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

MARK YONAMINE, P.E.
DIRECTOR

HAKU MILLES, P.E.
DEPUTY DIRECTOR

803321

February 12, 2020

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

Dear Mr. Kawaoka:

Subject: Chapter 343, Hawaii Revised Statutes (HRS) Draft Environmental Assessment (EA) for the City and County of Honolulu Emergency Operations Center
Tax Map Key (TMK): (1) 2-1-042: 013 (portion)
Honolulu, Oahu, Hawaii

With this letter, the City and County of Honolulu, Department of Design and Construction hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFNSI) for the City and County of Honolulu Emergency Operations Center project situated at TMK: (1) 2-1-042: 013 (portion), in the Honolulu district on the Island of Oahu for publication in the February 23, 2020 edition of *The Environmental Notice*.

Enclosed is a completed Office of Environmental Quality Control (OEQC) publication form, one (1) hard copy of the DEA-AFNSI, and one (1) CD containing three (3) PDF copies of the DEA-AFNSI. Simultaneous with this letter, we have submitted the summary of the action in a MS Word file and distribution list for review by email to OEQC.

If there are any questions, please contact John Condrey, Project Manager of the Facilities Division at 768-8468, or our consultant from G70, Mark Kawika McKeague at 523-5866 or by email at HonoluluEOC@g70.design.

Sincerely,

For Mark Yonamine, P.E.
Director

MY:ln

Enclosures:

(1) OEQC Publication Form
(2) One (1) hard copy of the DEA-AFNSI
(3) One (1) CD

From: webmaster@hawaii.gov
To: HI Office of Environmental Quality Control
Subject: New online submission for The Environmental Notice
Date: Thursday, February 13, 2020 4:11:21 PM

Action Name

City and County of Honolulu Emergency Operations Center

Type of Document/Determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Honolulu, Oʻahu

Tax Map Key(s) (TMK(s))

(1) 2-1-042:013 (portion)

Action type

Agency

Other required permits and approvals

Hawaiʻi Capital Special District Permit - Major; Waiver Permit; Historic Preservation Review under HRS 6E-8; various building, grading, water connection, noise, and plan review permits for construction of the proposed building

Proposing/determining agency

City and County of Honolulu Department of Design and Construction (DDC)

Agency contact name

John Condrey

Agency contact email (for info about the action)

HonoluluEOC@g70.design

Email address or URL for receiving comments

HonoluluEOC@g70.design

Agency contact phone

(808) 768-8486

Agency address

650 South King Street
11th Floor
Honolulu, Hawaii 96813
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

G70

Consultant contact name

Mark Kawika McKeague

Consultant contact email

HonoluluEOC@g70.design

Consultant contact phone

(661) 993-9694

Consultant address

111 S. King Street
Suite 170
Honolulu, Hawaii 96813
United States
Map It

Action summary

The City and County of Honolulu DDC is proposing to construct a new Emergency Operations Center (EOC) on City property in Honolulu, Oʻahu. The EOC is a critical facility that serves as a centralized control center where public safety, emergency response, and support agencies can plan, prepare and respond to a wide variety of hazard events. The new facility will support the Department of Emergency Management (DEM) and the Office of Climate Change, Sustainability and Resiliency (CCSR) by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. Currently, EOC operations are situated in the basement level of the Frank F. Fasi Municipal Building, which lacks adequate space when activated. The new EOC will provide the adequate operational space needed to accommodate all required personnel during EOC activation.

Reasons supporting determination

See Chapter 6.2 of the Draft EA-AFNSI.

Attached documents (signed agency letter & EA/EIS)

- CCH-EOC-Draft-EA_G70-02132020.pdf
- CCH-EOC_Request-for-Publication-Letter-signed.pdf

Action location map

- Honolulu-EOC-Project-Area.zip

Authorized individual

Noelle Besa Wright

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

Emergency Operations Center

DRAFT ENVIRONMENTAL ASSESSMENT

HONOLULU, KONA DISTRICT, ISLAND OF O'AHU
TMK 2-1-042: 013

APPLICANT:

**DEPARTMENT OF DESIGN
AND CONSTRUCTION HONOLULU**

PREPARED BY:

G70

FEBRUARY 2020

DEPARTMENT OF DESIGN AND CONSTRUCTION
HONOLULU EMERGENCY OPERATIONS CENTER

Honolulu, Kona District, Island of O‘ahu, Hawai‘i

TMK 2-1-042: 013

Draft Environmental Assessment

Applicant:

Honolulu Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, Hawai‘i 96813-3078

Approving Agency:

City and County of Honolulu
Department of Design and Construction, 11th Floor
650 South King Street
Honolulu, Hawai‘i 96813

Prepared By:

G70
111 S. King Street, Suite 170
Honolulu, Hawai‘i 96813

This environmental document is prepared pursuant to 343, Hawai‘i Revised Statutes and Chapter 200.1 of Title 11, Administrative Rules, Department of Health, Environmental Impact Statement Rules.

FEBRUARY 2020

Table of Contents

Section **Page**

List of Figures iii
List of Tables iv
List of Appendices iv
Abbreviations v

1.0 Introduction

1.1 Project Information Summary 1-1
1.2 Purpose of the Environmental Assessment 1-2
1.3 Agencies, Organizations and Individuals Contacted in Pre-Consultation 1-3

2.0 General Description of the Proposed Action

2.1 Location and Land Use 2-1
2.2 Purpose of the Project 2-3
2.3 Project Scope 2-5
2.3.1 Background of the Project 2-5
2.3.2 Project Description 2-5
2.3.3 Program Description 2-6
2.4 Project Phasing and Cost 2-11

3.0 Environmental Setting, Potential Impacts, and Mitigation Measures

3.1 Climate 3-1
3.2 Topography and Soils 3-1
3.3 Drainage and Water Quality 3-2
3.4 Flora and Fauna 3-10
3.5 Natural & Manmade Hazards 3-14
3.6 Archaeological and Historical Resources 3-23
3.7 Cultural Resources and Practices 3-27
3.8 Socio-Economic Characteristics 3-27
3.9 Visual Resources 3-29
3.10 Utilities 3-34
3.11 Roadways, Access and Traffic Conditions 3-40
3.12 Air Quality and Noise 3-42
3.13 Public Services and Facilities 3-45
3.14 Potential Cumulative and Secondary Impacts 3-48

4.0 Alternatives to the Proposed Action

4.1 Alternative A – No Action 4-1
4.2 Alternative B – Alternative EOC Configurations Operations Center 4-1
4.3 Alternative Locations 4-2
4.4 Preferred Alternative/Proposed Action 4-2

5.0 Conformance with Plans, Required Permits, and Approvals

5.1 Americans with Disabilities Act of 1991 5-1
5.2 Hawai‘i 2050 Sustainability Plan Hawai‘i State Plan 5-1
5.3 Hawai‘i State Plan 5-2
5.4 Hawai‘i State Land Use District Guidelines 5-25
5.5 Hawai‘i Coastal Zone Management Program 5-26
5.6 Hawai‘i Multi-Hazard Mitigation Plan 5-27
5.7 City and County of Honolulu General Plan 5-28
5.8 City and County of Honolulu Land Use Ordinance 5-31
5.9 City and County of Honolulu Primary Urban Center Development Plan 5-31
5.10 City and County of Honolulu Hawai‘i Capital Special District 5-33
5.11 Hawai‘i State Capital Master Plan 5-34
5.12 City and County of Honolulu Special Management Area Guidelines 5-35
5.13 City and County of Honolulu City and County of Honolulu Multi-Hazard Pre-Disaster Mitigation Plan 5-35
5.14 Ola: O‘ahu Resilience Strategy 5-36
5.15 Required Permits and Approvals 5-37

6.0 Findings and Reasons Supporting Anticipated Determination

6.1 Anticipated Determination 6-1
6.2 Reasons Supporting the Anticipated Determination 6-1
6.3 Summary 6-4

7.0 Agencies, Organizations and Individuals Receiving Copies of the EA

8.0 References

List of Figures

Figure **Page**

1.1 Project Location and Tax Key Map....1-3
1.2 State Land Use District Classification....1-4
1.3 City and County of Honolulu Zoning District Classification....1-5
1.4 City and County of Honolulu Hawai‘i Capital Special District....1-6
1.5 City and County of Honolulu Primary Urban Center (PUC) Development Plan (DP)....1-7
1.6 FEMA Flood Designation and City and County of Honolulu Tsunami Evacuation Zone....1-8
2.1 Ahupua‘a....2-2
2.2 Proposed EOC Site Plan – Ground Floor....2-7
2.3 Proposed EOC Site Plan – Second Floor....2-8
2.4 Proposed EOC Site Plan – Third Floor....2-9
2.5 Proposed EOC Site Plan – Fourth Floor....2-10
3.1 U.S. Department of Agriculture Soil Conservation Service Land Capability Groupings....3-3
3.2 Existing Conditions Plan (G70)....3-5
3.3 UIC Line....3-9
3.4 Concept Site and Utility Plan (G70)....3-11
3.5 Sea Level Rise Exposure Area....3-17
3.6 Seismic Hazards....3-19
3.7 Previous Archaeological Work and Existing Archaeological Monitoring in the Project Area....3-26
3.8 Existing Project Site....3-30
3.9 Map Key for Figures 3.10 through 3.12....3-31
3.10 View from South Hotel Street and Alapa‘i Street Looking South....3-32
3.11 View of the Project Parcel Looking North from Alapa‘i Street and South King Street (Diamond Head side)....3-32
3.12 View of the Project Parcel Looking North from Alapa‘i Street and South King Street (‘Ewa side)....3-33
3.13 View of the Project Parcel Looking North from South Street and South King Street....3-33
3.14 Preliminary Building Section....3-35
3.15 View of the Project Parcel Looking South From Punchbowl Scenic Lookout....3-37

List of Tables

Table **Page**

2.1 Development Program 2-11

3.1 Demographic Information for Urban Honolulu Census Designated Place (CDP), City and County of Honolulu (Island of O‘ahu), and State of Hawai‘i, July 2018 Estimates 3-27

3.2 Board of Water Supply (BWS) Water Demands by Zoning 3-38

5.1 Hawai‘i State Plan – HRS Ch. 226 – Part 1. Overall Theme, Goals, Objectives and Policies 5-2

5.2 Hawai’i Coastal Zone Management Program – HRS Chapter 2015A – Objectives and Policies 5-26

5.3 Required Permits and Approvals 5-37

7.1 Agencies, Organizations and Individuals Receiving Copies of the EA 7-1

Appendices

A. *Biological Inventory for the City and County of Honolulu’s Emergency Operations Center,* G70. October 2019.

B. *Archaeological Monitoring Plan for the Alapa‘i Transit Center and Joint Management Center Project,* Cultural Surveys Hawai‘i, Inc. June 2010.

C. *City and County of Honolulu Emergency Operations Center Traffic Analysis*, Fehr & Peers. December 20, 2019.

Acronyms and Abbreviations

AEC	Alternate Emergency Coordinator
ATC	Alapa‘i Transit Center
ARS	Archaeological Inventory Survey
BMPs	Best Management Practices
City	City and County of Honolulu
CIA	Cultural Impact Assessment
CPHC	Central Pacific Hurricane Center
CZM	Coastal Zone Management
DDC	Department of Design and Construction, City
DEC	Department Emergency Coordinator
DEM	Department of Emergency Management, City
DHS	Department of Homeland Security
DLNR	Department of Land and Natural Resources, State
DMA	Disaster Mitigation Act of 2000
DNL	Day-Night Average Sound Level
DP	Development Plan
DPP	Department of Planning and Permitting, City
DoD	Department of Defense, State
DOH	Department of Health, State
DOT	Department of Transportation, State
DP	Development Plan
DPG	Disaster Preparedness Group
DTS	Department of Transportation Services. City

EA	Environmental Assessment
EAS	Emergency Alert System
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services, City
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Floor Rate Insurance Map
FONSI	Finding of No Significant Impact
GAT	Great Aleutian Tsunami
GHG	Greenhouse gas
HAR	Hawai‘i Administrative Rules
HECO	Hawaiian Electric Company
HEPA	Hawai‘i’s Environmental Protection Act
HFD	Honolulu Fire Department
HI-EMA	Hawai‘i Emergency Management Agency, State
HMP	Hazard Mitigation Plan
HPD	Honolulu Police Department
HRS	Hawai‘i Revised Statutes
IBC	International Building Code
ICAC	Interagency Climate Adaptation Committee
JTMC	Joint Traffic Management Center
LCA	Land Commission Awards
LUO	Land Use Ordinance
Mph	Miles per hour
MSL	Mean Sea Level

NAAQS	National Ambient Air Quality Standards
NIMS	National Incident Management System
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control, State
OHA	Office of Hawaiian Affairs
OMPO	Oahu Metropolitan Planning Organization
PGA	Peak ground acceleration
PTWC	Pacific Tsunami Warning Center
PUC	Primary Urban Center
ROH	Revised Ordinances of Honolulu
SAAQS	Station Ambient Air Quality Standards
SD	Special District
SDC	Seismic Design Category
Sea Grant	UH Sea Grant College Program
sf	Square feet
SHPD	State Historic Preservation Division
SLR	Sea level rise
SLRXA	SLR Exposure Area
SMA	Special Management Area
SOEST	UH School of Ocean and Earth Science and Technology
State	State of Hawaiʻi
SWP	State Warning Point
TMK	Tax Map Key
UH	University of Hawaiʻi
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

WUI	Wildland-urban interface
XTEZ	Extreme Tsunami Evacuation Zone

Chapter 1

Introduction

Chapter 1

Introduction

This Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai‘i Revised Statutes (HRS) and Hawai‘i Administrative Rules (HAR), Title 11, Chapter 200.1, Department of Health, which set requirements for the preparation of environmental assessments.

1.1 Project Information Summary

Type of Document:	Environmental Assessment
Project Name:	City and County of Honolulu Emergency Operations Center
Applicant:	City and County of Honolulu Department Design and Construction, Facilities Division 650 South King Street, 11th Floor Honolulu, HI 96813-3078 Contact: John R. Condrey, AIA, IIDA Telephone: (808) 768-8480
Agent:	G70 111 S. King St., Suite 170 Honolulu, HI 96813 Contact: Mark Kawika McKeague, AICP Telephone: (808) 523-5866
Approving Agency:	City and County of Honolulu Department of Design and Construction
Record Fee Owner	City and County of Honolulu
Ch. 343, HRS Triggers:	Use of County Lands and Funds
Project Location:	710 South King Street Honolulu, HI 96729
Tax Map Keys (TMK) :	TMK: (1) 2-1-042:013 (por.) *(Figure 1.1)*
TMK Area	63,210 square feet
Project Area:	6,535 square feet
State Land Use District:	Urban District (U) *(Figure 1.2)*

City & County of Honolulu	
Zoning	BMX-3, Community Business Mixed Use District (*Figure 1.3*)
Special District	Hawai‘i Capital Special District – Alapa‘i Precinct (*Figure 1.4*)
Development Plan	Primary Urban Center- Institutional *(Figure 1.5)*
Special Management Area (SMA)	Not located in SMA
Flood Zone:	FIRM Zone X *(Figure 1.6)*
Tsunami Zone	Located in the Extreme Tsunami Evacuation Zone *(Figure 1.6)*
Anticipated Determination:	Finding of No Significant Impact (FONSI)

1.2 Purpose of the Environmental Assessment

This Draft Environmental Assessment (EA) will comply with Hawai‘i’s Environmental Review process, Hawai‘i Revised Statutes (HRS), Chapter 343. The use of County land and funds is the trigger for preparation of the EA. The City and County of Honolulu Department Design and Construction (DDC) is the proposing agency. The purpose of the Draft EA is to inform interested parties of the proposed Project, disclose and examine the potential environmental impacts of the Project, and seek agency and public comment on subject areas that should be addressed. The filing and publication of this Draft EA with the Office of Environmental Quality Control (OEQC) will be followed by a 30-day public comment period. All relevant written public comments received during the 30-day public comment period will receive a written response for inclusion and use in the preparation in the project’s forthcoming Final EA.

This Draft EA addresses the construction of a new Emergency Operations Center (EOC) on City and County of Honolulu (City) property in Honolulu, O‘ahu. The new facility will support the Department of Emergency Management (DEM) and the Office of Climate Change, Sustainability and Resiliency (CCSR) by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. Currently, when activated, EOC operations are situated in the basement level of the Frank Fasi Municipal Building. CCSR is located over a mile and a half away at the Kapālama Hale. Both DEM and CCSR will benefit from being in closer proximity by having the ability to share knowledge and resources that will help provide a higher level of support for when the EOC is activated in emergency response situations.

1.3 Agencies, Organizations and Individuals Contacted in Pre-Consultation

A Participant Letter and Early Consultation Handout were sent on October 30, 2019 to initiate the environmental review process. A list of agencies, organizations and individuals, and other parties that were presented notice of the proposed Project or contacted during the early consultation period of this EA is provided in *Chapter 7.0* of this document. Comments received on the Project and response letters are also provided. Additionally, a listing of those agencies that will be provided an opportunity to review this Draft EA is provided in *Chapter 7.0.*

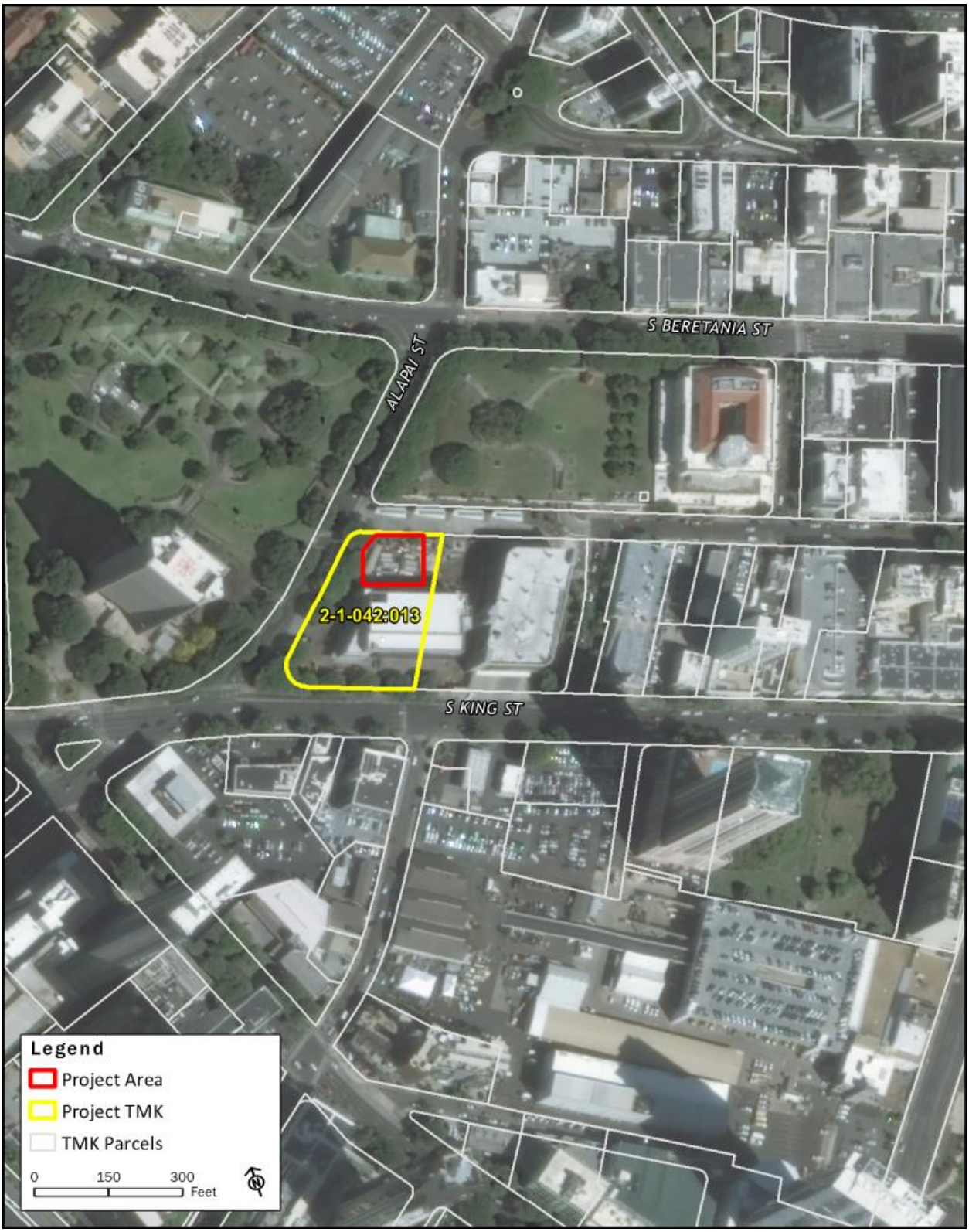


Figure 1.1 **Project Location and Tax Map Key**

Figure 1.2 **State Land Use District Classification**

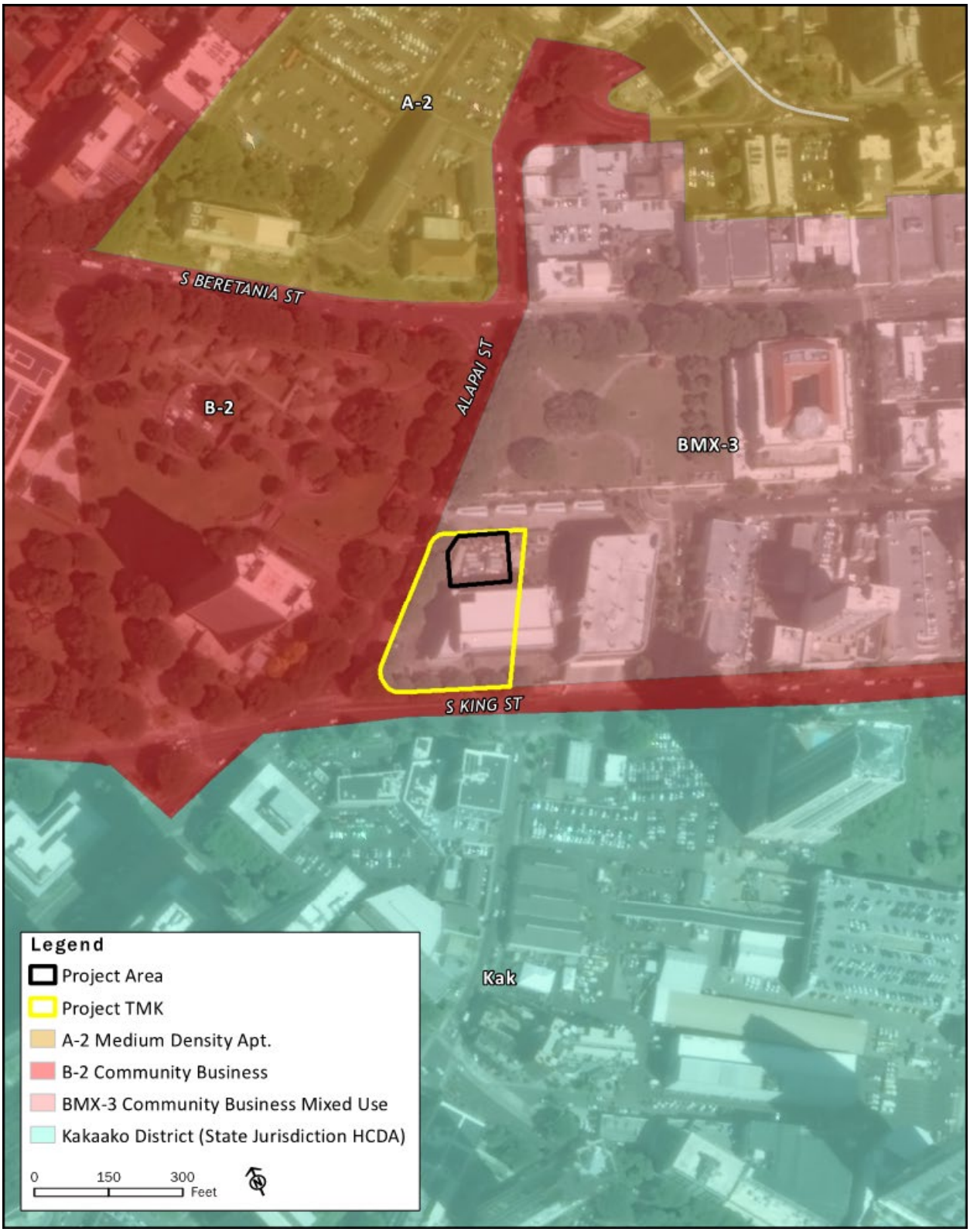


Figure 1.3 **City and County of Honolulu Zoning District Classification**

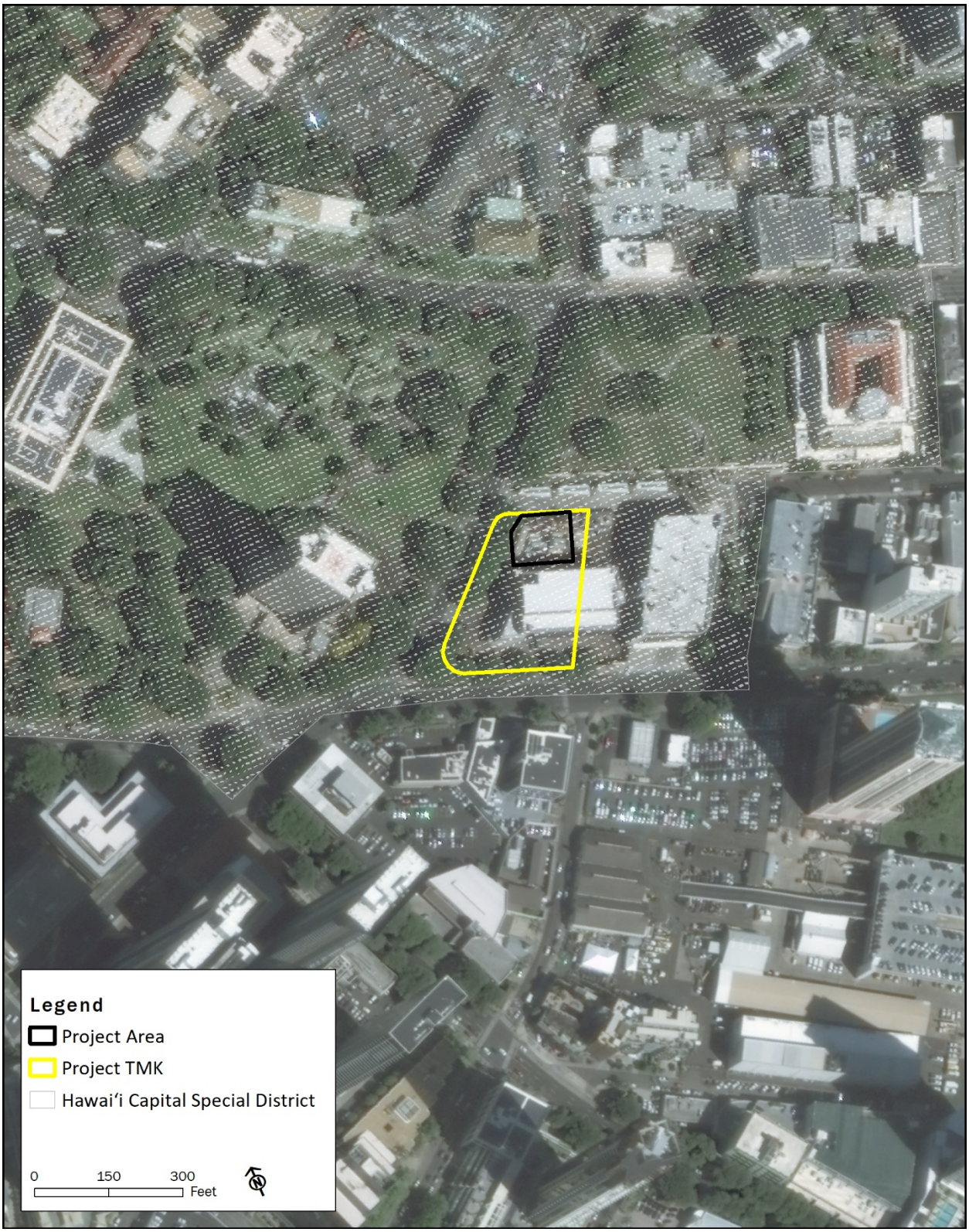


Figure 1.4 **City and County of Honolulu Hawai'i Capital Special District**

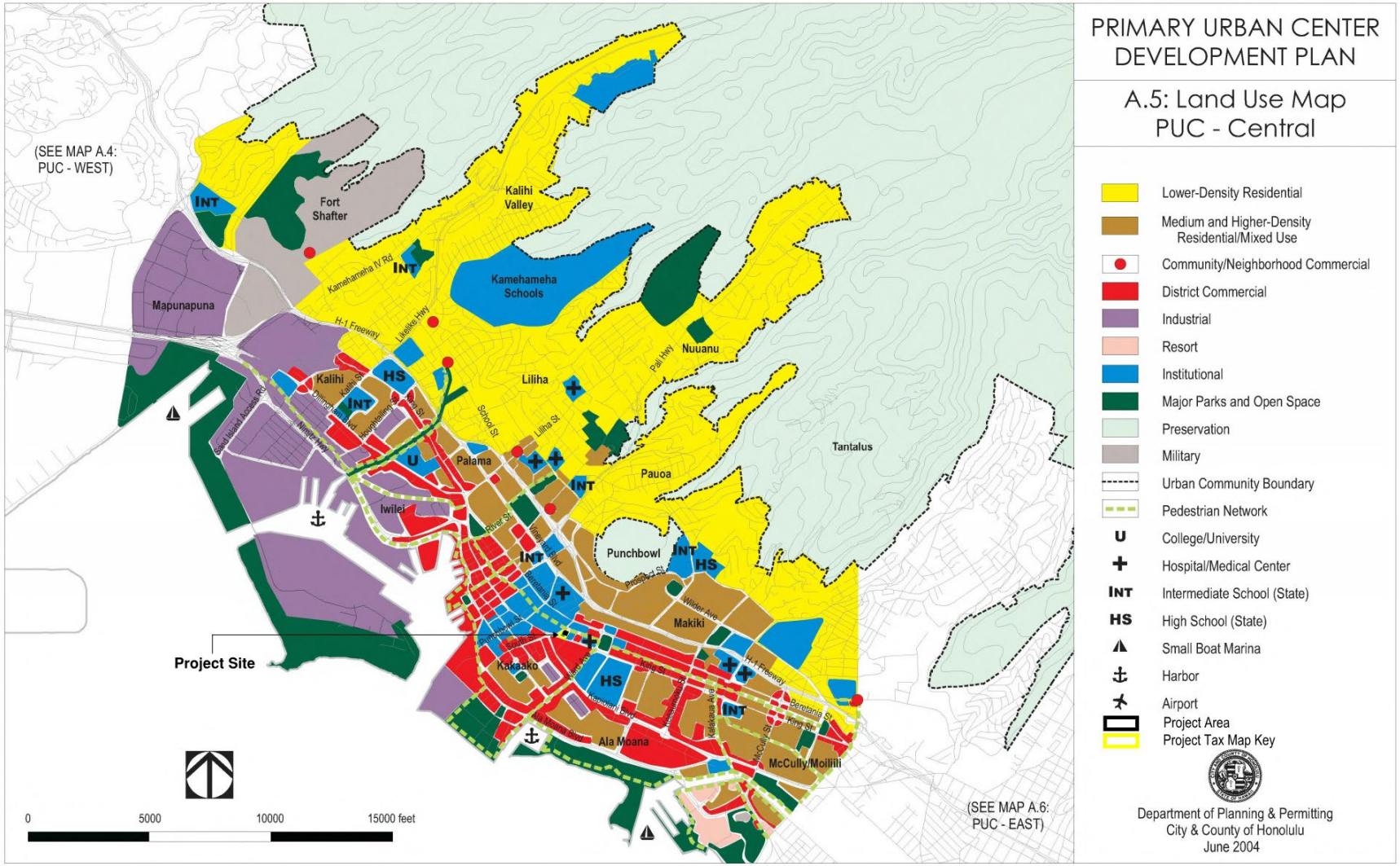


Figure 1.5 **City and County of Honolulu Primary Urban Center (PUC) Development Plan (DP)**

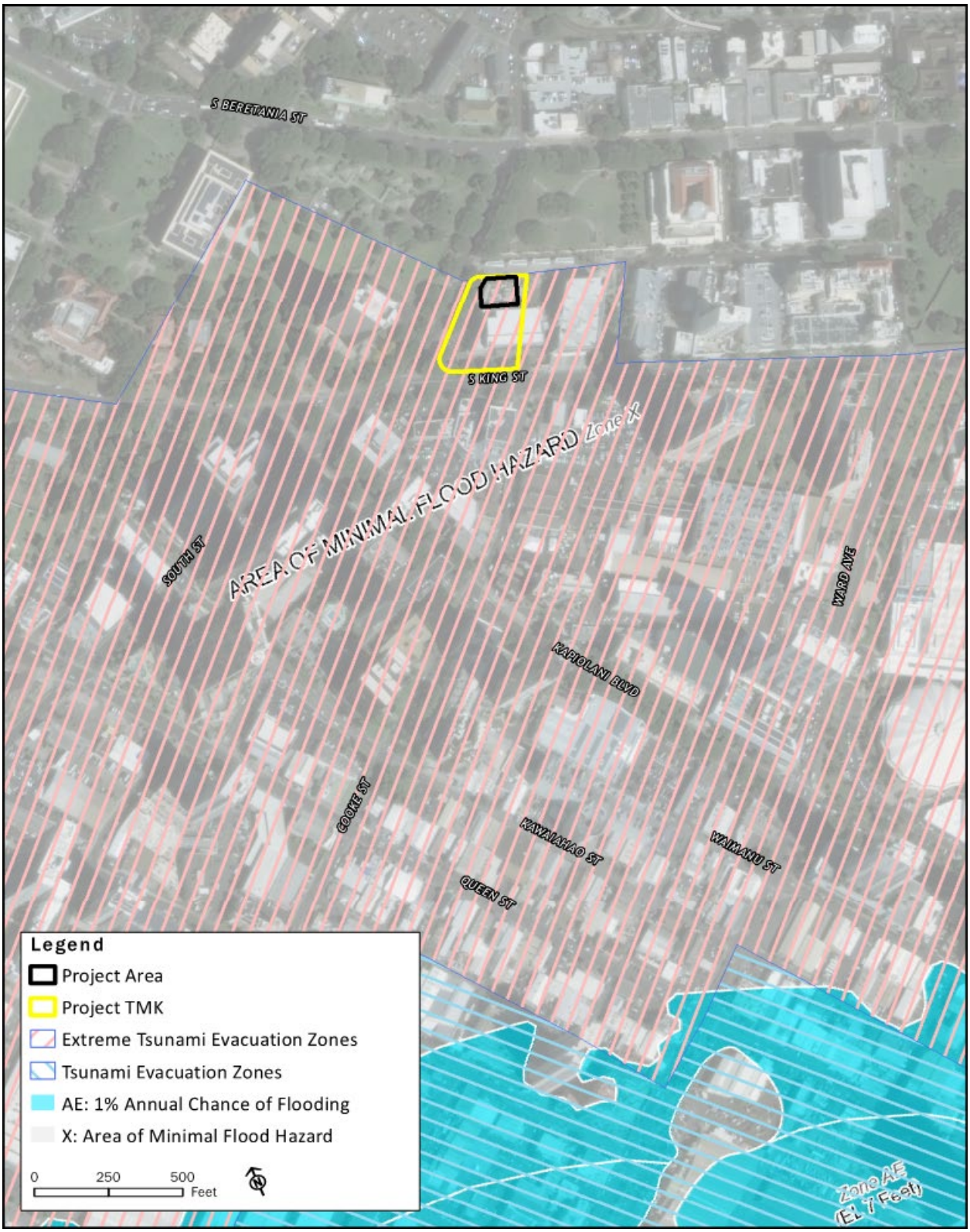


Figure 1.6 FEMA Flood Designation and City and County of Honolulu Tsunami Evacuation Zone

Chapter 2

General Description of the Proposed Action

Chapter 2

General Description of the Proposed Action

2.1 Location and Land Use

The Project is located at the northeastern corner of South King Street and Alapaʻi Street in downtown Honolulu on the Island of Oʻahu in the State of Hawaiʻi. The site encompasses an approximate 6,535-square foot portion of a 63,210-square foot parcel identified as Tax Map Key (TMK) parcel (1) 2-1-042:013 (*Figure 1.1*). The parcel is owned by the City. The property is bounded by the Honolulu Police Department (HPD) headquarters on South Beretania Street to the north, South King Street to the south, Alapaʻi Street to the west, and Kealamakai Street to the east. The proposed EOC site is adjacent to the Alapaʻi Transit Center (ATC) bus passenger pick-up area and the recently completed Alapaʻi Joint Traffic Management Center (JTMC). The site is currently vacant except for existing landscaping comprised of grass and recently planted trees. Elevations at the site range from approximately 12 to 14 feet above mean sea level (MSL). The site is designated as Urban by the State Land Use Commission (*Figure 1.2*) and classified by the City and County of Honolulu as within the BMX-3, Community Business Mixed Use District (*Figure 1.4*).

The island of Oʻahu is the third largest island in the State of Hawaiʻi with a land area of approximately 597 square miles. The island of Oʻahu is comprised of the erosional remnants of two shield volcanoes, Waiʻanae and Koʻolau. Waiʻanae is the older of the two and makes up the western part of Oʻahu. Koʻolau is younger and makes up the eastern part. The downtown Honolulu area is located on the broad coastal plains along the southern flank of the Koʻolau volcanic mountain range.

The Project site lies in the Kulaokahuʻa plain within the Kewalo ʻili, a land division within the traditional ahupuaʻa of Honolulu (*Figure 2.1*). Kulaokahuʻa translates as "the plain of the boundary." Kulaokahuʻa was the relatively level ground region between the mauka fertile valleys and the makai wetlands. The area was described as a dry, dusty plain in the pre-contact and early post-contact eras. These level plains were used as a gaming field for maika and other sports by Hawaiians. Foot paths and later horse paths were developed to connect the two populous areas of Kou (Honolulu) and Waikīkī. As Kou continued to develop as a major center of commerce during the mid-nineteenth century, parcels within Kulaokahuʻa were sold and built upon. The Project site has since been in municipal use as a bus transit center and parking area since circa 1938.

The Project site is located in the City-designated Hawaiʻi Capital Special District – Alapaʻi Precinct (*Figure 1.5*). The Hawaiʻi Capital Special district was established in June 1972, to preserve and enhance the architectural character and park-like setting of the State, and City and County civic center. The district is characterized by its expansive open space and concentration of State, and City and County buildings. The Alapaʻi Precinct is located on the eastern edge of the district and is designated to provide a transition in height, open space, density and design compatibility to the central Historic Precinct.

Figure 2.1 **Ahupua‘a**

The Project site is currently used for ATC bus operations and JTMC traffic management operations. The site also includes a five-story parking facility used by City employees. Land use for the site is designated in the City Primary Urban Center (PUC) Development Plan (DP) as "Institutional", which includes facilities for public use or benefit. The current and proposed land use is consistent with this designation. Land uses adjacent to the project site include the Honolulu Police Department Headquarters and City parking structure to the north, the Frank F. Fasi Municipal Building across Alapaʻi Street to the west, and the two-story BedMart Mattress Superstore to the east. The site's central location in close proximity to municipal services will allow key government executives and officials rapid access to the EOC. Additionally, the site's close proximity to various public parking structures will provide adequate parking for officials who may need to quickly report to the EOC during times of activation. Commercial and office uses are located makai of South King Street.

2.2 Purpose of the Project

The proposed Project is the construction of a new facility that will house the EOC on City property in downtown Honolulu, Oʻahu. Pursuant to HRS, Chapter 127A-5, County Emergency Management, "each county shall establish and maintain an EOC as a place from where emergencies and disasters shall be managed, and staff it appropriately". The existing EOC in the Frank F. Fasi Municipal Building basement is the City's primary EOC. The EOC is considered a critical facility, or an asset for which loss would have the greatest impact during a hazard event (DEM, 2019). The purpose of the Project is to support DEM and CCSR by providing a new EOC with ancillary support facilities and offices that will consolidate the two agency's functions into one space. Approximately 61 staff persons will use the site daily. The new EOC will also provide the operational space needed during activation in cases of natural and human-caused, e.g. terrorism, hazard emergencies. Overall, efficient operation of the City EOC is in the interest of the island's public safety.

