleana Claims to Quiet Land Titles in the Hawaii Islands (1842-43).* Hawai‘i State Archives, Honolulu.

Foreign Testimony

1848 *Foreign Testimony of Kuleana Claims to Quiet Land Titles in the Hawaii Islands (1848-50).* Hawai‘i State Archives, Honolulu.

Foster, Nelson (editor)

1991 *Punahou: This History and Promise of a School of the Islands.* Punahou School, Honolulu.

Google Earth

2013, 2018 Aerial photographs of Hawai‘i. Google Inc., Mountain View, California. Available online at www.google.com/earth.html.

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 (Various Plats and Parcels).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Hammatt Hallett H., Alex Hazlett, and David W. Shideler

2010 *Archaeological Literature Review and Field Inspection Study Addressing the U.S. Immigration and Customs Enforcement (ICE) Master Plan, Kaka‘ako, Honolulu (Kona) District, O‘ahu, Hawai‘i TMK: [1] 2-1-015:018 & 020.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Hammatt Hallett H. and David W. Shideler

2010 *Kewalo Basin Repairs Project Archaeological Literature Review and Field Inspection Report Kaka‘ako Ahupua‘a, Honolulu (Kona District), O‘ahu TMK: [1] 2-1-058.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

2016 *Archaeological Literature Review and Field Inspection for the Hawaii Technology Development Corporation Innovation Center (HTDC) at Lot "C," Makai Area of the Kaka‘ako Community Development District, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu TMK: [1] 2-1-015:052.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

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.

Hashimoto, Randall M.
1957 Map of Kaakaukukui. Registered Map 4096. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Hawai‘i State Archives
1885 Photograph of *Kinau* on Lyle and Sorenson’s “Marine Railway.” Hawai‘i State Archives, Honolulu.

1911-1920 Photograph of Fort Armstrong—Colorized postcard. Hawai‘i State Archives, Honolulu.

Hawai‘i TMK Service
2014 Tax Map Key [1] 2-1-015 and 060. Hawai‘i TMK Service, Honolulu.

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

Johnson, Donald D.
1991 *The City and County of Honolulu, A Government Chronicle*. University of Hawaii Press and City Council of the City and County of Honolulu, Honolulu.

Judd, Walter F.
1975 *Palaces and Forts of the Hawaiian Kingdom*. Pacific Books Publishers, Palo Alto, California.

Kame‘eleihiwa, Lilikala
1992 *Native Land and Foreign Desires. Pahea Lā E. Pono Ai?* Bishop Museum Press, Honolulu.

Kamehameha Schools Archives
1890 Photograph of the King’s (Kalākaua’s) Boathouse. Ray Jerome Baker Collection, Kamehameha Schools Archives, Honolulu.

1921 Photograph of a city worker supervising open burning of trash near Kewalo Basin. Ray Jerome Baker. Kamehameha Schools Archives, Honolulu.

Kortum, Karl
1887 Photograph of the Kaka‘ako Saluting Battery and Flagstaff. Original photograph archived at the San Francisco Maritime Museum, San Francisco, California. Reprinted in *The Saga of the Sandwich Islands*, Volume 1, by Edward Scott, 1968, p. 176. Sierra-Tahoe Publishing Company, Crystal Bay, Lake Tahoe, Nevada.

Kotzebue, Otto von
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.

LaPasse, Lt. Joseph de

1855 “Plan du Mouillage [Anchorages] d’Honolulu” Map by Lt. Joseph de LaPasse. Reprinted in *The Early Mapping of Hawai‘i*, by Gary L. Fitzpatrick, 1986, pp. 82–83. Editions Limited, Honolulu.

Lash, Erik and Robert L. Spear

2015 *Archaeological Inventory Survey on 3.02 Acres for the Cutter Mazda Property - 805 Ala Moana Boulevard, KAK 14-140, Honolulu Ahupua'a, Honolulu (Kona) District, O'ahu Island, Hawai'i [TMK: (1) 2-1-059:001, 003].* Scientific Consultant Services, Inc., Honolulu.

Lyons, C.J.

1876 Map of Ka‘akaukukui and Pu‘unui. Registered Map 611. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Macdonald, Gordon A., Agatin T. Abbott, and Frank L. Peterson

1983 *Volcanoes in the Sea: The Geology of Hawaii.* University of Hawaii Press, Honolulu.

Malden, Lt. Charles

1825 Map of “South Coast of Woahoo and Honorurou Harbour.” Registered Map 431. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Mason Architects, Inc.

2009 *Architectural Inventory Survey Kaka‘ako Mauka.* Mason Architects, Inc., Honolulu.

McElroy, Windy K.

2008 *Archaeological Assessment of TMKs 2-10-059:011 and 012 in Kaka‘ako, Honolulu Ahupua‘a, Kona District, O‘ahu Island, Hawai‘i.* Garcia and Associates, Kailua, Hawai‘i.

McIntosh, James and Paul L. Cleghorn

2000 *Archaeological Report for the Oahu Commercial Harbors 2020 Master Plan-Immediate Phase Environmental Impact Statement.* Pacific Legacy Inc., Kailua, Hawai‘i.

Monsarrat, M.D.

1897 Map of Honolulu, Hawaiian Islands. Registered Map 1910. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

1909 Map of Oahu fisheries, Waikiki section. Registered Map 2848. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

1920 Map of Honolulu. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Nakamura, Barry

1979 The Story of Waikiki and the Reclamation Project. M.A. thesis, University of Hawai‘i, Honolulu.

Native Register

1847 *Native Register of Kuleana Claims to Quiet Land Titles in the Hawaii Islands (1847-52).* Hawai‘i State Archives, Honolulu.

Native Testimony

1848 *Foreign Testimony of Kuleana Claims to Quiet Land Titles in the Hawaii Islands (1853-54).* Hawai‘i State Archives, Honolulu.

Pammer, Michelle, Brittany Enanoria, and Hallett H. Hammatt

2017 *Archaeological Monitoring Report for the Nimitz Highway and Ala Moana Boulevard Resurfacing and Highway Lighting Replacement Project, Honolulu and Waikīkī Ahupua‘a, Honolulu District, O‘ahu, TMKs: [1] 2-1, 2-3, and 2-6 (various plats and parcels; Nimitz Hwy. and Ala Moana Blvd. Rights-of-Way).* Cultural Surveys Hawai‘i, Inc. Kailua, Hawai‘i.

Pammer, Michelle and Hallett H. Hammatt

2010 *Archaeological Assessment for the Former Comp USA Parcel, Kaka‘ako, Honolulu District, O‘ahu Island.* Cultural Surveys Hawai‘i, Inc. Kailua, Hawai‘i.

Petrey, Whitney Rose, Alexander Hazlett, Douglas Borthwick, and Hallett H. Hammatt

2009 *Archaeological Monitoring Report for the Nimitz Highway and Ala Moana Boulevard Resurfacing Project Honolulu Ahupua‘a, Kona District, O‘ahu Island TMK: (1) 2-1-014 and 027.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Pfeffer, Michael T., Douglas K. 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.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Podmore, G.

1911 Map of Honolulu, Kewalo Section. Registered Map 3094. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Pukui, Mary Kawena, Samuel H. Elbert, and Esther T. Mookini

1974 *Place Names of Hawaii*. University of Hawaii Press, Honolulu.

Richardson, Kent D.

2005 *Reflections of Pearl Harbor: An Oral History of December 7, 1941.* Greenwood Publishing Group, Westport, Connecticut.

Rivera, Michael and Christopher M. Monahan

2017 *Archaeological Monitoring Report in Support of Phase II Environmental Site Assessments Kaka‘ako Makai (Parcels A, C, D, E, I & L) Waikiki Ahupua‘a, Kona (Honolulu) District O‘ahu Island, Hawai‘i TMK (1) 2-1-015:051 & 061; 2-1-058:006, 048, 129 & 130 (por.); 2-1-060:027.* TCP Hawai‘i. LLC. Kailua, Hawai‘i.

Rush, Benjamin Franklin

1957 *History of Construction and Development of Honolulu Harbor, Hilo Harbor, Kawaihae Harbor, Kahului Harbor, Kaunakakai Harbor, Nawiliwili Harbor, Port Allen Harbor, Hawaii.* Board of Harbor Commissioners, Honolulu.

Ryan

1944 Map of Animal Quarentine [*sic*] Station, Kaakaukukui. HTS Plat 2123. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Scott, Edward B.