In accordance with the National Incident Management System (NIMS), all disaster response starts at the county level. As such, DEM takes the lead role and coordinates the City's emergency management activities with State, Federal (including military), and non-government agencies to mitigate, prepare for, respond to, and recover from various types of emergencies or disasters to protect the public safety and welfare on the island. DEM conforms to the standards for local preparedness set forth by the Federal Emergency Management Agency (FEMA) by also coordinating overall prevention, engaging in public awareness and preparedness education, developing emergency and disaster plans, and planning mitigation and recovery efforts. The agency's planning efforts are directed at threats and hazards that may include natural disasters, such as hurricanes, earthquakes, tsunamis, flooding, high surf, and high winds; human-caused disasters such as aircraft crashes, radiological incidents, marine and inland oil spills, and hazardous material releases; and acts of terrorism. When the EOC is activated, DEM takes a lead role in coordinating emergency operations.

CCSR is responsible for tracking climate change science and potential impacts on City facilities, increasing community emergency preparedness, developing resilient infrastructure in response to the effects from climate change, and developing climate action and adaptation plans. In an emergency, CCSR will play an import role in advising, public messaging, and coordinating actions and policies of departments within the City to increase community preparedness. CCSR is also the Program Coordinator the City Hazard Mitigation Program. In this role, CCSR initiates and facilitates appropriate and regular hazard mitigation stakeholder engagement and supports City departments with hazard mitigation projects. As "hazard mitigation" is one of the five mission areas defined in the National Preparedness Goals, CCSR works closely with DEM in its capacity as the City Hazard Mitigation Program coordinator. Together with DEM, the two agencies play key roles in City planning and response to hazard events.

Key to municipal emergency response is an EOC, which serves as a centralized command and control center where public safety, emergency response, and support agencies can plan, prepare and respond to a wide variety of hazard events. Operators must bring together and quickly analyze shared information to make potentially lifesaving decisions that can affect the entire island population. EOCs are typically activated for a variety of occurrences from very low-level incidents up to major activations. In managing the EOC, DEM conforms to National Response Framework guidelines and the Department of Homeland Security's (DHS) local emergency management capability and conformance standards.

Public safety can depend on an EOC running at peak efficiency. Currently, EOC operations are situated in the basement level of the Frank F. Fasi Municipal Building. The building was constructed in 1976 as a centralized office building for various City departments. Since its construction, the building has aged. Meanwhile, the number of City employees has grown. CCSR was established in 2016 and could not be accommodated in the Frank F. Fasi Municipal Building. CCSR is located over a mile and a half away at the Kapālama Hale. Consolidating DEM and CCSR into one building will facilitate the agencies' ability to share knowledge and resources that will help provide a higher level of support for when the EOC is activated in emergency response situations. Individual agencies respond to situations, but at present there is no comprehensive coordinated system for response. In the event of a tsunami or other disaster situation, interagency communication could be compromised by geographical separation and interruption of communications infrastructure. Island emergency response services would be improved over existing conditions by consolidating DEM functions. DEM plans to increase staffing to provide a higher level of support when the EOC is activated in emergency response situations.

The existing EOC was designed in the mid-1970's in "NASA mission control" configuration with fixed workstations and seating and has a capacity of 20 operational stations and up to 15 non-operational (observer) stations. According to ICX Transportation Group (May 15, 2007 Memo to Pete Galvez), this capacity within the basement is inadequate to meet EOC needs. The City currently has 18 departments, each of which require operational space at the EOC. Each department designates Department Emergency Coordinators (DEC) and Alternative Emergency Coordinators (AEC) to be support the EOC during activation. Many departments have essential functions requiring more than one operational space, which brings the total requirement to approximately 30. Many other key staff such as State and Federal agencies, utilities (natural gas, electricity, telephone, cellular phone), large refineries, the Civil Air Patrol, responder organizations) will increase operational need to 60 or more spaces. The existing EOC also lacks space for breakouts and other meeting rooms required to manage emergencies. In case of a long-term emergency, there is inadequate space for provisions, sleeping or other needs and/or lock-down of the facility. The new EOC would provide the adequate operational space needed to accommodate all required personnel during EOC activation.

2.3 Project Scope

2.3.1 Background of the Project

Alapa'i Transit Center and Joint Traffic Management Center Final Environmental Assessment/Finding of No Significant Impact (FONSI) was prepared by G70 and published in January 2008 for construction of a new ATC and JTMC. The Final EA was accepted by the City Department of Transportation Services (DTS). The scope of that project included construction of an EOC on the tenth floor of the JTMC. Subsequently, final design of the JTMC did not include the EOC due to budget constraints. Construction of the ATC parking facility was completed in 2012, while construction of the bus shelter area was completed in 2013. The JTMC was completed in 2019.

Pursuant to HAR, Chapter 11-200.1-12, a proposing agency may incorporate information or analysis from a relevant prior Final EA into an EA when the information or analysis is pertinent and has logical relevancy to the proposed action. Since 2008 and construction of the ATC and JTMC, the Project environs have generally remained unchanged.. Accordingly, the Project's impacts are understood as similar to the ATC and JTMC project, and this Draft EA incorporates information and analysis used in the 2008 Final EA/FONSI issued for the ATC and JTMC project. Land use of the site for municipal purposes has continued, and the Project does not propose a change in this use.

2.3.2 Project Description

Preliminary plans involve the siting of a new EOC facility immediately mauka of the JTMC. The new EOC is designed to serve the staff's needs by providing the operational space required to facilitate EOC functions and accommodate future growth. It will also jointly relocate related agencies to increase efficiency, coordination, and effectiveness amongst agencies involved in emergency operations. The proposed building will have an approximate building footprint of 6,535 square feet.

The EOC will include approximately 27,627 square feet of floor area and a four-story design configuration with a height of approximately 61 feet tall, adhering to the 100-foot height limit specified by the Hawai'i Capital Special District standards. The Project will be designed to maintain the architectural character of the Hawai'i Capital Special District and the urban design character of Honolulu in general. Materials and colors which blend with the landscape and are similar to neighboring buildings will be chosen. All existing landscaping will be replaced upon completion of construction.

The new facility will connect to the existing driveway and parking facilities the ATC, which is only available for use by City employees. Vehicles gain access to the ATC parking garage from Kealamakai Street. Overflow parking may be available at the parking area that serves the Frank F. Fasi Civic Center Parking Garage. EOC employees and visitors arriving by foot would enter through the main entrance on the mauka side of the building. No public parking or bus passenger parking will be provided on-site.

The building will adhere to Federal force protection guidelines requiring building hardening, building setbacks, perimeter protection and secured entry points, as outlined in the *FEMA 426 and 427 Publication, Risk Management Series, Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings*. The building may also adhere to *FEMA 543 Publication, Risk Management Series, Design Guidelines for Improving Critical Facilities from Flooding and High Winds.* It is anticipated that the new facility will require a new fire hydrant but will be able to utilize the site's existing infrastructure for its wastewater, water, and electrical demand. The adequacy of all infrastructure requirements will be verified. Solar photovoltaic (PV) panels will be installed on the rooftop to support the energy efficiency of the new building. Low-impact development (LID) practices, such as landscaped areas, storm drain inlet protection, and other methods may be incorporated to reduce environmental impacts of the new building. The building will be designed to obtain Leadership in Energy and Environmental Design (LEED) Silver for New Construction V4 certification pursuant to City Ordinance 06-06, Relating to Green Building Standards for City Facilities.

2.3.3 Program Description

For the purposes of the City's EOC Facility Program, DEM has two distinct functions: day to day emergency management coordination and emergency operations. In the EOC, where DEM conducts emergency operations, DEM sounds the sirens and issues public notifications during an emergency. The State Warning Point, operated by the State Department of Defense (DoD), Emergency Management Agency (HI-EMA), uses the Hawai'i Warning System (HAWAS) to transmit and receive

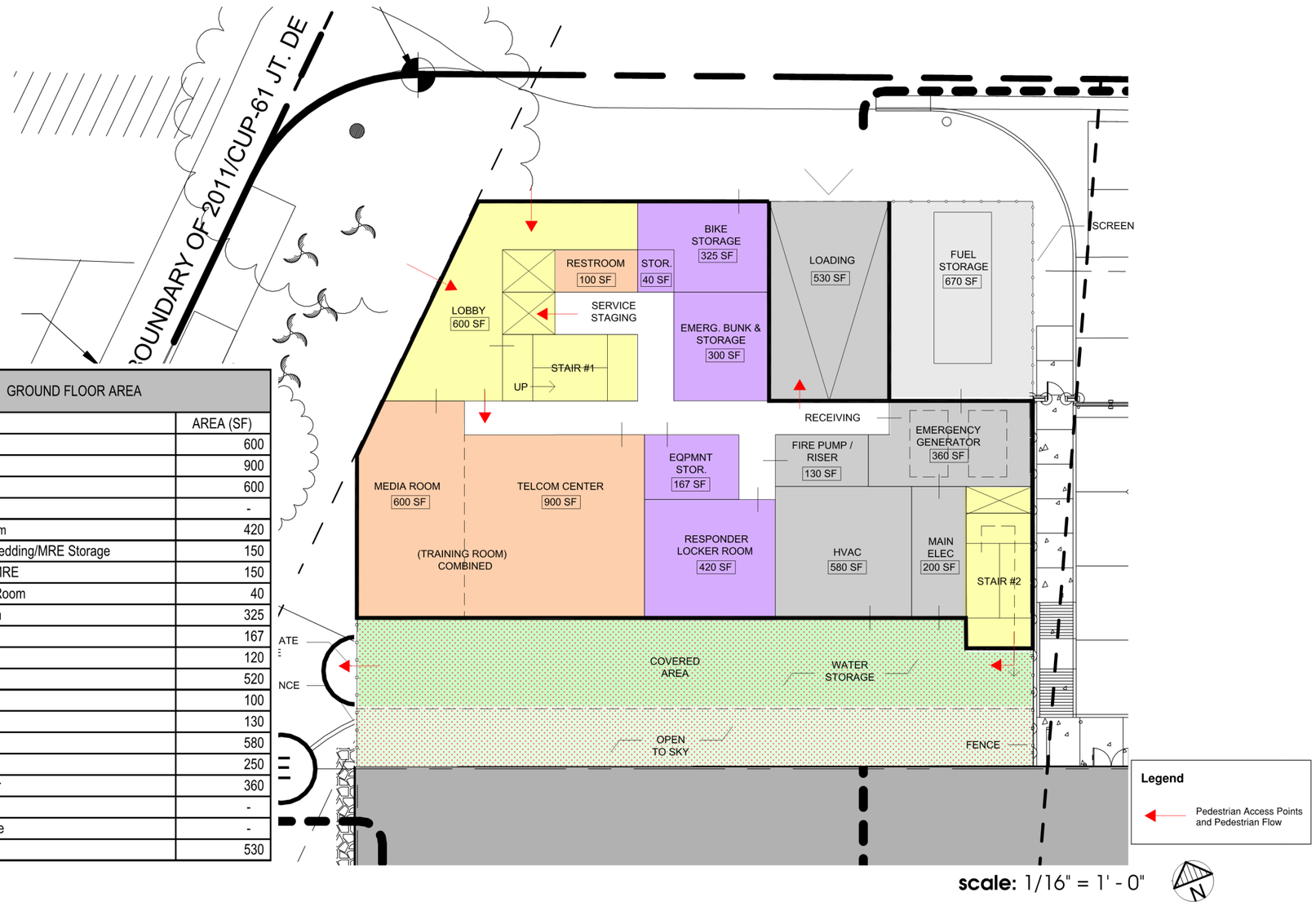
emergency messages to and from the EOC. DEM also monitors Honolulu Police Department (HPD), Honolulu Fire Department (HFD), and Emergency Management Services (EMS) talk groups. EOC staff must be able to display a variety of data from within the EOC as well as transmit external audio and video sources. DEM also works closely with State, local utilities, telecoms, and non-governmental agencies during emergencies.

The DEM staff forms the backbone of the EOC operational staff and must be able to immediately access controls to the Outdoor Siren Warning System and issue public notifications during an emergency that requires immediate activation. As such, it is important that DEM staff be located close to the EOC. The CCSR will be relocated from its existing location at Kapālama Hale to the new EOC facility in order to facilitate collaboration, knowledge-sharing and resources with DEM, which will provide a higher level of overall disaster mitigation and response support to the island.

The first level of the proposed building will include a telecom center, media room, responder locker room, equipment storage, emergency bunk and storage, bike storage, loading area, fire pump, fuel storage, and other ancillary support rooms (*Figure 2.2*). Access to the building would be secured and located on the northwest, or mauka, end of the building. A covered break area will be provided. During normal operation, the media room and telcom center may be combined to form a training room.

The main EOC will be located on the second floor, and will primarily consist of a Situation Room, Communications Area, siren/Emergency Alert System (EAS) Station, two (2) breakout rooms, joint information center, Executive Office, radiological monitoring room, broadcast room, IT room, restrooms, break room, and AV tech room (*Figure 2.3*). Not all rooms are staffed during normal operations but fill up during emergency activations. The Situation Room is the core of the EOC during activations and will be designed to quickly adapt the needs of its users. The media briefing room will be physically separated from EOC operations area to prevent interference with on-going operations. During normal operations, the Situation Room and breakout rooms may be reconfigured and used for multipurpose meetings and training events such as monthly DEC and AEC staff trainings and coordination. The new EOC will provide the space needed for agencies to collaborate and monitor emergencies during activation.

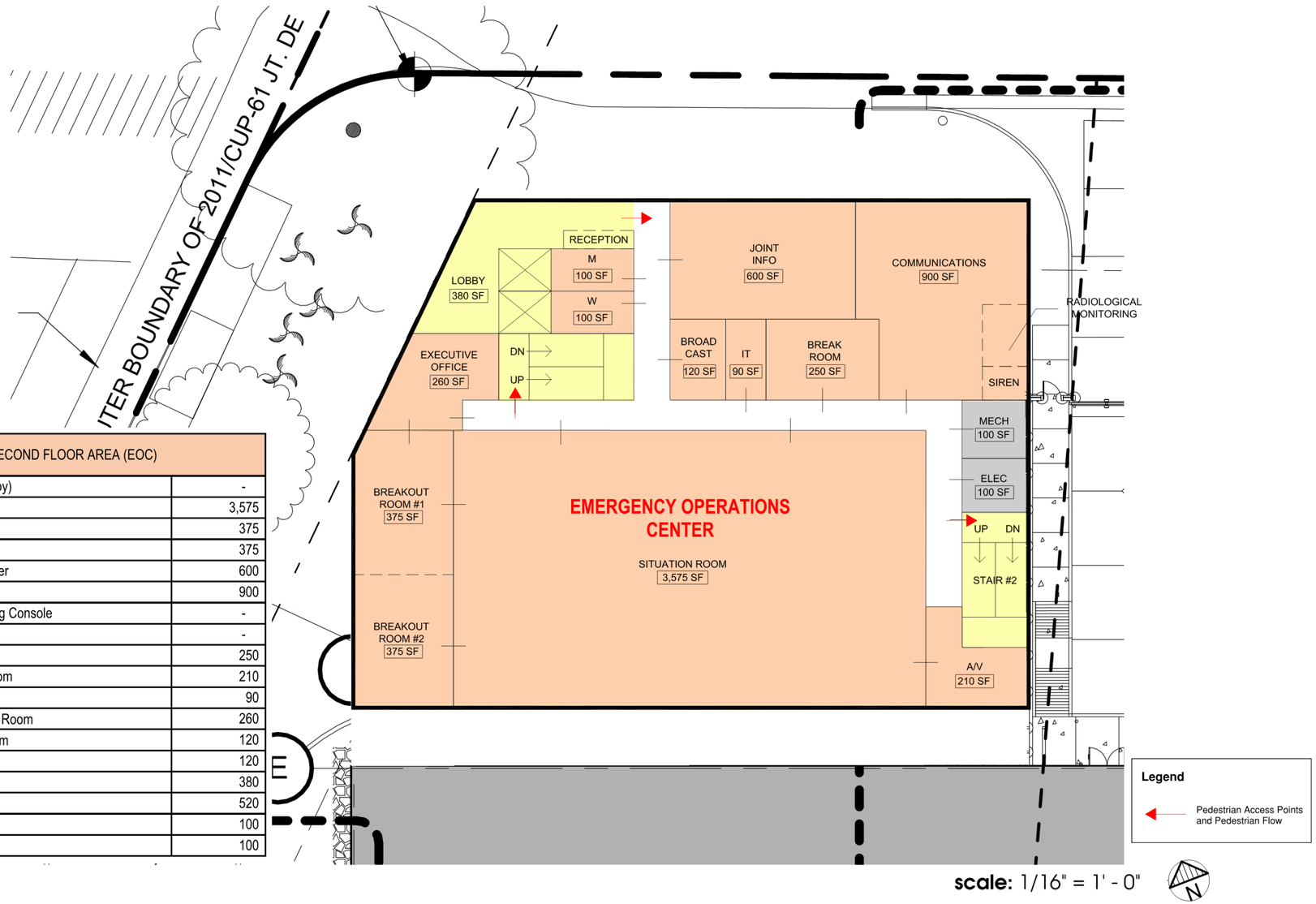
The third level will be designated for DEM and include office areas, a collaboration area, break room, copy room, reference library, and deck (*Figure 2.4*). Although not currently planned, DEM offices may be connected to the existing JTMC via a breezeway in the future. DEM is located on the third level to facilitate closer physical access to the EOC on the second floor. The fourth level will include designated offices for the CCSR, and will be comprised of offices, two (2) conference rooms, a break room, copy room, collaboration areas, and storage (*Figure 2.5).*



GROUND FLOOR AREA	
	AREA (SF)
Lobby	600
Telcom Center	900
Media Room	600
Training Room	-
Responder Locker Room	420
Emergency Bunks / Bedding/MRE Storage	150
Emergency Storage/MRE	150
Chair/Table Storage Room	40
Bicycle Storage Room	325
Equipment Storage	167
Elevator	120
Stair(s)	520
Public Toilet (Media)	100
Fire Pump/Riser	130
HVAC	580
Main Electrical Room	250
Emergency Generator	360
Fuel Storage	-
Potable Water Storage	-
Loading Bay	530

FLOOR PLAN
GROUND FLOOR

Figure 2.2 **Proposed EOC Site Plan – Ground Floor**



SECOND FLOOR AREA (EOC)	
Reception (part of lobby)	-
Situation Room	3,575
Break-out Room 1	375
Break-out Room 2	375
Joint Information Center	600
Communications Area	900
Radiological Monitoring Console	-
Siren / EAS Station	-
Kitchen Breakroom	250
Audio Visual Tech Room	210
IT Work Space/Bench	90
Executive Conference Room	260
Broadcast-Sound Room	120
Elevator	120
Lobby	380
Stair(s)	520
Restroom (Men)	100
Restroom (Women)	100

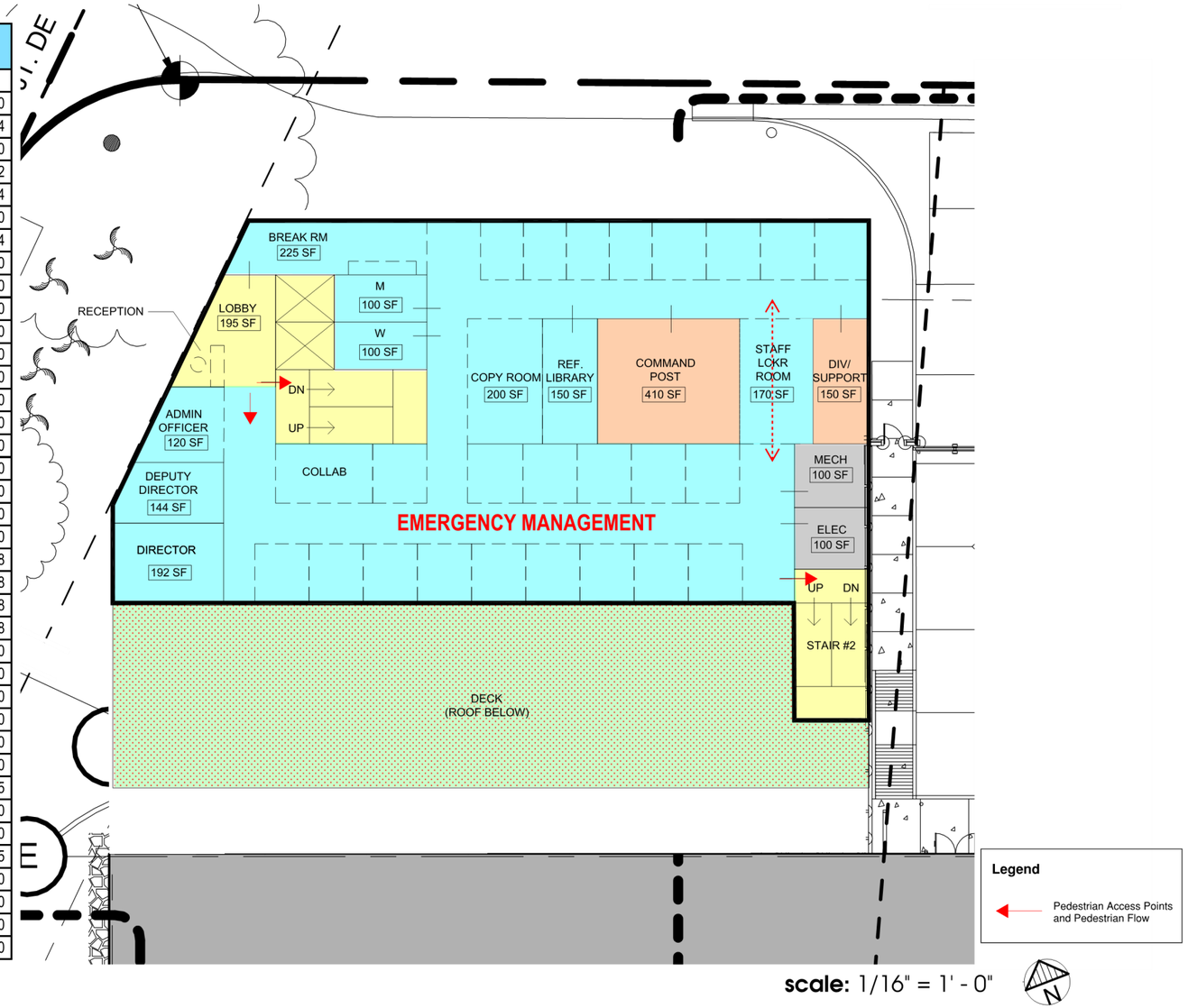
G70

FLOOR PLAN
SECOND FLOOR

LEVEL 1: SUPPORT / EOC (partial)
LEVEL 2: EOC
LEVEL 3: DEM
LEVEL 4: CCSR

Figure 2.3 **Proposed EOC Site Plan – Second Floor**

THIRD FLOOR AREA (DEM)	
Reception (part of lobby)	-
Admin Services Officer (ASO) Office	120
Administrative Specialist	64
Files/Storage/Reference Library	150
DEM-POPS Director	192
DEM-POPS Deputy Director	144
Secretary	70
Clerk / Typist (pool)	64
Disaster Preparedness Officer	70
Logistics Officer	70
Communications Officer	70
Public Information Officer	70
HAZMAT Officer	70
Training & Exercise Officer	70
Operations Specialist	70
Responder Specialist	70
Planner 1	70
Planner 2	70
Planner 3	70
Planner 4	70
Communications Specialist	70
VISTA 1	48
VISTA 2	48
VISTA 3	48
VISTA 4	48
Grants Management Officer	70
Grants Management Assistant	70
Grants Accountant	70
Copy Workroom	200
Division Support	150
Command Post	410
Break Room	225
Staff Locker Room	170
Elevator	120
Lobby	195
Stair(s)	520
Restroom (Men)	100
Restroom (Women)	100
Custodial Closet	80

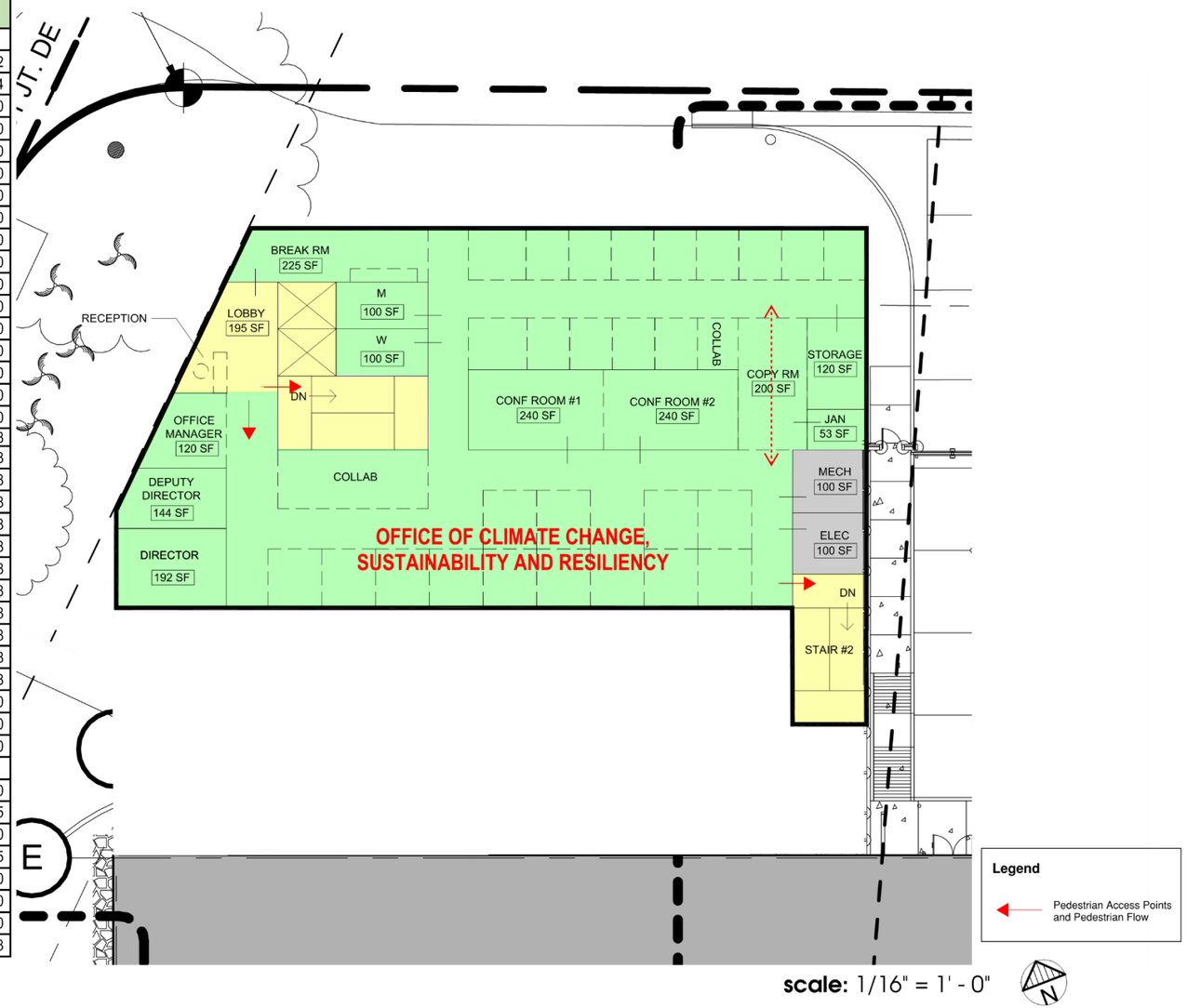


G70 **FLOOR PLAN**
THIRD FLOOR

LEVEL 1: SUPPORT / EOC (partial)
LEVEL 2: EOC
LEVEL 3: DEM
LEVEL 4: CCSR

Figure 2.4 **Proposed EOC Site Plan – Third Floor**

FOURTH FLOOR AREA (CCSR)	
Reception	-
Director & Chief Resilience Officer	192
Deputy Director & Deputy Chief Resilience Officer	144
Management Analyst 4	70
Planner VII – SR28*	70
Planner VII – SR28	70
Planner VI – SR26*	70
Planner VI – SR26*	70
Planner VI – SR26*	70
Planner VI – SR26	70
Community Relations Specialist III – SR24	70
Planner IV – SR22*	70
Planner IV – SR22*	70
Planner IV – SR22	70
Community Relations Specialist II – SR22	70
Planner III – SR20	70
Office Manager III – SR16	120
AmeriCorps VISTA Supervisor	70
AmeriCorps VISTA	48
AmeriCorps VISTA	48
AmeriCorps VISTA	48
AmeriCorps VISTA	48
AmeriCorps VISTA	48
AmeriCorps VISTA	48
AmeriCorps VISTA	48
Lead for America Fellow (year round)	48
Po'okela Fellow/Graduate intern	48
Peter J. Rappa Fellow/Graduate intern	48
UH Graduate intern	48
HPU Graduate intern	48
Storage	120
Conference Room 1	240
Conference Room 2	240
Collaborative Space	-
Work Room/Copier	200
Break Room	225
Elevator	120
Lobby	195
Stair(s)	520
Restroom (Men)	100
Restroom (Women)	100
Janitor	53



LEVEL 1: SUPPORT / EOC (partial)
LEVEL 2: EOC
LEVEL 3: DEM
LEVEL 4: CCSR

G70 **FLOOR PLAN**
FOURTH FLOOR

Figure 2.5 **Proposed EOC Site Plan – Fourth Floor**

The following *Table 2.1* identifies the floor areas of each floor of the proposed EOC. Overall, approximately 27,627 square feet of floor area is proposed.

Table 2.1 Development Program

Level	Floor Area
Level 1: Support and EOC (partial)	6,535 square feet
Level 2: EOC	8,936 square feet
Level 3: DEM Offices	6,078 square feet
Level 4: CCSR Offices	6,078 square feet
Total:	27,627 square feet

2.4 Project Phasing and Cost

The Project is expected to cost approximately $38.6 million. Project construction will be funded with the use of City funds. Construction is expected to commence in October 2022 and anticipated to be complete in April 2024.

Chapter 3

Environmental Setting, Potential Impacts, and Mitigation Measures

Chapter 3

Environmental Setting, Potential Impacts, and Mitigation Measures

The environmental setting, potential impacts and mitigation measures for the Honolulu EOC are addressed in the sections below.

3.1 Climate

Existing Conditions

The EOC project site is located in the Kulaokahu‘a region on the broad coastal plains of southwest O‘ahu. Historical accounts from the 1800s described the Kulaokahu’a region as an arid and dusty plain; too dry and barren to support vegetation. Climate in the Project area is characterized as semi-tropical and influenced by Hawai‘i’s geographic location southwest of the Pacific High region. The climate is moderate with consistent year-round temperatures, moderate humidity, and prevailing northeasterly trade winds. According to data from the Rainfall Atlas of Hawai‘i, the Project site experiences an average annual rainfall of 28 inches annually, with the highest precipitation occurring between the months of November through March (Giambelluca et al., 2013). Data from the Climate Atlas of Hawai‘i recorded an average annual temperature of 75 degrees Fahrenheit (Giambelluca et al., 2014).

The prevailing northeasterly trade winds are present approximately 70% of the time, and generally blow 10 to 20 miles per hour (Fletcher et. al., 2002). During Kona weather conditions in the summer months when tradewind circulation breaks down, the winds blow from a southerly direction and occur as light and variable.

Anticipated Impacts and Proposed Mitigation

The proposed project is not anticipated to result nor constitute a source of impact to rainfall resources or the climate of the project area or region; therefore, no mitigation measures are required.

3.2 Topography and Soils

Existing Conditions

The project site has a relatively moderate slope from the east side of the site towards Alapa‘i Street at slopes ranging between 1 to 2 percent. The parcel has been previously disturbed and altered by extensive grading to create a flat area. The Project site has an elevation ranging from 12 to 14 feet above MSL.

According to the U.S Department of Agriculture (USDA), Soil Conservation Service publication, *Soil Survey of the Islands of Kauai, O'ahu, Maui, Molokai, and Lanai, State of Hawai'i, 1972*, the site is entirely consists of Makiki clay loam, 0 to 2 percent slopes (MkA) (*Figure 3.1*). This soil is characterized by moderately rapid permeability, slow runoff, and an erosion hazard that is no more than slight.

Anticipated Impacts and Proposed Mitigation

The existing topography will be altered to the extent necessary for construction of the proposed Project. Grading will be limited to less than one acre and will be determined once final design of the Project moves forward. A grading permit approved by DPP will be required for all grading activities. Site work will include limited grading and excavation for building the foundation and installation of utilities. Excavation at the site will be accomplished by using conventional excavating equipment. Detailed design will take into consideration the groundwater level.

The Project will not disturb greater than one acre of land area; therefore, a National Pollutant Discharge Elimination System (NPDES) general permit coverage authorizing discharges of storm water associated with construction activities will not be required for the Project from the DOH, Environmental Management Division, Clean Water Branch. For all ground disturbing activities, a Grading Plan, Erosion and Sediment Control Plan (ESCP), and Best Management Practices (BMPs) will be integrated into the construction plans. Construction BMPs may include, but are not limited to, stabilized construction entrances, stabilization of disturbed areas, silt-screens, re-vegetation, and maintenance of equipment. Additional mitigation may include removal of unsuitable soils under foundations and/or special foundation design. BMPs will also be deployed at exposed areas to minimize potential runoff. Grading, excavation, and other construction activities required for the project will be in accordance with State and City regulatory requirements.

3.3 Drainage and Water Quality

Existing Conditions

Drainage

Existing offsite drainage infrastructure is provided along Alapa'i Street and South King Street (see *Figure 3.2).* A 3.75-foot by 2.5-foot City-owned box drain is located along Alapa'i Street fronting the Project site. A 30-inch City-owned drainpipe is provided along South King Street that combines with the box drain at the intersection of South King Street and Alapa'i Street. According to the Honolulu Land Information System (HoLIS), this system appears to discharge runoff directly into the ocean at Honolulu Harbor.

Generally, storm runoff generated on the project site flows overland across established vegetation and grass swales towards an existing 48-inch drain inlet. Runoff is also directed from the adjacent JTMC building rooftop to an existing swale along the northern edge of the JTMC building and also discharges into the existing 48-inch drain inlet that is connected to an 18-inch line.

Two existing onsite drainage systems are located on the Project's property that currently serves the JTMC. An 18-inch drain line runs parallel with the Alapa'i Street property edge in the southern direction before entering a hydrodynamic separator that outlets to a 24-inch City-owned drain line.

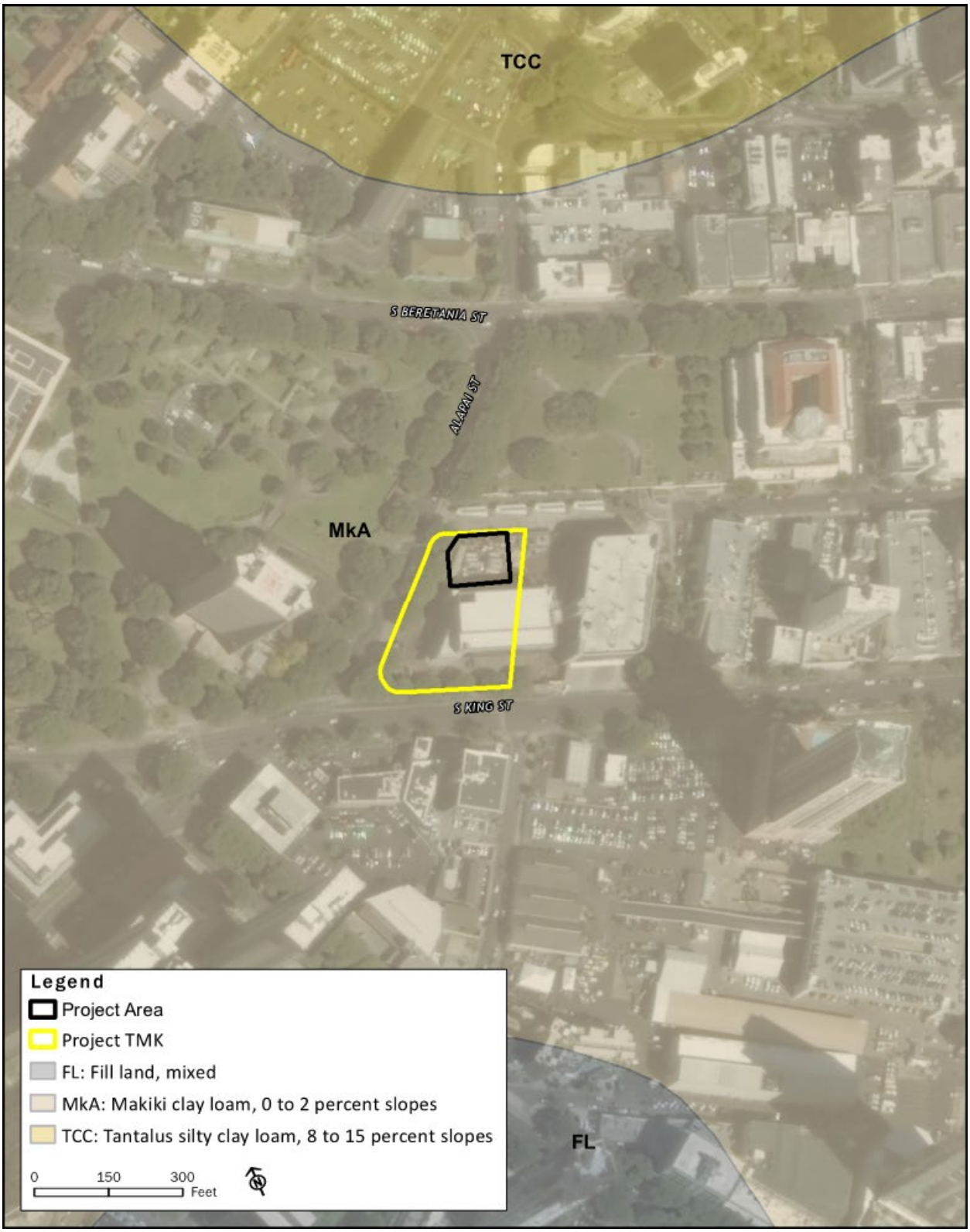


Figure 3.1 U.S. Department of Agriculture Soil Conservation Service Land Capability Groupings

This page left intentionally blank.

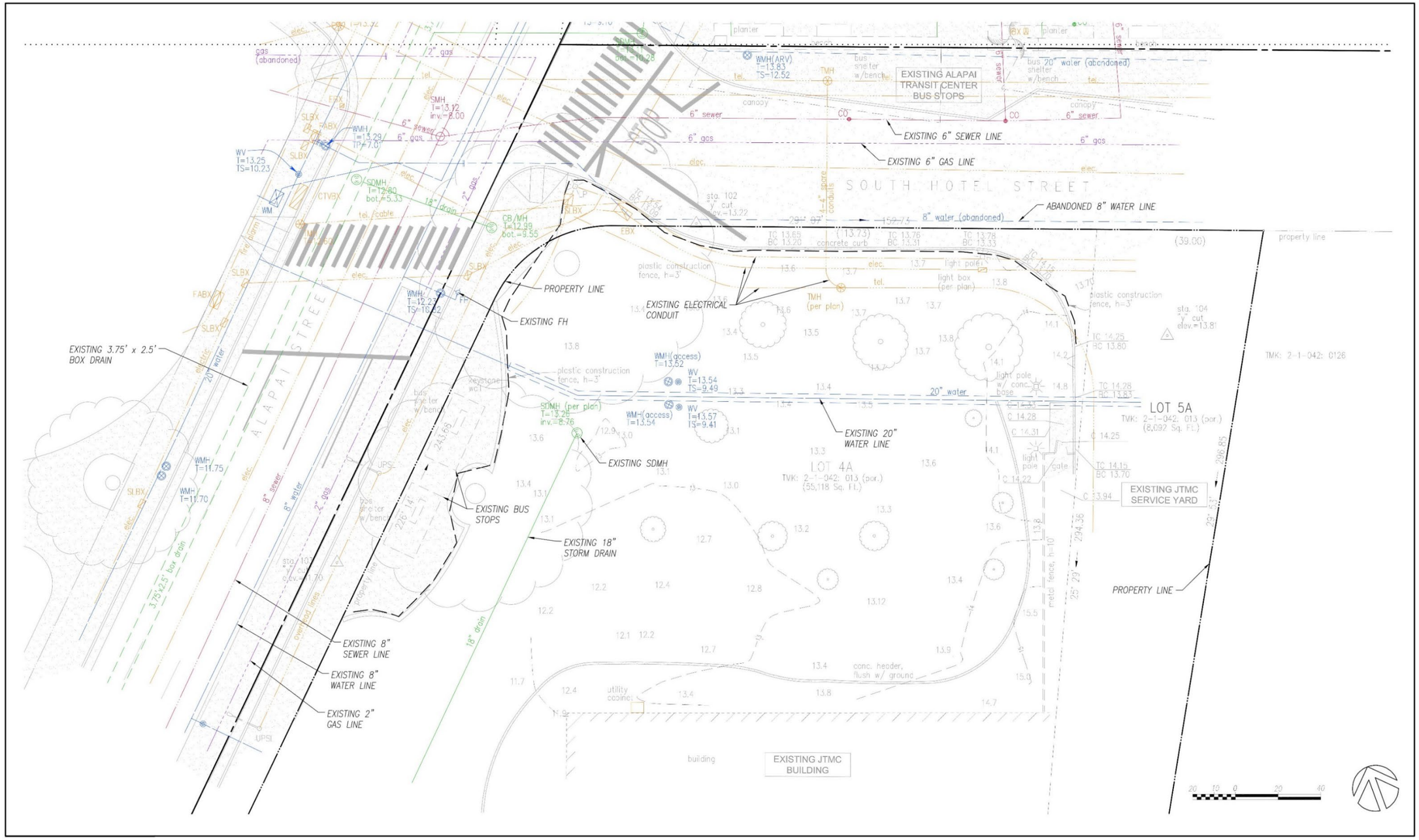


Figure 3.2 **Existing Conditions Plan (G70)**

This page left intentionally blank.