1968 *The Saga of the Sandwich Islands: The Complete Documentation of Honolulu's and Oahu's Development Over One Hundred and Seventy Five Years.* Sierra Tahoe Publishing Company, Lafayette, Indiana

Shideler, David (with Mason Architects and David Franzen)

2002 *Historic American Engineering Record and Index to Photographs: Incinerator Number One (Old Kewalo Incinerator).* Cultural Surveys Hawai‘i, Inc. Kailua, Hawai‘i.

Sroat, Ena, Kelly L. Burke, Gine M. Farley, and Matt McDermott

2017 *Archaeological Inventory Survey Report for the Block A Project, Kaka‘ako, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMK: [1] 2-1-056:001.* Cultural Surveys Hawai‘i, Inc. Kailua, Hawai‘i.

Stearns, H.T.

1978 *Quaternary Shorelines in the Hawaiian Islands*. Bishop Museum Bulletin 237. Bishop Museum Press, Honolulu.

Thrum, Thomas

1886 Hawaiian Register and Directory for 1887. *Hawaiian Almanac and Annual for 1887.* Thomas G. Thrum, Honolulu.

Tulchin, Jon and Hallett H. Hammatt

2013 *Archaeological Inventory Survey for the Kamehameha Schools Kaka‘ako Block F, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu Island, TMK: [1] 2-1-055: 003, 006, 021, 026, 038.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Tulchin, Jon, Nigel Kingsbury, and Hallett H. Hammatt

2015 *Archaeological Inventory Survey for Kamehameha Schools Kaka‘ako Block H, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu Island TMK: [1] 2-1-056: 003 and 004.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Tulchin, Jon, Constance O'Hare, and Hallett H. Hammatt

2014a *Archaeological Inventory Survey for Kamehameha Schools Kaka‘ako Block B, Honolulu Ahupua‘a, Honolulu (Kona) District, Island of O‘ahu, TMKs: (1) 2-1-054: 025, 027, 028 por. and 032*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

2014b *Archaeological Inventory Survey for Kamehameha Schools Kaka‘ako Block I, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMKs: [1] 2-1-056:002, 007 and 008*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Turran, Tyler, Jonas Madeus, and Hallett H. Hammatt

2016 *Archaeological Monitoring Report for the Ala Moana Boulevard/Auahi Street Sewer Rehabilitation Phase 2 and Phase 3 Project, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-1-055, 056, 058, and 059: various parcels.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

UH SOEST

1954 UH SOEST Kakaako coast aerial photograph. 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/

1957 UH SOEST Kakaako coast aerial photograph. 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/

1961 UH SOEST Kakaako coast aerial photograph. 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/

1974 UH SOEST Kakaako coast aerial photograph. 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/

1982 UH SOEST Kakaako coast aerial photograph. 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/

2005 UH SOEST Kakaako coast aerial photograph. 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

1931-1938 Fort Armstrong aerial photographs. Hawai‘i State Archives, Honolulu.

1939-1941 Kaka‘ako Coast aerial photograph. Hawai‘i State Archives, Honolulu.

U.S. Army War Department

1916 *United States Military Reservations National Cemeteries and Military Parks.* Government Printing Office, Washington.

1919 U.S. Army War Department fire control map, Honolulu quadrangle. U.S. Department of War Maps/U.S. Army Corps of Engineers, Washington, D.C.

1933 U.S. Army War Department fire control map, Honolulu quadrangle. USGS Information Services, Denver, Colorado.

1943 U.S. Army War Department terrain map, Honolulu quadrangle. U.S. Department of War Maps/U.S. Army Corps of Engineers, Washington, D.C.

USDA (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).

USGS (U.S. Geological Survey)

1953 Honolulu USGS topographic quadrangle. USGS Information Services, Denver, Colorado.

1959 Honolulu USGS topographic quadrangle. USGS Information Services, Denver, Colorado.

1969 Honolulu USGS topographic quadrangle. USGS Information Services, Denver, Colorado.

1998 Honolulu USGS topographic quadrangle. USGS Information Services, Denver, Colorado.

Wall, W.A.

1887 Hawaiian Government Survey Map of Honolulu and Vicinity, Oahu Island, Kona District. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Waihona ‘Aina

2000 *The Māhele Database*. Electronic document, http://waihona.com

Williford, G. and T. McGovern

2003 *Defenses of Pearl Harbor and Oahu 1907-50.* Osprey Publishing, Elms Court, Chapel Way, Botley, Oxford, United Kingdom.

Wilson Okamoto & Associates, Inc.

1998 *Final Environmental Impact Statement for the Block J Redevelopment Project Honolulu, O‘ahu, Hawai‘i.* Wilson Okamoto & Associates, Honolulu.

Winieski, John P. and Hallett H. Hammatt

2001 *Archaeological Monitoring Report for the Nimitz Highway Reconstructed Sewer, Honolulu, O‘ahu, Hawai‘i (TMK 1-7-02,03 and 2-1-02, 13-16, 25, 27, 29-32).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Wisniewski, Richard A.

1984 *Hawaii: The Territorial Years, 1900-1959. A Pictorial History.* Pacific Basin Enterprises, Honolulu.

Wong-Smith, Helen and Paul H. Rosendahl

1990 *Aloha Tower Complex Historical Assessment, Honolulu Harbor, Island of O‘ahu, TMK 2-1-01.* Paul H. Rosendahl, Inc., Hilo, Hawai‘i.

Yent, Martha

1985 *Burial Excavations at the Honolulu Ironworks Construction Site, Honolulu, O‘ahu.* Department of Land and Natural Resources, Division of State Parks, Honolulu.

Zapor, Tim and Hallett H. Hammatt

2018 *Archaeological Monitoring Report for the Kakaako Pumping Station (SIHP # 50-80-14-9710) Project, 653 Ala Moana Boulevard, Kakaako Makai, Honolulu Ahupuaa, Honolulu (Kona) District, Oahu TMK: [1] 2-1-015:063.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Appendix A SHPD Correspondence

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GOVERNOR OF
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BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
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February 9, 2018

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IN REPLY REFER TO:
Log No. 2018.00236
Doc. No. 1801JA02
Archaeology

Garett Kamemoto, Interim Executive Director
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Dear Mr. Akinaka and Mr. Kamemoto:

SUBJECT: **National Historic Preservation Act (NHPA) Section 106 and Chapter 6E Review – Revised Draft Archaeological Inventory Survey Report for Entrepreneur's Sandbox Project Kaka‘ako Community Development District "Makai Area" Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu TMK: (1) 2-1-015:052 (portion)**

This letter provides the State Historic Preservation Division's (SHPD's) review comments concerning the revised document titled *Draft Archaeological Inventory Survey Report for the Innovation Center at Lot "C,"* Makai *Area of the Kaka‘ako Community Development District, Honolulu Ahupua‘a, Honolulu (Kona) District, O‘ahu TMK: [1] 2-1-015:052* (Blahut and Hammatt, January 2018). This submittal was received by SHPD on January 30, 2018.

This archaeological inventory survey (AIS) was conducted by CSH at the request of Ferraro Choi and Associates, Ltd., on behalf of HCDA. Funding is being provided by the Department of Commerce U.S. Economic Development Administration (EDA); the proposed project is therefore considered a federal "undertaking" and requires compliance with National Historic Preservation Act (NHPA) Section 106.

The project as originally proposed was to include construction of multiple facilities throughout TMK: (1) 2-1-015:052, the 5.11-acre area known as Lot C. Lot C is located is on the *makai* (shore) side of the Ala Moana/Nimitz Highway alignment, in the Kaka‘ako Community Development District *makai* area, and is bounded on the *mauka* (inland; here, north) side by Ilalo Street, on the east side by Keawe Street (and, across Keawe Street, the John A. Burns School of Medicine [JABSOM]), on the *makai* (south) side by a large Re-Use Hawaii warehouse, and on the west side by Forrest Avenue.

Changes made to the project were discussed during a meeting held on January 9, 2018, attended by representatives of the Hawaii Community Development Authority (HCDA), Cultural Surveys Hawai‘i, Inc. (CSH), and SHPD. The project is now reduced in scope to include only construction of the Entrepreneur's Sandbox, which will provide the State High Technology Development Corporation (HTDC) with community spaces and resources for meetings, discussions, and educational activities. The Entrepreneur's Sandbox project area, in the east corner of the TMK

Mr. Akinaka and Mr. Kamemoto
February 9, 2018
Page 2

parcel, totals 0.61 acre (0.25 hectare). It is bounded on the northeast by Ilalo Street, on the southeast by Keawe Street, and on the other two sides by other portions of the parcel.