An additional system is located within the JTMC's service yard, adjacent to the proposed Project area. This system begins within the service yard with a 48-inch inlet. The system then continues around the north side of the JTMC before turning south between the JTMC and the parking structure before entering a hydrodynamic separator near the property boundary along South King Street. Runoff then exits the hydrodynamic separator and into the 30-inch City-owned drain line within South King Street.

Groundwater

The Commission on Water Resource Management (CWRM) under the Department of Land and Natural Resources (DLNR) is the primary steward of the State's water resources. CWRM has broad powers and responsibilities to protect and manage Hawai'i's water resources and administers the State Water Code (HRS §174C, 2008 amendment) and administrative rules. Other State agencies maintain responsibilities for water quality (State Department of Health [DOH])) and coastal zone management (Department of Business, Economic Development and Tourism [DBEDT]).

Groundwater units have been identified by the purpose CWRM to manage groundwater resources. Primarily determined by subsurface conditions, each island is divided into regions that reflect hydrogeological similarities within hydrographic, topographic and historical boundaries. Sustainable yield estimates of aquifers have been developed by CWRM and are revised periodically based on recharge studies, groundwater models, other hydrogeologic studies, pumpage and deep monitor well data, and the identification of errors in previous models or studies. All revisions to the sustainable yields have taken place in accordance with statutory requirements. Revised sustainable yield estimates adopted by CWRM are official and are used for regulatory and planning purposes (CWRM, 2019).

The Project site lies within the CWRM-delineated Nu'uanu Aquifer Unit, which is a section of the Honolulu Hydrological Unit. The aquifer is characterized as predominantly high-level ground water. The sustainable yield estimate for the Nu'uanu Aquifer Unit is 14 million gallons per day (MGD) (CWRM, 2008). The sustainable yield "…means the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source as determined by the commission" (HRS §174C-3). Sustainable yield is based on reported water use subtracted from the estimated storage of the aquifer, estimated groundwater recharge, calculations based on ground and surface water interaction, and deep ground water well monitoring data.

Land use and water planning are linked to the maintenance of healthy watersheds through the integration of sustainable planning, watershed protection projects and BMPs to minimize impacts (BWS, DPP, 2012). The State Water Code requires that County water use and development plans be consistent with the County's land use plans and policies. On O'ahu, the BWS and the DPP jointly prepared the *Primary Urban Center Watershed Management Plan*, which together with the other regional watershed management plans, form the *O'ahu Water Management Plan* adopted by CWRM. Water demand for the project is specified in *Chapter 3.10 Utilities*.

The State Department of Health (DOH) Safe Drinking Water Branch (SDWB) and Wastewater Branch (WWB) both work in accordance with each other to protect both surface and groundwater units for the people of Hawai'i. The SDWB administers underground injection control (UIC) program to prevent contamination from injection wells, which are used to dispose of water or other fluids into a groundwater aquifer. The boundary between exempted aquifers and underground sources of drinking water is generally referred to as the "UIC Line". Restrictions on injection wells differ, depending on whether the area is inland (mauka) or seaward (makai) of the UIC line (SDWB, 2019). The WWB, ensures wastewater is properly disposed without polluting waters to harm the health of people. The project site lies above (mauka) of the UIC line, indicating that the underlying aquifer is considered a

drinking water source. See Figure 3.3, UIC Line. There are no water use wells or water monitoring wells on or near site.

Surface Waters

There are no surface waters, including streams or wetlands, within close proximity to the Project area. Furthermore, there are no nearshore marine waters within the Project site. The subject property is located approximately 0.4-mile northeast of Honolulu Harbor, the nearest marine water body. DOH classifies Honolulu Harbor as a "Class A" marine water body, which are to be protected for recreational use and aesthetic enjoyment while remaining compatible with the protection and propagation of wildlife. According to HAR, Section 11-54-3, Honolulu Harbor is also an exception with the DOH "Class A" designation.

Anticipated Impacts and Proposed Mitigation

Drainage

Grading will be required for construction of the Project. Grading will be limited to less than one acre and will be determined once final design of the Project moves forward. Erosion control BMPs will be installed and will comply with the State, County and Federal regulations during all phases of construction. Pre-construction structural control BMPs may include, but not be limited to, a stabilized construction ingress/egress, catch basin inlet protection, and temporary filter sock perimeter control, During construction, a site-specific BMPs plan will be incorporated into final construction plans, and will include guidelines and mitigation measures to prevent soil loss and sediment discharges from the work site, discharge pollution, and other detrimental impacts related to construction activities. BMPs may include, but not be limited to, the use of silt fences or screens, maintenance and fueling of construction equipment and vehicles in designated areas, vehicle washing in designated areas, storage of all liquids in sealed containers, and temporary stabilization methods, Good housekeeping mitigation measures will also be incorporated in construction plans and will include a spill prevention plan, dust control measures, and a rain response plan.

In the long-term, design of the Project will comply with the City's drainage standards, which include storm water quality treatment BMPs utilizing a Low Impact Development (LID) approach. As required by the City standards, LID improvements and BMPs will be distributed and installed throughout the site where practical and feasible to improve storm water quality and manage storm water quantity. The proposed project will maximize pervious and landscaped areas within the site to the maximum extent practicable. LID utilized for the site will include the following:

- Dry swales: Shallow linear channel with a planting bed which filters runoff, which is then collected in an underdrain system, and discharged at the downstream end of the swale.
- Rain gardens: Engineered shallow depression that collects and filters storm water runoff using conditioned planting soil beds and vegetation. The filtered runoff infiltrates through the basin invert and into the soil matrix.
- Infiltration trenches: Rock-filled trench with no outlet, where storm water runoff is stored in the void space between the rocks and infiltrates through the bottom and into the soil matrix.

As a result, all storm runoff will be detained onsite to attenuate the peak runoff flow. In addition, a new swale will be installed between the proposed EOC building and existing JTMC. The new swale will accommodate both the existing offsite flows from the JTMC roof runoff and potential roof runoff from the EOC.

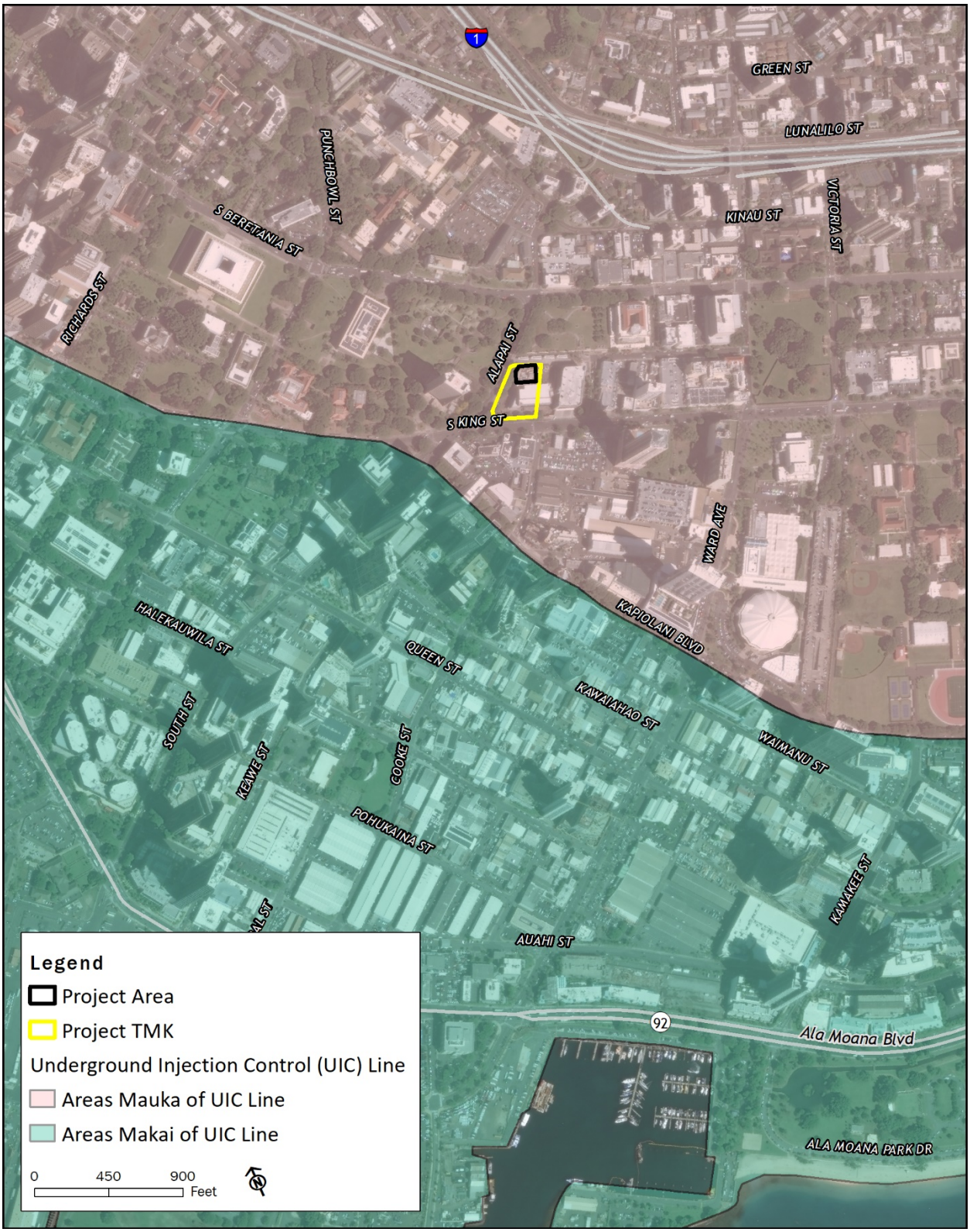


Figure 3.3 **UIC Line**

Storm runoff from the proposed building will be collected through downspouts that outlet to natural stormwater management systems. Collected flows will be transported through volume- and flow-based BMPs fronting Alapa‘i Street. The BMPs size will be based on the DPP *Storm Drainage Standards August 2017* which analyzes the 10-year, 1-hour recurrence interval. To remain in compliance with the City's Storm Drainage Standards, runoff management strategies will need to be implemented to attenuate the increased flows that are anticipated for the proposed project. Runoff retention can be applied to the Project by designing natural detention systems within the Project's landscape design that will withhold storm water runoff. The detention systems will be provided with overflow devices or practices that will discharge runoff at a rate acceptable by the City. A storm drain inlet will be installed as shown in *Figure 3.4, Concept Site and Utility Plan*.

Groundwater

No short- or long-term significant impacts to groundwater resources associated with the Project are anticipated during construction or operation of the proposed Project.

Surface Waters

Appropriate mitigative measures and controls would be applied consistent with sound engineering and operating practices for the protection of groundwater and surface water resources. Storm water runoff from construction areas will be regulated through adherence to the City and County of Honolulu's Department of Facility Maintenance (DFM), Storm Water Quality Branch. The project will incorporate site-specific BMPs as previously described to prevent soil loss, storm water runoff, and sediment discharges from the site. BMPs may include the use of a stabilized construction ingress/egress, inlet protection, and temporary filter sock perimeter controls. Project activities will comply with DOH regulations as set forth in HAR, Title 11 Chapter 54, Water Quality Standards and Chapter 55, Water Pollution Controls. Control measures will be in place and functional before construction activities begin and will be maintained throughout the construction period.

3.4 Flora and Fauna

Existing Conditions

A biological inventory survey was performed for the Project by G70 in October 2019. The findings of the assessment are included as *Appendix A.* The Project site is a newly landscaped area directly north of the newly constructed JTMC. No plants or animals currently protected or proposed for protection under either the Federal or State of Hawai‘i endangered species programs (DLNR, 1997, 2015; U.S. Fish and Wildlife Service [UFWS], 2015) were detected during the course of the survey at the Project site. Further detail of the findings is provided below.

Flora

The botanical survey of the site identified several trees, shrubs and groundcovers commonly used in urban landscapes, including three mature monkeypod trees (*Samanea saman*) planted at regular intervals along the sidewalk edge of Alapa‘i Street, along with three kou (*Cordia subcordata*), four kukui (*Aleurites moluccanus*), and four rainbow shower trees (*Cassia x nealiae*), all of which were young and appeared to have recently been installed in the interior landscaped area. A young noni tree (*Citrifolia morinda*) was also identified near the middle of the three monkeypod trees lining the sidewalk and did not appear to be an intentional part of the landscape.

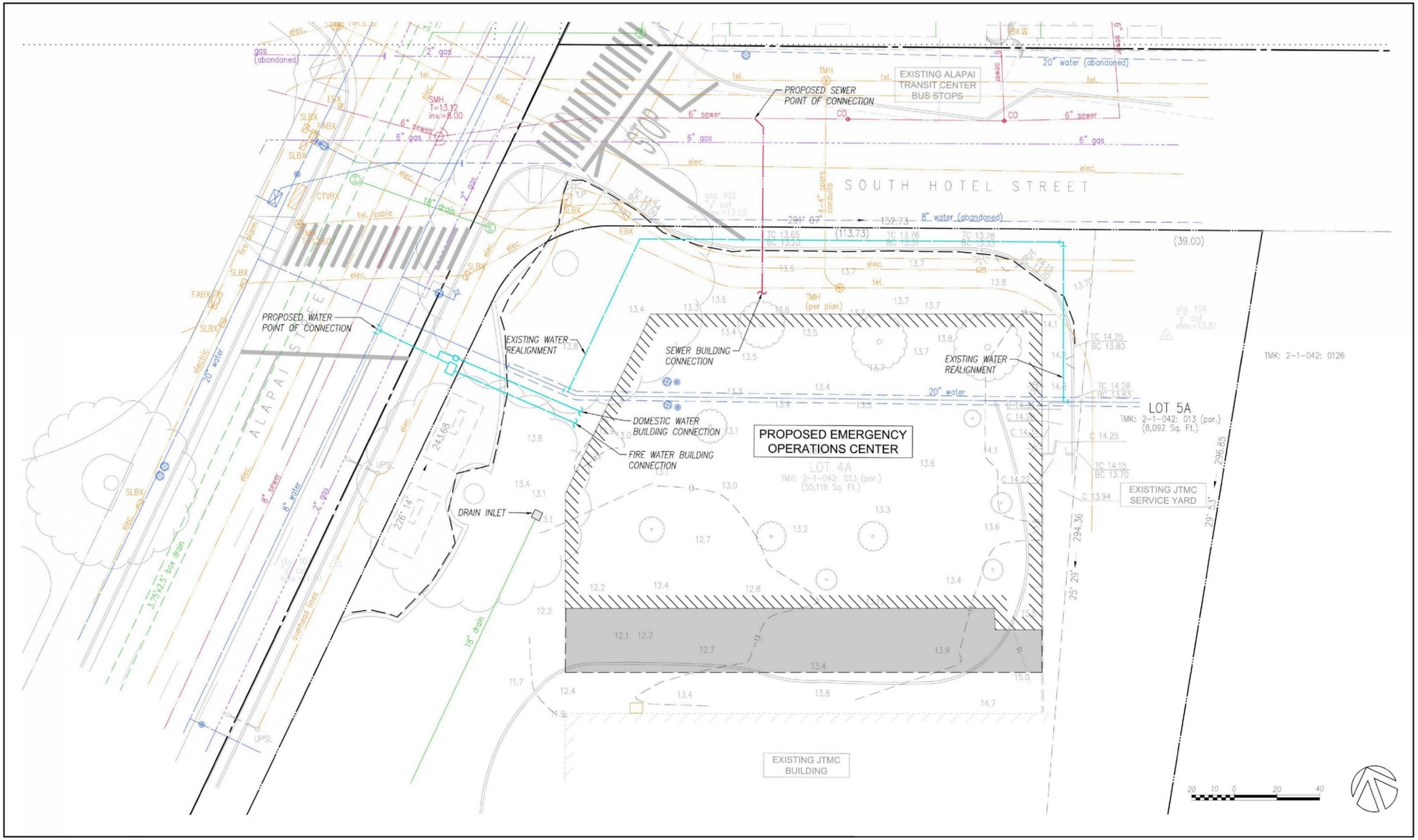


Figure 3.4 **Concept Site and Utility Plan (G70)**

This page left intentionally blank.

Monstera (*Monstera deliciosa*) was observed growing from the base of two monkeypod trees in the middle and the northwestern corner of the lot. Monkeypod seedlings were abundant under the middle tree as well as scattered on the ground between trees.

Along the eastern edge of the site, a small landscaped area is planted in a swooping design with ornamental shrubs including blue plumbago (*Plumbago auriculate*) and coral creeper (*Barleria repens*).

Groundcover was patchy and primarily consisted of Bermuda grass (*Cynodon dactylon*), as well as "weedy" species such as nut grass/purple nutsedge (*Cyperus rotundus*), dandelion (*Taraxacum officianale*), asthma-plant/pill-bearing spurge (*Euphorbia hirta*) and obscure morning glory (*Ipomea obscura*).

Fauna

At the time of the survey, avian fauna observed at the Project site included several rock doves (*Columba livia*) flying overhead and a single zebra dove (*Geopelia striata*) in the garden area. Neither species is Federally- or State-listed as endangered or threatened, nor are they protected by the Migratory Bird Treaty Act of 1918 (MBTA). Indigenous Hawaiian seabirds, such as the *manu o kū* or white tern (*Gygis alba rothschildi*), were not observed in the survey area. However, white terns are known to have successfully adapted to an urban environment over time (Pyle, 2017). Therefore, they may occur in the Project area. These terns carry no special Federal Protected, Endangered or Threatened status; however, they are considered endangered on Oʻahu.

No mammalian species, including the Federally- and State-listed endangered Hawaiian hoary bat (*Lasiurus semotus*), were detected in the Project area during the survey. According to the USFWS, the Hawaiian hoary bat is known or believed to occur across the City and County of Honolulu (USFWS, n.d.); therefore, it is possible for them to overfly the Project site on occasion. Although there were no terrestrial fauna observed during the survey, it is likely that common species known to occur in urban environments, such as domestic dogs (*Canis familaris*), domestic cats (*Felis catus*), mongoose (*Herpestes auropunctatus*), rats (*Rattus spp.*) and mice (*Mus domesticus*), may occasionally be present on the Project site.

Anticipated Impacts and Proposed Mitigation

The proposed Project will not cause long term effects to endangered or threatened plant or animal species. While landscaping along Alapaʻi Street will remain, construction of the Project will remove existing landscape on the site. New landscaping will be consistent with existing flora and may include the use of ornamental shrubs and various species of groundcover. Existing trees may be relocated elsewhere on the Project site.

Although not identified during the avian and terrestrial mammal surveys, the potential presence of the following species may require additional consideration and mitigation measures:

- Hawaiian Seabirds – Hawaiian seabirds may occasionally overfly the Project area. No seabird nesting occurs on the property and therefore the only likely impact to seabirds would be the installation of outdoor lights. Night lights can disorient seabirds, resulting in their potential downing and harm from collision with objects and/or predation by feral dogs and cats if downed. All construction activity will take place during daylight hours. In addition, exterior facility lighting will be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights or other structures. If tree trimming is required, all trees will be examined to determine if any

white terns are nesting in them, especially during the white tern breeding season (January through June). Should a nest be discovered, work will cease within a minimum radius of 100 feet of the nest for a minimum of 60 days; if a nest with chicks is discovered, work will cease for 30 days. If a previously undiscovered nest is found after work begins, work will case within a minimum radius of 100 feet of the next and the USFWS will be contacted. Information about seabird fallout will be provided to all staff working on the site prior to the initiation of work. If a downed seabird is found, the contractor will contact USFWS immediately.

- Hawaiian Hoary Bat – It is possible that the Hawaiian hoary bat, or ʻōpeʻapeʻa (*Lasiuris cinereus semotus*), may overfly the area on occasion. Some trees on the property have potential value as roosting habitat for this listed species. The Hawaiian hoary bat has been documented to use coconut palms (*Cocos nucifera*), kukui (*Aleurites moluccana*), avocado (*Persea americana*), shower trees (*Cassia javanica*), and eucalyptus (*Eucalyptus spp.*); USFWS 1998). To avoid any potential negative impacts to roosting bats, woody vegetation taller than 15 ft will not be removed during pupping season (between June 1 and September 15). Additionally, barbed wire will not be utilized for fencing.

3.5 Natural & Manmade Hazards

The island of Oʻahu is susceptible to potential natural hazards, such as hurricanes, tropical storm, high winds, climate change and sea level rise (SLR), flooding and tsunami inundation, earthquakes, wildfires, and manmade hazards. The island's unique geographical challenges, aging infrastructure, and fragile logistics system further highlight the importance of collaborative effort over time to manage complex emergency management issues. The State of Hawaiʻi Department of Defense (DoD), Emergency Management Agency (HI-EMA) in cooperation with DEM administers various civil defense programs and warning systems that alert the public of emergencies and natural hazards. In accordance with the NIMS, all disaster response starts with DEM in the City and County of Honolulu. As such, the proposed action to construct a new EOC with offices for DEM and CCSR will enhance City response to natural hazard events, therefore benefitting the overall island. The new EOC will facilitate knowledge- and resource-sharing, accommodate an increase in staff, and provide adequate physical operational space.

Existing Conditions

Hurricanes, Tropical Storms and High Winds

In Hawaiʻi, northeast tradewinds predominate throughout most of the year and generally range in velocity between 10 and 20 miles per hour (mph) with tradewinds of 40-60 mph periodically occurring. When wind speeds exceed 70 mph, the storms are characterized as hurricanes. Hurricanes are characterized by strong tropical winds with sustained wind speeds greater than 74 miles per hour and by widespread heavy rains in excess of six inches. Heavy rains may result in deadly and destructive flooding. Strong winds can produce microbursts and mini-swirls, which are small, localized wind bursts that can reach speeds of greater than 200 mph. Depending on the wind speeds, hurricanes can damage on-shore buildings and structures and vessels within the harbor. The weather associated with hurricanes and tropical storms typically lasts between 12 to 18 hours, with a slow-moving storm lasting around 24 hours. Hurricanes are classified according to "Category", according to wind speeds as follows: Category 1 hurricanes have wind speeds between 74 to 95 mph; Category 2 hurricanes have winds between 96 to 110 mph; Category 3 (major) have wind speeds of 111 to 129 mph; Category 4 (major) have wind speeds from 130 to 156 mph; and, Category 5 hurricanes have wind speeds exceeding 157 mph (HI-EMA, 2018). Category 1 and 2 storms are still dangerous and require preventative measures.

The weather associated with hurricanes and tropical storms can lead to storm surge, which is an abnormal rise of water generated by a storm, over and above the predicted astronomical tides. Storm surge occurs when water is pushed toward the shoreline by the force of winds from the storm (HI-EMA, 2018). Coastal areas are particularly vulnerable to storm surge due to extreme flooding caused by the rise in water level.

The State of Hawaiʻi is located in the Central Pacific basin where hurricane season runs from June 1 to November 30 (HI-EMA, 2018).. During hurricanes and storm conditions high winds cause strong uplifting forces on structures, particularly roofs. Wind-driven materials and debris can attain high velocity, causing devastating property damage and harm to life and limb.

Hurricanes occasionally approach the Hawaiian Islands, but rarely reach the islands with hurricane force wind speeds. Records show that strong wind storms have struck all major Hawaiian Islands. The first officially recognized hurricane in Hawaiian waters was Hurricane Hiki in August 1950. Since that time, five hurricanes have caused serious damage in Hawaiʻi: Nina (1957), Dot (1959), ʻIwa (1982), Estelle (1986), and ʻIniki (1992). The island of Oʻahu has never experienced a hurricane or tropical storm make direct landfall in modern history. However, the island has been subject to indirect effects when storms pass close to the islands, such as heavy rain, strong winds, and storm surge. On Oʻahu, several storms have resulted in activation of the EOC between 2012 and 2017 (HI-EMA, 2018). Tropical Storm Iselle (2014) brought heavy rains and strong winds which resulted in downed trees and wires, and widespread power outages. In 2015, Hurricane Kilo brought high winds and flooding, causing sewers to overflow and water to escape manholes. Also in 2015, a swell from Hurricane Ignacio generated surf 10 to 20 feet, leading to occasional deposited sand and other debris on roadways along the coastline and resulted in one injury. Other tropical storms that resulted in EOC activation include Hurricane Jimena (2015), Tropical Storm Niala (2015), Tropic Storm Oho (2015), and Hurricane Olaf (2015).

It is difficult to predict when these natural occurrences may occur, but it is reasonable to expect that future events will occur and may be increasing in frequency due to global climate change. The entire State of Hawaiʻi is vulnerable to the damaging impacts of hurricanes. The coastal areas of the State are more susceptible to damage caused by a combination of high winds and tidal surge. Inland areas, especially those in the 1% and 0.2% annual chance flood areas designated by FEMA are at risk due to heavy rains and flooding caused by storms. The Project area is, however, no more or less vulnerable than the rest of Oʻahu to the destructive winds and torrential rains associated with hurricanes.

Climate Change and Sea Level Rise

Rapid anthropogenic climate change is a well-established fact within the scientific community. As a result of climate change, oceans are warming and acidifying, ice sheets and glaciers are melting, and sea levels are rising (NASA, 2015). Rising sea levels and high water levels caused by storms will leave developed areas near coastal areas vulnerable to coastal erosion and sea water innundation. Chronic coastal flooding is occurring now, and over the next 30 to 70 years the flooding is expected to increase with SLR and impact homes and businesses located near the shoreline (HCCMAC, 2017).

The Hawaiʻi State Legislature passed a law (SB 2745) in 2012 that amends the State Planning Act to include climate change as one of the priority guidelines. In 2014, the Hawaiʻi State legislature passed the Hawaiʻi Climate Adaptation Initiative Act (Act 83, 2014), codified as Hawaiʻi Revised Statutes (HRS), Chapter 225P, which established an Interagency Climate Adaptation Committee (ICAC). The purpose of the act is to address the effect of climate change by implementing a climate adaption plan. On June 6, 2017, Governor David Ige signed Act 32, Session Laws of Hawaiʻi, which amended HRS, Chapter 225P by renaming the ICAC the "Hawaiʻi Climate Change Mitigation and Adaptation

Commission". The *Hawai'i Sea Level Rise Vulnerability and Adaptation Report* was published in December 2017 by the commission to provide a basis for recommendations on reducing exposure and increasing adaptability to the impacts of SLR resulting from human-generated greenhouse gas (GHG) emissions. Research within the report notes that the intensity and frequency of natural disasters have increased and will continue to do so, and further provides technical projections of areas along the coast that are vulnerable to SLR based on the latest available science. The report finds that for O'ahu, with no mitigative actions, 3.2 feet of SLR and its associated erosion, flooding, and waves will have significant impacts to the island's land, building and land values, residents, structures, and major roadways. Rising sea levels will increase the probability of coastal flooding and erosion, which could damage coastal infrastructure. Portions of the island vulnerable to 3.2-foot SLR by 2100 are referred to as the SLR Exposure Area (SLRXA) (PacIOOS, 2018).

Mayor Kirk Caldwell issued an executive order on climate change and SLR with the intention of establishing City policies to address climate change and SLR in accordance with the *Hawai'i Sea Level Rise Vulnerability and Adaptation Report*, and two publications from the City Climate Change Commission: *Sea Level Rise Guidance* and the *Climate Change Brief*. The guidance issued through these publications affirmed that a 3.2-foot SLR scenario by the end of the century was a reasonable benchmark for planning purposes (City Climate Change Commission, 2018).

The proposed Project is not located along coastal areas and outside of the SLRXA, as indicated in the Hawai'i Sea Level Rise Viewer (*Figure 3.5*). The Project site is primarily flat, with elevations ranging from 12 to 14 feet above MSL throughout the entire site.

Flooding and Tsunami Inundation

The Project site itself is primarily flat and level throughout, with an elevation ranging 12 to 14 feet above MSL. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) map number 15003C0362G, effective on January 19, 2011, the Project area is located in Zone "X", an area determined to be outside the 0.2% annual chance floodplain and outside of the 500-year floodplain *(Figure 1.6)*. There is a minimal to no threat of serious riverine or coastal flooding at the Project site, nor is the parcel subject to any flood regulations. The site is not located within a FEMA Special Flood Hazard Area (SFHA).

To understand potential impacts on the State, this extreme tsunami was modeled and is called the Great Aleutian Tsunami (GAT) inundation area. In the City and County of Honolulu, the following are located within the GAT inundation area: 760 State buildings with a replacement cost value of over $3 billion; 94.8 miles of State road; and, 185 critical facilities. About a half dozen tsunamis have crossed the Pacific Ocean in the last decade, three of which have required mandatory shoreline evacuation across the State.

The City classifies tsunami evacuation zones into the following three designations: Tsunami Evacuation Zone, where evacuation is required for any tsunami warning; Extreme Tsunami Evacuation Zone (XTEZ), where additional areas must be evacuated only during an extreme tsunami event generated from earthquakes of Magnitude 9 or higher on the Richter scale (based on the GAT); and, safe areas that are anticipated to be outside of the inundated areas. According to the City and County of Honolulu, Department of Emergency Management Tsunami Evacuation Zone maps (Map 19, Inset 2 – Airport to Waikiki), the subject property is within the XTEZ. See *Figure 1.6*.

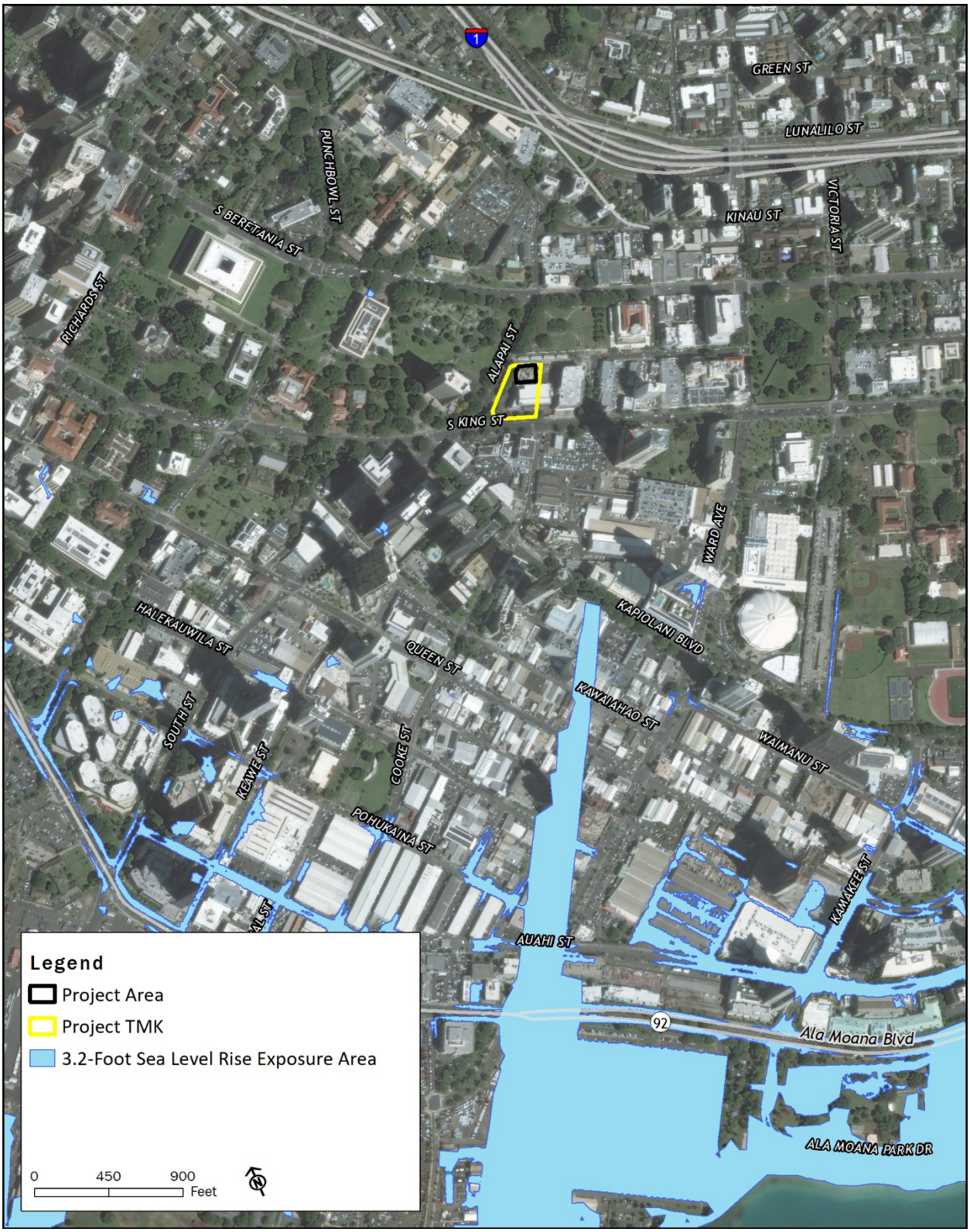


Figure 3.5 **Sea Level Rise Exposure Area**

The Pacific Tsunami Warning Center (PTWC) in ‘Ewa Beach on O‘ahu provides official tsunami warnings for the State depending on the level of seismic activity recorded and potential for a tsunami. Tsunami warning levels include Tsunami Warning, Watch, Advisory, or Information Bulletin/Statement in decreasing order of risk, PTWC is managed by the National Atmospheric Administration (NOAA) National Weather Service (NWS). From the PTWC, NWS disseminates interpretive information to emergency managers, including DEM, and other officials, news media, and the public. For distant-source tsunamis, HI-EMA coordinates the statewide sounding of the first tsunami warning siren. In the City and County of Honolulu, DEM is responsible for subsequent siren soundings, disseminating public information on tsunami evacuations, and issuing the all-clear (HI-EMA, 2018).

Earthquakes

Earthquakes in the Hawaiian Islands fall into three main categories: volcanic, tectonic, and mantle. Each year, thousands of earthquakes occur within the State, however the majority are detectable only with highly sensitive instruments (USGS, 2019). Moderate earthquakes occasionally occur in the islands; however, most cause little or no damage. The majority of earthquakes in Hawai‘i occur on and around the Island of Hawai‘i, especially in the southern districts of the island where the most active volcanoes in the State – Kilauea, Mauna Loa, and Loihi – are located.

The severity of an earthquake is classified by magnitude and intensity. Magnitude is a measure of the amount of energy released during an earthquake, while intensity is a measure of the severity of ground shaking (HI-EMA, 2018). Seismic hazard is typically characterized in terms of peak ground acceleration (PGA) measured as a percent of Earth’s gravitational acceleration (%g) (USGS, 2017). For example, areas with a PGA at less than 17% have a very small probability of experiencing damaging earthquake events, while areas with a PGA at over 100 %g would make it difficult to stand and could topple structures. Seismic Design Categories (SDC) reflect the likelihood of experiencing earthquakes of various intensities. Building design and construction professionals use SDCs to determine the level of seismic resistance required for new buildings.

Due to the relatively short period of documented earthquake monitoring in the State of Hawai‘i, information pertaining to earthquakes that were felt on the Island of O‘ahu may not be complete. In general, over the last 150 years of recorded history, we are not aware of reported earthquakes greater than Magnitude 6 occurring on the Island of O‘ahu. The last major earthquake to be felt on O‘ahu was the Honomu Earthquake in 1973, which resulted in minor cosmetic damage to structures, but fortunately did not result in any reported injuries or deaths. *Figure 3.6, Seismic Hazards* depicts the maximum PGA expected over the next 50 years in the State with at least a 2% chance of exceedance.

Colors indicate shaking in PGA and the corresponding SDC. According to USGS, expected ground acceleration on O‘ahu is no greater than 17% with an SDC of “B”, which indicates an earthquake hazard of moderate intensity with slight damage. Seismic hazards in the area are no greater in the Project area than other locations on O‘ahu.

The potential impacts of global climate change on earthquake probability are unknown. For example, some scientists believe that melting glaciers could induce tectonic activity. Secondary impacts of earthquakes could be magnified by climate change, as rising air temperatures facilitate soil breakdown and intense rainstorms cause greater erosion or greater susceptibility to dam failure.

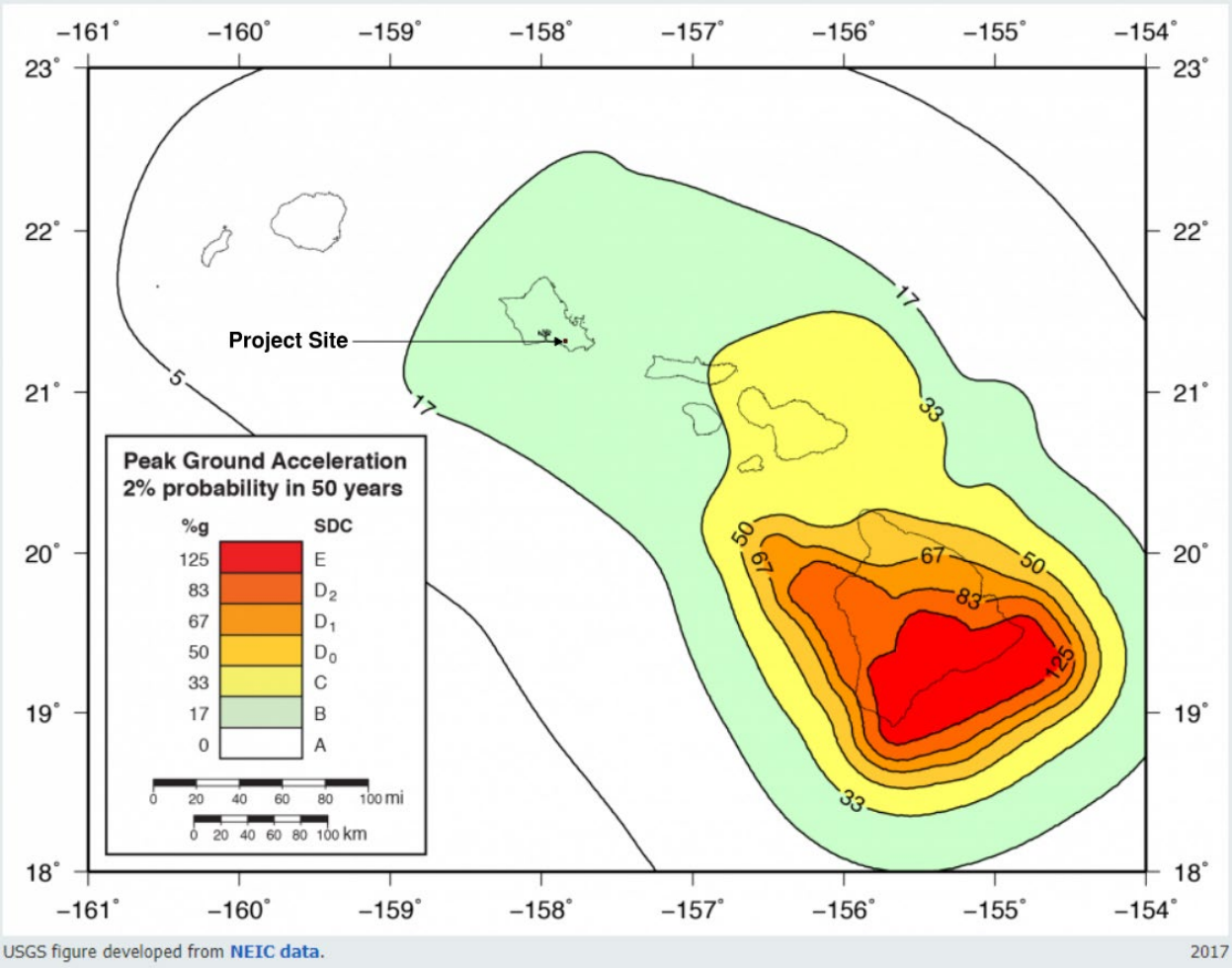


Figure 3.6 **Seismic Hazards**

Wildfires

The Hawaiian Islands are also vulnerable to wildland fired, especially during the summer months from prolonged drought and/or high winds. The greatest danger of fire is where developed, urbanized areas border densely vegetated areas or wildland (trees and brush), also known as the wildland-urban interface (WUI). Overgrown vegetation close to homes, pockets of open space within subdivisions, and an increase of non-native high fire-intensity plants around developed areas pose increasing threats to commercial, community, environmental, and residential resources. A great majority of wildfires are human caused (intentionally caused or by negligence) and often start along roadsides. Wildfires can and do also occur naturally.