The AIS was conducted throughout Lot C, the originally proposed project area. This revision provides, for future reference, the background information and archaeological results of the AIS for the entire Lot "C" property. The AIS is submitted, however, in support of the reduced project, the Entrepreneur's Sandbox. The report's assessment of project effect on historic properties and archaeological mitigation recommendations address only the Entrepreneur's Sandbox project, as does this SHPD review, under Hawaii Administrative Rules (HAR) §13-276. Any future projects proposing construction of additional facilities elsewhere on Lot "C" shall require consultation with SHPD regarding historic-preservation review requirements. Consultation will ensure that all historic properties in the newly proposed project area(s) are documented adequately, that site integrity and significance assessments are based on an adequate body of information, and that the effects of any newly proposed project(s) on historic properties can be evaluated.

As background information, the ground disturbances anticipated during the originally proposed, lot-wide project included excavation for installation and/or relocation of utilities including an overhead electrical line, excavation to update traffic signals, and construction of five structures. The originally proposed structures include the 13,500-ft.^{2} Entrepreneur's Sandbox and four others (sizes approximate): the Innovation Hale (150,000 ft.^{2}), a multi-story office and commercial tower; the Kewalo Incubation Center (47,000 ft.^{2}), a four-story office building; the Learning Center (140,000 ft.^{2}) and a public-plaza build-out, with space for office use and assembly; and the Regional Parking Garage, with 900 stalls.

The Entrepreneur's Sandbox and the entire TMK parcel are located within the boundaries of the former Fort Armstrong, a pre-World War I, Taft-Era Coastal Artillery fort built to protect Honolulu Harbor. The archaeological remnants of Fort Armstrong are designated State Inventory of Historic Places (SIHP) Site 50-80-14-8049. Surface survey throughout the parcel identified no historic properties except for a low berm that had formed over a *makai* seawall. Machine-assisted test excavation of eight trenches throughout the parcel resulted in the discovery of subsurface features and other components associated with Fort Armstrong; these components include discoveries made in the Entrepreneur's Sandbox area.

Test Excavation 1 (T-1) was excavated in the historically mapped location of the former Drill Ground (and a later baseball field). T-2 tested an area outside the Oil House (Fort Armstrong Building [Bldg.] 102). T-3 and T-8 tested a Garage (Bldg. 18); part of T-3 also sectioned an area outside the Carpenter and Smith Shop (Bldg. 100). T-4 exposed part of a *makai* seawall that crossed through Fort Armstrong, and that helped retain fills deposited as a structural foundation for the fort and other nearby properties. T-5 investigated the Commanding Officer's Quarters (Bldg. 2). T-6 explored the northwest edge of the former Servants' Quarters (Bldg. 101). T-7 investigated the Administration Building (Bldg. 1). Other historically mapped but not yet archaeologically documented structures in the area include a circa (ca.) 1891 powder magazine, a 1911 ditch and channel head in the south corner, and U-shaped western seawall built by 1897.

Site 8049 Feature 1 is the project-area segment of the *makai* seawall. The 0.85-m-long segment exposed in T-4 is a vertically faced, stacked, mortared wall of basalt boulders and coral/limestone cobbles. Feature 2 (exposed in T-3 Stratum II) is the polished concrete Garage (Bldg. 18) floor. Feature 3 (T-8 Stratum IVb), in the *mauka* area, is an oil-rolled or macadam pavement that may represent a road built by 1911, during the initial infilling of the area with fills and the early development of Fort Armstrong.

Testing also exposed other cultural elements. T-2, beside the Oil House (Bldg. 102), exposed wire-reinforced concrete, coarse basalt gravel, and red brick fragments in Stratum IIb, and oil in Stratum IIc. T-5, in the Commanding Officer's Quarters (Bldg. 2), exposed asphalt, concrete fragments, milled wood, and a corroded cut nail in Stratum II. T-6, along the northwest edge of the Servants' Quarters (Bldg. 101), exposed a large, squared, basalt block (a probable "tofu block," the base for a post for a building on "stilts"), milled wood, and flat (probably window) glass in Stratum II, and, in Stratum IIIa, rounded basalt cobbles that may once have formed an alignment.

The AIS report finds that Site 8049 possesses integrity of location, design, materials, and workmanship. The site is considered eligible for nomination to the National and Hawai'i State Registers of Historic Places (NRHP and

Mr. Akinaka and Mr. Kamemoto
February 9, 2018
Page 3

HRHP) under Criterion D, and significant under HAR §13-275-6, for its potential to provide important information relating to the pre-World War I military buildup of coastal forts in Hawai'i, and to historic land reclamation and associated land use in Kaka'ako. The effect of the Entrepreneur's Sandbox project on SIHP Site 50-80-14-8049 is assessed under 36 Code of Federal Regulations (CFR) 800.5 as "No adverse effect." The project effect assessment under HAR §13-275-7 is "Effect, with proposed mitigation commitments." Recommended effect mitigation shall include data recovery, in the form of archaeological monitoring during all ground-disturbing activities connected with the Entrepreneur's Sandbox project. SHPD concurs with the assessments of site integrity, site significance, and project effects, and with the mitigation plan. As noted earlier, any future plans to develop other portions of the parcel shall require prior consultation with SHPD to determine historic-preservation requirements.

The **SHPD requests one revision** to be included within the final report:

- Page 145, Section 9.2: Please clarify that the mitigation recommendation is archaeological monitoring for the Entrepreneur's Sandbox project. The mitigation is to mitigate effects created by that project on the identified historic property. There is no recommendation of archaeological monitoring for future projects or work in the project area. In the event a new project is proposed within other portions of the AIS study, future consultation with SHPD shall occur.

The revisions requested in SHPD's January 22, 2018, review letter (Log No. 2017.02241, Doc. No. 1801JA07) have been made successfully. This AIS report satisfies the requirements of Hawaii Administrative Rules (HAR) §13-276-5. **It is accepted**. Please send one hard copy of the document, clearly marked FINAL, along with a text-searchable PDF version, to the Kapolei SHPD office, attention SHPD Library.

Following HAR §13-275-3(b), Steps (1) through (4) of the historic preservation review are complete. The SHPD concurs that the survey identification and documentation efforts are adequate for this project, agrees with site significance assessments and project effect determination, and accepts proposed mitigation, data recovery in the form of archaeological monitoring.

As stipulated in HAR §13-275-7(e), when SHPD comments that a project will result in "effect with proposed mitigation commitments," then detailed mitigation plans shall be developed for SHPD review and acceptance before project work begins. **SHPD looks forward to** receiving an archaeological monitoring plan meeting the requirements of HAR §13-279-4.

Please contact Dr. Jane Allen at (808) 692-8045 or by email at jane.allen@hawaii.gov if you have any questions or if we can be of assistance in any way.

Aloha

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
State Historic Preservation Officer

cc: Stan Good, Project Engineer
U.S. Department of Commerce
Economic Development Administration
Seattle Regional Office
915 Second Avenue Room 1890
Seattle WA 98174
Email: sgood@eda.go

Doug Borthwick
Cultural Surveys Hawai'i
P.O. Box 1114
Kailua HI 96734
Email: dborthwick@culturalsurveys.com

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
www.boardofwatersupply.com

KIRK CALDWELL, MAYOR

BRYAN P. ANDAYA, Chair
KAPUA SPROAT, Vice Chair
KAY C. MATSUI
RAY C. SOON
MAX J. SWORD

ROSS S. SASAMURA, Ex-Officio
JADE T. BUTAY, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

February 8, 2019

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Your Letter Dated December 28, 2018, Regarding the Environmental Assessment Pre-Assessment Consultation for Kakaako Transpacific Broadband Conduit, Tax Map Keys 2-1-015:052 and 2-1-060:009 and 008, Honolulu, Oahu, Hawaii

Thank you for your letter and the opportunity to be involved in the pre-assessment consultation phase for the subject Environmental Assessment (EA). We apologize for the delay in responding and thank you for your patience. We have the following comments to offer:

1. Given the locations of existing Board of Water Supply (BWS) waterlines in the area, siting the conduit landing station at the John A. Burns School of Medicine (JABSOM) campus (Option B) is preferable to Lot C (Option A).
2. That being said, however, the JABSOM campus is where BWS currently has its deep well cooling station, wells, pumps and connecting pipelines. Unfortunately, the information provided on the conduit landing station is not enough to determine if the proposed station and landing will have any impact on the BWS deep well cooling facility and appurtenances. At any rate, the EA should discuss and assess the impacts the proposed Transpacific Broadband Conduit project would have on the BWS deep well cooling facility and equipment and identify any mitigative measures that need to be implemented.
3. Further, BWS reserves the right to provide additional comments on the project until such time when construction plans are prepared and submitted to BWS for review and approval.

If you have any questions, please call Michael Matsuo of our Land Division at 748-5951.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Ernest Lau, P.E.
Manager and Chief Engineer
City and County of Honolulu
Board of Water Supply
630 South Beretania Street
Honolulu, HI 96843

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kakaʻako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Lau:

Thank you for your letter dated February 8, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward. Per your request, a consultation meeting will be coordinated with your office once the proposed project alignment is determined and additional details are available.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

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

February 8, 2019

RECEIVED
FEB 12 2019
WILSON OKAMOTO CORPORATION

Wilson Okamoto Corporation
ATTN: Earl Matsukawa
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa,

Subject: Environmental Assessment Pre-Consultation for Kakaako Transpacific Broadband Conduit
TMK: [1] 2-1-015:052 and 2-1-060-009, and 008
Honolulu, Oahu, Hawaii

Thank you for the opportunity to review and comment. The Department of Design and Construction's Facilities Division had the following comment.

The proposed Transpacific Cable Landing Area/Directional Drilling Staging Area is on the site of the amphitheater area used for concerts and events. The construction would have a major impact on this important feature of the park. The EA will need to address what will be the impacts and how it will be mitigated. We understand that the City has already taken over the park and approval for the project will require the approval of the Department of Parks and Recreation. The project would also require easements from the City/State for use of any of the park land.

Should you have any further questions, please contact Clifford Lau of our Facilities Division at 768-8483.

Sincerely,

Robert J. Kroning, P.E.
Director

RJK:ms (755517)

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Robert J. Kroning, P.E.
Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr. Kroning:

Thank you for your letter dated February 8, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulu`ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 19-40

January 23, 2019

Mr. Earl Matsukawa, AICP
Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JAN 25 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

Subject: Environmental Assessment, Pre-Assessment Consultation,
Kakaako Transpacific Broadband Conduit
Tax Map Keys: (1) 2-1-015:052, 2-1-060:009 and 008

Thank you for the opportunity to review and comment on the subject project.

Our comments are as follow:

- Once construction phase commence, install approved Best Management Practices fronting all drainage facilities along City roads (Ilalo Street and Olomehani Street) and future dedicated roads (Ohe Street) to the City.

- During construction and upon completion of the project; any damages/deficiencies to along the sidewalks and/or roadways on City roads (Ilalo Street and Olomehani Street) and future dedicated roads to the City (Ohe Street) shall be repaired to City standards and accepted by the City at no cost to the City and County of Honolulu.

- Please note that Forrest Avenue is under the jurisdiction of the State of Hawaii, Harbors Division.

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

10380-01
May 8, 2019

Mr. Ross S. Sasamura, P.E.
Director and Chief Engineer
City and County of Honolulu
Department of Facility Maintenance
1000 Ulu‘ohia Street, Suite 215
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr. Sasamura:

Thank you for your letter dated January 23, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 766-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

February 26, 2019 2019/ELOG-8(ST)

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
FEB 27 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment (EA) Pre-Assessment
Kakaako Transpacific Broadband Conduit
Kaaako Waterfront Park - Honolulu
Tax Map Keys 2-1-015: 052; 2-1-060: 008 and 009

This is in response to your letter received on January 2, 2019, regarding the forthcoming EA being prepared for a proposed landing of a trans-pacific fiber-optic cable at the Kaaako Waterfront Park. The Project involves underground horizontal directional drilling and cable conduits pulled across (under) the shoreline setback area and within the Special Management Area established by Chapter 205A, Hawaii Revised Statutes. Because the Project is located within the Kakaako Improvement District, the Hawaii Community Development Authority and/or State Office of Planning, not the Department of Planning and Permitting, will administer these requirements.

Should you have any questions, please contact Steve Tagawa, at 768-8024.

Very truly yours,

FOR: Kathy K. Sokugawa
Acting Director

cc: State of Hawaii, Office of Planning

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Ms. Kathy Sokugawa
Acting Director
City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Ms. Sokugawa:

Thank you for your letter dated February 26, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR

WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP1/19-755848R

January 31, 2019

Mr. Earl Matsukawa
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
FEB 14 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

SUBJECT: Draft Environmental Assessment (DEA) for the Transpacific Broadband Conduit in Kakaako, Oahu

Thank you for the opportunity to provide comments on the DEA for the Kakaako Transpacific Broadband Conduit. In response to your letter dated December 28, 2018 we have the following comments:

1. **Construction Impacts.** The following comments are related to short-term construction impacts:

   a. **Traffic Management Plan (TMP).** The EA should include a Traffic Management Plan, which discusses traffic impacts the project may have on any surrounding City roadways, including short-term impacts during construction and long-term impacts after construction with corresponding measures to mitigate these impacts by applying Complete Streets principles.

   b. **Best Practice TMPs.** Best practice TMPs provide the City with information by which to monitor construction areas. The City will require cameras where sidewalks are closed to help assess effectiveness of management.

   c. **Joint TMP Review.** The TMP shall be jointly reviewed and accepted by the City's Department of Transportation Services (DTS) and the Department of Planning and Permitting.

d. **Construction Materials and Equipment.** 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.

e. **Safety Measures for Existing Access.** Any existing pedestrian, bicycle and vehicle access/crossing will be maintained with the highest safety measures during construction. Pedestrian detour routes should be established around construction activities situated within the sidewalk area. These detour routes should be located adjacent to or near the property line and near to the bus stop. For example, if a conduit line installation takes place within the sidewalk area, then the pedestrian detour route can be located within the project's property. In this way, the pedestrian does not have to travel a far distance or round-about path to get to the bus stop. Pedestrian detour plans shall be submitted to the DTS for review and approval.

f. **Best Management Practice Controls.** Best Management Practice controls should be included at construction site to prevent trailing of dirt and debris on City roadways.

g. **Americans with Disabilities Act (ADA) Requirements.** Any damage to the existing roadway that is caused by the project should be repaired to current City standards as well as meet Americans with Disabilities Act requirements.

h. **Neighborhood Impacts.** The area Neighborhood Board, as well as the area businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should 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.

i. **Street Usage Permits.** A street usage permit from the City's DTS should be obtained for any construction-related work that may require the temporary closure of any traffic lane on a City street.

j. **Public Transit Service Area.** The project is in an existing public transit service area. To ensure that the project development does not affect public transit services (bus operations, bus routes, bus stops and

para-transit operations); submit project plans to DTS – Public Transit Division (PTD) for review and approval. Contact DTS-PTD at 768-8396, 768-8370, 769-8374 or TheBusStop@honolulu.gov.

2. **Sea Level Rise and Resilience**. Infrastructure improvements located within areas potentially exposed to chronic flooding with sea level rise shall be subject to an in-depth analysis of the potential impacts of sea level rise on elevation, tolerance for risk, and the lifetime of the proposed structure or infrastructure. Any significant improvements within existing footprints should be dependent on established, resilient design guidelines, or otherwise be subject to relocation to a more suitable area.

   The potential for chronic flooding with 3.2 feet of sea level rise (SLR-XA) shall be used as the vulnerability zone for planning purposes. Maps of the project area shall be provided for both the SLR-XA and flooded highways. The applicant shall recommend strategies and designs that increase the flood resiliency for new development or improvements within the SLR-XA that cannot be relocated, or seek opportunities to plan new development or projects well landward of the SLR-XA. See the following to determine vulnerability: http://www.pacioos.hawaii.edu/shoreline/slr-hawaii.

We reserve the right to further comment pending review of the EA.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Nicola Szibbo of my staff at 768-8359.

Very truly yours,

Wes Frysztacki
Director

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Wes Frysztacki
Director
City and County of Honolulu
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr. Frysztacki:

Thank you for your letter dated January 31, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 768-3486 ● FAX: (808) 768-3487 ● WEBSITE: http://envhonolulu.org

KIRK CALDWELL
MAYOR

LORI M.K. KAHIKINA, P.E.
DIRECTOR

TIMOTHY A. HOUGHTON
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO
PRO 19-002

January 9, 2018

Mr. Earl Matsukawa
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JAN 11 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment Pre-Consultation for Kakaako Transpacific Broadband Conduit (TMK: 2-1-015:052 and 2-1-060:009 and 008)

We have reviewed your letter dated December 28, 2018. Please be aware that we have major wastewater facilities in the vicinity of the proposed project and are working on proposed improvements to those facilities. Please keep us apprised of the project as more design details are established.