According to the Hawai‘i Wildfire Management Organization data referenced in the *Hawai‘i Multi-Hazard Mitigation Plan (2018 Draft)* (HI-EMA, 2018), the Project site’s risk from wildfire is low. The site is developed and not adjacent to overgrown vegetation. Notably, climate change has the potential increase vulnerability to wildfire in the State due to longer droughts, an increase in consecutive dry days, and a decrease in days of intense rainfall.

Manmade Events

According to FEMA, manmade hazards are distinct from natural hazards in that they originate from human activity (FEMA, 2003). While the risks presented by natural hazards may be increased or decreased as a result of human activity, they are not inherently human-induced. Manmade hazards Hawai‘i may be vulnerable to include terrorism. Terrorism refers to the use of Weapons of Mass Destruction (WMD), including biological, chemical, nuclear and radiological weapons; arson, incendiary, explosive, and armed attacks; industrial sabotage and intentional hazardous materials releases; and “cyberterrorism.” Within these general categories, however, there are many variations (FEMA, 2003).

Terrorism threat prevention and protection is designated to the State DoD, Homeland Security Division pursuant to HRS, Chapter 128A. Terrorism threat monitoring and detection is conducted at the State Fusion Center and the U.S. Pacific Command Joint Operations Center. In the event of a homeland security emergency in the State, HI-EMA is responsible for coordinating the State’s government response to impacts of the incident in cooperation with other Federal, State, and County agencies responding to the event (HI-EMA, 2017). On O‘ahu, DEM is responsible for coordinating with HI-EMA and activating the EOC when needed.

Due to rising geopolitical tensions between the U.S. and North Korea, Hawai‘i may be vulnerable to missile and nuclear threat, prompting preparation that began in late 2016. HI-EMA manages the State Warning Point (SWP), which is staffed on a 24-hour, 7 day-a-week basis. In the case of a possible missile launch, the U.S. Pacific Command Joint Operations Center would notify the SWP. Upon receipt of this notification, HI-EMA will activate the “Attack-Warning” signal on all outdoor sirens statewide and transmit a warning advisory on radio, television, and cellular telephones within two minutes (DoD, 2017). In cases of a missile threat, there are no public shelters (blast or fallout) designated in the state due to the short warning time. Most recently, a false missile alert was issued on January 13, 2018 by HI-EMA. Various investigations have subsequently taken place by the State DoD and HI-EMA. The incident is currently under investigation by the Federal Communications Commission Public Safety and Homeland Security Bureau. Meanwhile, HI-EMA continues to take action to improve its processes while all future drills have been suspended until a full analysis has been completed.

Anticipated Impacts and Proposed Mitigation

The Project will not increase the risk of human health or property damage due to natural hazards. The purpose of the Project is to construct a new EOC including offices for DEM and CCSR. As a critical facility, the EOC serves as the City’s centralized hub supporting multi-agency and public/private coordination, information, and resource management during a wide range of natural hazard and emergency situations. The Project is a necessary and important component to City’s overall natural hazard response and mitigation strategy.

Hurricanes, Tropical Storms and High Winds

The effects of past storm events have caused minimal to no damage in the Project area. The future threat of hurricanes in downtown Honolulu cannot be calculated, although the frequency of hurricane threats may increase with climate change and warming ocean waters and the resulting rise in sea level. Waves generated by these storm events can cause coastal erosion and flooding, which will be worsened by SLR. According to research within the Hawai‘i Multi-Hazard Mitigation Plan (2018 Draft), the entire population is vulnerable to hurricane hazards, with approximately 15.2% of the island’s population vulnerable to impacts of a Category 4 hurricane event. Hurricane hazard may potentially cause over $2 billion in replacement costs to State buildings (HI-EMA, 2018). Depending on the

category of hurricane, between 14.7 miles to 43.3 miles of the City's 375.3 miles of road would be vulnerable to flooding as a result of storm surge inundation, degrading the integrity of the road and isolating population and communities. Disruption to the island's critical facilities including airports, harbors, transportation and utility infrastructure, and other public services could occur, impacting resident and visitor travel and all forms of economic activity. The City has 134 critical facilities within a Category 4 hurricane inundation area (HI-EMA, 2018).

When a hurricane is approaching, the Central Pacific Hurricane Center (CPHC) provides guidance. When necessary during an event, CPHC issues a hurricane watch when a storm is expected to make landfall within 36 hours. A hurricane warning is issued when landfall is likely within 12 to 24 hours. The warning is provided to the SWP managed by HI-EMA, which maintains situational awareness and is continually staffed to monitor broadcast and online media, weather forecasts, and other warning systems to identify emerging threats. As a critical facility, DEM activates the EOC during storms to closely monitor local conditions and report incidents to the SWP that meet the notification criteria and to disseminate information updates to the public. The closest potential hurricane evacuation shelter is located at McKinley High School, approximately 0.4-mile southeast of the Project site.

If a hurricane, tropical storm, or high winds occur during construction, activities would cease, and equipment will be secured in work and support areas. To mitigate against long-term potential impacts from hurricanes, the proposed Project will be designed to meet the current International Building Code (IBC) and City building code requirements pursuant to the ROH, Chapter 16. The main EOC is located on the second floor of the proposed building. Essential equipment may also be located on higher floors wherever feasible to avoid inundation from storm surges. No direct, secondary, or cumulative impacts related to hurricanes, tropical storms, and high winds are expected.

Climate Change and Sea Level Rise

Climate change and SLR and associated coastal impacts are a concern for the State of Hawai'i and the world and requires a global response. Construction of the Project would not result nor constitute a source of impact to the climate of the project area or region and does not propose activities that will lead to an increase in the generation of GHGs. The Project site is furthermore located outside of a SLRXA.

As discussed in *Chapter 3.3*, the Project will include installation of LID improvements and BMPs where practical and feasible to improve storm water quality and manage storm water quantity. The proposed project will maximize pervious and landscaped areas within the site to the maximum extent practicable. Dry swales, rain gardens, and infiltration trenches will be utilized for LID. As a result, all storm runoff will be detained onsite to attenuate the peak runoff flow. Electric utilities may be relocated to higher floors to account for a future rise in sea level.

The new EOC facility will include offices for CCSR, the primary City agency tasked with tracking climate change science and developing climate action and adaptation plans. Relocating CCSR offices into the same building as DEM and in closer proximity to other key municipal agencies will improve City collaboration on climate change issues. The new facility will also accommodate an increase in DEM staff, which will help build the City's natural hazard response capacity as the frequency and severity of storms increases. On the long-term, the Project will improve the City's overall response and adaptation to climate change and SLR.

Flooding and Tsunami Inundation

Short-term impacts due to flooding or tsunami inundation are not expected. During construction, activities would cease for the period that the flood or tsunami hazard exists. Equipment would be secured in work and support areas. No additional impacts related to construction are anticipated.

No long-term adverse impacts due to the Project are expected. Construction of new EOC building will adhere to the most current IBC, State, and City building code standards. Design of the building may also incorporate standards outlined in FEMA 543 Publication, Risk Management Series, Design Guidelines for Improving Critical Facilities from Flooding and High Winds. Any increase in runoff caused by an increase in impervious surfaces will be mitigated on site as required to meet City standards. Onsite drainage will be designed to flow away from buildings towards landscaped areas.

The proposed project site is located entirely within the City-designated XTEZ. In the case of extreme tsunami, facility users will be able to take shelter in the upper floors of the proposed structure. The EOC is furthermore located on the second floor of the building to mitigate for potential vulnerability during flooding and tsunami events.

The new EOC will be used to coordinate City-wide response to flooding and tsunami events. From the new EOC, DEM will coordinate with the PTWC, which issues tsunami messages to notify emergency managers, the public, and other partners about the potential for a tsunami following a possible tsunami-generating event. DEM will also sound subsequent siren warnings, disseminate public information on tsunami evacuations, and issue the all-clear from the new EOC. As in the case of hurricanes, DEM monitors local conditions and reports incidents to the SWP.

Notably, climate change and SLR, as discussed in the previous section, will exacerbate the extent of coastal inundation from tsunami. Inundation will reach further inland, putting more people and property at risk. Therefore, the new EOC will play an important role in public safety during flooding and tsunami events.

Earthquakes

Construction of the proposed project is not expected to be adversely affected by seismic activity as the proposed new structure would be constructed for a long-term design life in accordance with the most current IBC seismic design standards and City building code standards, which provides minimum design criteria to address potential for damage due to seismic disturbances.

Wildfires

The Project site is located in a developed, urbanized area away from overgrown vegetation, therefore no adverse impacts due to construction or long-term operation of the Project are anticipated, and no mitigation measures are required.

Manmade Events

No short-term impacts related to construction or long-term impacts related to operation of the new EOC are anticipated. The Project site is no more threatened by manmade hazard events than other sites on the island. As a critical facility, the new building will adhere to Federal force protection guidelines requiring building hardening, building setbacks, perimeter protection and secured entry points, as outlined in the *FEMA 426 and 427 Publication, Risk Management Series, Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings* and *FEMA 386-7 Publication, Risk*

Management Series, Integrating Manmade Hazards Into Mitigation Planning. Construction of the new, expanded EOC will enable DEM to efficiently support State response to manmade hazards during cases of emergency.

3.6 Archaeological and Historical Resources

Existing Conditions

An Archaeological Inventory Survey (AIS) and Cultural Impact Evaluation (CIE) was conducted by Cultural Surveys Hawaiʻi (CSH) for the ATC and JTMC Final EA published in 2008. The AIS documented two historic properties within the approximate 4.1-acre survey area defined as the entire footprint of the ATC and JTMC site. The APE also encompassed the proposed EOC site. The AIS and CIE included research on historic and archaeological background and engagement in community consultation. A ground survey of the 4.1-acre survey area was also conducted to evaluate the likelihood of cultural deposits and for planning of backhoe testing. Limited subsurface testing of 28 trenches with a backhoe was conducted to determine if subsurface deposits were located in the project area. Documentation included trench and mapped with an evaluation of function, interrelationships and significance. All sites were assigned State Inventory of Historic Places (SIHP) site numbers.

Archaeological background research into Kulaokahuʻa indicated that the area was a "dry, dusty plain" in pre-contact and early post-contact eras. It was used as a gaming field for *maika,* a Hawaiian bowling type of game, and other sports by Hawaiians, and was traversed by foot trails and later horse paths that connected the two more populous areas of Kou (Honolulu) and Waikīkī. The area was thus not a focus for habitation or agriculture until the late nineteenth century, when people, mainly *haole* (foreign-born residents), began to move into this new suburb of Honolulu. *Māhele* records show that Kulaokahuʻa became Crown lands. Much of this area was quickly divided into lots and rented or sold as house lots, mainly to *haole* residents who dug wells in the area to provide much needed water.. Typically, only historic artifacts have been found in trenches excavated in this district.

Fieldwork for the AIS was carried out in close consultation with the DLNR State Historic Preservation Division (SHPD) and primarily consisted of the excavation of 28 approximately 6-meter long test trenches. Two sites were identified: SIHP 50-80-14-6901 consisting of four historic trash pits and SIHP 50-80-14-6902 designating three burials.

SIHP 50-80-14-6901 consists of four historic trash pits, dating to between A.D. 1820 and 1920. This site is recommended as eligible for the National and Hawaiʻi Register under Criterion D (for its information content). The most common type of artifacts were bottles used for beverages, condiments, medicine, and perfume, or bottle glass fragments. The assemblages of SIHP 50-80-14-6901 are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with refuse from the Cooke and Atherton families resident in the immediate area in the indicated timeframe.

During subsurface testing, a burial was discovered on the SIHP 50-80-14-6902 along Kealamakai Street. Working in close consultation with SHPD, an additional five trenches were excavated to delimit the extent of the burials. Two additional burials were then encountered. Two of the three total burials were perceived to be in coffins (Burials 1 and 2). In the third case (Burial 3) the presence or absence of a coffin was not determined before all work in the vicinity was halted (as per present norms following the identification of human remains). These three burials are collectively considered as constituting SIHP 50-80-14-6902. The site is eligible for listing on the National and Hawaiʻi Register under Criteria D and E (Hawaiʻi Register-only – for its potential traditional cultural significance to an ethnic group).

Due to the findings during testing, the previous JTMC project was found to potentially affect cultural resources and historic properties in the area, therefore mitigation measures would be implemented. The AIS and CIE was accepted by SHPD on December 7, 2007 as satisfying the requirements of HAR Chapter 13-276-5, Identification and Inventory of Historic Properties (Log No. 2007.3993, Doc. No. 0712ED04). SHPD also concurred with the following two proposed mitigation measures: 1) a burial treatment plan for SIHP 50-80-14-6902 where three burials were preserved in place within a single burial preserve area; and, 2) preparation of an Archaeological Monitoring Plan (AMP) consisting of on-site archaeological monitoring for all ground disturbance for excavations deeper than 18 inches below the land surface.

In accordance with the first mitigation measure approved by SHPD, a burial treatment plan was prepared in February 2008 by CSH in consultation with the Office of Hawaiian Affairs (OHA), Hui Mālama I Nā Kūpuna o Hawaiʻi Nei, and the Oʻahu Island Burial Council (OIBC) which proposed the preservation of the burial site in place and the establishment of a permanent burial site buffer consisting of a circular area with a 30-foot diameter centered on the burial site. Landscaping within the preserve area is limited to three tī leaf plants and lauaʻe ground cover. There will be no signs or plaques. In the long term, no activity or work is permitted to take place within the burial site preserve; no subsurface excavation shall be allowed, except for landscape=related digging in the soil for purposes of planting and maintaining the vegetation within. No storage of materials or equipment is permitted to take place within the burial site preserve. No trash or other foreign objects shall be allowed within the burial site preserve, which shall be cleared of debris regularly. Landscaping and maintenance of the plants within the burial site preserve shall only be conducted using hand tools; no power tools shall be used.

Should the burial site preserve be damaged by natural or man-made causes, the SHPD shall be contacted and consulted prior to making any additional repairs or changes to the site. In the unlikely event that human skeletal remains are exposed, they should be temporarily covered and protected from the weather, from onlookers, and / or from any other potential agents of harm until the SHPD has been consulted. If applicable, remedial steps needed to repair the burial site preserve shall be determined by the SHPD.

The metes and bounds of the permanent burial site buffer were to have been recorded by a certified land surveyor and registered at the Bureau of Conveyances by the landowner, in order to protect the burial site in perpetuity. The burial treatment plan was reviewed and approved by SHPD on March 10, 2008 (Log. No. 2008.0556, Doc. No. 0803KP10).

Subsequently, an AMP was also prepared by CSH and accepted by SHPD on July 5, 2010 (Log No. 2010.2405, Doc. No. 1007NM04) as meeting the requirements of HAR, Chapter 13-279. The AMP and acceptance letter are provided in *Appendix B*. See *Figure 3.7* illustrating the historic sites identified in the Project area and the main archaeological monitoring area. The AMP stipulates that any departure from the contents will only follow consultation with and written concurrence from SHPD.

Anticipated Impacts and Proposed Mitigation

Construction of the Project will require ground disturbing activities such as grubbing, grading, and minor excavations for utilities and installation of piles. The existing water line running through the site will be demolished and removed. Therefore, construction may result in adverse impacts to historic and archaeological resources in the Project area. In 2019, DDC engaged in the State historic preservation review process and necessary consultation with SHPD pursuant to HRS, Chapter 6E-8 and HAR, Section 13-275-5. Because previous extensive historic and archaeological work was performed in the EOC Project area, consultation was undertaken to seek a Letter of Determination documenting SHPD's

concurrence on utilization of the accepted 2010 AMP for the Project site as mitigation for potential impacts to historic and archaeological resources (see *Chapter 7.0* for the Request for a Letter of Determination to SHPD dated January 24, 2020). Pursuant to HAR, Chapter 13-279-4, the AMP specifies the following eight requirements in terms of the archaeological monitoring during construction: anticipated historic properties; locations of historic properties: fieldwork; archaeologists' role; coordination meeting; artifact collection, documentation, and laboratory work; report preparation; and, archiving of materials. The AMP and SHPD acceptance letter are provided in *Appendix B.* No additional conditions were imposed by SHPD.

An informational presentation was made to the OIBC on January 8, 2020. CSH presented the history of research and testing performed on the 4-acre survey area and a summary of the burial treatment plan and provided information on all existing approvals. No substantive concerns were raised by the OIBC or attending general public. As such, DDC will move forward with the following steps for the subject Project:

1. Ongoing consultation with SHPD and OHA pursuant to HRS 6E-8;
2. Confirmation with SHPD as to past AIS work is adequate in scope and coverage; and,
3. Implement and/or update existing archaeological monitoring program during construction phase of the proposed EOC Project.

With the employment of archaeological monitoring as mitigation, no long-term adverse impacts to historic and archaeological resources are expected from operation of the Project.

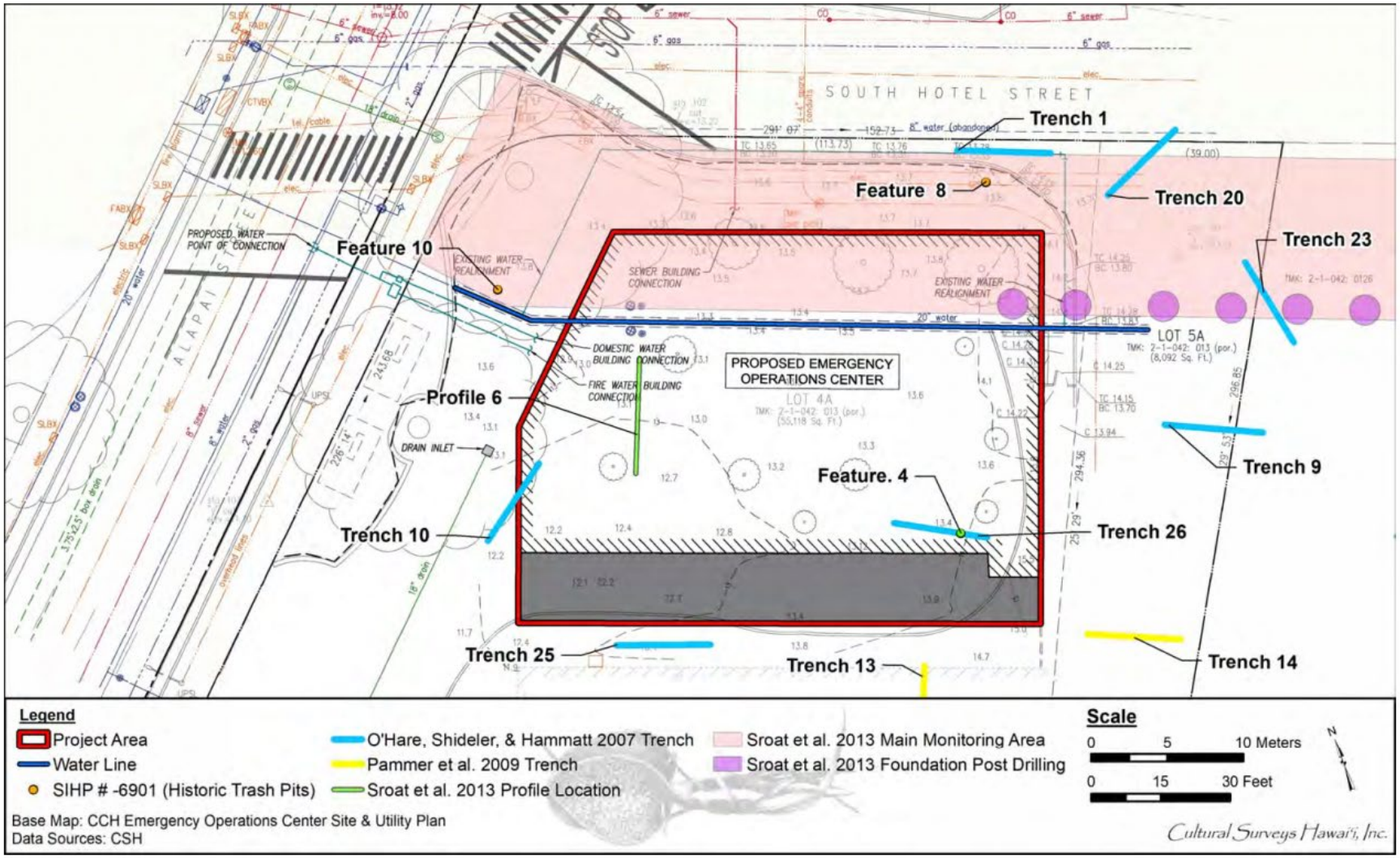


Figure 3.7 **Previous Archaeological Work and Existing Archaeological Monitoring in the Project Area**

3.7 Cultural Resources and Practices

Existing Conditions

Traditional cultural practices are based on a profound awareness concerning harmony between man and our natural resources. The Hawaiians depended on cultural practices for survival. Based on their familiarity with specific places and through much trial and error, Hawaiian communities were able to devise systems that fostered sustainable use of nature's resources. Many of these cultural practices have been passed down from generation to generation and are still practiced in some of Hawaiʻi's communities today.

An AIS and CIE were prepared by CSH for the ATC and JTMC Final EA published in January 2008. The CIE assessed traditional cultural practices and resources within ATC and JTMC site, including the proposed EOC site. The area is understood to have been virtually entirely paved since circa 1938. Two historic properties were identified within the area, including SIHP 50-80-14-6901, consisting of four historic trash pits, and SIHP 50-80-14-6902, consisting of the three burials discussed in *Chapter 3.6.* SIHP 50-80-14-6901 is comprised of a variety of European, English, and American wares but are not regarded as cultural properties. Other than interment of the deceased, there is no discernible evidence of a traditional Hawaiian use within the immediate Project site. Outside of the immediate Project site, the shared kuleana (responsibility) to mālama (protect or preserve) iwi kūpuna (remains of ancestors) identified on the Project parcel and preserved pursuant to the burial treatment plan is a contemporary cultural practice that persists today.

Anticipated Impacts and Proposed Mitigation

The proposed Project will not result in short- or long-term adverse impacts to cultural resources and practices. Proposed mitigation measures for the burials (SIHP 50-80-14-6902) is discussed in the previous *Chapter 3.6*. No other mitigation measures are proposed.

3.8 Socio-Economic Characteristics

Existing Conditions

The Project site is located within the Urban Honolulu Census Designated Place (CDP) on the island of Oʻahu, which is entirely under the jurisdiction of the City and County of Honolulu. *Table 3.1* below presents demographic information based on 2018 estimates provided by the U.S. Census for the Urban Honolulu CDP, City, and the State of Hawaiʻi. The Urban Honolulu CDP includes approximately 35.4 percent of the island's residential population. Meanwhile, the City is home to almost 70 percent of the State's residential population. Median income in the Urban Honolulu CDP ($65,707) is lower than both the City median income ($80,078) and the State median ($74,923).

Table 3.1 Demographic Information for Urban Honolulu Census Designated Place (CDP), City and County of Honolulu (Island of O'ahu), and State of Hawai'i, July 2018 Estimates			
	Urban Honolulu CDP	City and County of Honolulu	State of Hawai'i
Indicator	Number / Percent	Number / Percent	Number / Percent
Population Estimates, July 1, 2018	347,397	980,080	1,420,491
Population Estimates base, April 1, 2010	337,721	953,206	1,360,307
Population, Percent Change – April 1, 2010 to July 1, 2018	2.9	2.8	4.4
Race			
White	17.7	21.7	25.6
Black/African American	1.7	2.8	2.2
Amer Indian/Alaskan Native	0.1	0.3	0.4
Asian alone	54.1	43.0	37.6
Nat Hawn/Other Pac Islander	8.1	9.6	10.2
Hispanic or Latino	7.0	10.0	10.7
Two or more Races	17.4	22.6	24.0
Family & Living Arrangements			
Avg household size	2.62	3.06	3.02
Median household income (In 2017 dollars)	$65,707	$80,078	$74,923
Households with One or more People Under 18 Years of Age	17.2	21.2	21.4
Unemployment Rate (October 2019, DBEDT)		2.4	2.6

Source: DBEDT, U.S Census Bureau – American Fact Finder

The Project site does not currently include residential or office uses. No future residential uses are proposed. The Project will add approximately 61 employees to the site. TheBus employees use the ATC temporarily for passenger drop-off and pick-up. City employees using the ATC parking facility traverse the site to access City facilities such as the Frank F. Fasi Municipal Building or the HPD Headquarters. More than half of total employment on O'ahu is in the government, healthcare, and education sectors.

Anticipated Impacts and Proposed Mitigation

In the short-term, the Project will create a limited number of temporary construction-related jobs with direct and indirect benefit during the 18-month construction duration.

There are no anticipated negative long-term impacts on the socio-economic characteristics of the general population. The new EOC will provide increased office space for DEM and CCSR, therefore

increasing the daily commuting population onto the proposed site. However, the Project will not result in an increase in the residential population at the site.

The anticipated socio-economic impacts of the Project for the local community are overall positive. The new offices will accommodate an increase in DEM staff needed to improve planning, operations, and overall service to the community. The consolidation of DEM and CCSR offices will result in a beneficial impact on the quality of City response to emergency hazard situations. The proposed Project will be important to the protection of the community in cases of natural hazards, which will be especially exacerbated by climate change.

3.9 Visual Resources

Existing Conditions

The existing Project site is vacant and landscaped with grass and young trees. See *Figure 3.8*. The surrounding visual environment of the Project site is characterized by municipal office buildings typical of an urban environment. The proposed EOC is bounded by the ATC bus passenger pick-up area immediately north, the JTMC immediately south, the Frank F. Fasi Municipal Building across Alapaʻi Street to the west, and the ATC parking garage to the east. Surrounding buildings range from 70 feet to 235 feet high.

The PUC DP (2004) considers and prioritizes the preservation of panoramic views of natural features and landmarks applicable to the project area. The Project area is located within view planes identified in the PUC DP, including mauka-makai panoramic public views of Punchbowl and the Koʻolau Mountain range and East-West Views from the Honolulu International Airport to Diamond Head. The existing surrounding buildings are also visible from this perspective. The City Land Use Ordinance (LUO) further designates Alapaʻi Street between King and Beretania Streets as a prominent view corridor (ROH, Sec. 21-90.3).

The Hawaiʻi Special Capital District recommends that “structures should be oriented so as to minimize the intrusion into mauka-makai views, especially to and from Punchbowl.” Alapaʻi Street between King and Beretania Streets is identified as a prominent view corridor. Within the Alapaʻi Precinct, building heights are limited to 100 feet.

See *Figures 3.9 through 3.12* for views of the Project site from different perspectives.

Figure 3.8 **Existing Project Site**

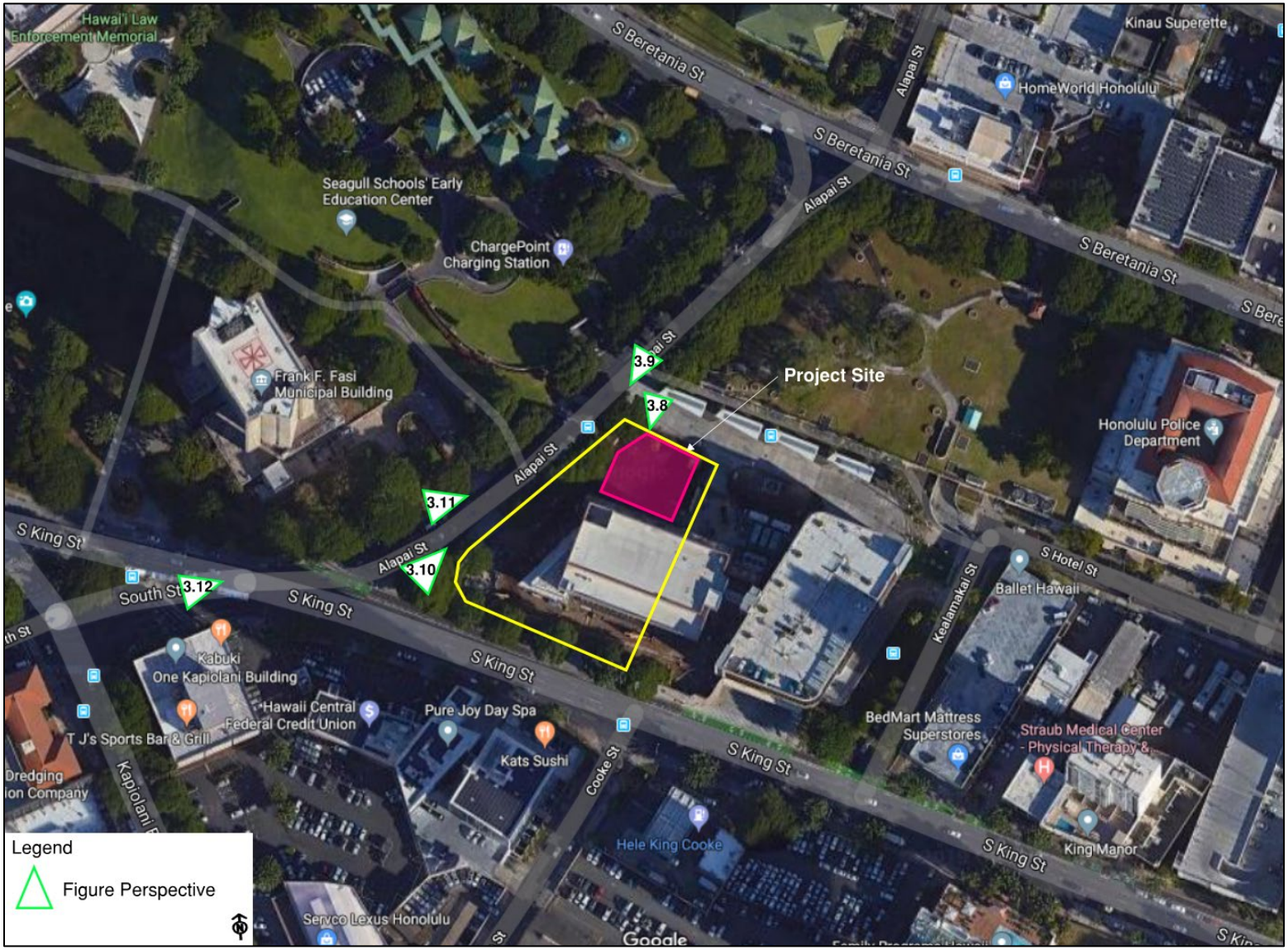


Figure 3.9 **Map Key for Figures 3.10 through 3.12**

Figure 3.10 View from South Hotel Street and Alapa‘i Street Looking South

Figure 3.11 View of the Project Parcel Looking North from Alapa‘i Street and South King Street (Diamond Head side)

Figure 3.12 View of the Project Parcel Looking North from Alapa‘i Street and South King Street (‘Ewa side)

Figure 3.13 View of the Project Parcel Looking North from South Street and South King Street

Anticipated Impacts and Proposed Mitigation

Short-term minor impacts of the Project on the surrounding area are related to construction activities and will be minimized through avoidance and minimization measures. If night-time construction activity or equipment maintenance is proposed during construction phases of the project, all associated lights will be shielded, and when large flood/work lights are used, they would be placed on poles to allow the lights to be pointed directly at the ground. Upon completion of the project, temporary lighting would be removed, and disturbed areas would be revegetated with non-invasive plant species appropriate for the Project area.

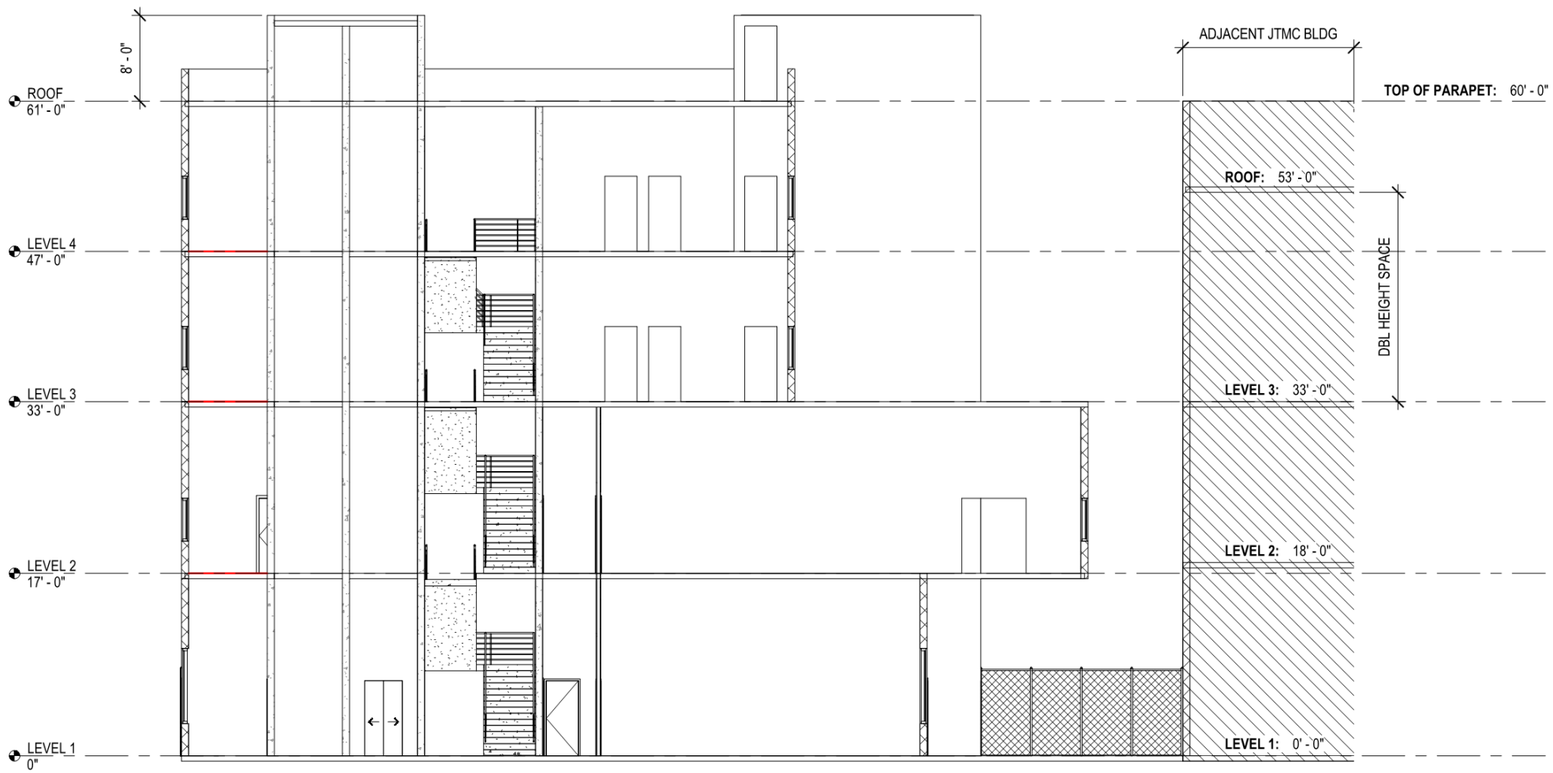
Upon completion of construction, the proposed EOC will be a four-story, 61-foot-tall structure situated adjacent to the existing JTMC (see *Figure 3.14,* for the preliminary building section). The existing JTMC is of similar height at 60 feet tall at the top of parapet. The building height will not exceed the Hawai‘i Capital Special District 100-foot height limit. The Project will adhere to the Hawai‘i Capital Special District design guidelines articulated in the LUO and will be painted similar to neighboring buildings. The EOC will be visible along Alapa‘i Street and South Hotel Street. The building will be located behind JTMC, obscured from view along South King Street and from the historic Honolulu Advertiser Building located at 801 South Street. The new building will also be located behind the existing HPD headquarters and municipal parking structure on South Beretania Street and will not be visible. The proposed building will be visible from the Punchbowl Scenic Lookout. See *Figure 3.15*. Existing buildings surrounding the Project site already exceed the proposed building’s height; therefore, the Project is not anticipated to further impact views along this corridor. The Project will not obscure views of the lookout from Alapa‘i Street. Final design treatments to minimize the impact of the structure on the surrounding neighborhood may include screening such as landscaping comparable to the existing JTMC. Once mature, landscaped trees may obscure view of the proposed building from the Punchbowl Scenic Lookout and screen views of the building from the street level.

3.10 Utilities

Existing Conditions

Water

Potable water in the general area is provided by the Honolulu Board of Water Supply (BWS). There is an existing 8-inch and 20-inch water main along Alapa‘i Street and another existing 12-inch water line along South King Street. An additional, concrete-jacketed, 20-inch water line passes through the proposed project area and runs parallel with South Hotel Street before connecting to the 20-inch water main along Alapa‘i Street. This line extends into the east direction, running parallel with South Hotel Street. See *Figure 3.2* for existing water lines. There are three (3) meters identified for the parcel that are used for the JTMC. However, a new fire and domestic water meter will be needed to serve the proposed facility.



1 CROSS SECTION
SCALE: 1/8" = 1'-0"

Figure 3.13 **Preliminary Building Section**

This page left intentionally blank.

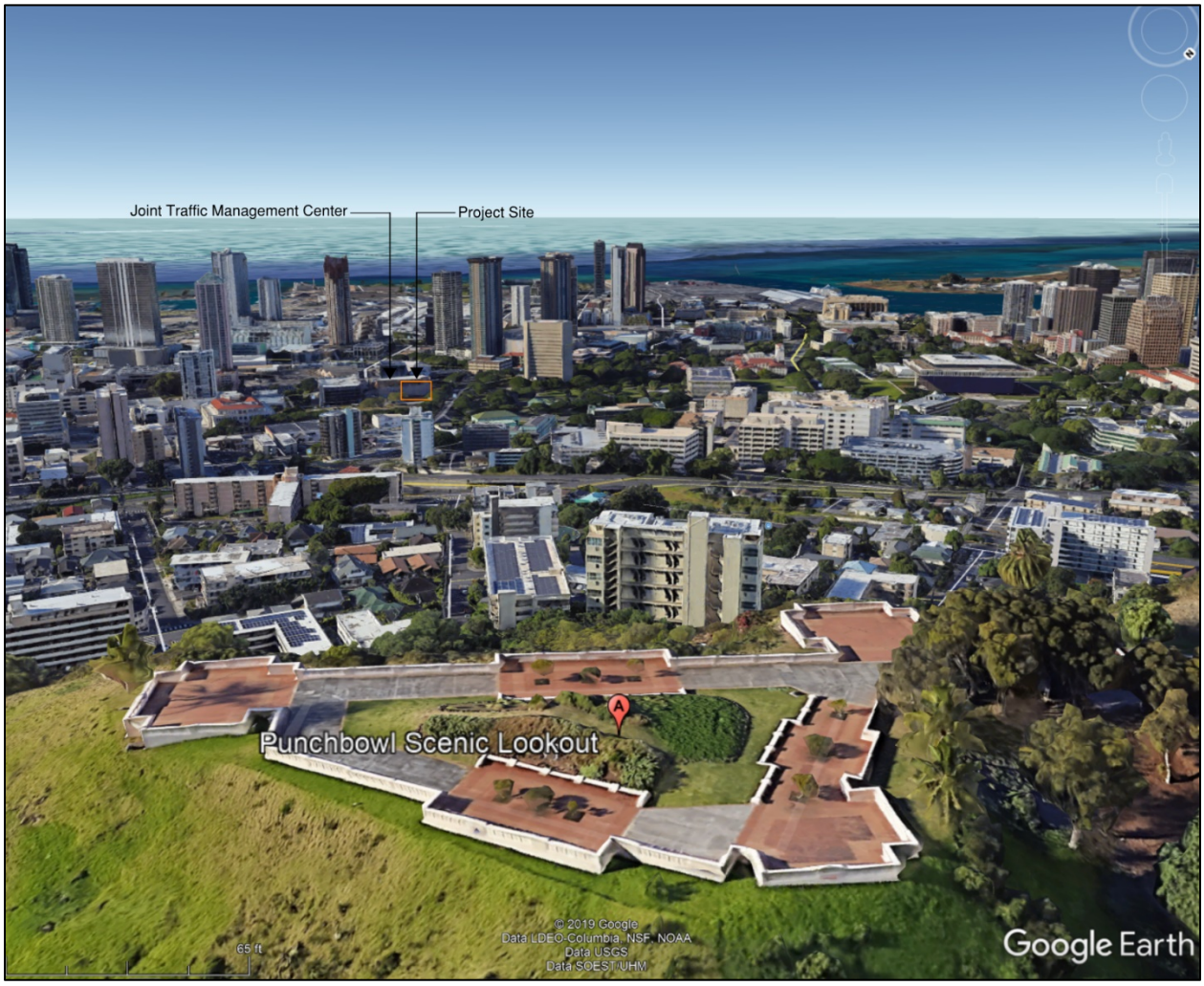


Figure 3.15 View of the Project Parcel Looking South From Punchbowl Scenic Lookout

Wastewater

The parcel is served by the City wastewater collection system. There is a 6-inch sewer lateral that connects to the 8-inch sewer main on Alapaʻi Street and two 6-inch sewer laterals that connect to the 18-inch sewer main on King Street. An additional 6-inch sewer line runs parallel with South Hotel Street and connects to the wastewater main along Alapaʻi Street. See *Figure 3.2* for existing sewer lines. Wastewater flows are conveyed to the Sand Island Wastewater Treatment Plant (WWTP).