Should you have any questions, please call Lisa Kimura, Civil Engineer, at 768-3455.

Sincerely,

Ross S. Tanimoto
for Lori M.K. Kahikina, P.E.
Director

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Ms. Lori Kahikina, P.E
Director
City and County of Honolulu
Department of Environmental Services
1000 Uluohia Street, Suite 308
Kapolei, HI 96707

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Ms. Kahikina:

Thank you for your letter dated January 9, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward. Per your request, a consultation meeting will be coordinated with your office once the proposed project alignment is determined and additional details are available

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

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

January 16, 2019

RECEIVED
JAN 17 2019
WILSON OKAMOTO CORPORATION

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Environmental Assessment Preassessment Consultation for Kakaako Transpacific Broadband Conduit
Honolulu, Oahu, Hawaii
Tax Map Keys: 2-1-015: 052
2-1-060: 008 and 009

In response to your letter dated December 28, 2018, regarding the abovementioned subject, the Honolulu Fire Department (HFD) requires that the following must 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; 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; 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; 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; 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 Wayne Masuda of our Fire Prevention Bureau at 723-7151 or wmasuda@honolulu.gov.

Sincerely,

SOCRATES D. BRATAKOS
Assistant Chief

SDB/TC:gl

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Socrates D. Bratakos
Assistant Chief
City and County of Honolulu
Fire Department
636 South Street
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr. Bratakos:

Thank you for your letter dated January 16, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

KIRK CALDWELL
MAYOR

SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
JONATHON GREMS
DEPUTY CHIEFS

OUR REFERENCE EO-TS

January 22, 2019

Mr. Earl Matsukawa, AICP, Project Manager
Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
JAN 28 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

This is in response to your letter of December 28, 2018, requesting comments on a Pre-Assessment Consultation, Draft Environmental Assessment, for the proposed Kakaako Transpacific Broadband Conduit project.

The Honolulu Police Department (HPD) has reviewed this project and anticipates a short-term impact to traffic around the project area. The HPD recommends the developer implement traffic controls and management (e.g., signs, cones, barricades, flag persons, special duty officers, etc.) for construction vehicles to and from the worksite. Furthermore, the HPD would like to remind the contractor that workers should not park their vehicles in the neighboring Ala Moana Beach Park area during their work shift without prior approval from the city's Department of Parks and Recreation.

If there are any questions, please call Major Ryan Nishibun of District 1 (Central Honolulu) at 723-3327.

Thank you for the opportunity to review this project.

Sincerely,

ALLAN T. NAGATA
Assistant Chief
Support Services Bureau

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Allen T. Nagata
Assistant Chief
Support Services Bureau
City and County of Honolulu
Police Department
801 South Beretania Street
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kakaʻako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Nagata:

Thank you for your letter dated January 22, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

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

January 31, 2019

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

RECEIVED
FEB 07 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment (EA) Pre-Assessment Consultation for Kakaako Transpacific Broadband Conduit
Tax Map Keys [1] 2-1-015:052 and 2-1-060-009 and 008
Honolulu, Hawaii

Thank you for the opportunity to review and comment at the pre-assessment consultation stage on the proposed Kakaako Transpacific Broadband Conduit.

The Department of Parks and Recreation anticipates taking fee title or jurisdiction pursuant to a Governor Executive Order sometime this year of Kakaako Waterfront Park and has concerns over the impact to the park identified as Transpacific Cable Landing Area crosshatched in red on Figure 2-Project Area of your transmittal.

Please contact my secretary, Carolyn Ikehara at 768-3001, to schedule a meeting with me and my staff to discuss our concerns.

Should you have any questions, please contact John Reid, Planner at 768-3017.

Sincerely,

Michele K. Nekota
Director

MKN:jr
(755710)

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Ms. Michele K. Nekota
Director
City and County of Honolulu
Department of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, HI 96707

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Ms. Nekota:

Thank you for your letter dated January 31, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward. Per your request, a consultation meeting will be coordinated with your office once the proposed project alignment is determined and additional details are available.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

February 5, 2019

RECEIVED
FEB 07 2019
WILSON OKAMOTO CORPORATION

Mr. Earl Matsukawa, AICP
Wilson Okamoto Corporation
1907 South Beretania Street. Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Environmental Assessment (EA) Pre-Assessment Consultation for Kaka'ako Transpacific Broadband Conduit

In response to your letter dated December 28, 2018, please be advised that Hawaii Gas maintains underground utility gas mains in the project vicinity, which serves commercial customers in the area. We would appreciate your consideration during the project planning and design process to minimize any potential conflicts with the existing gas facilities in the project area.

Thank you for the opportunity to comment on the Environmental Assessment Pre-Assessment Consultation. Should there be any questions, or if additional information is desired, please call Kristen Asato 596-1425.

Sincerely,

Hawaii Gas

Keith K. Yamamoto
Manager, Engineering

KKY:krs

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Keith K. Yamamoto
Manager, Engineering
Hawaii Gas
P.O. Box 3000
Honolulu, HI 96802-3000

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kakaʻako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Yamamoto:

Thank you for your letter dated February 5, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward. Per your request, a consultation meeting will be coordinated with your office once the proposed project alignment is determined and additional details are available.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

Hawaiian Telcom
HAWAII'S TECHNOLOGY LEADER

January 17, 2019

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826
Attention: Mr. Earl Matsukawa, Project Manager
broadband@wilsonokamoto.com

Dear Mr. Matsukawa,

Subject: Kaka'ako Transpacific Broadband Conduit

Thank you for allowing Hawaiian Telcom (HT) to provide comments on the proposed Kaka'ako Transpacific Broadband Conduit project. Our comments are as follows:

1. Plan should consider multiple conduits per route. HT recommends a minimum of 4.
2. HT recommends two separate routes into the landing area (see attached map) to allow Transpacific cables diversity options in their designs.
3. Environmental Assessment should extend out to the 3 nautical mile limits of Hawaiian waters.
4. Design of conduit station should consider sea level increases and potential storm surges.
5. Proposed conduits should be designed to connect to existing on-island networks and conduit infrastructure. This allows new Transpacific cables the option of locating their equipment in the State CLS or backhauling their system to another location on island.
6. Diverse paths from the conduit station to Ala Moana Blvd are needed.
7. The area that is required should also include the ocean ground bed that provides grounding of the transpacific cables.
8. Exit point of the HDD conduit path of the transpacific cable seaward must be in an area of minimal ship traffic to eliminate the possibility of damage to the transpacific cable from ship anchors and dredging. EA should include review of ship traffic routes.

If there are any questions on our comments, please call Mr. Brian Masutani at 546-6562 or myself at 546-2534.

Sincerely,

Daniel Masutomi

Daniel Masutomi
Director – Network Optimization & Subsea Engineering
Hawaiian Telcom

Hawaiian Telcom
HAWAII'S TECHNOLOGY LEADER

Conceptual Design for Landing Diversity

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Daniel Masutomi
Director
Network Optimization & Subsea Engineering
Hawaiian Telcom
1177 Bishop Street
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr.Masutomi:

Thank you for your letter dated January 17, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward. Per your request, a consultation meeting will be coordinated with your office once the proposed project alignment is determined and additional details are available.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

From:	Liu, Rouen
To:	Public Comment
Cc:	Kuwaye, Kristen
Subject:	Kaka"ako Transpacific Broadband Conduit pre - Assessment Consultation - Hawaiian Electric Request for review and comment
Date:	Wednesday, February 6, 2019 9:34:40 AM

Dear Mr. Matsukawa,
Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project relocation. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Kaka'ako Transpacific Broadband Conduit project comes to fruition, please continue to keep us informed.
Should there be any questions, please contact me at 543-7245.
Thank you,
Rouen Liu
Permit Engineer
Hawaiian Electric Company

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WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Rouen Liu
Permit Engineer
Hawaiian Electric Company
P.O Box 2750
Honolulu, HI 96840

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr.Liu:

Thank you for your email dated February 6, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

COOL GREEN CLEAN™
Honolulu

Honolulu Seawater Air Conditioning, LLC
1132 Bishop Street, Suite 1470
Honolulu, Hawaii 96813

Tel: 808 531 7922
Fax: 808 531 7925
www.honoluluseawac.com

January 27, 2019

Mr. Earl Matsukawa, AICP
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Via Email: broadband@wilsonokamoto.com

Re: Environmental Assessment Pre-Assessment Consultation for
Kaka'ako Transpacific Broadband Conduit
Tax Map Keys (TMK): [1] 2-1-015:052 and 2-1-060-009, and 008
Honolulu, O'ahu, Hawai'i

Dear Mr. Matsukawa,

Thank you for inviting written comments from Honolulu Seawater Air Conditioning, LLC (HSWAC) for the proposed Kaka'ako Transpacific Broadband Conduit (KTBC) Environmental Assessment (EA) Pre-Assessment Consultation.

HSWAC supports initiatives to improve adaptation and expanded use of technology in Hawaii which in the case of the KTBC is accomplished by expanding the rapid and secure transmission and exchange of data for future development of regional and local content and applications.

We understand the project is in its infancy and design has not progressed beyond largely conceptual considerations, so continued coordination with HSWAC would be essential to avoid conflicts between the two projects, both in the ground and between construction crews, to the extent construction schedules coincide.

As currently designed, the HSWAC shore landing and micro tunneling appears to coincide with the envisioned KTBC shore landing and horizontal directional drilling in the Ewa portion of the Kaka'ako Waterfront Park. At the appropriate time, HSWAC representatives should meet with the designers of the KTBC project to ensure the KTBC design does not conflict with the HSWAC design. Note the HSWAC design has been approved by several agencies.

Sincerely,

Frederic Berg

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Frederic Berg
Sea Water Air Conditioning
1132 Bishop Street, Suite 1410
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kakaʻako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Berg:

Thank you for your letter dated January 27, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward. Per your request, a consultation meeting will be coordinated with your office once the proposed project alignment is determined and additional details are available.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1900.3

JAN 24 2019

RECEIVED
JAN 25 2019
WILSON OKAMOTO CORPORATION

Mr. Earl Matsukawa, Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

Subject: Environmental Assessment Pre-Assessment Consultation for HRS Chapter 343 Kakaako Transpacific Broadband Conduit
TMK: (1) 2-1-015:052 and 2-1-060-009, and 008
Honolulu, Hawaii

Thank you for the opportunity to provide comments for the subject project. The proposed project does not impact any Department of Accounting and General Services' existing facilities in the area, and we have no comments to offer at this time.

If you have any questions, your staff may call Mr. Dennis Chen of the Public Works Division at 586-0491, or at dennis.yk.chen@hawaii.gov.

Sincerely,

CURT T. OTAGURO
Comptroller

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Curt T. Otaguro
Comptroller
State of Hawai‘i
Department of Accounting and General Services
1132 Bishop Street, Suite 1410
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr.Berg:

Thank you for your letter dated January 24, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

We acknowledge that the Department of Accounting and General Services does not have any comments at this time.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

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

January 29, 2019

Wilson Okamoto Corporation
Attn: Mr. Earl Matsukawa, Project Manager
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

via email: broadband@wilsonokamoto.com

Dear Mr. Matsukawa:

SUBJECT: Environmental Assessment (EA) Pre-Assessment Consultation for **Kaka'ako Transpacific Broadband Conduit** located in Honolulu, Island of Oahu; TMK: (1) 2-1-015:052 and 2-1-060:008, and 009

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division and (b) Land Division – Oahu District on the subject matter. Should you have any questions, please feel free to call Barbara Lee at (808) 587-0453. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION
2019 JAN 16 AM 10:

DEPT. OF LAND & NATURAL RESOURCES
STATE 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

'19 JAN 07 AM 11:19 ENGINEERING

January 03, 2019

MEMORANDUM

FROM

TO:

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 Pre-Assessment Consultation for Kaka`ako Transpacific Broadband Conduit
LOCATION: Honolulu, Island of Oahu; TMK: (1) 2-1-015:052 and 2-1-060:008 & -009
APPLICANT: Wilson-Okamoto Corp. for *Hawai`i Community Development Corporation*

Transmitted for your review and comment is information on the above-referenced project. Please do not fax or email any comments to Wilson Okamoto Corporation as described in their enclosed memo. Instead, please use this memo form to respond so that we may compile all comments received and submit them together on behalf of DLNR, as required.

Please submit your comments directly to Land Division by **January 24, 2019.** If no response is received by this date, we will assume your division or office has no comments. Should you have any questions, please contact Barbara Lee at 587-0453. Thank you.

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed: _____

Print Name: Carty S. Chang, Chief Engineer
Date: 1/15/19

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Environmental Assessment Pre-Assessment Consultation for Kaka'ako Transpacific Broadband Conduit, Honolulu, Island of Oahu;TMK: (1) 2-1-015:052 and 2-1-060:008 & 009

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 Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency 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 their local Department/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: 1/15/19

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

January 03, 2019

MEMORANDUM

TO: **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

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Environmental Assessment Pre-Assessment Consultation for Kaka`ako Transpacific Broadband Conduit
LOCATION: Honolulu, Island of Oahu; TMK: (1) 2-1-015:052 and 2-1-060:008 & -009
APPLICANT: Wilson-Okamoto Corp. for *Hawai`i Community Development Corporation*

Transmitted for your review and comment is information on the above-referenced project. Please do not fax or email any comments to Wilson Okamoto Corporation as described in their enclosed memo. Instead, please use this memo form to respond so that we may compile all comments received and submit them together on behalf of DLNR, as required.

Please submit your comments directly to Land Division by **January 24, 2019.** If no response is received by this date, we will assume your division or office has no comments. Should you have any questions, please contact Barbara Lee at 587-0453. Thank you.

Any improvements on (submerged) lands under the Land Board jurisdiction needs a land disposition from the Board.

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: Darlene Bryant-Takamatsu

Print Name: Darlene Bryant-Takamatsu
Date: 1/7/19

Attachments
cc: Central Files

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Russell Y. Tsuji
Land Administrator
State of Hawai‘i
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr.Tsuji:

Thank you for your letter dated January 29, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DAVID Y. IGE
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File: HEER Office

January 23, 2019

2019-041MGC

RECEIVED
JAN 28 2019
WILSON OKAMOTO CORPORATION

Wilson Okamonto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826
Atten: Mr. Earl Matsukawa

Facility Site: Kakaako Transpacific Broadband Conduit
Tax Map Keys (TMK): (1) 2-1-015:052 and 2-1-060-009 and 008

Subject: Review of Environmental Site Assessment (EA) Pre-Assessment Consultation for Kakaako Transpacific Broadband Conduit

Dear Mr. Matsukawa,

The State of Hawaii, Department of Health (HDOH), Hazard Evaluation and emergency Response (HEER) Office reviewed the Pre-Assessment Consultation report submitted by Wilson Okamoto Corporation received in our office January 10, 2019. This pre-assessment consultation report is submitted in preparation for the Draft Environmental Site Assessment for Kakaako Transpacific Broadband Conduit.

The HEER office has overseen several investigations pertaining to soil and groundwater contamination in the Kakaako Makai District project area for the past several years. Results of these previous investigations indicated elevated levels of contaminants as a result of previous activities conducted at the site. Based on historical information about various operations and the results of several investigations to date, the HDOH recommends that, in the absence of the specific local data that shows area to be clean, all soils in the Kakaako area be managed assuming they are contaminated and may pose hazards to construction workers.

Based on the proposed location of the shore-landing conduit, the conduit station, and crossing the drainage canal, it is possible to potentially disrupt the cap and encounter the contaminated refuse material, and the existing burial pit next to Cancer Center where soil contaminated with PCB, DDT, Dieldrin and lead were buried as part of the Soil Management Plan for JABSOM. To prepare a basis to properly manage these contaminated soil, the HDOH requests that Hawaii Community Development Authority (HCDA) submit the Pre-Construction Environmental Hazard Management Plan (EHMP) that will describe proposed construction activities (e.g. drilling, trenching, excavation, stockpiling, pile caps, grading) and precautionary measures and practices to be implemented to prevent exposure and ensure safety of workers. EHMP should also include procedure for groundwater handling and disposal if groundwater is encountered during construction. It should also address proper disposal of contaminated soil.

In this regard, the HEER Office recommends that you select an environmental consultant familiar with our office procedures and guidance. EHMP should be submitted to HEER Office for review and approval before the start of any construction activities.

Please feel free to email me at melody.calisay@doh.hawaii.gov or give me a call at 808-586-7577 if you have further questions.