Electrical Power and Telecommunications

Existing underground power and telephone lines run along Alapaʻi Street and along South King Street. Electrical service is provided by Hawaiian Electric Company (HECO) and provided from South King Street. The Project site currently has telecommunication service provided from both Alapaʻi Street and South King Street. See *Figure 3.2*

Solid Waste Management

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 Waimānalo Gulch Sanitary Landfill (WGSL) in Kapolei. The WGSL is the sole municipal solid waste landfill on Oʻahu. Construction debris is handled by the privately-owned PVT landfill, the only landfill on the island that accepts such waste. The PVT Landfill accepts approved contaminated soil for disposal or use in solidification of liquid wastes and sludge material for processing or disposal, which is regulated under their existing Solid Waste Management Plan. A private company will pick up and transport solid waste generated by this Project.

Anticipated Impacts and Proposed Mitigation

Water

Based on planning guidelines for commercial zoning, the BWS's Water System Standards (2002) indicates an average daily demand consumption of 3,000 gallons per acre for commercial developments. BWS recommends a factor of 1.5 be applied to the average daily demand to obtain the maximum daily demand. The breakdown of water demand for full development of the proposed zoning can be seen in *Table 3.2* below.

Table 3.2: BWS Water Demands by Zoning

Zoning	Acres	Daily Demand (gallons/acre)	Average Daily Demand (gallons)	Maximum Daily Demand (gallons)
Commercial	0.30	3,000	900	1,350

If allowed by BWS' meter requirements, the proposed development is expected to install two water meters for the proposed Project to provide domestic and fire water service to the development. Both services are expected to connect to a single water lateral extending from the 8-inch water main within Alapaʻi Street. The meter sizes and placements will be determined during design and will be dependent on the water fixture units. Currently an existing concrete jacketed 20-inch water line passes through the proposed location of the building. The water line and the BWS easement will need to be relocated

for the new EOC building. See *Figure 3.4* for proposed points of water connection. DDC will continue to consult with BWS requirements.

Short-term impacts to the use of potable water may include an increase in water consumption due to dust control measures during construction. The use of nonpotable water may be used for dust control. Should potable water be used, the use would be temporary and only last the duration of construction.

Long-term effects to water use would result from occupancy of the new building. The Project would require the use of 1,350 gallons per day. Through pre-consultation conducted in preparation of this Draft EA, BWS confirmed that the existing water system is adequate to accommodate the proposed development (see *Chapter 7.0*). A final decision on the availability of water will be confirmed at the time of the building permit application approval process. The use of nonpotable water for irrigation, efficient irrigation systems, and ultra-low flow water fixtures and toilets may be used to the extent practicable. Per early consultation with HFD in preparation of this Draft EA, a fire water building connection will be provided as shown in *Figure 3.4*. See *Chapter 7.0* for a copy of HFD's letter.

Wastewater

Existing municipal sewer systems, including the 8-inch sewer main in Alapaʻi Street and the 6-inch sewer line within South Hotel Street, will be sufficient to serve the proposed Project. The 6-inch sewer lateral running within South Hotel Street preliminarily appears to be the preferred connection point due to the low impact that would be anticipated during construction and location relative to the proposed building. See *Figure 3.4* for the proposed point of connection. The 8-inch municipal sewer main within Alapaʻi Street would be the next preferred connection point if the 6-inch line in South Hotel Street is unavailable.

A sewer connection application was submitted to DPP to verify capacity of the City's system and ability to serve the proposed project, and approved on January 13, 2020 (File No. 2020/SCA-0048).

Electrical Power and Telecommunications

The electrical and telecommunication systems shall be designed and coordinated with HECO for electrical services and Spectrum or Hawaiian Telcom for telecommunication services.

An on-site transformer may be needed for the Project. Final design and evaluation of the on-site electrical and telecommunication utilities shall be conducted by a licensed electrical engineer. Due to its critical facility designation, the electrical engineer will accommodate for network redundancy in final electrical plans.

Solid Waste Management

Short-term impacts to solid waste are related to construction activities, resulting in a temporary increase over current conditions. All construction debris will be handled and disposed of in accordance with applicable federal, state, and City rules and regulations. Efforts will be made to reduce the waste generated during the construction phase and when possible materials/structures will be re-used and/or recycled, to minimize disposal of material into landfills. All waste-related materials hauled off-site will be handled by the general contractor who will be responsible for ensuring that the loads are properly secured and covered to prevent the inadvertent loss of waste along the roadway and to prevent the commingling of rainfall with waste materials while it is in transit. Construction activity is not expected to generate any hazardous materials.

During operation, the new EOC will adhere to rules set forth in ROH, Section 9-1.11, which requires all City agencies undertake a recycling program managed by the City Department of Environmental Services. No long-term impacts to solid waste collection and disposal facilities are anticipated.

3.11 Roadways, Access and Traffic Conditions

Existing Conditions

A Transportation Analysis was prepared by Fehr and Pehrs (December 2019) and is included in *Appendix C.* Traffic conditions were observed at the following four study intersections adjacent to the site during the AM peak period (6:00 am to 9:00 am) and the PM peak period (3:00 pm to 6:00 pm) on Thursday, October 10, 2019:

1. South King Street / Alapaʻi Street-South Street
2. Beretania Street / Alapaʻi Street
3. South King Street / Kealamakai Street
4. Beretania Street / Hale Makai Street

The below provides a summary of roadway, bicycle, pedestrian, and transit facilities and observed activity in the vicinity of the proposed EOC.

Roadways

South King Street is an arterial street under the jurisdiction of the City. The street is a one-way, five lane roadway adjacent to the ATC / JTMC site. In the vicinity of the Project, parking is permitted on the makai side of the road between Alapaʻi Street and Ward Avenue and on the north / mauka side of the road between Kealamakai Street and Ward Avenue. A protected bikeway is provided on the mauka side of the street from Alapaʻi Street to Isenberg Street. Alapaʻi Street is also an arterial street under the jurisdiction of the City. It is a one-way north / mauka-bound, four-lane roadway bordering the east of the proposed EOC site. No parking is permitted on Alapaʻi Street between Beretania Street and South King Street. South Beretania Street is an arterial street under the jurisdiction of the City and is part of a one-way couplet with King Street located makai of Hotel Street. Beretania Street is a one-way, five-lane roadway north of the site. Parallel parking is permitted along most sections of the makai curb lane except between the hours of 6:30 am to 8:30 am. Local streets in the vicinity of the Project site include Hale Makai Street, South Hotel Street, and Kealamakai Street.

During traffic observations conducted on October 10, 2019, the following conditions were observed:

1. South King Street / Alapaʻi Street-South Street: No substantial operational issues were observed during the AM peak hour on the east / Diamond Head-bound leg (South King Street) and north / mauka-bound leg (South Street). During the PM peak hour, no operational issues were observed on South King Street. On South Street, it was observed that only a portion of the vehicles queued at the intersection south east of the South King Street / Alapaʻi Street-South Street intersection (South Street / Kapiolani Boulevard) were able to clear the intersection during the cycle.
2. Beretania Street / Alapaʻi Street: In the AM peak hour, queues on Beretania Street extend back to the intersection with Hale Makai. This queue was observed to clear the intersection during each cycle. The queues on Alapaʻi Street during this same peak hour were observed to extend

back past the egress from the ATC to the bus stops on the Diamond Head side of the street. During some cycles, the traffic was queued back to the intersection with South King Street.

3. In the PM peak hour, a similar queuing pattern was observed on Alapaʻi Street. During this peak hour, these queues caused a more substantial delay for buses exiting the transit center. Queuing on Beretania Street was limited and substantial congestion was observed primarily during the PM peak hour.
4. South King Street / Kealamakai Street: In the AM and PM peak hours, queuing was very limited on Kealamakai Street. Vehicles turning left from Kealamakai Street onto South Street experienced little delay after ensuring that no conflicting pedestrian, bicycle, and vehicular traffic was present. On South King Street, vehicles turning left onto Kealamakai Street did not experience any substantial delay and did not significantly slow through vehicles.
5. Beretania Street / Hale Makai Street: In the AM peak hour, queues were very limited at this intersection. During the PM peak hour, queues at Hale Makai were longer, while queues at Beretania Street were shorter than the AM peak hour.

Finally, no severe safety conflicts between vehicles and pedestrians were observed during filed observations. Historical crash information for crashes in the Project vicinity is provided in *Appendix C.*

Bicycle

A two-way protected bikeway is provided on the mauka side of South King Street adjacent to the Project site from Alapaʻi Street to Isenberg Street. The protected bikeway, named the King Street Cycle Track, is observed to be well-maintained and the asphalt berm with flexible delineators enhances protection for cyclists. No separate bicycle facilities are provided on the other roadways included in the study. Within the vicinity of the Project, Biki Bikeshare stations are provided along Beretania Street, Hale Makai Street, and South King Street. A Biki station is also provided at the Frank F. Fasi Municipal Building.

Pedestrian

Sidewalks are provided on both sides of all streets included in the study. All sidewalks meet the minimum 6-foot-wide City standard, and in most cases exceed the minimum and are very wide and All sidewalks were observed to provide adequate width for the volume of pedestrians observed. All pedestrians observed in the study area utilized the sidewalks and crosswalks in the Project area.

Transit

TheBus is the main public transportation service on the island of Oʻahu, where it served over 63 million riders in Fiscal Year 2017-2018. The bus fleet transports over 197,000 riders a week via fixed-route, express, and paratransit service. The ATC bounds the Project site to its immediate north and east. Currently 34 bus routes serve the ATC. Buses enter the ATC from South King Street and exit at Alapaʻi Street. Other bus routes use Alapaʻi Street for boarding and alighting without entering the transit center. The site is also served by bus routes that provide service at the following intersections: mauka-Diamond Head corner of the Beretania Street and Alapaʻi Street intersection; makai-ʻewa corner of the South King Street / Alapaʻi Street-South Street intersection; and the makai side of South King Street near the intersection with Cooke Street. Overall, the Project site is well-served by public transit.

Anticipated Impacts and Proposed Mitigation

Vehicular access to the proposed EOC building will be restricted and only service trucks will be able to access the site using the bus driveway serving ATC. EOC employees may park their vehicles in the existing ATC / JTMC parking garage located on the east side of the building. Entrance to and exit from the garage is provided on Kealamakai Street. If needed, overflow parking by employees or during EOC activation may be provided at the Frank F. Fasi Municipal Building parking garage.

Pedestrian access to the EOC will be provided at two entryways on the northwestern corner of the building near the intersection of Alapaʻi Street and the primary ATC bus driveway located on South King Street located approximately 375 feet north / mauka of South King Street. Entrance on the ground floor will be ADA-accessible and meet State DOH compliance standards. From the JTMC parking structure, employees can use the sidewalk provided on the north / mauka side of the transit center behind the bus shelters or the sidewalk along Kealamakai Street and King Street.

Trip generation estimates from construction of the Project were included in the transportation analysis conducted by Fehr and Pehrs. Overall, the new EOC is expected to generate no more than 294 daily trips to the ATC / JTMC site. The new EOC will typically only be accessed by employees and a limited number of visitors and will not be open to the general public. As such, the Project is expected to create no more than 17 trips in a single peak hour. Further, any turning movement generated by the Project, or the number of vehicles making left or right turns at the study intersections, will be less than 15 trips. As this number is small, especially when compared to the large volumes of observed traffic in the area, the proposed EOC is not expected to affect the operations of the roadways in the vicinity of the Project in the long-term. Furthermore, the proposed Project site is situated on a portion of the ATC that is currently landscaped and is not expected to conflict with the space needed for transit vehicles to maneuver throughout the site.

Additionally, no substantial long-term impacts to existing pedestrian or bikeway facilities are anticipated from construction of the Project. Existing bicycle facilities in the Project vicinity will be able to accommodate potential demand created by the Project. The new EOC building will be appropriately set back from adjacent streets and the existing sidewalks and paths are expected to be adequate to serve Project demand and site access.

Potential short-term impacts to traffic and circulation on site are related to temporary construction activities. Disruptions to normal traffic flow to the site and within the bus passenger area may be minimized through the use of traffic control barricades, cones, and signage to delineate construction boundaries. Staging areas will be located on site. Approach signs and a flag person may be positioned to direct traffic through temporary traffic control zones as necessary. However, all impacts would be short-term and last only the duration of construction.

3.12 Air Quality and Noise

Existing Conditions

Air Quality

The State Department of Health (DOH), Clean Air Branch (CAB) has established the State Ambient Air Quality Standards (SAAQS). The DOH-CAB regularly samples ambient air quality at monitoring stations throughout the State, and annually publishes this information. On Oʻahu, there are four monitoring stations which measure the following pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2),

particulate matter (PM) of 10 micrometers or smaller (PM_{10}), PM of 2.5 micrometers and smaller ($PM_{2.5}$), and sulfur dioxide (SO_2). Readings at the Honolulu monitoring station, located approximately 0.2-mile north west of the Project site at 1250 Punchbowl Street in Downtown Honolulu, show that air quality is considered "good" and confirm that criteria pollutants were below state and federal ambient air quality standards.

Air quality in the State of Hawaiʻi continues to be one of the best in the nation, and criteria pollutant levels remain well below SAAQS. According to the *Annual Summary 2016 Hawaiʻi Air Quality Data,* air quality monitoring data compiled by the DOH indicates that the established air quality standards for all monitored parameters are consistently met throughout the State and on the island of Oʻahu. Oʻahu has relatively clean air, low in pollution, due in part to prevailing northeasterly trade winds. The relative absence of stationary pollutant sources in the area presumably keeps air quality in the Project area at levels considered good (i.e., well within the air quality standards). Present air quality in the Project area is primarily affected by emissions from vehicular traffic, with carbon monoxide being the most abundant of the pollutants emitted. There is potential for Hawaiʻi carbon monoxide criteria, which are more stringent than the Federal standards, to be exceeded on occasion near high-volume intersections during periods when traffic congestion and poor dispersion conditions coincide.

Noise

Major contributors to the existing background ambient noise levels within the Project area are traffic along South King Street, South Beretania Street, Alapaʻi Street, and South Street and buses which are idling or positioning within the ATC. According to the acoustic study prepared for the ATC and JTMC Final EA published in 2008, traffic noise levels tend to be lowest during the early morning hours between 3:00 am and 5:00 am, and highest during the AM and PM commuting hours. Since 2008, the Project environs have remained similar.

HAR §11-46, "Community Noise Control", defines maximum permissible sound levels which are intended to protect, control, and abate noise pollution from stationary sources and construction, industrial, and agricultural equipment. As detailed below, maximum permissible sound levels in various zoning districts are set for excessive noise sources during the day (7 am to 10 pm) and night (10 pm to 7 am) at the property line where the activity occurs.

- Class A – Residential, conservation, preservation, public space, open space, or similar type zones – 55 decibel (dBA) (day) and 45 dBA (night)
- Class B – Multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type zones – 60 dBa (day) and 50 dBa (night)
- Class C – Agriculture, country, industrial, or similar type zones – 70 dBa (day) and 70 dBA (night)

Based on the business zoning of the area, the Project is located in the Class B zoning district for noise control purposes. The maximum permissible daytime sound level in the district is 60 dBA during daytime hours. In 2008, noise levels in the Project environs exceeded 65 DNL along roadways in the vicinity of the Project. It was anticipated that traffic noise levels would increase with or without the Project by 2012.

Anticipated Impacts and Proposed Mitigation

Air Quality

The proposed Project will not result in long-term impacts to air quality. There will be short-term impacts during the construction period in the form of exhaust from increased traffic and fugitive dust from construction activity.

A dust control management plan will be developed which identifies and addresses activities that have a potential to generate fugitive dust. The short-term effects on air quality during construction will be mitigated by compliance with provisions of HAR §11-60.1-33 on Fugitive Dust. Potential control measures to reduce fugitive dust include:

- Using water to control fugitive dust in construction operations, the grading of roads, or the clearing of land;
- Applying asphalt, water, or suitable chemicals on roads, material stockpiles, and other surfaces which may result in fugitive dust;
- Installing and using hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Reasonable containment methods shall be employed during sandblasting or other similar operations;
- Covering all moving, open-bodied trucks transporting materials which may result in fugitive dust;
- Maintaining roadways in a clean manner;
- Promptly removing earth or other materials from paved streets which have been transported there by trucking, earth-moving equipment, erosion, or other means.

Noise

Potential noise impacts to the surrounding environment are related to construction activities. Construction noise is not expected to be significant, as there will be limited grading and facilities development. The general contractor will be responsible for obtaining a Noise Permit from DOH and complying with conditions attached to the permit. Under current procedures, noisy construction activities are restricted to hours between 7:00 am and 6:00 pm, Monday through Friday, excluding certain holidays, and 9:00 am and 6:00 pm on Saturdays. Construction is not permitted on Sundays. Construction will be performed during the day to ensure minimal nighttime noise impacts on surrounding land uses. The contractor will also ensure that construction equipment with motors are properly equipped with mufflers in good operating condition.

In the long-term, operation of the new EOC is not anticipated to significantly increase noise levels in the Project area. Traffic noise from the surrounding roadways will continue to control background ambient noise levels in the Project environs. As discussed in *Chapter 3.11*, the Project is not expected to generate substantial traffic to the site. Therefore, increases in traffic noise levels attributable to the Project is not expected to result in a substantial increase in noise in the Project area.

3.13 Public Services and Facilities

Existing Conditions

Emergency Medical Services and Facilities

Emergency medical service is provided by the City and County of Honolulu's Emergency Services Department, Emergency Medical Services Division (EMS). EMS operates 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 Oʻahu. HFD also responds to medical emergencies, providing first aid in coordination with EMS.

The site is well-served by medical services due to its close proximity to Hawaiʻi Pacific Health-affiliated Straub Medical Center, located approximately 0.2-mile west of the Project site, and Queen's Medical Center, located approximately 0.3-mile north. Straub Medical Center is a not-for-profit health care provider with a 159-bed medical center. The center provides more than 32 different medical specialties and is home to the Pacific Region's only multi-disciplinary burn treatment center. The Queen's Medical Center hospital is licensed for 505 acute and 28 sub-acute care beds. Queen's serves as the major referral center for cancer, heart disease, neuroscience, orthopedics, surgery, emergency medicine, and behavioral health, and has the only organ transplantation program in the state. Queen's is also the state's designated trauma center - the first and only Level I trauma center in the state.

Disaster Relief

As described in *Chapter 2.0*, DEM is responsible for planning and coordination of disaster management and relief in the City. DEM communicates and coordinates with other City, State and Federal agencies in cases of emergency, and coordinates public awareness, information, and education efforts to prepare the community. In accordance with NIMS, DEM activates the EOC during varying levels of emergencies and serves as its primary staff. From the EOC, DEM may also issue watches and warnings received at the State level. When a disaster response effort exceeds the capabilities of a county, HI-EMA may recommend a State Emergency Proclamation from the Governor. Such a proclamation may suspend certain State laws to enable quick emergency response, activate the State Emergency Response Team, or allow the State DoD to place the Hawaiʻi Army and Air National Guard on State Active Duty.

In cases of tsunami or hurricane, a network of emergency evacuation shelters managed by DEM are designated throughout the island. Shelter locations and opening times are determined based on the situation. DEM also encourages the public to shelter-in-place or in homes outside of hazard areas.

Educational and Library Facilities

The Project site is located within the State Department of Education's (DOE) Honolulu District, McKinley Complex (Kaimuki- McKinley-Roosevelt Complex Area), which includes the following schools: Kaahumanu Elementary, Kaiulani Elementary, Kauluwela Elementary, Lanakila Elementary, Likelike Elementary, Royal Elementary, Central Middle School, and McKinley High School. These schools serve approximately 6,440 students (DOE, 2017). Public charter schools located within the McKinley Complex include the Myron Thompson Academy and Voyager School. The Complex also includes the

McKinley Community School. Seagull Schools' Early Education Center, located approximately 395 feet north west of the Project Site, serves children five years old and younger.

The public library in closest proximity to the Project site is the Hawai'i State Public Library, located 0.3-mile west.

Recreational Facilities

City parks managed by the Department of Parks and Recreation (DPR) in close proximity to the Project site include Thomas Square, a six (6)-acre park located approximately 0.2-mile east of the Project site. The park is listed on the National Register of Historic Places (NRHP) and is considered an important site for cultural and community events.

The City also manages the Neil S. Blaisdell Center, located approximately 0.3-mile east of the Project site. The complex includes a multi-purpose Arena, Exhibition Hall, Concert Hall, and meetings room which are utilized for various types of events. Facilities at McKinley High School, including the field and cafeteria, are available to the public for meetings, farmers' markets, and entertainment events.

The Project site is located within the Hawai'i Capital Special District characterized by historic and municipal buildings and landmarks enhanced by park-like settings. As such, the lawns of the Hawaii State Capitol building, Honolulu Hale, and the Frank F. Fasi Municipal Building are often used by the public for recreation. The Honolulu Police Department Headquarters, bordering the ATC to the north, includes a park-like area with landscaped, pedestrian-oriented, connective walkways above the parking facility.

The site is served by various existing bikeway facilities that enhance transportation circulation in the area. The Civic Center Bike Path, which begins within the ATC and traverses through the Project site and terminates at Hotel Street in Chinatown. The King Street Protected Bike Lane is a two (2)-mile separated east-west bike lane beginning at the intersection of South King Street and Alapa'i Street and terminating at Isenberg Street. Existing bike lanes are also provided on Beretania Street and Alapa'i Street north of the Project site. The *Oahu Bike Plan – 2019 Update Draft* (DTS, 2019) envisions a future mauka-makai shared use path along Alapa'i Street bordering the west of the Project site. This path would logically and safely connect the King Street Protected Bike Lane and existing bikeway facilities on Beretania Street and Alapa'i Street with the Civic Center Bike Path. The proposed path is considered a Priority 2 project, which refers to those projects that will be implemented after Priority 1 or when the street is resurfaced.

The Project is not anticipated to adversely impact the existing recreational facilities in the area.

Police and Fire Services

Fire protection services are provided by the Honolulu Fire Department (HFD) Kaka'ako Fire Station 09 located 0.3-mile west of the Project site at 555 Queen St, Honolulu, HI 96813 (DPP, 2019). The response time to the Project site would be approximately one (1) minute. Additional fire support could be provided by the Central Fire Station 01 located approximately 0.6-mile north west of the of the project site at 104 South Beretania Street and the Pāwa'a Fire Station Central Fire Station located at 1610 Makaloa Street, approximately 1.2 miles south east of the Project site.

Police protection services for the Project site are provided by HPD District 1, which covers the downtown Honolulu area from Liliha Street to Punahou Street and from Round Top Drive to Ala Moana Beach, including Aloha Tower. The Project site is located within Sector 1. The main police station for

the island of O‘ahu and HPD administrative office headquarters is the Alapa‘i Station located at 801 South Beretania Street, which borders the ATC to the north. Additional police protection is provided by the Downtown Substation located approximately 0.8- mile north west of the Project site at 79 North Hotel Street. The site is located within HPD’s Patrol Beat 151, which responded to 282 total crimes out of 6,808 total crimes in District 1 overall in 2018 based on HPD statistics (HPD, 2018).

Anticipated Impacts and Proposed Mitigation

Police and Fire Services

The new EOC will increase the on-site population of employees by adding DEM and CCSR office facilities. This increase in population may require additional security and police protection services. HPD responded to early consultation efforts for the Project on November 19, 2019, and suggested measures be included to mitigate for the increase in traffic on the site (See *Chapter 7.0*). As needed, private security will be considered, particularly due to the facility’s central location and its adjacency to the ATC. Entry to the office areas will be gate and security controlled. All restricted areas will have security measures that may include, but not be limited to, clear signage, self-closing doors, secured and non-manipulable locks, and security cameras. Design measures will ensure that public spaces are well-lit and visible as to deter the potential for crime-related opportunities.

Similarly, the Project will impact fire protection services with a slight increase in the number of employees in the vicinity. Design measures for the building will meet the Uniform Fire Code and fire flow requirements. Staff training will also provide an additional measure of safety and emergency response preparation.

The new EOC may improve police and fire first responders’ coordinated response during cases of emergency and times when the EOC must be activated, thus resulting in an overall benefit to the public. Should police or fire services be needed at the site, responders would be able to quickly respond given the close proximity of the site to such services.

Emergency Medical Services and Facilities

The new EOC will include DEM and CCSR office facilities, increasing the on-site population of employees. This increase in population may require additional emergency response services. Staff training may be provided and would provide an additional measure of safety and emergency response preparation.

As with the police and fire services, the EOC may improve police and fire first responders’ coordinated response during cases of emergency and times when the EOC must be activated, thus resulting in an overall benefit to the public.

Disaster Relief

The Project is expected to accommodate an increase in DEM staff needed for future 24-hour operations and Federal and State Program support capabilities. This increase in staff is expected to improve the capability and efficiency of DEM’s disaster relief responsibilities. The new building will also relocate CCSR offices into the same building as DEM, fostering collaboration on natural hazard planning and response.

The Project is not expected to increase demand at emergency evacuation shelters. It is anticipated that employees at the Project site will staff the EOC during cases of emergency. The new EOC will

include emergency bunks and responder locker rooms should employees be required to stay overnight during EOC activation. Users would also be able to evacuate to higher floors of the building in case of tsunami.

Educational and Library Facilities

The proposed Project is anticipated to produce increased noise levels during construction. The Seagull Schools' Early Education Center may be affected by noise generated during Project construction. Measures to mitigate noise impacts during construction are detailed in *Chapter 3.12 Air Quality and Noise.* Upon completion of construction activities, it is anticipated that noise levels will be reduced back to pre-construction levels.

In the long term, the Project is not expected to adversely impact schools in the surrounding area.

Recreational Facilities

The new EOC will serve approximately 61 employees, which is not anticipated to increase demand for regional recreation. Therefore, short-term and long-term impacts to existing facilities are not anticipated.

Pedestrian and transportation facilities will continue to be separated. Pedestrian traffic will be controlled and directed along the existing street sidewalks to pedestrian access points along Alapa'i Street. Landscaping will be installed along the perimeter of the site to facilitate a pedestrian-friendly environment. Employees at the new EOC will benefit from existing bikeways and future installation of bikeway facilities.

3.14 Potential Cumulative and Secondary Impacts

Cumulative impacts are the result of incremental effects of an activity when combined with other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Minor but collectively significant actions over a period of time can result in cumulative impacts to a place. The Project site has been previously disturbed through transportation and municipal uses. The EOC will be constructed in an existing development footprint that is zoned for municipal use, and as a result, is not anticipated to generate significant cumulative impacts.

The Project will generate few vehicular trips and is expected to have a negligible impact on traffic operations. There no known major projects or long-range development projects within the vicinity of the Project. The future completion of the Honolulu Authority for Rapid Transit (HART) project may result in an increase in ATC users in the future and add to traffic at the site as multi-modal transportation use increases. This would result in a general increase in users of the Project area. As part of the State's effort to reach targeted renewable energy goals, the State has finalized an agreement with Honolulu Seawater Air Conditioning (HSAC) to cool seven State office buildings and the State Capitol through the use of chilled ocean water starting in 2021. The proposed EOC is not within the HSAC potential service area according to the Final Environmental Impact Statement prepared for the HSAC project (U.S. Army Corps of Engineers Honolulu District, June 2014). It is not anticipated that the proposed construction of the EOC will interfere with installation of the HSAC. The cumulative intensification of development on the site will change the cityscape; however, adverse impacts to scenic and visual resources is not anticipated.

Secondary effects are impacts that are associated with an activity but do not result directly from the activity. The Project would add approximately 61 City employees to the Project site; however, this would have incidental impacts on the overall City population. The increase of users on site is not expected to exceed the ATC's public transit or parking garage current capacity. The site may also see an increase in the use of pedestrian and bikeway corridors in the vicinity of the site, which would have the secondary impact of further activating the streets in the Project area. The new EOC will accommodate an increase in DEM staff needed to increase the agency's capability to support Federal and State programs and to enable 24-hour monitoring within the EOC. The new facility will also relocate DEM and CCSR offices into one building to facilitate knowledge- and resource-sharing. This would result in positive secondary impacts improved natural hazard response by the City, an overall safer island, and other qualitative public benefits that are difficult to quantify.

Chapter 4

Alternatives to the Proposed Action

Chapter 4

Alternatives to the Proposed Project

Three alternatives were considered to address the purpose and need for the Project: (A) No Action Alternative; (B) Alternative Configurations; and, (C) the Preferred Alternative/Proposed Action. The following presents an analysis of the alternatives to the proposed project.

4.1 Alternative A – No-Action Alternative

The No-Action Alternative is the baseline against which all other alternatives are measured. "No-action" refers to the future site conditions that would result should the project not proceed.

The No-Action Alternative would involve not proceeding with the construction of the new EOC, thereby eliminating the potential for efficient and improved operation of hazard response conducted at the existing EOC. In the case of the No Action Alternative, DEM and CCSR would continue to coordinate from separate offices. The opportunity for increased knowledge-sharing and collaboration would be lost. Additional space to accommodate future staff and space for education training and events would not be constructed. This Project would not provide DEM the needed physical space for increased staff working to prepare the community for response to natural hazard events.

Increased efficiency of the EOC, the City's centralized emergency response facility, is the primary purpose of the Project. If the proposed Project is not constructed, efficient response during cases of emergency would be compromised. When activated, the existing EOC does not have enough space for all necessary personnel. Critical telecommunication infrastructure within the existing EOC would also not be updated and perhaps create a vulnerability for effective communications during a EOC-triggering event. There are no facilities for staff to stay overnight. As the severity of storms increases in the context of climate change, the City may risk being inadequately prepared to respond to natural hazard events. For these reasons, the No-Action Alternative was not considered a viable alternative.

4.2 Alternative B – Alternative EOC Configurations

Alternative B would include construction of a new EOC, but with three (3) alternative configurations.

Option 1 included the following configuration: Level 1 – Support with EOC Telcom Center and Command Post; Level 2 – Main EOC; and Level 3 – DEM and CCSR offices combined on one floor. This configuration was rejected because EOC features were spread across two floors and would therefore not meet the Project purpose of increasing efficiencies of the EOC and DEM and CCSR. It was also determined that DEM and CCSR offices required more operational space.

Option 2 included the following configuration: Level 1 – Support and CCSR offices; Level 2 – Main EOC; and, Level 3 – DEM and EOC Telcom Center and Command Post. This option was also rejected because the purpose of improving efficiencies of EOC operations would not be met if essential EOC rooms were spread across two levels. Additionally, this alternative did not include a media room, which was

determined to be necessary for the dissemination of information to the public. The siting of CCSR on the ground level was not preferred.

Option 3 included the following configuration: Level 1 – Support and EOC Telcom Center and Command Post; Level 2 – CCSR offices; Level 3 – EOC; Level 4 – DEM offices. This configuration was rejected because it separated DEM from CCSR, thus not accomplishing the Project purpose of fostering collaboration between DEM and CCSR. Additionally, siting the EOC on the third level would result in a direct connection to the JTMC, which would be incompatible with the security requirements of the JTMC, which must abide by stringent security requirements.

The four-level design configuration was determined to be the preferable over the three-level designs. Option 3 was then refined to address the above-mentioned concerns.

4.3 Alternative Location

In general, locating an EOC must be based on various factors including space requirements for staff, utilities requirements, security requirements, and a vulnerability or hazard analysis to assess the location's ability to survive natural or manmade hazards. As a critical facility, the EOC must be sited in a location easily accessed by City departmental personnel. A majority of personnel required during EOC activation are located at the Frank F. Fasi Municipal Building or Honolulu Hale. Location of a new EOC must further be consistent with land use designations for government or institutional facilities outlined in the PUC DP. Due to this limitation of select siting criteria and availability of public lands in the urban corridor, alternative locations were not considered.

4.4 Preferred Alternative/Proposed Action

The proposed action to construct a new EOC with offices for DEM And CCSR and ancillary support facilities was determined to be the preferred alternative as it fulfills the need for increased EOC space, space to accommodate an increase in DEM staff, and the need for CCSR to be geographically located closer to relevant City agencies. DEM and CCSR will be able to share knowledge and resources and will both be able to quickly respond to emergency situations when the EOC is activated. The new EOC will better accommodate the staff required during activation. The existing EOC lacks space for break-outs and other meeting rooms required to manage emergencies. In case of a long-term emergency, there is inadequate space for provisions, sleeping or other needs and/or lock-down of the facility. The new EOC would include space for break out meetings, emergency bunks, and storage. When not activated in cases of emergency, the new facility may also be used for trainings and events which will build the capacity and knowledge of relevant staff.

In cases of emergency when masses of people may be evacuating by bus through the area, DEM is prepared to engage proper protocol to keep residents safe and to ensure that City, State, and Federal personnel required at the EOC, including the Mayor of the City and County of Honolulu, can safely enter the EOC through the secured entrance. In these cases, bus passenger service at the ATC would continue as required.

The program description described in Section 2.3.2 was determined to be the preferred configuration. When implemented, this Project will increase the efficiency of the City's hazard response and facilitate closer collaboration between DEM and CCSR to the benefit of the wider island community.

Chapter 5

Conformance with Plans, Required Permits, and Approvals

Chapter 5

Plans and Policies

In this chapter, the project's consistency with applicable land use policies set forth in the Americans with Disabilities Act, Hawai'i State Plan, Hawai'i 2050 Sustainability Plan, Hawai'i State Land Use District Guidelines, Hawai'i Coastal Zone Management Program, Hawai'i Multi-Hazard Mitigation Plan (2018 Draft/2013), General Plan for the City and County of Honolulu, City and County of Honolulu Land Use Ordinance (LUO), City and County of Honolulu Primary Urban Center Development Plan, City and County of Honolulu Special Management Area Guidelines, Multi-Hazard Pre-Disaster Mitigation Plan for the City and County of Honolulu, Ola: O'ahu Resilience Strategy, Hawai'i Capital Special District Guidelines, and Hawai'i State Capital Master Plan are discussed.

5.1 Americans with Disabilities Act of 1991

In 1991, the Federal government enacted the Americans with Disabilities Act (ADA) to provide equal accessibility for persons with disabilities. Part of this statute requires building designs to consider and incorporate the needs of persons with disabilities. Chapter 103-50, HRS states, "…all plans and specifications for the construction of public buildings, facilities, and sites shall be prepared so that the buildings, facilities, and sites are accessible to and usable to persons with disabilities." The State Disability and Communication Access Board (DCAB) establishes guidelines for the design of buildings, facilities, and site, by or on behalf of the State and Counties in accordance with Chapter 103-50, HRS.

Discussion: The proposed EOC facility and site improvements will be designed to comply with ADA and DCAB accessibility requirements.

5.2 Hawai'i 2050 Sustainability Plan

The long-term strategy of the Hawai'i 2050 Sustainability Plan is supported by its main goals and objectives of respect for culture, character, beauty, and history of the State's island communities; balance among economic, community, and environmental priorities; and an effort to meet the needs of the present without compromising the ability of future generations to meet their own needs.

The 2050 Plan delineates five goals toward a sustainable Hawai'i accompanied by strategic actions for implementation and indicators to measure success or failure. The goals and strategic actions that are pertinent to the project are as follows:

Goal One: *Living sustainably is part of our daily practice in Hawai'i.* Strategic Actions: *Develop a sustainability ethic.*

Goal Two: *Our diversified and globally competitive economy enables us to meaningfully live, work, and play in Hawai'i.* Strategic Actions: *Develop a more diverse and resilient economy.*

Goal Three: *Our natural resources are responsibly and respectfully used, replenished, and preserved for future generations*. Strategic Actions: *Provide greater protection for air, and land-, fresh water- and ocean-based habitats; conserve agricultural, open space and conservation lands and resources.*

Goal Four: *Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need.* Strategic Actions: *Provide access to diverse recreational facilities and opportunities*.

Goal Five: *Our Kanaka Maoli and island cultures and values are thriving and perpetuated.* Strategic Actions: *Honor Kanaka Maoli culture and heritage; Celebrate our cultural diversity and island way of life; Enable Kanaka Maoli and others to pursue traditional Kanaka Maoli lifestyles and practices.*

Discussion: The new EOC will support DEM and CCSR by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. DEM develops and implements Emergency Management Plans to protect public safety, while CCSR tracks climate change science and develops climate action and adaptation plans. CCSR also plays an important role in advising, public messaging, and coordinating actions and policies. The consolidation of the two departments into one building will facilitate knowledge-sharing between the agencies. Expanded space for CCSR may support an increase in staff, which would allow CCSR to increase its capacity in monitoring, researching, and planning for climate change and sustainability. Beyond emergency situations, the EOC and breakout rooms may be used to host multipurpose meetings and education trainings.

5.3 Hawai‘i State Plan

The Hawai‘i State Plan, adopted in 1978 and revised in 1986, serves as a guide for the future long-range development of the State by identifying goals, objectives, policies, and priorities. It is the goal of the State, under the Hawai‘i State Planning Act (Chapter 226, Hawai‘i Revised Statutes (HRS)), to achieve the following:

- A strong, viable economy characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i present and future generations.
- A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
- Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life (Chapter 226-4, HRS).

The objectives and policies of the Hawai‘i State Plan are presented below and discussed based on their relevance to the proposed Project *(see Table 5.1)*.

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
§226-1: Findings and Purpose			
§226-2: Definitions			
§226-3: Overall Theme			
§226-4: State Goals. In order to guarantee, for the present and future generations, those elements of choice and mobility that insure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:			
(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i's present and future generations			x
(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.			X
(3) Physical, social and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life.			X
Discussion: While construction of the new facility will result in the safety of the community, the abovementioned goal is not applicable to the Project.			
§226-5: Objective and policies for population (a) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter; (b) To achieve the population objective, it shall be the policy of this State to:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawai‘i's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each county.			X
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs-and desires.			X
(3) Promote increased opportunities for Hawai‘i's people to pursue their socioeconomic aspirations throughout the islands.			X
(4) Encourage research activities and public awareness programs to foster and understanding of Hawai‘i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai‘i's population.			X
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among states, provided that such actions do not prevent the reunion of immediate family members.			X
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population			X
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area			X
Discussion: Construction of the new EOC will allow the City to better serve the island's population in cases of emergency response to natural hazards. The consolidation of DEM and CCSR offices into one building will also allow the two agencies to better improve departmental operations and foster a collaborative environment that will result in improved service to the community. However, the Project does not directly address the Hawai‘i State Plan's objectives and policies for population.			
§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.	X		
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries and includes the development and expansion of industries on the neighbor islands.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(b) To achieve the general economic objectives, it shall be the policy of this State to:			
(1) Promote and encourage entrepreneurship within Hawai‘i by residents and nonresidents of the State.			X
(2) Expand Hawai‘i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
(3) Promote Hawai‘i as an attractive market for environmentally and socially sound investment activities that benefit Hawai‘i's people.			X
(4) Transform and maintain Hawai‘i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawai‘i.			X
(6) Seek broader outlets for new or expanded Hawai‘i business investments.			X
(7) Expand existing markets and penetrate new markets for Hawai‘i's products and services.			X
(8) Assure that the basic economic needs of Hawai‘i's people are maintained in the event of disruptions in overseas transportation.	X		
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.			X
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai‘i's small-scale producers, manufacturers, and distributors.			X
(11) Encourage labor-intensive activities that are economically satisfying, and which offer opportunities for upward mobility.			X
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawai‘i.			X
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawai‘i's employment and economic growth opportunities.			X
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
(15) Maintain acceptable working conditions and standards for Hawai‘i's workers.	X		
(16) Provide equal employment opportunities for all segments of Hawai‘i's population through affirmative action and nondiscrimination measures.			X
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(18) Encourage businesses that have favorable financial multiplier effects within Hawai‘i's economy.			X
(19) Promote and protect intangible resources in Hawai‘i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			X
(20) 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.			X
(21) Foster a business climate in Hawai‘i--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			X
Discussion: Construction of the new EOC will consolidate DEM and CCSR office operations in one building, improving departmental operations and fostering a more collaborative environment between the two agencies, especially in cases of emergency and response to natural hazards.			

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
§226-7 Objectives and policies for the economy - agriculture. (a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
(1) Viability of Hawai‘i's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.			X
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawai‘i's strategic, economic, and social well-being.			X
(b) To achieve the agriculture objectives, it shall be the policy of this State to:			
(1) Establish a clear direction for Hawai‘i's agriculture through stakeholder commitment and advocacy.			X
(2) Encourage agriculture by making best use of natural resources.			X
(3) Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.			X
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai‘i's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawai‘i's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai‘i's producers and consumer markets locally, on the continental United States, and internationally.			X
(8) Support research and development activities that provide greater efficiency and economic productivity in agriculture.			X
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			X
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			X
(12) Expand Hawai‘i's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			X
(13) Promote economically competitive activities that increase Hawai‘i's agricultural self-sufficiency.			X
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
(16) Facilitate the transition of agricultural lands in economically non-feasible agricultural production to economically viable agricultural uses.			X
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i‘a, māla, and irrigated lo‘i, and growth of traditional Hawaiian crops, such as kalo, ‘uala, and ‘ulu.			X
(18) Increase and develop small-scale farms.			X
Discussion: The Project involves construction of a new EOC and offices for DEM and CCSR in the urbanized area of Downtown Honolulu, and does not relate to the growth and development of agriculture throughout the State.			

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
§226-8 Objective and policies for the economy--visitor industry. (a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai‘i's economy. (b) To achieve the visitor industry objective, it shall be the policy of this State to:			
(1) Support and assist in the promotion of Hawai‘i's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai‘i's people.			X
(3) Improve the quality of existing visitor destination areas.			X
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai‘i's people.			X
(6) Provide opportunities for Hawai‘i's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawai‘i's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai‘i's cultures and values.			X
Discussion: The purpose of the new EOC and consolidation of DEM and CCSR is to improve the efficiency of emergency response operations. As discussed in *Chapter 3.5,* climate science points to increasing severity of natural hazard events and SLR inundation, necessitating efficient emergency response from local and State government. Much of O‘ahu's visitor industry is located along coastal areas susceptible to SLR inundation. However, the objective of the new EOC is not to achieve a visitor industry that constitutes a major component of steady growth of Hawai‘i's economy. Its primary function is to serve the safety of the local and visitor community.			
§226-9 Objective and policies for the economy--federal expenditures. (a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai‘i's economy. (b) To achieve the federal expenditures objective, it shall be the policy of this State to:			
(1) Encourage the sustained flow of federal expenditures in Hawai‘i that generates long-term government civilian employment.			X
(2) Promote Hawai‘i's supportive role in national defense.			X
(3) Promote the development of federally supported activities in Hawai‘i that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai‘i's environment.			X
(4) Increase opportunities for entry and advancement of Hawai‘i's people into federal government service.			X
(5) Promote federal use of local commodities, services, and facilities available in Hawai‘i.			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai‘i.	X		
(7) Pursue the return of federally controlled lands in Hawai‘i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: The new EOC and offices will be primarily utilized by City agencies. Typically, State and City agencies operate at the front lines of emergency management while federal agencies play a secondary role. In cases when the EOC is activated during an emergency, staff in the EOC liaise with government agencies at all levels to collect, analyze, and share information. The new EOC will geographically consolidate DEM and CCSR, two key department in cases of emergency, and mitigate for potential interruptions in communications during emergency events. The proposed Project will be funded with the use of City funds and will not involve federal funding.			
§226-10 Objective and policies for the economy--potential growth and innovative activities. (a) Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawai‘i's economic base. (b) To achieve the potential growth and innovative activity objective, it shall be the policy of this State to:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawai‘i's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;			x
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawai‘i through the export of services or products or substitution of imported services or products;			x
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements;			x
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity;			x
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus;			x
(6) Expand Hawai‘i's capacity to attract and service international programs and activities that generate employment for Hawai‘i's people;			x
(7) Enhance and promote Hawai‘i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts;			x
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste;			x
(9) Promote Hawai‘i's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State;			x
(10) Provide public incentives and encourage private initiative to attract new or innovative industries that best support Hawai‘i's social, economic, physical, and environmental objectives;			x
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;			x
(12) Develop, promote, and support research and educational and training programs that will enhance Hawai‘i's ability to attract and develop economic activities of benefit to Hawai‘i;			x
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawai‘i;			x
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawai‘i's social, economic, physical, and environmental objectives;			x
(15) Increase research and development of businesses and services in the telecommunications and information industries;			x

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and			x
(17) Recognize and promote health care and health care information technology as growth industries.			x
Discussion: The new EOC will include solar PV to support electrical needs of the building. However, the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawai‘i's economic base is not applicable to the proposed Project.			
§226-10.5 Objectives and policies for the economy--information industry. (a) Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai‘i as a leader in broadband and wireless communications and applications in the Pacific Region. (b) To achieve the information industry objective, it shall be the policy of this State to:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawai‘i and between Hawai‘i and the world, and make high speed communication available to all residents and businesses in Hawai‘i;			X
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai‘i to accommodate future growth and innovation in Hawai‘i's economy;			X
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawai‘i;			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawai‘i, using technology to communicate with their headquarters, offices, or customers located out-of-state;			X
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry;			X
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai‘i's people;			X
(7) Provide opportunities for Hawai‘i's people to obtain job training and education that will allow for upward mobility within the information industry;			X
(8) Foster a recognition of the contribution of the information industry to Hawai‘i's economy; and			X
(9) Assist in the promotion of Hawai‘i as a broker, creator, and processor of information in the Pacific.			X
Discussion: Construction of the new EOC will not help to position Hawai‘i as a leader in broadband and wireless communications and applications in the Pacific Region.			
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources. (a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:			
(1) Prudent use of Hawai‘i's land-based, shoreline, and marine resources.	X		
(2) Effective protection of Hawai‘i's unique and fragile environmental resources.	X		
(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:			
(1) Exercise an overall conservation ethic in the use of Hawai‘i's natural resources.			X
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	X		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	X		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			X
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai‘i.			X
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities and natural resources.			X
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational and scientific purposes.			X
Discussion: The Project site is located within the Hawai‘i Capital District, and will be designed to adhere to design standards set forth in the LUO. The Project is consistent with the site's existing municipal, urban land use and will not result in the utilization of land that would otherwise be designated for conservation.			
§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources. (a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai‘i's scenic assets, natural beauty, and multi-cultural/historical resources. (b) To achieve the scenic, natural beauty, and historic resources objectives, it shall be the policy of this State to:			
(1) Promote the preservation and restoration of significant natural and historic resources.	X		
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			X
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	X		
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai‘i's ethnic and cultural heritage.			X
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.			X
Discussion: The Project will be designed in accordance with Hawai‘i Capital District design standards and oriented to preserve mauka-makai views from South King Street and east-west views in vicinity of the Frank F. Fasi Municipal Building. As discussed in *Chapter 3.6*, historic and cultural resources are not present within the Project site; however, such resources are known to exist within the ATC and JTMC parcel. During construction of the Project, archaeological monitoring of the site pursuant to an existing AMP approved by SHPD will be performed. However, the purpose of the Project is not to necessarily enhance scenic assets, natural beauty, and multi-cultural/historical resources.			
§226-13 Objectives and policies for the physical environment--land, air, and water quality. (a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:			
(1) Maintenance and pursuit of improved quality in Hawai‘i's land, air, and water resources.	X		
(2) Greater public awareness and appreciation of Hawai‘i's environmental resources.			X
(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:			
(1) Foster educational activities that promote a better understanding of Hawai‘i's limited environmental resources.			X
(2) Promote the proper management of Hawai‘i's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawai‘i's surface, ground and coastal waters.	X		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai‘i's people.	X		
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.	X		

Table 5.1: Hawai'i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.	X		
(7) Encourage urban developments in close proximity to existing services and facilities.	X		
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.			X
Discussion: The purpose of the Project is to construct a new EOC facility which will support DEM and CCSR by providing a new EOC with ancillary support facilities and offices that will support an increase in staff. The new facility will improve the efficiency of agency response to emergency situations. As discussed in *Chapter 3.5,* human-induced climate change has increased the severity of natural disaster events, necessitating a modern, efficiency facility better equipped to respond to emergency situations. The site is located within downtown Honolulu within the Hawai'i Capital District, and is consistent with the site's present and surrounding land uses. Construction of the Project will include BMPs to minimize effects to air and water quality and is not anticipated to post significant detrimental effects to the surrounding area.			
§226-14 Objective and policies for facility systems--in general. (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives. (b) To achieve the general facility systems objective, it shall be the policy of this State to:			
(1) Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	X		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	X		
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.	X		
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.	X		
Discussion: Construction of the new EOC supports the State's objectives and policies for facility systems by using existing utilities and upgrading or relocating specific utilities, such as water, as needed. The new EOC will serve as a centralized planning and communications hub for City administration, DEM, CCSR and other support agencies during emergency events.			
§226-15 Objectives and policies for facility systems--solid and liquid wastes. (a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.	X		
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.	X		
(b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	X		
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	X		
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Discussion: Existing solid waste disposal and recycling programs at the parcel location will continue and will not be altered by the Project.			

Table 5.1: Hawai'i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
§226-16 Objective and policies for facility systems--water. (a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities. (b) To achieve the facility systems water objective, it shall be the policy of this State to:			
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.	X		
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			X
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.			X
Discussion: Existing water at the parcel location is sufficient to serve the Project site. LID measures may be incorporated into the Project to the extent possible to encourage the productive use of runoff water.			
§226-17 Objectives and policies for facility systems--transportation. (a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.	X		
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
(b) To achieve the transportation objectives, it shall be the policy of this State to:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;			X
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			X
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			X
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			X
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			X
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;			X
(7) Encourage a variety of carriers to offer increased opportunities and advantages to inter-island movement of people and goods;			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai‘i's natural environment;			X
(11) Encourage safe and convenient use of low-cost, energy- efficient, non-polluting means of transportation;	X		
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			X
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			X
<u>Discussion:</u> While it is not the Project's purpose to directly meet the State's objectives for transportation, the Project's location within the Alapa‘i Transit Center may encourage employees to utilize public transportation or cycling to site. Long-term bicycle parking will be provided on the ground floor. See *Chapter 3.11* for further discussion.			
§226-18 Objectives and policies for facility systems--energy. (a) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			X
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawai‘i's dependence on imported fuels for electrical generation and ground transportation;	X		
(3) Greater diversification of energy generation in the face of threats to Hawai‘i's energy supplies and systems;	X		
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and	X		
(5) Utility models that make the social and financial interests of Hawai‘i's utility customers a priority.			X
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand. (c) To further achieve the energy objectives, it shall be the policy of this State to:			
(1) Support research and development as well as promote the use of renewable energy sources;			X
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			X
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			X
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including: (A) Development of cost-effective demand-side management programs; (B) Education; (C) Adoption of energy-efficient practices and technologies; and (D) Increasing energy efficiency and decreasing energy use in public infrastructure;			X
(5) Ensure to the extent that new supply-side resources are needed, the development or expansion of energy systems utilizes the least-cost energy supply option and maximizes efficient technologies;			X
(6) Support research, development, and demonstration of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			X
(7) Promote alternate fuels and energy efficiency by encouraging diversification of transportation modes and infrastructure;			X
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications; and			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(9) Support actions that reduce, avoid, or sequester Hawai‘i's greenhouse gas emissions through agriculture and forestry initiatives.			X
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			X
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			X
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawai‘i.			X
Discussion: The new EOC will include the use of rooftop solar PVs to support the building's energy needs. However, the State's objectives and policies with regards to energy are not applicable to the Project.			
§226-18.5 Objectives and policies for facility systems--telecommunications. (a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people. (b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand. (c) To further achieve the telecommunications objective, it shall be the policy of this State to:			
(1) Facilitate research and development of telecommunications systems and resources;			X
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			X
(3) Promote efficient management and use of existing telecommunications systems and services; and	X		
(4) Facilitate the development of education and training of telecommunications personnel.			X
Discussion: The new EOC will serve as the planning and communications center for key City agencies during emergency events. The EOC will include a communications, broadcast, and media briefing room to facilitate information-sharing between agencies and the dissemination of information to the public.			
§226-19 Objectives and policies for socio-cultural advancement--housing. (a) Planning for the State's socio- cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			
(1) Greater opportunities for Hawai‘i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more rental and for sale affordable housing is made available to extremely low-, very low-, lower-, moderate-, and above moderate-income segments of Hawai‘i's population.			X
(2) The orderly development of residential areas sensitive to community needs and other land uses.			X
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawai‘i's people.			X
(b) To achieve the housing objectives, it shall be the policy of this State to:			
(1) Effectively accommodate the housing needs of Hawai‘i's people.			X
(2) Stimulate and promote feasible approaches that increase affordable rental and for sale housing choices for extremely low-, very low-, lower-, moderate-, and above moderate-income households.			X
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing rental and for sale housing units and residential areas.			X
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			X
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X
(7) Foster a variety of lifestyles traditional to Hawai‘i through the design and maintenance of neighborhoods that reflect the culture and values of the community.			X
(8) Promote research and development of methods to reduce the cost of housing construction in Hawai‘i.			X
Discussion: The purpose of the Project is to construct a new EOC which will include offices for DEM and CCSR. Planning for the State’s socio-cultural advancement with regard to housing is not applicable to the proposed Project.			
§226-20 Objectives and policies for socio-cultural advancement--health. (a) Planning for the State's socio- cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.			X
(2) Maintenance of sanitary and environmentally healthful conditions in Hawai‘i's communities.	X		
(b) To achieve the health objectives, it shall be the policy of this State to:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.	X		
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			X
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			X
Discussion: The new EOC facilities will result in a sanitary, healthful work environment for employees, and will include features such as a covered outdoor area for employees to utilize during breaks. In case of a long-term emergency, the new EOC will provide adequate space for provisions, sleeping, or other needs, of which the existing EOC is currently lacking.			
§226-21 Objective and policies for socio-cultural advancement--education. (a) Planning for the State's socio- cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations. (b) To achieve the education objective, it shall be the policy of this State to:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			X
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawai‘i's cultural heritage.			X
(5) Provide higher educational opportunities that enable Hawai‘i's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			X
(8) Emphasize quality educational programs in Hawai‘i's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X
Discussion: When not activated in emergency situations, the proposed EOC facility will be designed to be used for multipurpose meetings and training events and will include collaboration areas for DEM and CCSR staff. However, the advancement of the State's socio-cultural education objectives is not applicable to the subject Project.			
§226-22 Objective and policies for socio-cultural advancement--social services. (a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being. (b) To achieve the social service objective, it shall be the policy of the State to:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawai‘i's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Discussion: The purpose of the Project is to construct a new EOC that, when activated, will serve as a centralized hub for planning and response to emergency events. The facility will also include DEM and CCSR office operations. As such, the State's objectives for socio-cultural advancement regarding social services is not applicable for the Project.			
§226-23 Objective and policies for socio-cultural advancement--leisure. (a) Planning for the State's socio- cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations. (b) To achieve the leisure objective, it shall be the policy of this State to:			

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(1) Foster and preserve Hawai‘i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.			X
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.			X
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			X
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.			X
(5) Ensure opportunities for everyone to use and enjoy Hawai‘i's recreational resources.			X
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.			X
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai‘i's people.			X
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			X
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai‘i's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Discussion: The purpose of the Project is to construct a new EOC that, when activated, will serve as a centralized hub for planning and response to emergency events. The facility will also include DEM and CCSR office operations. The State's socio-cultural advancement objectives regarding leisure are not applicable for the Project.			
§226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being. (a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations. (b) To achieve the individual rights and personal well-being objective, it shall be the policy of this State to:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.			X
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.			X
Discussion: The State's socio-cultural advancement objectives regarding individual rights and personal well-being of individuals is not applicable for the Project.			
§226-25 Objective and policies for socio-cultural advancement--culture. (a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai‘i's people. (b) To achieve the culture objective, it shall be the policy of this State to:			
(1) Foster increased knowledge and understanding of Hawai‘i's ethnic and cultural heritages and the history of Hawai‘i.			X
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai‘i's people and which are sensitive and responsive to family and community needs.			X
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai‘i.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai‘i's people and visitors.			X
Discussion: The State's socio-cultural advancement objectives regarding culture is not applicable for the Project.			
§226-26 Objectives and policies for socio-cultural advancement--public safety. (a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.	X		
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.	X		
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawai‘i's people.	X		
(b) To achieve the public safety objectives, it shall be the policy of this State to:			
(1) Ensure that public safety programs are effective and responsive to community needs.	X		
(2) Encourage increased community awareness and participation in public safety programs.	X		
(c) To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
(d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.	X		
(2) Enhance the coordination between emergency management programs throughout the State.	X		
Discussion: The proposed Project includes the construction of a new EOC. An EOC functions to support multi-agency and public/private coordination and resource management during a range of emergency situations. The EOC is activated as required for specific levels of incidents. Currently, EOC operations are located in the basement level of the Frank F. Fasi Municipal Building and is managed by DEM. When activated, the EOC must accommodate operational space for representatives of 18 City agencies and other key staff. The existing EOC lacks space required to manage emergencies. The new EOC will be larger and enhance coordination during emergency events. The new facility will jointly locate DEM and CCSR, Currently, DEM operations are also located in the basement level of the Frank F. Fasi Municipal Building. CCSR is located over a mile and a half away at the Kapālama Hale. Both agencies play a significant role in emergency preparedness and disaster mitigation. DEM develops emergency and disaster plans, and, in the event of an emergency, assists in the implementation of the Emergency Management Plans to protect the public safety and welfare of the City. When the EOC is activated, DEM takes the lead role in coordinating emergency operations. CCSR is responsible for tracking climate change science and potential impacts and increasing community emergency preparedness. In an emergency, CCSR plays an important role in advising, public messaging, and coordinating actions and policies of departments. Constructing a larger EOC and consolidating DEM and CCSR operations within the same building will ensure that each key agency is in a proper state of readiness to respond to EOC activation during emergency events and enhance coordination between emergency management programs, thus meeting the State's objectives for public safety articulated in the Hawai‘i State Plan.			

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
§226-27 Objectives and policies for socio-cultural advancement--government. (a) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
(1) Efficient, effective, and responsive government services at all levels in the State.	X		
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.	X		
(b) To achieve the government objectives, it shall be the policy of this State to:			
(1) Provide for necessary public goods and services not assumed by the private sector.	X		
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.	X		
(3) Minimize the size of government to that necessary to be effective.			X
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawai‘i.			X
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.	X		
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.	X		
Discussion: The Project meets the State’s objectives with respect to government. The new EOC will jointly locate DEM and CCSR offices into one building, providing an opportunity to increase efficiency, coordination, and effectiveness among State and City agencies involved in emergency operations. The new EOC is designed to serve the staff’s needs by providing the operational space required to facilitate EOC functions. During emergencies, the EOC plays a vital role in facilitating interagency and public communication of information.			
§226-101 Purpose. The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.			
§226-102 Overall direction. The State shall strive to improve the quality of life for Hawai‘i's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.			
Discussion: The Project supports the overall direction of the State of Hawai‘i with regards to sustainability and climate change adaptation. The new EOC will provide office space for the DEM and CCSR. DEM develops and implements Emergency Management Plans, while CCSR tracks climate change science and develops climate action and adaptation plans. Both DEM and CCSR will benefit from being located in closer proximity to one another by having the ability to share knowledge and resources that will help provide a higher level of support for when the EOC is activated in emergency response situations. The new EOC will support the overall direction of the Hawai‘i State Plan by meeting the City’s operational needs, allowing City agencies to better serve the public during emergency events.			
§226-103 Economic priority guidelines. (a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai‘i's people and achieve a stable and diversified economy:			
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises. (A) Encourage investments which:			
(i) Reflect long term commitments to the State;			X
(ii) Rely on economic linkages within the local economy;			X
(iii) Diversify the economy;			X
(iv) Reinvest in the local economy;			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(v) Are sensitive to community needs and priorities; and			X
(vi) Demonstrate a commitment to provide management opportunities to Hawai‘i residents.			X
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			X
(i) Present or former residents acting as entrepreneurs or principals;			X
(ii) Academic support from an institution of higher education in Hawai‘i;			X
(iii) Investment interest from Hawai‘i residents;			X
(iv) Resources unique to Hawai‘i that are required for innovative activity; and			X
(v) Complementary or supportive industries or government programs or projects.			X
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			X
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			X
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			X
(5) Streamline the processes for building and development permit and review and telecommunication infrastructure installation approval and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where scientific evidence indicates that public health, safety, and welfare would not be adversely affected.			X
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawai‘i's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawai‘i from transportation interruptions between Hawai‘i and the continental United States.			X
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			X
(A) An industry that can take advantage of Hawai‘i's unique location and available physical and human resources.			X
(B) A clean industry that would have minimal adverse effects on Hawai‘i's environment.			X
(C) An industry that is willing to hire and train Hawai‘i's people to meet the industry's labor needs at all levels of employment.			X
(D) An industry that would provide reasonable income and steady employment.			X
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawai‘i business.			X
(10) Enhance the quality of Hawai‘i's labor force and develop and maintain career opportunities for Hawai‘i's people through the following actions:			X
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			X
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			X
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(D) Promote career opportunities in all industries for Hawai‘i's people by encouraging firms doing business in the State to hire residents.			X
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on- the-job training opportunities.			X
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			X
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			
(1) Promote visitor satisfaction by fostering an environment which enhances the aloha spirit and minimizes inconveniences to Hawai‘i's residents and visitors.			X
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			X
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			X
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai‘i's significant natural, scenic, historic, and cultural resources.			X
(5) Develop and maintain career opportunities in the visitor industry for Hawai‘i's people, with emphasis on managerial positions.			X
(6) Support and coordinate tourism promotion abroad to enhance Hawai‘i's share of existing and potential visitor markets.			X
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			X
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			X
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.	X		
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			X
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai‘i.			X
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			X
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			X
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			X
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			X
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			X
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai‘i's agricultural community.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(6) Seek favorable freight rates for Hawai‘i's agricultural products from interisland and overseas transportation operators.			X
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			X
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			X
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			X
(10) Support the continuation of land currently in use for diversified agriculture.			X
(11) Encourage residents and visitors to support Hawai‘i's farmers by purchasing locally grown food and food products.			X
(e) Priority guidelines for water use and development:			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			X
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			X
(3) Increase the support for research and development of economically feasible alternative water sources.			X
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			X
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			X
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			X
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			X
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			X
(g) Priority guidelines to promote the development of the information industry:			
(1) Establish an information network that will serve as the catalyst for establishing a viable information industry in Hawai‘i.			X
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			X
(3) Encourage the development of small businesses in the information field such as software development, the development of new information systems and peripherals, data conversion and data entry services, and home or cottage services such as computer programming, secretarial, and accounting services.			X
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			X
(5) Encourage research activities, including legal research in the information and telecommunications fields.			X
(6) Support promotional activities to market Hawai‘i's information industry services.			X
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: The purpose of the Project is to construct a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one building. The new, expanded EOC will provide the increased operational space needed during cases of emergency. The use of LID and solar PV panels will be incorporated into the site and building design.			
§226-104 Population growth and land resources priority guidelines. (a) Priority guidelines to effect desired statewide growth and distribution:			
(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai‘i's people.			X
(2) Manage a growth rate for Hawai‘i's economy that will parallel future employment needs for Hawai‘i's people.			X
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.	X		
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			X
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			X
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			X
(7) Support the development of high technology parks on the neighbor islands.			X
(b) Priority guidelines for regional growth distribution and land resource utilization:			
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.	X		
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			X
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.	X		
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			X
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.	X		
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			X
(7) Pursue rehabilitation of appropriate urban areas.			X
(8) Support the redevelopment of Kaka‘ako into a viable residential, industrial, and commercial community.			X
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	X		
(10) Identify critical environmental areas in Hawai‘i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.			X
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(12) Utilize Hawai‘i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	X		
(13) Protect and enhance Hawai‘i's shoreline, open spaces, and scenic resources.	X		
Discussion: The Project site is located in the urbanized environment of downtown Honolulu and will thus protect lands designated for conservation and preservation. Existing utilities are adequate to support the proposed Project. The new building will also be oriented to preserve existing mauka-makai and east-west viewsheds.			
§226-105 Crime and criminal justice. Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			X
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			X
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			X
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			X
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			X
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			X
Discussion: The purpose of the project is to construct a new EOC. The priority guidelines in the area of crime and criminal justice are not applicable to the proposed Project.			
§226-106 Affordable housing. Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land, urban land, and public land to meet housing needs of extremely low-, very low-, lower-, moderate-, and above moderate-income households.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawai‘i's extremely low-, very low-, lower-, and moderate-income households and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawai‘i's people for the purchase of initial owner-occupied housing.			X
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			X
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(8) Give higher priority to the provision of quality housing that is affordable for Hawai‘i's residents and less priority to development of housing intended primarily for individuals outside of Hawai‘i.			X
Discussion: The purpose of the project is to construct a new EOC. The priority guidelines regarding affordable housing are not applicable to the proposed Project.			
§226-107 Quality education. Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;			X

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education workforce;			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities;			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			
(A) The electronic exchange of information;			X
(B) Statewide electronic mail; and			X
(C) Access to the Internet.			X
Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			X
(6) Pursue the establishment of Hawai‘i's public and private universities and colleges as research and training centers of the Pacific;			X
(7) Develop resources and programs for early childhood education;			X
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			X
(9) Strengthen and expand educational programs and services for students with special needs.			X
Discussion: The purpose of the project is to construct a new EOC. The priority guidelines in the area of education are not applicable to the proposed Project.			
§226-108 Sustainability. Priority guidelines and principles to promote sustainability shall include:			
(1) Encouraging balanced economic, social, community, and environmental priorities;	X		
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;			X
(3) Promoting a diversified and dynamic economy;			X
(4) Encouraging respect for the host culture;			X
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;			X
(6) Considering the principles of the ahupua‘a system; and			X
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai‘i.	X		
Discussion: The Project meets the sustainability priority guidelines articulated in the Hawai‘i State Plan. The new EOC will support DEM and CCSR by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. DEM develops and implements Emergency Management Plans to protect public safety, while CCSR tracks climate change science and develops climate action and adaptation plans. CCSR also plays an important role in advising, public messaging, and coordinating actions and policies. An expanded office would support CCSR in fulfilling its functions as they relate to sustainability.			
§226-109 Climate change adaptation priority guidelines. Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:			
(1) Ensure that Hawai‘i's people are educated, informed, and aware of the impacts climate change may have on their communities;	X		

Table 5.1: Hawai‘i State Plan – HRS Ch. 226 - Part 1. Overall Theme, Goals, Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;	X		
(3) Invest in continued monitoring and research of Hawai‘i’s climate and the impacts of climate change on the State;	X		
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;	X		
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;	X		
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;	X		
(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;	X		
(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;	X		
(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and	X		
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.	X		
Discussion: The Project meets all of the climate change adaption priority guidelines articulated in the Hawai‘i State Plan. The new EOC will support DEM and CCSR by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. DEM develops and implements Emergency Management Plans to protect public safety, while CCSR tracks climate change science and develops climate action and adaptation plans. The consolidation of the two departments into one building will facilitate knowledge-sharing between the agencies. Expanded space for CCSR may support an increase in staff, which would allow CCSR to increase its capacity in monitoring, researching, and planning for climate change. Beyond emergency situations, the EOC and breakout rooms may be used to host multipurpose meetings and education trainings.			

5.4 Hawai‘i State Land Use District Guidelines

Under the Chapter 205, HRS, all lands of the State are to be classified in one of four categories: urban, rural, agricultural, and conservation lands. The State Land Use Commission (LUC), an agency of the State Department of Business, Economic Development, and Tourism (DBEDT), is responsible for each district’s standards and for determining the boundaries of each district (Chapter 205-2(a), HRS). The LUC is also responsible for administering all requests for district reclassifications and/or amendments to district boundaries, pursuant to Chapter 205-4, HRS, and the HAR, Title 15, Chapter 15 as amended. Under this Chapter, all lands in Hawai‘i are classified into four land use districts: (1) Conservation, (2) Agricultural; (3) Urban, and (4) Rural.

Discussion: As classified by the State of Hawai‘i LUC, the project site is situated within the State Urban District. The Hawai‘i State Plan, Chapter 205-2 (b) Hawai‘i Revised Statutes, states that:

“Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated in.”

The proposed project is consistent with this Statute, as the proposed land uses are consistent with City and County of Honolulu General Plan, PUC DP, and LUO, as discussed below.

5.5 Hawai'i Coastal Zone Management Program

The Coastal Zone Management Program (CZMP) is a comprehensive nationwide program that establishes and enforces standards and policies to guide the development of public and private lands within the coastal areas. In the State of Hawai'i, the CZMP is articulated in the State Coastal Zone Management (CZM) Law in Chapter 205A of the HRS. The State CZM objectives and policies address ten subject areas. These subject areas 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.

Virtually all relate to potential development impacts on the shoreline, near shore, and ocean area environments. The Hawai'i CZM Law charges each County with designating and administering Special Management Areas (SMA) within the State's coastal areas. Any "development," as defined by the CZM Law, located within the SMA requires a SMA Use Permit.

Discussion: The Project area is not located within the coastal zone or SMA. However, HRS Chapter 205A requires all state and county agencies to enforce CZM objectives and policies as set forth in HRS §205A-2. Table 5.2 below addresses the applicability of the objectives/policies to the new EOC in relation to the ten subject areas mentioned above.

Table 5.2: Hawai'i Coastal Zone Management Program – HRS Chapter 205A Objectives and Policies

Subject Area	Objective/Policy
Recreational resources	See *Chapter 3.13* for a discussion on recreational resources in the vicinity of the Project. The new EOC will adopt water quality standards and regulate point and nonpoint sources of pollution to protect the recreational value of coastal waters.
Historic resources	See *Chapter 3.6* for further discussion on historic and archaeological resources in the vicinity of the Project. The Project is not expected to adversely affect known resources in the area. During construction, DDC will perform archaeological monitoring pursuant to an existing AMP prepared for the site.
Scenic and open space resources	The Project is not anticipated to have significant impact on scenic view planes or resources in the downtown Honolulu area. The height of the new four-story EOC building will be below the 100-foot height limit. Surrounding buildings are of equal of higher elevation. The Project will not interfere with scenic views specific in the PUC DP. *Chapter 3.9* for further discussion.
Coastal ecosystems	The Project site is not located within an area vulnerable to coastal hazards, as discussed in *Chapter 3.5.* The site is located within the XTEZ. In cases of extreme tsunamis, users of the building would be able to evacuate to the higher floors. The final design of the building may include elevating the structure to reduce adverse impacts related to flooding and tsunami inundation.
Economic uses	The Project is providing a facility that is in a suitable location and will not negatively impact the state's economy. The new EOC will include DEM and CCSR offices. The function of the CCSR is to track climate change science,

Table 5.2: Hawai'i Coastal Zone Management Program – HRS Chapter 205A Objectives and Policies	
Subject Area	**Objective/Policy**
	including its effect on the state's economy, and develops climate action and adaptation plans. The construction of the new facility will support CCSR in its continued research. The consolidation of the two departments into one building will facilitate knowledge-sharing between the agencies. The Project site is not coastal dependent.
Coastal hazards	Not applicable.
Managing development	The project site is in the State Urban Land Use District and is zoned BMX-3. All improvement activities will be conducted in compliance with State and City environmental rules and regulations. This EA identifies and, where necessary, proposes mitigation measures to address anticipated impacts from the construction and operation of the project.
Public participation	Public notification of the proposed action will be provided with publication of the Draft EA. See *Chapter 7* of this EA for a list of agencies, organizations and individuals consulted in the preparation of the project EA.
Beach protection	The Project is not located along the coastal area, and therefore will not impact public beaches on O'ahu.
Marine resources	The Project will not impact the protection or use of marine and coastal resources. During construction, BMPs will mitigation the potential for erosion and stormwater runoff from the site, as described in *Chapter 3.3*.

5.6 Hawai'i Multi-Hazard Mitigation Plan (2018 Draft/2013)

To qualify for mitigation grants, State and County Agencies must develop and implement hazard mitigation plans pursuant to the Disaster Mitigation Act (DMA) of 2000. DMA further establishes criteria for developing state and local plans and requires that state plans be updated every five years.

The 2013 HMP identifies the hazards and risks posed by natural and technological disasters, identifies actions and activities to reduce losses from those hazards, and establishes priorities and long-term process to implement those actions (Martin and Chock, 2013). The 2013 HMP expresses the following six goals for hazard reduction and enhancement of mitigation capabilities in the State:

1. Protect life and property of the people in Hawai'i;
2. Continually strive to improve the state of the art for the identification of hazard areas, prediction capabilities, and warning systems;
3. Produce comprehensive, multi-hazard risk and vulnerability assessments;
4. Protect the State's natural, built, historical, and cultural assets;
5. Minimize post-disaster recovery disruption and rebuild businesses and restore economic activity to ensure the long-term sustainability of the State's economic base;
6. Ensure public awareness of risks, vulnerability, and multi-hazard mitigation actions through public education, that results in efficient evacuations, self-reliant disaster preparation, and willingness to abide by preventive or property protection requirements.

The Draft 2018 State HMP, the update of the 2013 HMP, includes more recent scientific data and hazard events, and identifies the major natural hazards that affect our State, assesses the risk that each hazard poses, analyzes the vulnerability of our people, property and infrastructure to the specific hazard, and recommends actions that can be taken to reduce the risk and vulnerability to the hazard (TetraTech, 2018). The State's Draft 2018 HMP also contains a description of programs, policy, statues and regulations applicable to hazard mitigation. The mitigation strategy sets the state's mitigation program priorities and helps guide the counties as they update their plans.

Eighty-seven mitigation actions were recommended in the updated 2018 Draft plan. The types of projects which have been determined high priority for the State are:

- Hardening or retrofit of essential facilities such as fire station, EOCs, communications facilities, schools, shelters, hospitals, etc.
- Public awareness/education
- Flood control and floodplain management to include the reduction of repetitive and severe repetitive loss properties
- Development and/or improvement of warning systems.

Discussion: The proposed Project to construct an upgraded, expanded EOC meets the State 2013 HMP goals of protecting life and property in the State and the improvement of prediction capabilities and warning systems. The new building includes expanded offices for DEM to accommodate an increase in staff, enabling DEM to expand its efforts in public awareness and disaster and mitigation management and planning.

The State 2018 Draft HMP identifies the retrofitting of essential facilities such as EOCs as a priority for the State; therefore, the proposed project to construct a new EOC would be a direct fulfillment of the plan. The new EOC would include a broadcast and communications area for DEM and other agencies to use for interagency communication and to disseminate information to the public during cases of emergency.

5.7 City and County of Honolulu General Plan (2002 Amendment)

Adopted by resolution in 1977, the 1992 revised edition of the General Plan for the City and County of Honolulu, as amended in 2002, sets forth the long-range objectives for the general welfare and prosperity of the people of O'ahu and broad policies to attain those objectives. The Draft 2035 O'ahu General Plan Update was published in November 2012, and the Revised General Plan was submitted to the City Council in April 2018 for approval. A Final Revised General Plan Update is still pending as of November 2019.

The General Plan Update provides objectives and policies intended to guide and coordinate City land use planning and regulation, and budgeting for operations and capital improvements. The Proposed Revised Plan includes continued focus on critical issues such as regional population, economic health, and affordable housing, while also addressing concerns such as climate change, sea level rise, and sustainability.

The project is consistent with the applicable objectives and policies of the current City and County of Honolulu General Plan as described below.

Part II: Economic Activity

Objective G: To bring about orderly economic growth on O‘ahu.

- Policy 1: Direct major economic activity and government services to the primary urban center and the secondary urban center at Kapolei.

Discussion: The Project involves construction of a new EOC that will consolidate DEM and CCSR offices into one building to increase overall operational efficiency and improve emergency response when the EOC is activated. The new facility will also accommodate a planned increase in staff. The Project is located in downtown Honolulu and meets the General Plan’s policy of directing government services to the PUC.

Part III: Natural Environment

Objective A: To protect and preserve the natural environment.

- Policy 1: Protect O‘ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.

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

- Policy 6: Design surface drainage and flood-control systems in a manner, which will help preserve their natural settings.

- Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.

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

- Policy 2: Protect O‘ahu's scenic views, especially those seen from highly developed and heavily traveled areas.

Discussion: The Project site is located within downtown Honolulu. The new four-story facility will meet the 100-foot height limit for the Hawai‘i Capital District and will not obstruct any mauka-makai or east-west views articulated in the PUC DP. Construction BMPs to minimize soil erosion and sediment runoff and dust, such as installation of dust screens and silt fences, will be implemented to protect the surrounding natural environment during construction.

Part VII: Physical Development and Urban Design

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

- Policy 1: Plan for the construction of new public facilities and utilities in the various parts of the Island according to the following order of priority: first, in the primary urban center; second, in the secondary urban center at Kapolei; and third, in the urban-fringe and rural areas.

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

Objective B: To develop Honolulu (Waiʻalae-Kahala to Hālawa), Aiea, and Pearl City as the Island's primary urban center.

- Policy 1: Stimulate development in the primary urban center by means of the City and County's capital-improvements program and State and Federal grant and loan programs.

- Policy 7: Provide for the continued viability of the Hawaiʻi Capital District as a center of government activities and as an attractive park-like setting in the heart of the City.

Discussion: The Project is consistent with the General Plan's objectives regarding physical development and urban design. The Project involves the construction of a new EOC with offices for DEM and CCSR within the Hawaiʻi Capital District of downtown Honolulu. The two agencies will benefit from the close proximity to other key State and City agencies within the district. As discussed in *Chapters 3.3, 3.10, and 3.11*, existing utilities and infrastructure are adequate to serve the site.

Part VIII: Public Safety

Objective B: To protect the people of Oʻahu and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions

- Policy 1: Keep up-to-date and enforce all City and County safety regulations.
- Policy 2: Require all developments in areas subject to floods and tsunamis to be located and constructed in a manner that will not create any health or safety hazard.
- Policy 4: Cooperate with State and Federal agencies to provide tsunami warning and protection for Oʻahu.
- Policy 5: Cooperate with State and Federal agencies to provide protection from war, civil disruptions, and other major disturbances.
- Policy 8: Provide adequate search and rescue and disaster response services.
- Policy 9: Design safe and secure public buildings.
- Policy 11: Develop civil defense plans and programs to protect and promote public health, safety and welfare of the people.
- Policy 12: Provide educational materials on civil defense preparedness, fire protection, traffic hazards and other unsafe conditions

Discussion: As discussed throughout this Draft EA, the new EOC will include offices for DEM and CCSR, two key emergency and natural hazard planning and response agencies. Both agencies will benefit from being located in closer proximity to one another by having the ability to share knowledge and resources that will help provide a higher level of support when the EOC is activated in emergency response situations. The new offices will also provide increased office space and collaboration areas to accommodate an increase in staff.

The function of an EOC is to support multi-agency and public-private coordination and resource management during a wide range of emergency situations. The existing EOC lacks operational space required during times of activation. The new EOC will provide the space needed for required personnel, as well as space for break-out and other meeting rooms. Beyond emergency situations, the EOC may be used for multipurpose meetings and training events.

Part 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.
- Policy 3: Ensure that government attitudes, actions, and services are sensitive to community needs and concerns.
- Policy 4: Prepare, maintain, and publicize policies and plans which are adequate to guide and coordinate City programs and regulatory responsibilities.

Discussion: The proposed action to construct a new EOC with offices for DEM and cc meets the General Plan's overall objective of increasing efficiency, effectiveness, and responsiveness of City services. The new EOC will provide adequate space to accommodate all personnel required during activation. Further, DEM's expanded office will accommodate an increase in staff needed to perform all DEM functions. Locating DEM and CCSR in closer proximity to one another will enhance knowledge-sharing between the two agencies, overall improving City natural hazard research, planning, and response.