Sincerely,

mgcalisay

Melody Calisay, Ph.D.
Project Manager
HEER Office-HDOH

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Ms. Melody Calisay, Ph.D.
Project Manager
State of Hawai‘i
Department of Health – HEER Office
P.O. Box 3378
Honolulu, HI 96801

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Ms. Calisay:

Thank you for your letter dated January 23, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

It is our understanding that the HEER Office has overseen several investigations pertaining to soil and groundwater contamination in the project area for the past several years. We acknowledge that HDOH recommends that all soils in the area be managed assuming they are contaminated and may pose hazards to construction workers.

The contractor will submit a Pre-Construction Environmental Hazard Management Plan (EHMP) that will describe the proposed construction activities and precautionary measures and practices to be implemented to prevent exposure and ensure safety of workers prior to construction of the proposed project.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

OFFICE OF PLANNING
STATE OF HAWAII

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

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
PLANNING PROGRAM ADMINISTRATOR II
OFFICE OF PLANNING

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

DTS201901231119NA

January 24, 2019

Mr. Earl Matsukawa, Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

RECEIVED
JAN 25 2019
WILSON OKAMOTO CORPORATION

Dear Mr. Matsukawa

Subject: Environmental Assessment Pre-Assessment Consultation for Kaka'ako Transpacific Broadband Conduit, Honolulu, Oahu, Hawaii; Tax Map Key: (1) 2-1-015: 052, and 2-1-060: 008 and 009

The Office of Planning (OP) is in receipt of your Environmental Assessment (EA) pre-assessment consultation request, received December 31, 2018, for the proposed Kaka'ako Transpacific Broadband Conduit.

According to your request, the Hawaii Community Development Authority (HCDA) is proposing to construct a new Broadband Conduit in Kaka'ako Makai, Urban Honolulu. The purpose of the proposed broadband conduit is to facilitate the future expansion of the State of Hawaii broadband infrastructure to meet existing and future data needs, and to catalyze the development of the high-tech industry within the urban core of Honolulu.

The proposed broadband conduit project consists of a shore-landing conduit housing, which would accommodate multiple conduit landings, and a conduit station connected by a dryline. The shore-landing conduit will be located within the Kaka'ako Waterfront Park, and the conduit station will be situated on either Lot C (Tax Map Key 2-1-015: 052) or the University of Hawaii John A. Burns School of Medicine campus. Horizontal directional drilling will be used to land the transpacific cable in the Kaka'ako Waterfront Park, and construct the shore-landing conduit. A construction area will be required for the drilling rig, drill pipe, drilling mud mixing, spoils handling, material storage, and pipe layout.

The proposed project will involve the use of state lands and funds, which triggers the requirements of Hawaii Revised Statutes (HRS) Chapter 343.

The OP has reviewed the subject review request and has the following comments to offer:

1. The Hawaii State Planning Act, HRS Chapter 226, provides goals, objectives, policies, and priority guidelines for growth, development, and the allocation of resources throughout the state in areas of state interest. The subject EA should discuss the compatibility of the proposed development with the objectives and

policies, and priority guidelines listed in HRS Chapter 226.

2. The Hawaii Coastal Zone Management (CZM) Act, HRS Chapter 205A, requires all state and county agencies to enforce the CZM objectives and policies. The subject EA should include an assessment as to how the proposed development conforms to CZM objectives and supporting policies set forth in HRS § 205A-2, as amended. 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. Kaka'ako Waterfront Park was once a landfill site until the 1960s. Horizontal directional drilling for installation of the pipes and conduits may create a pathway for hazardous substances to enter the environment. The subject EA should provide an assessment for topography, geology and soils about the potential environmental consequences of the hazardous waste contained in the former landfill. The OP suggests that the State Department of Health, Hazard Evaluation and Emergency Response Office be consulted as to whether an environmental hazard management plan shall be prepared to prevent landfill waste from adversely affecting the environment and posing a risk to human health.

4. The EA should provide an assessment on potential cumulative impacts resulting from the proposed broadband conduit project. Please note that the Entrepreneur's Sandbox on Lot C is under construction, and the Honolulu Seawater Air Conditioning Project in the Kaka'ako makai area is likely to commence its construction in late 2019.

5. Sea level rise from climate change will increase the risk of flooding, storm surges, and coastal erosion. The OP suggests that the subject EA refer to the findings of the Hawaii Sea Level Rise Vulnerability and Adaptation Report 2017, accepted by the Hawaii Climate Change Mitigation and Adaptation Commission. The Report, and Hawaii Sea Level Rise Viewer at http://climateadaptation.hawaii.gov/ particularly identifies 3.2-foot sea level rise exposure areas across the main Hawaiian Islands including Oahu, which is anticipated to occur in the mid to latter half of the 21st century. The EA may consider the site-specific mitigation measures to respond to the sea level rise impacts on the proposed project.

6. The EA should assess potential impacts of the proposed drilling activities on the adjacent drainage channel and water quality, and discuss mitigation measures to prevent any runoff, sediment, soil and debris resulting from the proposed construction, including excavation, grading and staging, from adversely impacting the

coastal ecosystem and the State waters as specified in Hawaii Administrative Rules (HAR) Chapter 11-54.

OP's Stormwater Impact Assessments, a document for Hawaii's environmental review process, could help the proposed project to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff occurrences. Mitigation measures listed in this document can be applied to water runoff strategies to protect coastal ecosystems.

The document is available at http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_stormwater_impact_assessments_guidance.pdf

7. The proposed project is located within the makai area of Kaka'ako Community Development District (CDD). Pursuant to HRS § 206E-8.5, all requests for developments within a special management area (SMA) and shoreline setback variances for developments within a CDD, for which a community development plan has been developed and approved in accordance with HRS § 206E-5, shall be submitted to and reviewed by the OP, the lead agency as defined in HRS Chapter 205A. Please consult with the OP and refer to HAR Chapter 15-150 for the requirements of SMA use and shoreline setbacks.

If you have any questions regarding this comment letter, please contact Shichao Li of our office at (808) 587-2841.

Sincerely,

Leo R. Asuncion
Planning Program Administrator II

c: Mr. Mike McCartney, Director
Department of Business, Economic Development and Tourism

WILSON OKAMOTO
CORPORATION
INNOVATORS • PLANNERS • ENGINEERS

10380-01
May 8, 2019

Mr. Leo R. Asuncion
Planning Program Administrator II
State of Hawai‘i
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kaka‘ako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, O‘ahu, Hawai‘i

Dear Mr. Asuncion:

Thank you for your letter dated January 24, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

In Reply Refer To:
01EPIF00-2019-TA-0155

February 13, 2019

Mr. Earl Matsukawa
Project Manager
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai‘i 96826

Subject: Response to your Request for Technical Assistance Regarding the Kaka‘ako Transpacific Broadband Conduit

Dear Mr. Matsukawa,

Thank you for your recent correspondence requesting technical assistance on species biology, habitat, or life requisite requirements. The Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) appreciates your efforts to avoid or minimize effects to protected species associated with your proposed actions. We provide the following information for your consideration under the authorities of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq*.), as amended.

Due to significant workload constraints, PIFWO is currently unable to specifically address your information request. The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area, in the ‘**Occurs In or Near Project Area’** column. Please note this list is not comprehensive and should only be used for general guidance. We have added to the PIFWO website, located at https://www.fws.gov/pacificislands/promo.cfm?id=177175840 recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality.

If you are representing a federal action agency, please use the official species list on our web-site for your section 7 consultation. You can find out if your project occurs in or near designated critical habitat here: https://ecos.fws.gov/ipac/.

Under section 7 of the ESA, it is the Federal agency’s (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project “may affect” federally listed species or designated critical habitat. A “may affect, not likely to adversely affect” determination is appropriate when effects to federally listed species are expected to be

discountable (*i.e.*, unlikely to occur), insignificant (minimal in size), or completely beneficial. This conclusion requires written concurrence from the Service. If a "may affect, likely to adversely affect" determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have "no effect" on federally listed species and/or critical habitat do not require additional coordination or consultation.

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a "may affect, not likely to adversely affect" determination for your project. If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats, and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve endangered species. We regret that we cannot provide you with more specific protected species information for your project site. If you have questions that are not answered by the information on our website, you can contact PIFWO at (808) 792-9400 and ask to speak to the lead biologist for the island where your project is located.

Sincerely,

Island Team Manager
Pacific Islands Fish and Wildlife Office

The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. For your guidance, we‘ve marked species that may occur in the vicinity of your project, this list is not comprehensive and should only be used for general guidance.

Scientific Name	**Common Name / Hawaiian Name**	**Federal Status**	**May Occur In Project Area**
Mammals			
Lasiurus cinereus semotus	Hawaiian hoary bat/ ‘ōpe‘ape‘a	E	☒
Reptiles			
Chelonia mydas	Green sea turtle/honu - Central North Pacific DPS	T	☐
Erectmochelys imbricata	Hawksbill sea turtle/ Honu ‘ea	E	☐
Birds			
Anas wyvilliana	Hawaiian duck/ koloa	E	☐
Branta sandvicensis	Hawaiian goose/ nēnē	E	☐
Fulica alai	Hawaiian coot/ ‘alae kea	E	☐
Gallinula galeata sandvicensis	Hawaiian gallinule/ ‘alae ‘ula	E	☐
Himantopus mexicanus knudseni	Hawaiian stilt/ Ae‘o	E	☒
Oceanodroma castro	Band-rumped storm-petrel/ ‘akē‘akē	E	☒
Pterodroma sandwichensis	Hawaiian petrel/ ‘ua‘u	E	☒
Puffinus auricularis newelli	Newell’s shearwater/ ‘a‘o	T	☒
Ardenna pacificus	Wedge-tailed Shearwater/ ‘ua‘u kani	MBTA	☒
Gygis alba	White Tern/ manu-o-kū	MBTA	☒
Buteo solitarius	Hawaiian hawk/ ‘io	E	☐
Insects			
Manduca blackburni	Blackburn’s sphinx moth	E	☐
Megalagrion pacificum	Pacific Hawaiian Damselfly	E	☐
M. xanthomelas	Orangeblack Hawaiian Damselfly	E	☐
M. nigrohamatum nigrolineatum	Blackline Hawaiian Damselfly	E	☐

Plants				
Scientific Name	**Common Name or Hawaiian Name**	**Federal Status**	**Locations**	**May Occur In Project Area**
Abutilon menziesii	Koʻoloaʻula	E	O, L, M, H	☐
Achyranthes splendens var. *rotundata*	ʻEwa hinahina	E	O	☐
Bonamia menziesii	No common name	E	K, O, L, M, H	☐
Canavalia pubescens	ʻĀwikiwiki	E	Ni, K, L, M	☐
Colubrina oppositifolia	Kauila	E	O, M, H	☐
Cyperus trachysanthos	Puʻukaʻa	E	K, O	☐
Gouania hillebrandii	No common name	E	Mo, M	☐
Hibiscus brackenridgei	Maʻo hau hele	E	O, Mo, L, M, H	☐
Ischaemum byrone	Hilo ischaemum	E	K, O, Mo, M, H	☐
Isodendrion pyrifolium	Wahine noho kula	E	O, H	☐
Marsilea villosa	ʻIhiʻihi	E	Ni, O, Mo	☐
Mezoneuron kavaiense	Uhiuhi	E	O, H	☐
Nothocestrum breviflorum	ʻAiea	E	H	☐
Panicum fauriei var. *carteri*	Carter's panicgrass	E	Molokini Islet (O), Mo	☐
Panicum niihauense	Lauʻehu	E	K	☐
Peucedanum sandwicense	Makou	E	K, O, Mo, M	☐
Pleomele (Chrysodracon) hawaiiensis	Halapepe	E	H	☐
Portulaca sclerocarpa	ʻIhi	E	L, H	☐
Portulaca villosa	ʻIhi	E	Le, Ka, Ni, O, Mo, M, L, H, Nihoa	☐
Pritchardia affinis (maideniana)	Loulu	E	H	☐
Pseudognaphalium sandwicensium var. *molokaiense*	ʻEnaʻena	E	Mo, M	☐
Scaevola coriacea	Dwarf naupaka	E	Mo, M	☐
Schenkia (*Centaurium*) *sebaeoides*	ʻĀwiwi	E	K, O, Mo, L, M	☐
Sesbania tomentosa	ʻŌhai	E	Ni, Ka, K, O, Mo, M, L, H, Necker, Nihoa	☐
Tetramolopium rockii	No common name	T	Mo	☐
Vigna o-wahuensis	No common name	E	Mo, M, L, H, Ka	☐

Location key: O=Oʻahu, K=Kauaʻi, M=Maui, H=Hawaiʻi Island, L=Lānaʻi, Mo=Molokaʻi, Ka=Kahoʻolawe, Ni=Niʻihau, Le=Lehua

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10380-01
May 8, 2019

Mr. Aaron Nadig
Island Team Manager
United States Department of Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kakaʻako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Nadig:

Thank you for your letter dated February 13, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation.

The scope of your comments is acknowledged and will be incorporated into the EA process moving forward.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

DEPARTMENT OF THE ARMY
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

April 4, 2019

SUBJECT: Request for Comments, EA Kaka'ako Transpacific Broadband Conduit, Honolulu, Hawaii, DA File No. POH-2019-00032

Wilson Okamoto Corperation
Attention: Mr. Earl Matsukawa
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Matsukawa:

The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Branch has received your request dated December 28, 2018 for a comments concerning the Environmental Assessment for the Kaka'ako Transpacific Broadband Conduit located in Honolulu, Island of Oahu, Hawaii. Your request has been assigned DA file number POH-2019-00032. Please reference this number in all future correspondence with our office relating to this action.

Based on the description in your letter, it appears that there may be waters of the United States (U.S.) on the project site that are subject to our federal permitting authority pursuant to Section 404 of the Clean Water Act (CWA) of 1972 (33 USC 1344) and Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S.C. 403). Section 404 of the CWA prohibits the placement of dredged or fill material into waters of the U.S., including wetlands, unless the work has been authorized by a DA permit. Under Section 10 of the RHA, a Department of the Army (DA) permit is required for work or structures in or affecting navigable waters of the U.S. Prior to finalizing your development plans and initiating work, we recommend you conduct a delineation of all aquatic resources that occur on the project site, including, but not limited to: rivers, streams, wetlands, ponds, lakes, and other similar drainage features. The aquatic delineation report and a request for a jurisdictional determination should be submitted to our office for review to determine if the project site contains waters of the U.S. Additional information about jurisdictional delineations and determinations, including a JD Request Form, can be found on our website.

Please be advised that if the project site contains waters of the U.S. and your proposed action cannot avoid impacting waters of the U.S., you will need to contact our office to determine if your activities are regulated and therefore, require prior DA authorization. Before authorizing work under our statutory authorities, the Corps must ensure a project complies with applicable Federal laws and regulations, such as the

Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Section 401 of the Clean Water Act, Coastal Zone Management Act, and the National Historic Preservation Act. In most instances, the Corps will coordinate directly with the appropriate agencies, but we may require additional information from the applicant to complete the coordination and consultation. To learn more about our Regulatory Program and application process, you may visit our website at https://www.poh.usace.army.mil/Missions/Regulatory or request a pre-application consultation meeting by emailing me or our main office at CEPOH-RO@usace.army.mil.

Thank you for your cooperation with the Honolulu District Regulatory Program. If you have any questions related to this determination, please contact me at (808) 835-4056 or via e-mail at albert.p.williams@usace.army.mil. You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. For additional information about our Regulatory Program, please visit our web site at http://www.poh.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Albert P. Williams
Regulatory Specialist

WILSON OKAMOTO
CORPORATION
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10380-01
May 8, 2019

Mr. Albert P. Willliams
Regulatory Specialist
Department of Army
U.S. Army Corps of Engineers
Honolulu District
Fort Shafter, HI 96858

Subject: Environmental Assessment (EA) Pre-Assessment Consultation
Kakaʻako Transpacific Broadband Conduit
Tax Map Keys (TMK): 2-1-015:052 and 2-1-060:009 and 008
Honolulu, Oʻahu, Hawaiʻi

Dear Mr. Williams:

Thank you for your letter dated April 4, 2019 regarding the subject Environmental Assessment (EA) Pre-Assessment Consultation. The following is offered in response to your comments:

The subject proposed project will not involve any work within the waters of the United States. No direct impacts to waters of the United States within the project corridor are anticipated either. Once further project plans/documentation are available, the U.S. Army Corps of Engineers will be engaged/consulted.

Your letter, along with this response, will be reproduced and included in the forthcoming Draft EA.

We appreciate your participation in the EA Pre-Assessment Consultation review process.

Sincerely,

Keola Cheng,
Project Manager

cc:
Amy Mutart, HCDA

Kakaʻako Transpacific Broadband Conduit
Final Environmental Assessment

Wilson Okamoto Corporation

Engineers & Planners
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826