5.8 City and County of Honolulu Primary Urban Center Development Plan

The island of O'ahu is divided into eight regional plan areas. Two areas are identified as "development plans," which provide guidance for future growth and development, while the other six areas are identified as "sustainable communities plans" (SCP), which aim to maintain the region's character and ensure modest development. Each regional plan implements the objectives and policies of the General Plan for the City and County of Honolulu and provides direction on public policy, investment, and decision-making within each respective region. Together with the General Plan, they guide population and land use growth over a 20- to 25-year time span.

The project site is located within the PUC DP area and has been designated for "Institutional" land uses (see *Figure 1.5*). The PUC DP was last revised in June 2004 by Ordinance No. 04-14, and is currently being updated. The plan reflects the results of a community-based comprehensive review program to guide development in the region through 2025. The 2004 Plan's vision for the Primary Urban Center focuses on the long-term protection of community resources, the preservation of its residential character, and the adoption of public improvement programs and development regulations that reflect a stable population. The PUC DP establishes the region's role in O'ahu's development pattern by defining policies in the Land Use and Transportation and Infrastructure and Public Facilities areas. The updated plan is expected to be complete in May 2020 and will expand on topics including housing affordability and types; mobility improvements including rail; infrastructure improvement priorities; creating livable age-friendly communities; location and types of new development; planning for climate change and SLR; creating a diverse and prosperous economy; and, preserving and enhancing parks, open spaces, and natural features, The following sections highlight excerpts of the PUC DP that are particularly relevant to this project.

Land Use and Transportation – Protection and Enhancing Natural, Cultural and Scenic Resources

Policies:

- Preserve panoramic views of natural landmarks and the urban skyline. Preserve views of the Koʻolau and Waianae Mountain Ranges, Punchbowl, Diamond Head, Pearl Harbor and other natural landmarks. Maintain important view corridors within and across urban Honolulu and keep Downtown as the most prominent feature of the urban skyline. Views along the Pearl Harbor shoreline and the Pearl Harbor Historic Trail toward the mountains, shoreline, significant landmarks, and adjacent communities should be created and maximized wherever possible and appropriate.

Guidelines

- Apart from Downtown and other central Honolulu locations, promote mid-rise or low-rise scale for new buildings
- Preserve the following panoramic views by establishing building height limits and setbacks that are based on viewplane analyses to determine the sight lines and desired view dimensions and characteristics:
  - From Kewalo Basin toward the Koʻolau range and Punchbowl
  - From Kakaako Waterfront Park toward Punchbowl and the Koʻolau Range
  - From Punchbowl Lookout toward Diamond Head
- Preserve and enhance significant *mauka* or *makai* view corridors along major collector streets through a combination of zoning controls and streetscape improvements

Discussion: The Project site is located within mauka-makai and east-west viewplanes articulated in the PUC DP Map A.1, Significant Panoramic Views, and is consistent with the above guidelines. To limit the impact to and preserve significant mauka-makai views to Punchbowl Crater from the shoreline and east-west views of Diamond Head from Pearl Harbor, the EOC will be limited to the 100-foot maximum height allowed by the Hawaiʻi Capital Special District.

Infrastructure and Public Facilities: Civic and Public Safety Facilities

Policies

- Provide adequate staffing and facilities to ensure effective and efficient delivery of basic governmental service and protection of public safety.

Guidelines

- As population increases, provide support for civil defense building shelters and improved technology, equipment and training for firefighting, police protection and paramedical services.

Discussion: The proposed new EOC and offices for DEM and CCSR will meet PUC DP's policy regarding civic and public safety facilities. The new facility will provide additional space for an increase in agency staff. The new EOC will also better accommodate agency personnel needed during times of activation, thus improving EOC operations during cases of emergency. The EOC will include a breakout rooms for and various rooms needed to facilitate interagency communication and communication with the

public, such as a broadcast room, communications room, and media briefing room. Beyond its use during times of emergency, the new EOC may also be used for trainings and events.

PUCDP Land Use Map

- The project site is designated as "Institutional" on the PUCDP's Land Use Map.
- A "Pedestrian Network" is designated to run adjacent and mauka of the site, traversing through the Alapaʻi Transit Center from Young Street to Hotel Street.

Discussion: The "Institutional" designation includes the Civic Center and other institutional campuses. The project site is considered a support facility and is consistent with the "Institutional" Land Use designation. Further, the project will not interrupt existing pedestrian facilities providing connectivity for the Hotel and Young Street corridor.

5.9 City and County of Honolulu Land Use Ordinance

The purpose of the LUO is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the County General Plan and development plans. The LUO is also intended to provide reasonable development and design standards. These standards are applicable to the location, height, bulk and size of structures, yard areas, off-street parking facilities, and open spaces, and the use of structures and land for agriculture, industry, business, residences or other purposes (ROH, Chapter 21).

Discussion: The subject property is designated as "BMX-3: Business Mixed-Use District" by the City and County of Honolulu's LUO *(Figure 1.3)*. Public uses and structures such as office buildings and facilities are permitted uses in BMX-3 district.

The new EOC and other support facilities will comply with ROH, Section 21-4, General Development Standards, of the LUO, and the Hawaiʻi Capital Special District guidelines articulated in ROH, Section 21-9 where applicable. The parking and loading provisions will comply with requirements in ROH, Section 21-6, Off-street Parking and Loading.

5.10 City and County of Honolulu Hawaiʻi Capital Special District

Within the LUO, certain Special Districts have been established to "provide a means by which certain areas in the community in need of restoration, preservation, redevelopment, or rejuvenation may be designated to guide development to protect and/or enhance the physical and visual aspects of an area for the benefit of the community as a whole" (Section 21-9.20, ROH). All development within any Special District is classified as either major, minor, or exempt. Major and minor projects require a Special District Permit to be processed by DPP.

The project is located within the Hawaiʻi Capital Special District and a Special District Permit will be required for the proposed project upon completion of the environmental review process. Hawaiʻi Capital Special District guidelines are provided to guide aesthetic and architectural aspects of the project development. The Hawaiʻi Capital SD provides guidelines for height, roofing, façade treatment, entrance, arcade and porch design, doors, windows, building materials, color scheme, courtyard, paving, signs, lighting, landscaping and parking. The proposed project is located within the Alapaʻi Precinct and applicable guidelines for the Alapaʻi Precinct are listed below:

- Height Limit: 100 feet
- Open Space Requirement: 40%
- Density and design compatibility with surrounding precincts
- Orient structures to minimize intrusion to mauka-makai views, especially to and from Punchbowl
- Preserve and enhance the park-like setting of the Hawai‘i Capital Special District

Discussion: To minimize viewshed impacts and to protect the mauka views to Punchbowl Crater from the shoreline and east-west views from Pearl Harbor to Diamond Head, the EOC will be limited to 61-feet high, adhering to the 100-foot maximum height allowed by the Hawai‘i Capital Special District. The proposed building will be visible from the Punchbowl Scenic Lookout. Existing buildings surrounding the Project site already exceed the proposed building's height; therefore, the Project is not anticipated to further impact views in this corridor. Section 21-90.3, ROH, Prominent views and historic places, identifies Alapa‘i Street between King and Beretania Streets as a prominent view corridor. The Project will be visible along Alapa‘i Street but will not obscure views of Punchbowl. The proposed EOC building's northwest-southeast orientation suggests disregard to mauka-makai views, however, this orientation is necessary to meet Federal anti-terrorist design standards that would not have been achievable with a mauka-makai building orientation. Final design treatments to minimize the impact of the structure on the surrounding neighborhood may include screening such as landscaping comparable to the existing JTMC. Once mature, landscaped trees may obscure view of the proposed building from the Punchbowl Scenic Lookout and screen views of the building from the street level.

The project will be designed to maintain the architectural character of the Hawai‘i Capital Special District and the urban design character of Honolulu in general. Materials and colors which blend with the landscape and are similar to neighboring buildings will be chosen. A waiver will be required to address 40% open space requirements for the district. These issues will be fully discussed in the forthcoming Hawai‘i Capital Special District Permit application.

5.11 Hawai‘i State Capital Master Plan

The Hawai‘i State Capital Master Plan (CMP) was written by John Carl Warnecke & Associates in 1968 to guide future planning efforts in the Civic Center. A Policy Committee and Citizens Committee jointly set forth guidelines in 1964 that are summarized in the 1968 CMP as Goals and Objectives. Applicable Goals and Objectives are listed below.

- The Civic Center of Honolulu should encompass major government structures.
- The Civic Center of Honolulu is ideally located adjacent to the central business district where it can best serve the general public.
- The historic buildings from the core of the Civic Center and government structures shall be related to this core.
- The structures and spaces within the Civic Center must be visually correlated. To this end plans will provide adequate and modulated open spaces unified by landscaping.
- The Civic Center must be related to its surrounding environment through land use planning, architectural design and functional relationships and surrounding land uses must be compatible.
- Provide adequate room for Civic Center expansion.

Discussion: The proposed project will meet the spirit of the plan by providing a major governmental

structure related to the Civic Center core that is intended for usage by multiple key agencies. Architectural design, site layout and landscaping would be visually harmonious with surrounding land uses.

5.12 City and County of Honolulu Special Management Area Guidelines

The Special Management Area (SMA) is a designation established to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai‘i. Special controls on developments within the SMA are necessary to avoid permanent loss of valuable resources and foreclosure of management options. The review guidelines of Section 25-3.2 of the ROH are used by DPP and the City Council for the review of developments proposed in the SMA. These guidelines are derived from Section 205A-26 HRS.

Discussion: The Project site is not within the SMA as delineated by the County. In addition, the potential environmental impacts of the project have been evaluated and determined to not pose a threat to the nearshore and coastal areas.

5.13 City and County of Honolulu Multi-Hazard Pre-Disaster Mitigation Plan

As noted in *Chapter 5.6*, State and County Agencies must develop and implement hazard mitigation plans to qualify for mitigation grants and disaster recover funding from FEMA. The City must update its plan every five years to maintain funding eligibility. The City’s Multi-Hazard Pre-Disaster Mitigation Plan serves as the City’s comprehensive plan to address the risks and vulnerabilities and outlines its mitigation goals and priority mitigation projects. Resolution 19-218 was adopted by the Honolulu City Council on November 6, 2019 to approve the 2019 Multi-Hazard Pre-Disaster Mitigation Plan and is awaiting Mayor Kirk Caldwell’s signature. The 2019 plan is an update of the 2012 plan dated August 2, 2012. DEM leads efforts to update the plan, while CCSR, as the Program Coordinator for the City Hazard Mitigation Program, will be responsible for updating the subsequent plan. The City’s 2019 plan identifies the following eight mitigation goals and objectives to eliminate or reduce risk:

1. Continually strive to improve the state of the art for the identification of hazard areas, risk assessment capabilities, warning systems, and effective response and recovery.
2. Plan, design, and construct future development and retrofit existing structures within hazard areas to become resilient and minimize losses.
3. Ensure that all emergency response critical facilities, communications systems, information technology data networks, and broadband internet connectivity remains operational during and after hazard events.
4. Ensure that all lifeline and information technology infrastructures are able to withstand hazard events or have contingency plans to quickly recovery after a disaster.
5. Develop public guidance for the need to shelter in residences that are strengthened as necessary and outside of areas that are subject to flooding, or in alternative resilient structures. Provide pre- and post-disaster emergency shelters to accommodate residents and visitors that are not able to shelter in place.
6. Develop a high level of awareness among the general public and businesses, particularly the visitor industry, that results in calm and efficient evacuations, self-sufficient survival skills, and willingness to abide by preventive or property protection requirements.

7. Minimize post-disaster recovery disruption by developing systems for efficient clean-up, documentation of damage and injury, and processing of appropriate aid to rebuild businesses and the economy.
8. Protect natural and cultural resources that buffer hazard effects to the extent practicable.

The plan further identifies 45 of the highest priority hazard mitigation actions for the City. Proposed actions address natural hazards O‘ahu is vulnerable to in addition to hazard mitigation areas of policies and processes, infrastructure facilities, public information, building facilities, and public education and outreach.

Discussion: The Project meets the City’s Multi-Hazard Pre-Disaster Mitigation Plan goals articulated above. The EOC is a critical facility during hazard events, serving as a centralized, collaborative communications environment for multiple agencies during emergency hazard events. The new EOC would upgrade existing facilities, provide space needed during EOC activation, and consolidate DEM and CCSR functions into one building, facilitating more efficient planning and response to emergency situations. Meeting areas will also be provided, offering additional space needed for collaboration and training across City agencies. The new building will include a broadcast and communications area for DEM and other agencies to use for interagency communication and to disseminate information to the public during cases of emergency.

5.14 Ola: O‘ahu Resilience Strategy

CCSR was established by City Charter in 2016 and tasked with tracking climate change science and its potential impacts. As a part of this task, the office was responsible for developing O‘ahu’s first resilience strategy. After 18 months of outreach with community stakeholders, government agencies, and the for- and non-profit sectors, CCSR published *Ola: Resilience Strategy* on May 31, 2019. The strategy identifies 44 actions which directly address the challenge of long-term affordability and the impacts of climate change. Actions are organized in the following four pillars: 1) Remaining Rooted, 2) Bouncing Forward, 3) Climate Security, and 4) Community Cohesion. The strategy is consistent with the City’s Multi-Hazard Pre-Disaster Mitigation Plan update (2018).

The 44 Actions from across the pillars include a description, resilience co-benefits, lead City agency and partners involved, timeframe, measures of success, and a spotlight which offers a story of the action already implemented. Actions are described in relation to the Aloha+ Challenge sustainability goal(s) and the United Nations Sustainable Development Goal(s) that align with the action.

DEM and CCSR are identified as leading agencies for the below actions:

Pillar 1: Remaining Rooted

Action 6: Expand Housing and Energy Transformation by Accelerating the Permitting Process

Pillar 2: Bouncing Forward

Action 14: Establish Future Conditions Climate Resilience Design Guidelines

Action 15: Develop a Network of Community Resilience Hubs

Action 17: Ensure Access to Fuel Supplies to Aid in Disaster Response and Recovery

Action 18: Increase O‘ahu’s Preparedness Utilizing Scenario Modeling and Artificial Intelligence

Pillar 3: Climate Security

Action 20: Reduce Taxpayer Expense and Increase Renewable Energy Through City-Wide Energy Performance Contracts

Action 25: Accelerate Carbon-Free New Mobility Options

Action 29: Protect Beaches and Public Safety with Revised shoreline Management Rules

Action 32: Deploy Sustainable Roof Systems to Manage Urban Heat and Rainfall

Pillar 4: Community Cohesion

Action 35: Increase Coordination with Neighborhood Preparedness Groups

Action 40: Lift Up Positive Examples of Island Values in Action

Discussion: The strategy emphasizes collaboration between various City agencies to achieve outlined actions. DEM and CCSR share lead agency responsibility for some of the above actions. Locating DEM and CCSR in one building will increase collaboration between the two departments as they work towards fulfilling the strategy’s actions together. When not activated, the EOC and breakout rooms may be used as training rooms for DEM, CCSR, and invited guests, greater facilitating collaboration needed to fulfill the strategy’s outlined actions. The expanded office space for DEM will accommodate new staff needed to increase the department’s capabilities. The new EOC will improve the City’s emergency response during natural hazard events, which are anticipated to increase as a result of global climate change and SLR. Increasing hazard response quality is essential in the City’s overall resilience and public safety.

5.15 Required Permits and Approvals

During the implementation stages of the Project, DDC will work with State and City review agencies for examination and approval of the Project plans and specifications. *Table 5.3* below lists the anticipated permits and approvals required for the Project:

Table 5.3: Required Permits and Approvals

Permit/Approval	Responsible Agency
HRS Chapter 343 Compliance	DDC
Hawai‘i Capital Special District Permit – Major	DPP
Waiver Permit (to waive 40% minimum open space requirements in the Hawai‘i Capital Special District)	
Building Permit for Electrical, Plumbing, and construction of sidewalks, curbs, and driveways	
Grading, Grubbing, and Stockpiling Permit	
Sewer Connection	

Table 5.3: Required Permits and Approvals	
Permit/Approval	**Responsible Agency**
Erosion and Sediment Control Plan, Clean Water Pollution Plan, Post-Construction Best Management Practices Plan	DFM
Water Connection	BWS
Plan Review	HFD
Fuel Tank Permit	
HRS Chapter 6E Compliance Historic resources	DLNR, State Historic Preservation Division
Community Noise Permit	DOH
ADA Compliance	

Chapter 6

Findings and Reasons Supporting Anticipated Determination

Chapter 6

Findings Supporting the Anticipated Determination

6.1 Anticipated Determination

Based on a review of the significance criteria outlined in HRS, Chapter 343, and HAR, Section 11-200.1-13, Hawai‘i Administrative Rules, the Project has been determined to not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated.

6.2 Reasons Supporting the Anticipated Determination

The potential impacts of the project have been fully examined and discussed in this EA. As stated earlier, there are no significant environmental impacts expected to result from the project. This determination is based on the assessments as presented below for criterion HAR, Chapter 11-200.1-13(b)(1) to (13).

(1) Irrevocably commit a natural, cultural or historic resource.

The proposed Project is not anticipated to result in the loss or destruction of any natural resources. As discussed in *Chapter 3.4,* no endangered or threatened plant or animal species or critical habitat were identified on the site. Mitigation measures discussed in *Chapter 3.4* will be employed to minimize potential impacts.

Historical properties, cultural resources, and wahi kanu have been documented in studies conducted specifically for the Project area. As detailed in *Chapters 3.6 and 3.7* of this report, an AIS and CIE prepared for the ATC and JTMC project in 2008. Within the approximate 6,535-square foot EOC Project site, a historic trash pit was identified as SIHP No. 50-80-14-6901. Additionally, three burials were identified outside the immediate project area but within 330-foot proximity. As discussed in *Chapter 3.6,* a burial treatment plan for the site was reviewed and accepted by SHPD on March 10, 2008 (Log. No. 2008.0556, Doc. No. 0803KP10) and is currently in place. At present, DDC has been in consultation with SHPD, the OIBC, and OHA. DDC is committed to continuing consultation and seeks to ensure archaeological monitoring pursuant to HAR 13-279 that was prepared for the ATC and JTMC parcel and accepted by SHPD on July 5, 2010 (Log No. 2010.2405, Doc. No. 1007NM04) will be amended and applied to the current Project area.

If any cultural or archaeological resources are unearthed or ancestral remains are inadvertently discovered, the DLNR, SHPD, the OIBC Kona moku representative and known cultural descendants will be duly notified. The treatment of these resources and iwi kupuna will be conducted in strict compliance with applicable historic preservation and burial laws and code of conduct to appropriately

care for any iwi kūpuna. With the prescribed mitigation measures, the Project will not involve a known loss of existing cultural, archaeological, or historical resources.

(2) Curtail the range of beneficial uses of the environment.

The project will not curtail the range of beneficial uses of the environment. The proposed Project is the construction of a new EOC on existing land developed for City transit and operational use. The proposed Project will not change this land use and is consistent with the existing level of activities in the project area. The purpose of the Project is to construct a new EOC with DEM and CCSR offices centralized to increase the efficiency of the City's hazard response. Accordingly, the Project will provide a beneficial impact to public safety.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law.

The project does not conflict with the State's long-term environmental policies or goals and guidelines as expressed in the State Environmental Policy, Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders. The Project will improve the City's hazard response and enhance public safety.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The project will result in short-term economic benefits during construction and operation that include direct, indirect, and induced employment opportunities and multiplier effects, but not at a level that would generate significant economic activity. The Project is expected to improve safety and enhance operations of the EOC and DEM and CCSR. The new facility will enable the City to better serve the wider island population during cases of emergency.

(5) Have a substantial adverse effect on public health.

The project is consistent with existing land uses and is not expected to affect public health. However, there are temporary short-term impacts to air quality from possible dust emissions and temporary degradation of the acoustic environment in the immediate vicinity resulting from construction equipment operations. The project will comply with State and County regulations during the construction period and will implement best management practices to minimize temporary impacts. The facility is expected to have long-term public safety benefits from improved EOC and DEM and CCSR operations.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

There are no adverse secondary impacts such as population changes as a result of this project. The number of people permitted to access the new EOC will be managed and will largely be under the supervision of City staff. Construction of the Project may be interrupt existing Alapaʻi Transit Center bus operations. However, bus operations will continue, and such interruption would be minimized and cease upon completion of the Project.

(7) Involve a substantial degradation of environmental quality.

The project will not involve a substantial degradation of environmental on-site or in the surrounding environment. Construction-period impacts related to noise and air quality are temporary and be

minimized using standard construction and erosion control BMPs as discussed throughout this Draft EA. Long-term impacts to air and water quality, noise, and natural resources are not anticipated.

(8) Is individually limited but cumulatively have substantial adverse effect upon the environment or involved a commitment for larger actions.

The development and implementation of the Project will have a very limited and negligible impact on the natural and cultural environment. There are no anticipated cumulative effects on ecosystem resources or human communities as the subject project is not intended as a commitment to a larger action by DDC or the City overall. The purpose of the proposed action is limited to constructing a new EOC and offices for DEM and CCSR in order to improve overall efficiency and hazard response.

(9) Have a substantial adverse effect on a rare, threatened or endangered species, or its habitat.

The project site does not contain known identified rare, threatened, or endangered species or critical habitat. As outlined in *Chapter 3.4,* to avoid potential impacts to Hawaiian hoary bats, tree disturbance will be limited during bat birthing and pup rearing season in the unlikely event that they may inhabit in trees within the Project area. Additionally, mitigation measures as outlined in *Chapter 3.4* to minimize impacts to Hawaiian seabirds that may occasionally fly over the Project site will be employed. No impacts are anticipated.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels.

General temporary impacts associated with construction are identified in *Chapter 3.0* of this Draft EA. Short-term effects on air, water quality, and ambient noise levels during construction will be mitigated through adherence with State and City regulations and mitigation measures as discussed throughout this Draft EA. No detrimental long-term impacts to air, water, or acoustic quality are anticipated with the project improvements. The improvements are not anticipated to detrimentally affect air or water quality or ambient noise levels.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters.

The project site lies within Flood Zone "X", an area determined to be outside the 0.2% annual chance floodplain and outside of the 500-year floodplain. The project site is in downtown Honolulu and consists primarily of soils characterized by moderately rapid permeability, slow runoff, and an erosion hazard that is no more than slight. The elevation of the Project area is outside of the tsunami zone, sea level rise exposure area, and other coastal areas; however, the Project is located within the XTEZ. In cases of extreme tsunamis, users of the facility would be able to evacuate the higher levels of the building. No long-term impact is anticipated.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies.

Short-term impacts to visual resources are related to construction, as discussed in *Chapter 3.9*. On the long-term, the Project will not substantially impact any scenic vistas or viewplanes identified in State or City plans. The new building is four stories high and is under the 100-foot height limit designated for the Hawai'i Capital District. The facility is visible from Alapa'i Street. Final design treatments to minimize the impact of the structure on the surrounding neighborhood may include screening such as landscaping.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

Construction of the project will not require substantial energy consumption relative to other similar sized projects. The new building may increase existing electrical demand at this location. The building will be designed to obtain LEED Silver for New Construction V4 certification pursuant to City Ordinance 06-06, Relating to Green Building Standards for City Facilities. Solar would be installed to increase the energy efficiency of the building. The Project is not expected to generate vehicular traffic at the site, as discussed in *Chapter 3.11.*

6.3 Summary

Based on the information and findings in this Draft EA and coordination with local, state, and federal regulatory agencies and public, it is anticipated that, with the incorporation of mitigation measures, this Project will have no significant impact on the natural or human environment. Further evaluation of the project's impacts through the preparation of an Environmental Impact Statement is not warranted. The Draft EA recommends mitigation measures to alleviate impacts when such impacts are identified. A Finding of No Significant Impact (FONSI) is anticipated for this project.

The new EOC will consolidate DEM and CCSR operations, facilitating knowledge- and resource-sharing between the two agencies and promoting efficient hazard response. Existing EOC operations will benefit from an expanded space designed to accommodate all required personnel during times of activation. Increased efficiency of operations will result in improved public safety. Beyond its use during emergency situations, the new EOC may also be used for education or training events during normal operating hours. The project is consistent with State and City plans and policies with regards to public safety as discussed in *Chapter 5.0*. Overall, the project will provide a public benefit while resulting in minimal impacts to the surrounding environment.

Chapter 7

Agencies, Organizations and Individuals Receiving Copies of the EA

Chapter 7

List of Agencies, Organizations and Individuals Receiving Copies of the EA

Early consultation on the project has been carried out with various agencies and stakeholder groups as part of the scoping process for this Project. Parties contacted in preparation of the Draft EA process, comments received, and those that will be provided an opportunity to review the Draft EA are identified below. Comment letters received during the early consultation process are also provided following this list. Also provided is the Request for a Letter of Determination to SHPD from DDC dated January 24, 2020. A determination from SHPD is still pending, and will be included in the Final EA.

Table 7.1 Agencies, Organizations and Individuals Receiving Copies of the EA

Respondents and Distribution	Early Consultation	Received Early Consultation Comments	Receiving Draft EA	Column Reserved for Draft EA Comments Received
Federal Agencies				
Federal Emergency Management Agency Region IX			X	
U.S. Fish and Wildlife Service – Pacific Islands Fish and Wildlife Office			X	
State of Hawai'i Agencies				
Department of Accounting and General Services			X	
Department of Business, Economic Development & Tourism (DBEDT) – Office of Planning			X	
DBEDT – State Energy Office			X	
Department of Defense	X		X	
Department of Health (DOH)	X		X	
DOH – Clean Water Branch			X	
DOH – Wastewater Branch			X	
Department of Land and Natural Resources (DLNR) – Land Division	X	X	X	
DLNR – Engineering Division			X	
DLNR – Land Division, O'ahu District			X	
DLNR – State Historic Preservation Division	X		X	

Table 7.1 Agencies, Organizations and Individuals Receiving Copies of the EA				
Respondents and Distribution	**Early Consultation**	**Received Early Consultation Comments**	**Receiving Draft EA**	**Column Reserved for Draft EA Comments Received**
Department of Transportation – Highways Division			X	
Hawai‘i Emergency Management Agency			X	
O‘ahu Island Burial Council			X	
Office of Hawaiian Affairs	X		X	
City and County of Honolulu Agencies				
Board of Water Supply	X	X	X	
Department of Emergency Management			X	
Department of Environmental Services			X	
Department of Facility Maintenance	X	X	X	
Department of Parks and Recreation			X	
Department of Planning and Permitting	X	X	X	
Department of Transportation Services	X		X	
Honolulu Fire Department	X	X	X	
Honolulu Police Department	X	X	X	
Office of Climate Change, Sustainability, and Resiliency	X		X	
Elected Officials				
U.S. Senator Brian Schatz			X	
U.S. Senator Mazie Hirono			X	
U.S. Representative Ed Case, First Congressional District			X	
Senator Sharon Y. Moriwaki – State Senate District 12			X	
Representative Scott K. Saiki – State House District 26			X	
Mayor Kirk Caldwell			X	
Council Member Carol Fukunaga Honolulu City Council District 6			X	
Chair Ryan Tam Ala Moana-Kaka‘ako Neighborhood Board No. 11	X		X	

Table 7.1 Agencies, Organizations and Individuals Receiving Copies of the EA				
Respondents and Distribution	**Early Consultation**	**Received Early Consultation Comments**	**Receiving Draft EA**	**Column Reserved for Draft EA Comments Received**
Community Groups, Individuals, and Consulted Parties				
Hawaiian Civic Club of Honolulu			X	
Libraries				
Hawai‘i State Library			X	
Utilities				
Hawaiian Electric Company			X	
Hawaiian Telcom			X	
Spectrum			X	
Other				
Honolulu Star-Advertiser			X	

Early Consultation Comments and Responses

Consultation with SHPD

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

MARK YONAMINE, P.E.
DIRECTOR DESIGNATE

HAKU MILLES, P.E.
DEPUTY DIRECTOR

800846

January 24, 2020

Susan Lebo, Ph.D., Archaeology Branch Chief
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
Kakuhihewa Building, Suite 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Dr. Lebo:

Subject: Request for a Letter of Determination and Hawaii Revised Statutes (HRS) §6E-8 Consultation with the State Historic Preservation Division (SHPD) Regarding the Proposed Alapai Transit Center Emergency Operations Center Project, Honolulu Ahupuaa, Honolulu District; Oahu Island
TMK: [1] 2-1-042:013 (por.)

The City and County of Honolulu (City), Department of Design and Construction (DDC), is proposing to construct an Emergency Operations Center (EOC) building at the Alapai Transit Center (ATC) in Honolulu, Oahu (TMK: [1] 2-1-042:013 [por.]). As a City project on City-owned land, the proposed project is subject to historic preservation review under HRS §6E-8 and Hawaii Administrative Rules (HAR) §13-275. There is no Federal involvement that would trigger compliance with Federal historic preservation review legislation (e.g., Section 106 of the National Historic Preservation Act). The information in this letter is intended to support the DDC's consultation with the SHPD regarding the project's necessary historic preservation review steps pursuant to HAR §13-275-3.

Project Description

The proposed project will construct a new facility to house the EOC and offices for the City's Department of Emergency Management (DEM) and Office of Climate Change, Sustainability, and Resiliency (CCSR) in downtown Honolulu, in the City-designated Hawaii Capital Special District – Alapai Precinct. The proposed project encompasses an approximately 6,535-square-foot portion of the 63,210 square-foot parcel identified as TMK: [1] 2-1-042:013. The property is bounded by the Honolulu Police Department's headquarters on South Beretania Street to the north, South King Street to the south, Alapai Street to the west, and Kealamakai

Street to the east. The proposed project is adjacent to the ATC bus passenger pick-up area and the recently completed Alapai Joint Traffic Management Center (JTMC).

The purpose of the project is to support the DEM and CCSR by providing a new EOC with ancillary support facilities and offices that will consolidate DEM and CCSR functions into one (1) space. Consolidating the DEM and CCSR into one (1) building will facilitate the agencies' ability to share knowledge and resources that will help provide a higher level of support when the EOC is activated in emergency response situations. The site will also support a planned increase in DEM staff needed for future 24-hour operations and Federal and State Program Support capabilities. The new EOC will also provide the operational space needed during activation in cases of natural hazard emergencies.

Preliminary plans involve the siting of a new EOC facility immediately mauka (northeast, inland) of the JTMC. The EOC will include approximately 27,627 square feet of floor area and a four-story design configuration with EOC support facilities on the first floor, the EOC on the second floor, DEM offices on the third floor, and CCSR offices on the fourth floor. The new building will have a height of approximately 60 feet, adhering to the 100-foot height limit specified by the Hawaii Capital Special District standards. The project will be designed to maintain the architectural character of the Hawaii Capital Special District and the urban design character of Honolulu in general.

Previous Archeological Studies at Alapai Transit Center

Three (3) prior archeological studies have been conducted at the ATC, two (2) of which overlapped with the current EOC project area. In 2007, Cultural Surveys Hawaii (CSH) prepared an *Archaeological Inventory Survey (AIS) and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupuaa, Honolulu District, Island of Oahu, TMK: [1] 2-1-042:004, 013* (O'Hare et al. 2007). This report was accepted by the SHPD in a letter dated December 7, 2007 (Log No.: 2007.3993, Doc. No.: 0712ED04; see enclosure). Two (2) historic properties, SIHP Nos. 50-80-14-6901 (historic trash pits, Features 1–4) and -6902 (three (3) human burials), were identified during the AIS. Two (2) of the 28 test excavations (Trenches 10 and 26) were within the current EOC project area (Figure 1 and Figure 2), within which only one (1) historic property (SIHP No. -6901) was identified. SIHP No. -6902 is well east of the current project area, by Kealamakai Street. A burial treatment plan (BTP) for SIHP No. -6902 (O'Hare et al. 2008), which called for preservation in place, was accepted by the SHPD in a letter dated March 10, 2008 (Log No.: 2008.0556, Doc. No.: 0803KP10; see enclosure). One (1) historic trash pit, SIHP No. -6901 Feature 4, was identified within the current EOC project area, in Trench 26 (see Figure 2). The documented stratigraphy within Trench 26 consists of the modern asphalt surface and associated base course, naturally deposited alluvium (including SIHP No. -6901 Feature 4), and natural volcanic cinder.

The ATC/JTMC project was subsequently re-designed and the proposed building footprints were moved. As a result, an addendum AIS was conducted to investigate the new areas of impact under the new building footprints. In 2009, CSH submitted an *Addendum to an*

Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua'a, Honolulu District, Island of O'ahu, TMK: [1] 2-1-042:004, 013 (Pammer et al. 2009). This report was accepted by the SHPD in a letter dated November 6, 2009 (Log No.: 2009.4418, Doc. No.: 0911NM18; see enclosure). None of the 15 addendum test excavations were within the current EOC project area; however, two (2) (Trenches 13 and 14) were in the immediate vicinity (within 5 meters) (see Figure 2). Three (3) additional features of SIHP No. -6901 (historic trash pits, Features 5–8) were identified during the addendum AIS; none were in the immediate vicinity of the current EOC project area. The observed stratigraphy within Trenches 13 and 14 is consistent with the findings of the 2007 AIS, consisting of the modern asphalt surface and associated base course, naturally deposited alluvium, and natural volcanic cinder. It was noted that the natural alluvium appeared disturbed and contained construction debris.

In 2010, CSH submitted an *Archaeological Monitoring Plan for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua'a, Honolulu District, O'ahu Island TMK: [1] 2-1-042:004, 013* (Pammer and McDermott 2010), which was accepted by the SHPD in a letter dated July 5, 2010 (Log No.: 2010.2405, Doc. No.: 1007NM04; see enclosure). This archaeological monitoring plan (AMP) called for on-site monitoring of all excavations deeper than 45 cm (18 inches) below surface.

From September 2010 through July 2011, CSH conducted archaeological monitoring for the ATC/JTMC Parking Structure Project. In 2013, the results were presented in an *Archaeological Monitoring Report for the Alapai Transit Center and Joint Traffic Management Center Parking Structure Project, Honolulu Ahupua'a, Honolulu District, O'ahu Island TMK: [1] 2-1-042:004, 013* (Sroat et al. 2013), which was accepted by the SHPD in a letter dated May 2013 (Log No.: 2013.3137, Doc. No.: 1305SL22; see enclosure). Three (3) additional features of SIHP No. -6901 (historic trash pits, Features 8–10) were identified during archaeological monitoring; none were within the current EOC project area. Although the "main monitoring areas" were mostly outside the current project area (see Figure 1), several excavations within the current project area were monitored by CSH archaeologists. Monitored ground disturbing activities within the current project area include trenching for water and electrical lines and drilling for foundation posts (see Figure 2). The stratigraphy recorded at the electrical line excavation (Profile 6) was consistent with that documented during the previous AIS and addendum AIS consisting of naturally deposited alluvium overlying natural volcanic cinder (the asphalt surface and associated base course had been removed prior to documentation). Several areas of disturbance from prior utility excavations were noted within the trench.

Consultation

On December 5, 2019, Noelle Wright and Kawika McKeague of G70, John Condrey of the City's DDC, and Matt McDermott of CSH met with Dr. Susan Lebo and Samantha Cragen of the SHPD to discuss the current EOC building project. Specifically, continuance of the SHPD-approved 2010 AMP (Pammer and McDermott 2010) was discussed.

On December 6, 2019, Kawika McKeague of G70 emailed representatives from the Office of Hawaiian Affairs (OHA) to provide a courtesy notice of the pending project. Representatives notified included Kai Markell (Compliance Manager) and Lauren Morawski (Compliance Archaeologist). Ms. Morawski provided Mr. McKeague with an update as to other key OHA personnel that should be duly notified including Keola Lindsey (Interim Manager for Compliance Enforcement) and Kamakana Ferreira (Lead Compliance Specialist). At present, we have not received any formal comments from OHA via G70 but will continue to coordinate with our consultants through this process and the pending State environmental review.

On January 8, 2020, Matt McDermott of CSH gave a presentation at the Oahu Island Burial Council meeting. Mr. McDermott provided an overview of the current project and its historic preservation review as well as a summary of past land use and prior archaeological studies on the parcel. No concerns were raised by members of the council or the audience.

Project Effect and Mitigation Commitments

Three (3) prior archaeological studies have been conducted at the ATC. Two (2) of these, an AIS by O'Hare et al. (2007) and archaeological monitoring by Sroat et al. (2013), were within the current EOC project area. One (1) historic property, SIHP No. 50-80-14-6901 (historic trash pits), was identified within the current project area during these prior studies. O'Hare et al. (2007) assessed SIHP No. -6901 as eligible for the State and National Registers of Historic Places under significance criterion D, and Pammer et al. (2009) and Sroat et al. (2013) subsequently concurred with that assessment. Based on the results of these prior studies within the ATC and the current EOC project area, the City's DDC seeks the SHPD's concurrence that a project effect determination of "effect, with proposed mitigation commitments" (pursuant to HAR §13-275-7) consisting of archaeological monitoring is appropriate. Additionally, the City's DDC seeks the SHPD's concurrence that archaeological monitoring will follow the SHPD-accepted 2010 AMP by Pammer and McDermott, which guided the prior archaeological monitoring within the EOC project area.

We would appreciate it if the SHPD would provide a letter of determination documenting the SHPD's concurrence with this letter. Alternatively, if the SHPD does not concur, we would appreciate guidance regarding what the SHPD considers to be appropriate historic preservation review steps for this project.

The City's DDC delegates authority to Matt McDermott of CSH (contact information below) to consult with the SHPD regarding the project's historic preservation review process.

Thank you for your consideration.

Should there be any questions, please contact John Condrey at 768-8468.

Sincerely,

Mark Yonamine, P.E.
Director Designate

MY:ln

Enclosures

cc: Kawika McKeague, Planning Principal
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813
Phone: (808) 441-2120
Email: kawikam@g70.design

Matt McDermott, Project Manager
Cultural Surveys Hawai'i, Inc.
P.O. Box 1114
Kailua, Hawaii 96734
Phone: (808) 262-9972
Email: mmcdermott@culturalsurveys.com

State of Hawai‘i

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

December 3, 2019

LD 2023

G70
ATTN: Kawika McKeague
111 South King Street, Suite 170
Honolulu, HI 96813-4307

Via email: kawikam@g70.design

Dear Sirs:

SUBJECT: **Early Consultation for Chapter 343, HRS, Environmental Assessment for Proposed Emergency Operations Center,** 710 South King Street, Kulaokahua, Honolulu, Island of Oahu; TMK: (1) 2-1-042:013 (por.)

Thank you for the opportunity to review and comment on the above subject matter. The Land Division of the Department of Land and Natural Resources ("DLNR") distributed copies of your request to various DLNR divisions for their review and comment.

Enclosed are responses from the a) Engineering Division and b) Land Division—Oahu District. Should you have any questions, please feel free to contact Barbara Lee at (808) 587-0453 or via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

LD 2023

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

October 30, 2019

RECEIVED
LAND DIVISION
2019 NOV -7 AM 10:49
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

Subject: Early Consultation for Chapter 343, HRS Environmental Assessment
City and County of Honolulu
Emergency Operations Center
Honolulu, O'ahu, Hawai'i
TMK: (1) 2-1-042:013 (por.)

Dear Participant:

On behalf of the City and County of Honolulu Department of Design and Construction (DDC), Facilities Division (FD), G70 is currently undertaking the preparation of an Environmental Assessment (EA) pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), for the proposed Emergency Operations Center (EOC).

Pursuant to Hawai'i Administrative Rules, §11-200.1-18 (Preparation and contents of a draft environmental assessment), DDC-FD, as the proposing agency, is conducting early consultation via this notification to seek the advice and input of agencies, citizen groups, and other individuals that have jurisdiction or expertise that would guide the analysis and preparation of the EA.

An overview of project information and the proposed action is enclosed for your review and comment.

Please provide comments via U.S. mail, email, or fax. We would like to receive these comments no later than December 1, 2019. Comments received subsequent to this deadline will still be considered.

G70
111 S. King Street, Suite 170
Honolulu, HI 96813-4307
Attn: Kawika McKeague, AICP
Fax: (808) 523-5874
Email: kawikam@g70.design

Thank you for your participation in early consultation for this environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

Enclosed: Early Consultation Handout

RECEIVED
2019 NOV -4 AM 8:22
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

Mr. Russell Tsuji
Land Administrator
State of Hawai‘i
Department of Land and Natural Resources (DLNR)
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Mr. Tsuji,

Thank you for your comment letter dated November 8, 2019 (File No. LD 2023) concerning the Pre-Consultation for Chapter 343, HRS EA for the proposed City and County of Honolulu Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

We appreciate your distributing the project information to the DLNR Divisions for their review and comments. We will directly respond to the comments received from the Engineering Division, and Land Division – O‘ahu District.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

LD 2087

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

LD 2023

2019 NOV 18 AM 10:45
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII
'19 NOV 18 AM 10:45 RECEIVED ENGINEERING LAND DIVISION

November 08, 2019

MEMORANDUM

TO: FROM

DLNR Agencies:
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X 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: TO Russell Y. Tsuji, Land Administrator
SUBJECT: **Early Consultation for Chapter 343, HRS, Environmental Assessment for Proposed Emergency Operations Center**
LOCATION: 710 South King Street, Kulaokahua, Honolulu, Island of Oahu; TMK: (1) 2-1-042:013 (por.)
APPLICANT: G70 on behalf of the City & County of Honolulu Department of Design and Construction, Facilities Division

Attached hereto, for your review and comment, is information on the above-referenced project. Project background information is attached hereto for your review.

Please submit any comments to Land Division no later than **November 27, 2019**. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee by phone at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

( ) We have no objections.
( ) We have no comments.
(✓) Comments are attached.

Signed: _____
Print Name: Carty S. Chang, Chief Engineer
Date: 11/15/19

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Early Consultation for Chapter 343, HRS, Environmental Assessment for Proposed Emergency Operations Center
Location: 710 South King Street, Honolulu, Island of Oahu
TMK(s): (1) 2-1-042:013 (por.)
Applicant: G70 on behalf of the City & County of Honolulu Department of Design and Construction, Facilities Division

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) 241-4896.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 11/15/19

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

Mr. Carty S. Chang
Chief Engineer
State of Hawai‘i
Department of Land and Natural Resources
Engineering Division
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Mr. Chang,

Thank you for your comment letter dated November 8, 2019 (File No. LD 2023) concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

We acknowledge that the rules and regulations of the National Flood Insurance Program, Title 44 of the Code of Federal Regulations are in effect if a development falls within a designated Special Flood Hazard Area (SFHA) According to the Federal Emergency Management Agency (FEMA), the project site is located in Zone “X”, and area determined to be outside the 0.2% annual chance floodplain and outside of the 500-year floodplain. Further, the site is located outside of the SFHA as designated by FEMA.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

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

LD 2023

November 08, 2019

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_Engineering Division
_X_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: **Early Consultation for Chapter 343, HRS, Environmental Assessment for Proposed Emergency Operations Center**

LOCATION: 710 South King Street, Kulaokahua, Honolulu, Island of Oahu; TMK: (1) 2-1-042:013 (por.)

APPLICANT: G70 on behalf of the City & County of Honolulu Department of Design and Construction, Facilities Division

Attached hereto, for your review and comment, is information on the above-referenced project. Project background information is attached hereto for your review.

Please submit any comments to Land Division no later than **November 27, 2019**. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee by phone at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

( ) We have no objections.
(X) We have no comments.
( ) Comments are attached.

Signed: Darlene Bryant-Takamatsu
Print Name: Darlene Bryant-Takamatsu
Date: 11/14/19

Attachments
cc: Central Files

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

Ms. Darlene Bryant-Takamatsu
State of Hawai‘i
Department of Land and Natural Resources (DLNR)
Land Division – O‘ahu District
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Ms. Bryant-Takamatsu,

Thank you for your comment letter dated November 8, 2019 (File No. LD 2023) concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

We acknowledge that the DLNR, Land Division – O‘ahu District has no comments to offer regarding the proposed Project at this time.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

City and County of Honolulu

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

December 2, 2019

RECEIVED
DEC 12 2019
G70

Mr. Mark Kawika McKeague
Group 70 International, Inc.
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Your Letter Dated October 30, 2019 Requesting Comments on the Environmental Assessment Pre-Consultation for the New City and County of Honolulu Emergency Operations Center off South King Street – Tax Map Key: 2-1-042: 013

Thank you for the opportunity to comment on the proposed emergency operations center project.

The existing water system is adequate to accommodate the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission, and daily storage.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

The construction drawings should be submitted for our review and the construction schedule should be coordinated to minimize impact to the water system.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

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

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

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

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Mr. Lau,

Thank you for your comment letter dated December 2, 2019 concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

Thank you for confirming that the existing system is adequate to accommodate the subject project based on current data. We understand that the final decision on availability of water will be confirmed when the building permit application is submitted for approval. We also understand that Water System Facility Charges are required for the resource development, transmission and daily storage for the previously installed existing facilities and any future developments. We appreciate the recommendations of water conservation measures for the project.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

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 19-648

November 21, 2019

RECEIVED
NOV 26 2019
G70

Mr. Mark Kawika McKeague, AICP
G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Early Consultation for Chapter 343, HRS Environmental Assessment
Emergency Operations Center
TMKs: (1) 2-1-042:013 (por.)

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

Our comments are as follow:

- During construction and upon completion of the project; any damages/deficiencies along the bridges, sidewalks and or/roadways on King Street and Alapai Street shall be repaired to City standards and accepted by the City and at no cost to the County of Honolulu.

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

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

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
Kapolei, HI 96707

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Mr. Sasamura,

Thank you for your comment letter dated November 21, 2019 (File No. DRM 19-648) concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu (City) Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

We understand and confirm that during construction and upon completion of the project, any damages/deficiencies along the sidewalks and roadways on King Street and Alapa‘i Street shall be repaired to City standards and accepted by the City and no cost to the City.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

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

November 22, 2019

RECEIVED
NOV 29 2019
G70

Mr. Mark Kawika McKeague, AICP
G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. McKeague:

Subject: Environmental Assessment
City and County of Honolulu Emergency Operations Center
Honolulu, Hawaii
Tax Map Key: 2-1-042: 013 (Portion)

In response to your letter dated October 30, 2019, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the submitted information and requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (45 meters) 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 (15 meters) 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 (45,720 millimeters) 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,

JASON SAMALA
Assistant Chief

JS/TC:gl

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

Mr. Jason Samala
Assistant Chief
Honolulu Fire Department
636 South Street
Honolulu, HI 96813-6007

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O'ahu, Hawai'i)

Dear Assistant Chief Samala,

Thank you for your comment letter dated November 22, 2019 concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu (City) Emergency Operations Center project, located in Honolulu, O'ahu, Hawai'i.

This project is not expected to impact Honolulu Fire Department (HFD) operations or ability to provide fire protection services to the area. The existing project site meets the recommendations provided by HFD. Appropriate fire access roads are provided for the existing project site. The Honolulu Board of Water Supply has confirmed that adequate water supply is also provided for the site. Civil drawings for any future work on the site will be submitted to the HFD for review and approval.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

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 RN-DK

November 19, 2019

RECEIVED
NOV 26 2019
G70

Mr. Mark Kawika McKeague, AICP
Principal
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. McKeague:

This is in response to your letter of October 30, 2019, requesting input on an Early Consultation, Draft Environmental Assessment, for the proposed City and County of Honolulu Emergency Operations Center. The Center will be located mauka of South King Street and Diamond Head of Alapai Street, adjacent to the recently completed Joint Traffic Management Center and Alapai Transit Center.

The Honolulu Police Department (HPD) has reviewed the project summary provided and anticipates short- and long-term impacts to pedestrian and vehicular traffic in and around the project area, especially during peak traffic hours. These impacts may cause an increase in calls for service to the area. The HPD recommends that increased security measures be considered, particularly due to the facility's central location and its adjacency to a high-traffic central bus transit terminal. All restricted areas should have security measures, such as clear signage, self-closing doors, secured and non-manipulable locks, security cameras, etc.

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

Serving and Protecting With Aloha

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

Mr. Allan T. Nagata
Assistant Chief
Honolulu Police Department
Support Services Bureau
801 South Beretania Street
Honolulu, HI 96813

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Assistant Chief Nagata,

Thank you for your comment letter dated November 19, 2019 (File No. RN-DK) concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu (City) Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

The forthcoming Draft EA will assess the potential impacts of construction and operation of the proposed facility on Honolulu Police Department operations and ability to provide police protection services to the area. We thank you for your recommendations regarding security measures due to the proposed facility’s central location. As a critical facility, the proposed project will include secured entrances, clear signage, and other measures to be determined.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

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

KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

January 22, 2020 2019/ELOG-2186(GT)

RECEIVED
JAN 24 2020
G70

Mr. Mark Kawika McKeague
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. McKeague:

SUBJECT: Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes
City and County of Honolulu - Emergency Operations Center
Alakea Street - Hawaii Capital District
Tax Map Key 2-1-042: 013 (portion)

This is in response to your letter (received November 4, 2019), requesting comments on the pre-assessment consultation for the Draft Environmental Assessment (EA) for the proposed City and County of Honolulu, Emergency Operations Center (EOC). We have reviewed the information provided and offer the following comments:

1. Discuss the consistency of the Project with the Oahu General Plan, and the Primary Urban Center Development Plan.

2. Review by the State Historic Preservation Division is required prior to issuance of permits.

3. The site is within the BMX-3 Community Business Mixed Use District. The Draft EA should explain how the proposed Project will comply with the requirements of the zoning district and discuss any development standards that may need to be modified.

4. The Project is within the Hawaii Capital Special District (HCSD) and a Special District (Major) Permit is required.

   a. The Draft EA should explain how the proposed Project will meet the requirements of the HCSD and discuss any mitigation that may be needed.

b. The Project may not meet the 40 percent minimum open space requirement and may apply for waiver. Please provide open space calculations, site diagram outlining the open space areas, and justification.

c. Discuss view impacts including views from the Punchbowl lookout and mitigation measures.

d. Provide landscaping and plant disposition plans.

5. Provide list of all required permits.

6. Discuss adjacent facilities including the Joint Traffic Management Center, Alapai Transit Center, Honolulu Police Department Headquarters, and the Fasi Municipal Building, and other potential projects that may affect the site including the Honolulu Seawater Air Conditioning project.

7. Discuss alternative sites including traffic and pedestrian access/circulation for first responder personnel, including City, State and Federal officials; mass transit vehicles; and passengers during emergencies. (Example: Explain how the Mayor would enter and leave the EOC during an emergency when masses of people are evacuating by bus through the area?)

8. Show how infrastructure including, sewer and electrical connections, will be provided to the site. Would power be provided underground or overhead?

We look forward to reviewing the Draft EA.

Should you have any questions, please contact Gerald Toyomura, of our Urban Design Branch, at 768-8056.

Very truly yours,

for Kathy K. Sokugawa
Acting Director

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

February 12, 2020

Ms. Kathy K. Sokugawa
Acting Director
City and County of Honolulu
Department of Planning and Permitting (DPP)
630 South King Street
Honolulu, HI 96813

Subject: Chapter 343, Hawai‘i Revised Statutes (HRS) Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
City and County of Honolulu Emergency Operations Center
TMK: (1) 2-1-042: 013 (portion)
(Honolulu, O‘ahu, Hawai‘i)

Dear Ms. Sokugawa:

Thank you for your comment letter dated January 22, 2020 (File No. 2019/ELOG-2186(GT)) concerning the Pre-Consultation for the Chapter 343, HRS EA for the proposed City and County of Honolulu Emergency Operations Center project, located in Honolulu, O‘ahu, Hawai‘i.

1. The Draft EA will include a discussion on the Project’s consistency with the O‘ahu General Plan, Primary Urban Center Development Plan, and the site’s BMX-3 Community Business Mixed Use District zoning designation.

2. We understand that review by the Department of Land and Natural Resources, State Historic Preservation Division (SHPD) is required prior to issuance of permits. Consultation with SHPD has been initiated, and the Draft EA will include a discussion and record of consultation to date.

3. We understand that the site is located within the Hawai‘i Capital Special District (HCSD) and that a Special District (Major) Permit will be required. The Draft EA will discuss the Project’s impacts to visual resources and compliance with HCSD design guidelines; however, because design is in the early stages, discussion on open space and landscaping will be further analyzed during the Special District (Major) Permit process and Project design has progressed.

4. DDC will work with DPP to obtain a permit once the environmental review process is complete.

5. Finally, the Draft EA will include the following to address your comments: a list of all permits required; discussion of surrounding and adjacent facilities and potential

projects that may affect the site; alternative sites considered; and, infrastructure requirements.

We will provide your office with access instructions to download a copy of the Draft EA, once filed with the Office of Environmental Quality and Control, for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. We appreciate your input and participation in this review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Mark Kawika McKeague, AICP
Principal

Chapter 8

References

Chapter 8

References

City and County of Honolulu, Department of Emergency Management. 2019.
Multi-Hazard Pre-Disaster Mitigation Plan for the City and County of Honolulu. July 26, 2019. Prepared by Martin and Chock, Inc.

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

Federal Emergency Management Agency. 2003.
FEMA 386-7 Publication, Risk Management Series, Integrating Manmade Hazards Into Mitigation Planning. September 2003.

Federal Emergency Management Agency. 2003.
FEMA 426 Publication, Risk Management Series, Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings. December 2003.

Federal Emergency Management Agency. 2003.
FEMA 427 Publication, Risk Management Series, Primer for Design of Commercial Buildings to Mitigate Terrorist Attacks. December 2003.

Federal Emergency Management Agency. 2007.
FEMA 543 Publication Risk Management Series, Design Guide for Improving Critical Facility Safety from Flooding and High Winds. January 2007.

Fletcher III, Charles H., et. al. 2002.
Atlas of Natural Hazards in the Hawaiian Coastal Zone. Geologic Investigation Series I-2761, O‘ahu. United States Geological Survey.

Giambelluca, T.W., et. al, 2013.
Online Rainfall Atlas of Hawai‘i. Bull. Amer. Meteor. Soc. 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1.

Giambelluca, T.W., X. Shuai, M.L. Barnes, R.J. Alliss, R.J. Longman, T. Miura, Q. Chen, A.G. Frazier, R.G. Mudd, L. Cuo, and A.D. Businger. 2014. *Evapotranspiration of Hawai‘i*. Final report submitted to the U.S. Army Corps of Engineers—Honolulu District, and the Commission on Water Resource Management, State of Hawai‘i.

Handy, E.C. and Handy E.G., 1972.
Native Planters in Old Hawaii: Their Life, Lore and Environment. Honolulu, Hawai‘i. Bishop Museum Bulletin 233. Bishop Museum Press.

Hawai‘i Endangered Species Research Committee, 2018.
Oahu Hawaiian Hoary Bat Occupancy and Distribution Study. Prepared by Western EcoSystems Technology, Inc.

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.

Hawai‘i Emergency Management Agency, 2017.
State of Hawai‘i Emergency Operations Plan – Basic Plan. Adopted May 9, 2017.

Hawai‘i Emergency Management Agency, 2018.
State of Hawai‘i 2018 Hazard Mitigation Plan. Prepared by Tetra Tech.

MacKenzie, M.K., Serrano S.K., and Sproat D.K., 2015.
Native Hawaiian Law: A Treatise. Honolulu, Hawai‘i. Kamehameha Publishing.

Pyle, Robert L. and Peter Pyle. 2017.
“The Birds of the Hawaiian Islands: Occurrence, History, Distribution, and Status.” *Hawai‘i Biological Survey.* Accessed December 30, 2019. [Available URL: http://hbs.bishopmuseum.org/birds/rlp-monograph/pdfs/05-LARI-ALCI/WHTT.pdf]

State of Hawai‘i Commission on Water Resource Management. 2019.
Water Resource Protection Plan 2019 Update. Prepared by Townscape, Inc.

State of Hawai‘i, Department of Defense. 2018.
All-Hazards Preparedness Improvement Action Plan and Report. Prepared by Brigadier General Kenneth S. Hara, Deputy Adjutant General.

State of Hawai‘i, Department of Health, 1990.
Aquifer Identification and Classification for O‘ahu: Groundwater Protection Strategy for Hawai‘i. Prepared by Water Resources Research Center.

State of Hawai‘i, Division of Aquatic Resources and Bishop Museum, 2008.
Atlas of Hawaiian Watersheds & Their Aquatic Resources, Oahu Watershed – Ko‘olau Poko Region. Accessed September 12, 2018. [Available URL: http://hawaiiwatershedatlas.com/oa_koolaupoko.html]

U.S. Army Corps of Engineers, Honolulu District. 2014.
Final Environmental Impact Statement For the Proposed Honolulu Seawater Air Conditioning Project, Honolulu, Hawai‘i. Prepared by Cardno TEC Inc. June 2014.

U.S. Census Bureau. 2010.
“Data for Census Tract 103.03, Honolulu County, Hawai‘i.” *American FactFinder.* Accessed August 13, 2019. [Available URL: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml]

U.S. Census Bureau. 2010.
"Data for Census Tract 103.05, Honolulu County, Hawai'i." *American FactFinder.* Accessed August 13, 2019. [Available URL: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml]

U.S. Department of Agriculture Soil Conservation Service. 2013.
Web Soil Survey. Accessed September 12, 2018. [Available URL: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx]

U.S. Fish and Wildlife Service, n.d.
"Hawaiian hoary bat (*Lasiurus cinereus semotus*)." *U.S. Fish and Wildlife Environmental Conservation Online System.* Accessed December 30, 2019. [Available URL: https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=770].

U.S. Geological Survey. 2017.
"Damaging Earthquakes – A Common Hazard in Hawai'i." May 12, 2017. Accessed January 3, 2020. [Available URL: https://volcanoes.usgs.gov/observatories/hvo/hazards_earthquakes.html]

U.S. Geological Survey, 2019.

About Earthquakes in Hawai'i. 2019. Accessed August 22, 2019. [Available URL: https://volcanoes.usgs.gov/observatories/hvo/about_earthquakes.html]

U.S. Geological Survey (USGS). 2019. *What are Tsunamis?* Accessed November 27, 2019. [Available URL: https://www.usgs.gov/faqs/what-are-tsunamis?qt-news_science_products=0#qt-news_science_products]

Appendices

Appendix A

Biological Inventory for the City and County of Honolulu's Emergency Operations Center

Biological Inventory for the City and County of Honolulu's Emergency Operations Center

TMK: 2-1-042:0138
Kona, O'ahu

October 2019

Report Prepared for:

G70
111 S. King St. Suite 170
Honolulu, HI 96813

Prepared by:

Janice Jensen
G70
111 S. King St. Suite 170
Honolulu, HI 96813

Executive Summary

On October 24, 2019 a biological survey was conducted for the newly landscaped area at the Alapaʻi Bus Station, the future site of the City and County of Honolulu's Emergency Operations Center. At the time of the survey, observed wildlife included several rock doves (*Columba livia*) flying overhead and a single zebra dove (*Geopelia striata*) in the garden area (see Table 1). No other fauna was observed.

A botanical survey identified several trees, shrubs and groundcovers commonly used in urban landscapes (see Table 2). These included three mature monkeypod trees (*Samanea saman*) planted at regular intervals along the sidewalk edge of Alapaʻi Street (Figure 1), along with three kou (*Cordia subcordata*), four kukui (*Aleurites moluccanus*), and four rainbow shower trees (*Cassia x nealiae*) all of which were young and appeared to have recently been installed in the interior landscaped area (Figure 2). A young noni tree (*Citrifolia morinda*) was also identified near the middle of the three monkeypod trees lining the sidewalk and did not appear to be an intentional part of the landscape. Monstera (*Monstera deliciosa*) was observed growing from the base of two monkeypod trees in the middle and the northwestern corner of the lot. Monkeypod seedlings were abundant under the middle tree as well as scattered on the ground between trees.

Along the eastern edge of the garden, closest to the building structure, a small landscaped area is planted in a swooping design with ornamental shrubs including blue plumbago (*Plumbago auriculate*) and coral creeper (*Barleria repens*) (Figures 3 and 4).

Groundcover (Figure 5) was patchy and primarily consisted of Bermuda grass (*Cynodon dactylon*), as well as "weedy" species such as nut grass/purple nutsedge (*Cyperus rotundus*), dandelion (*Taraxacum officianale*), asthma-plant/pill-bearing spurge (*Euphorbia hirta*) and obscure morning glory (*Ipomea obscura*).

Appendix I. Photos

Figure 1. Location of Alapaʻi Station landscaped area with mature monkeypod trees in the foreground.

Figure 2. Rainbow shower, kukui, and kou trees planted in the landscaped area.

Figure 3. Coral creeper in landscaped beds.

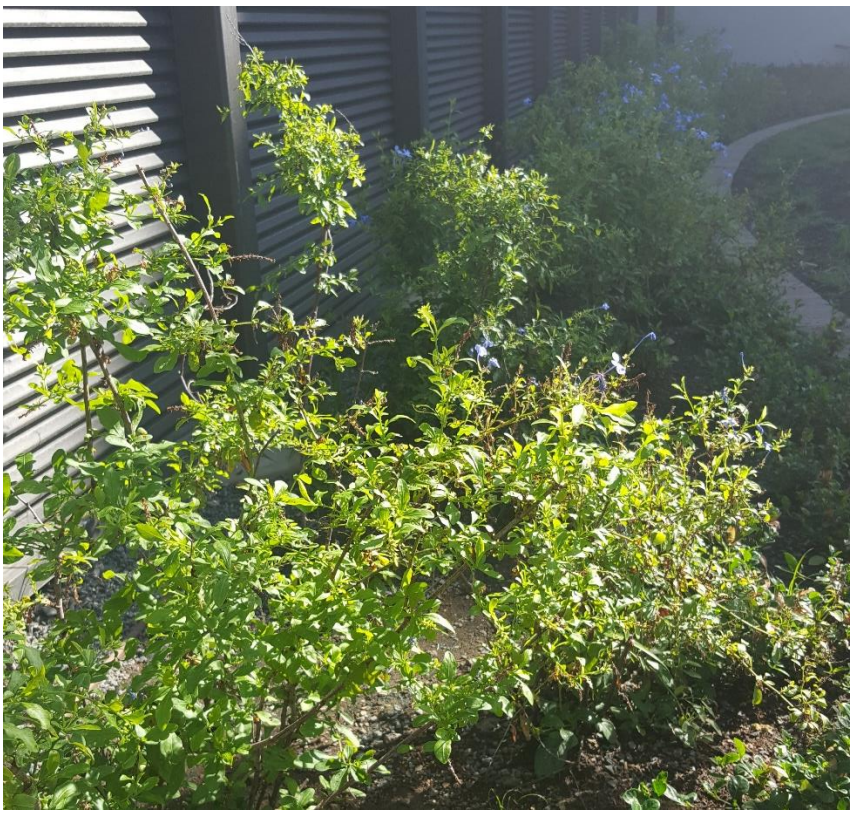


Figure 4. Blue plumbago planted among the coral creeper in the landscaped beds.

Figure 5. Patchy groundcover consisted mainly of Bermuda grass and “weedy” species such as nut grass.

Appendix II. Biological Inventory

Biogeographic Status

Nat Naturalized: Introduced to Hawaiʻi by humans, either directly or indirectly, since Western contact. Includes ornamentals and plants that may have formerly been cultivated.

Pol Polynesian introduction: Introduced to Hawaiʻi by the original Polynesian settlers.

Pol? Possible Polynesian introduction: May have been introduced to Hawaiʻi by the original Polynesian settlers; or may have been introduced post-Western contact.

Ind Indigenous species: Occurs naturally both within and outside of the Hawaiian Islands.

Ind? Possible indigenous species: May occur naturally in Hawaiʻi; or may have been introduced post-Western contact.

Abundance

R Rare: 1-3 individuals observed.

U Uncommon: Several to a dozen individuals observed.

O Occasional: Found regularly at the site.

C Common: Observed numerous times; makes up a large portion of the wildlife/ vegetation.

A Abundant: Large numbers observed; likely a locally-dominant species.

Table 1. Wildlife

Birds			
Scientific name	**Common name**	**Status**	**Abundance**
COLUMBIADAE			
Columba livia	rock dove	Nat	R
Geopelia striata	zebra dove	Nat	R

Table 2. Plants

Grasses and Groundcovers			
Scientific name; Family	**Common/ Hawaiian names**	**Status**	**Abundance**
ASTERACEAE			
Taraxacum officianale	dandelion	Nat	R
CYPERACEAE			
Cyperus rotundus	nut grass; purple nutsedge	Nat	C
EUPHORBIACEAE			

Euphorbia hirta	asthma-plant; pill-bearing spurge	Nat	U
POACEAE			
Cynodon dactylon	Bermuda grass	Nat	C
Shrubs and Vines			
Scientific name	**Common/ Hawaiian names**	**Status**	**Abundance**
ACANTHACEAE			
Barleria repens	coral creeper	Nat	C
ARACEAE			
Monstera deliciosa	monstera	Nat	U
CONVOLVULACEAE			
Ipomea obscura	obscure morning glory	Nat	R
PLUMBAGINACEAE			
Plumbago auriculate	blue plumbago	Nat	C
Trees			
Scientific name	**Common/ Hawaiian names**	**Status**	**Abundance**
BORAGINACEAE			
Cordia subcordata	*kou*	Ind	R
EUPHORBIACEAE			
Aleurites molucanus	candlenut tree/*kukui*	Pol	U
FABACEAE			
Cassia x nealiae (cross of Cassia javanica and Cassia fistula)	rainbow shower tree	Nat	U
Samanea saman	monkeypod tree	Nat	C (many seedlings found under mature trees)
RUBIACEAE			
Citrifolia morinda	*noni*	Pol	R

Appendix B

Archaeological Monitoring Plan for the Alapa‘i Transit Center and Joint Management Center Project

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

July 5, 2010

Matt McDermott
Cultural Surveys Hawaii
P.O. Box 1114
Kailua, Hawaii 96734

LOG NO: 2010.2405
DOC NO: 1007NM04
Archaeology

Dear Mr. McDermott:

SUBJECT: HAR § 13-13-279 Review –
Archaeological Monitoring Plan for the Alapai Transit Center and Joint Management Center Project
Honolulu Ahupua'a, Honolulu (Kona) District, Oahu Island.
TMK: [1]2-1-042: 004, 013

Thank you for the opportunity to review this draft of an *Archaeological Monitoring Plan (AMP) for the Alapai Transit Center and Joint Management Center Project, Honolulu, Ahupuaa, Honolulu District, Oahu TMK: (1) 2-1-042: 04, 013* (Pammer and McDermott, June 2010), that was received by our office on June 23, 2010. The background research for this project was very well done, and indicates that there is relatively little known about the pre-history of this inland area of Honolulu. We believe that the research questions you posed on site 50-80-14-6901, the historic trash pits and the historic burials will provide some information on the land use of the area.

According to this AMP the ground disturbing activities will potentially affect 4 acres. This AMP is accepted, and meets the minimum requirements of Hawaii Administrative Rules, §13-279 *Rules Governing Standards for Archaeological Monitoring Studies and Reports.* Please send a pdf searchable version on CD, with a copy of this letter attached, to the SHPD library at Kapolei

Please call Mike Vitousek at (808) 692-8024 if you have any questions or concerns regarding this letter.

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy SHPO/State Archaeologist
and Historic Preservation Manager

Final
Archaeological Monitoring Plan for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupuaʻa, Honolulu District, Oʻahu Island
TMK: [1] 2-1-042:004, 013

Prepared for

SSFM International, Inc.

And the

City and County of Honolulu

Prepared by

Michelle F. Pammer, B.A.

and

Matt McDermott, M.A.

Cultural Surveys Hawaiʻi, Inc.

Kailua, Hawaiʻi

(Job Code: KAKAAKO 35)

June 2010

Oʻahu Office
P.O. Box 1114
Kailua, Hawaiʻi 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawaiʻi 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Reference	Archaeological Monitoring Plan for the Alapai Transit Center and Joint Traffic Management Center Project Honolulu Ahupua‘a, Honolulu District, O‘ahu Island TMK: [1] 2-1-042:004, 013 (Pammer and McDermott 2010).
Date	June 2010
Project Number (s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KAKAAKO 35
Investigation Permit Number	The fieldwork component of the archaeological monitoring program may be carried out under archaeological permit number 10-10 issued to Cultural Surveys Hawai‘i, Inc. (CSH) by the Hawai‘i State Historic Preservation Division/ Department of Land and Natural Resources (SHPD/DLNR), per Hawai‘i Administrative Rules (HAR) Chapter 13-282.
Project Location	The project area is bounded by King Street to the south (*makai*), Alapai Street to the west, the mauka edge of Hotel Street to the north (*mauka*), and Kealamakai Street to the east. This area is depicted on the 1998 Honolulu USGS 7.5-minute topographic quadrangle.
Land Jurisdiction	Public, City and County of Honolulu (City)
Agencies	Federal Highway Administration (FHWA), Federal Transit Authority (FTA), City Department of Transportation Services (DTS), SHPD
Project Description	The proposed development of the Alapai Transit Center (ATC) and Joint Traffic Management Center (JTMC) site will involve the construction of a new bus transit center to include: a bus staging area, passenger-loading zone, and a throughway for buses; a multi-story parking structure; and the Joint Traffic Management Center. Utility hookups associated with the project may extend into adjacent City-owned streets.
Project Acreage	Approximately 4 acres
Ground Disturbance	Project-related ground disturbance will involve grading and excavation for building foundations, utility installation, and landscaping.
Historic Preservation Regulatory Context	As a City project located on municipal land, the ATC / JTMC project is subject to State of Hawaii historic preservation review legislation (Hawaii Revised Statutes [HRS] Chapter 6-E and Hawaii Administrative Rules [HAR] Chapter 13-275). Additionally, due to at least partial federal funding, the ATC / JTMC development is a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA).

Background to the Current Monitoring Plan	To fulfill the ATC / JTMC development's historic preservation review requirements, in 2007 CSH completed an archaeological inventory survey (AIS) and cultural impact evaluation for the project area (O'Hare et al. 2007). Two cultural resources were identified: SIHP # 50-80-14-6901, post-contact trash pits; and SIHP # 50-80-14-6902, three human burials. The archaeological inventory survey and cultural impact evaluation report was reviewed and approved by the SHPD (SHPD correspondence 7 December 2007 LOG NO: 2007.3993 / DOC NO: 0712ED04). A Burial Treatment Plan was prepared by O'Hare et al. (2008) to address the burial treatment and preservation measures for SIHP # 50-80-14-6902. This plan was approved by SHPD on 10 March 2008 (SHPD correspondence LOG. NO: 2008.0556 DOC NO: 0803KP10). In 2009, the project was redesigned and the proposed building footprints were moved. As a result, an addendum AIS was conducted to investigate the new areas of impact under the new building footprints (Pammer et al. 2009). This addendum AIS was reviewed and approved by SHPD (SHPD correspondence 6 November 2009 LOG. NO: 2009.4418 DOC NO: 0911NM18). The archaeological monitoring program described in this document is one of the ATC / JTMC project's historic preservation mitigation measures that resulted from the project' historic preservation review. The other mitigation measure is the implementation of the project's burial treatment plan which describes how the project's three previously identified burials will be preserve in place.
Historic Properties Likely Affected	Based on previous AIS results, two historic properties were identified within the current project area. SIHP # 50-80-14-6901 consists of seven historic trash pits, dating to between A.D. 1820 and 1930. SIHP 50-80-14-6902 consists of three burials; Burial 1 and 2 are historic coffin interments, less information is available regarding Burial 3. SHPD determined there was insufficient information to make an ethnicity determination for the burials.
Document Purpose	This archaeological monitoring program is to be implemented to facilitate the identification and treatment of any burials or human skeletal remains that might be discovered during subsurface disturbance and to mitigate the project's effect on any non-burial archaeological deposits that might be uncovered during project construction. The monitoring program also describes how the burial preservation measures described in the project's burial treatment plan (O'Hare et al. 2008), will be implemented during project construction. The plan was prepared in consideration of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation and was prepared to fulfill the requirements of HAR Chapter 13-279. It is intended for review and approval by the City and SHPD.
Monitoring Recommend-ation	On-site archaeological monitoring is recommended for all ground-disturbance for excavations deeper than 18 inches (45 cm) below the current land surface. Any departure from this will only follow consultation with, and written concurrence from, SHPD.

Table of Contents

Management Summary i

Section 1 Introduction 1

1.1 Project Background 1
1.2 Environmental Setting 6
1.2.1 Natural Environment 6
1.2.2 Built Environment 8

Section 2 Background Research 9

2.1 Oral History and Documentary Background Research 9
2.1.1 Oral History and Mythological Accounts 9
2.1.2 Pre-Contact and Early Post-Contact Honolulu 11
2.1.3 1815 to 1850: Honolulu in Transition 13
2.1.4 Early 1800s – the Oahu Charity School 15
2.1.5 Mid 1800s and the *Māhele* 19
2.1.6 Late 1800s to 1900s: The Atherton Family and “Fernhurst” 20
2.1.7 Modern Land Use 27
2.2 Previous Archaeological Research 34
2.2.1 Miller Street Block 34
2.2.2 Washington Place 34
2.2.3 City Hall Annex 42
2.2.4 King Street Rehabilitation Project 42
2.2.5 Kaka‘ako Fire Station (New Fire Department Headquarters) 42
2.2.6 Kawaiaha‘o Church Grounds and the Mission House 43
2.2.7 Queen Emmalani Tower 44
2.2.8 Kaka‘ako Improvement District 3 and Pohulani Elderly Housing 45
2.2.9 ‘Iolani Palace and the Capitol Historic District 45
2.2.10 1971 Construction Excavations at Queen’s Medical Center 47
2.2.11 One Archer Lane 48
2.2.12 Hawaiian Electric Company (HECO) Dispatch Center 49
2.2.13 Beretania Street Rehabilitation 50
2.3 Previous Work Within the Current Project Area 50
2.3.1 Archaeological Inventory Survey 50
2.3.2 Burial Treatment Plan 52
2.3.3 Addendum Archaeological Inventory Survey 52
2.4 Background Summary and Predictive Model 54

Section 3 Burial Treatment and Protection 56

3.1 Statement of Proposed Treatment 56
3.2 Treatment During and After Discovery 56
3.3 Burial Location 56
3.4 Short-Term Burial Protection Measures 58
3.5 Burial Site Preparation 58
3.6 Long-Term Burial Protection Measures 58

Section 4 Archaeological Monitoring Provisions 59

4.1 Research Focus 61

Section 5 References Cited 63

Appendix A SHPD Correspondence 1

SHPD Acceptance of the Archaeological Inventory Survey 1
SHPD Acceptance of the Burial Treatment Plan 3
SHPD Acceptance of the Addendum Archaeological Inventory Survey 4

Appendix B Land Commission Award 8511 to the Oahu Charity School 1

Appendix C Project Area Site Plans 1

Appendix D Historic Property Descriptions 1

SIHP 50-80-14-6901 1
Feature 1 4
Feature 2 6
Feature 3 8
Feature 4 10
Feature 5 11
Feature 6 13
Feature 7 15
SIHP 50-80-14-6902 17
Burial 1 19
Burials 2 and 3 20

Appendix E Complete Artifact Analysis 1

Analysis from O’Hare et al. 2007, Features 1-4 1
Bottle Glass Analysis 2
Other Artifacts 11
Summary of Historic Artifacts 16
Analysis from Pammer et al. 2009, Features 5-7 16
Bottle Glass Analysis 16
Other Artifacts 21
Summary of Historic Artifacts 27

List of Figures

Figure 1. 1998 USGS 7.5-Minute Series Topographic Map, Honolulu Quadrangle, showing the current survey area in relation to the ATC & JTMC Project Area 2
Figure 2. TMK [1] 2-1-042 showing the current survey area in relation to the ATC & JTMC Project Area 3
Figure 3. Aerial photograph showing the location of the current survey area in relation to the ATC & JTMC Project Area (source: U.S.G.S Orthoimagery 2005) 4
Figure 4. The Alapai Site Plan showing how the ATC and JTMC Parking Structure come together once the two projects are completed. Note the burial preserve area, a circle depicting a 30’ buffer area located immediately makai of the Kealamakai Street parking structure ramp. 5
Figure 5. Overlay of Soil Survey of the State of Hawai‘i (Foote et al. 1972), showing sediment types within the project area 7
Figure 6. 1847 map by T. Metcalf of upper Honolulu, showing project area within “Kewalo” ...10
Figure 7. Portion of 1855 La Passe map of Honolulu, showing no development of the project area 17
Figure 8. Photograph of Honolulu taken in 1854 from Kawaiaha‘o Church, view to the west; the Oahu Charity School, with the tall bell tower, is in the center of the photograph (Photo from *Honolulu Advertiser* Archives) 18
Figure 9. 1906 Land Court Application 93, Map 1, showing project area owned by J. B. Atherton22
Figure 10. Two pages from Index of Grants Kulaokahu‘a, 1846-1857; pertinent names are highlighted (reproduced in Greer 1970:95) 23
Figure 11. 1873 map of Makiki Valley and Lands Adjacent, showing project area in lower left corner of map (magnified inset portion of map shown in upper left corner of map), showing one lot owned by Cooke and one owned by Atherton 24
Figure 12. 1897 Monsarrat map of Honolulu, showing the C.H. Atherton house and the J.B. Atherton house within the shaded (red) project area 25
Figure 13. Home of C. H. Atherton, view to north, photograph ca. 1912 (Hawai‘i State Archives)28
Figure 14. Home of C. H. Atherton, view to northeast, undated photograph (Hawai‘i State Archives).....28
Figure 15. Fernhurst Y.W.C.A., view to northeast, photograph ca. 1930 (Hawai‘i State Archives)29
Figure 16. Fernhurst Y.W.C.A., view to northeast, undated photograph (Hawai‘i State Archives)29
Figure 17. 1914 Sanborn Fire Insurance map, showing Atherton House “Fernhurst” in project area; structure in left upper corner is “Servant’s Quarters”; upper central structure labeled “Auto”; structure on lower left is a dwelling (D) 30
Figure 18. 1927 Sanborn Fire Insurance Map, showing Fernhurst Y.W.C.A., which was built in 1921 in the project area.....31
Figure 19. 1927-1951 Sanborn Fire Insurance Map, showing addition of tennis court to the Fernhurst Y.W.C.A. 32
Figure 20. 1927-1956 Sanborn fire insurance map, showing project area used for “ Bus Yard” and “Bus Parking;” property sold to HRT & L around 1938 33
Figure 21. U.S. Geological Surveys 7.5-Minute Series Topographic Map, Honolulu Quadrangle, Honolulu Quad, showing previous archaeological work near the project area 35

Figure 22. Aerial photograph showing O’Hare et al. (2007) survey area and backhoe trench locations in relation to the ATC & JTMC project area and the current survey area (indicated in red) 51
Figure 23. An aerial photo of the project area depicting the new building footprint with the locations of the 15 excavated trenches for the addendum inventory survey 53
Figure 24. An aerial photo of the project area depicting the new building footprint with the locations of the 7 historic trash pits, (Features 1-4 previously identified by O’Hare 2007), and the burial locations 53
Figure 25. 30-foot diameter Burial Preserve Area for SIHP No. 50-80-14-6902 projected on a satellite image of the project area (see text for UTM coordinates)....57
Figure 26. Project area plans showing the plans for the ATC renovation. Note the burial preserve area, a circle depicting a 30’ buffer area located immediately makai of the Kealamakai Street parking structure ramp....1
Figure 27. Project area plans providing more renovation details for the ATC....2
Figure 28. Project area plans showing the layout of the JTMC Parking Structure. Protection for SIHP # 50-80-14-6901, burial, will be included....3
Figure 29. Project area plans showing the foundation plan for the pre-cast JTMC parking structure. Note that this is not a final plan therefore the layout will change slightly 4
Figure 30. Project area plans with an overlay of SIHP 50-80-14-6901 and the estimated location of the SIHP 50-80-14-6902 burial preserve in relation to the parking structure. 2
Figure 31. An aerial photo of the project area depicting the new building footprint with the locations of the 7 features of SIHP 50-80-14-6901 and the SIHP 50-80-14-6902 burial locations 3
Figure 32. Aerial photo showing location of Trenches 1-28 excavated during the O’Hare et al. (2007) inventory survey and the locations where SIHP 50-80-14-6901 was found....3
Figure 33. An aerial photo of the new building footprint with the locations of the 15 additional excavated trenches with the marked locations of the previous 28 O’Hare et al. (2007) trench....4
Figure 34. Backhoe Trench 3, northeast quadrant of project area, west wall profile, with SIHP 50-80-14-6901 Feature 1....5
Figure 35. Photo of Trench 3 containing SIHP 50-80-14-6901 Feature 1, view to the north 6
Figure 36. Backhoe Trench 18, northeast quadrant of project area, south wall profile, with SIHP 50-80-14-6901 Feature 2 Trash Pit....7
Figure 37. Photo of SIHP 50-80-14-6901 Feature 2, from within Trench 18, view to the southeast7
Figure 38. Backhoe Trench 22, northeast quadrant of project area, South Wall profile with SIHP 50-80-14-6901 Feature 3....9
Figure 39. Photo of close-up of Backhoe Trench 22, SIHP 50-80-14-6901 Feature 3, view to the west 9
Figure 40. Backhoe Trench 26, northwest quadrant of project area, NE Wall profile with SIHP 50-80-14-6901 Feature 4....10
Figure 41. Photo of Backhoe Trench 26 with SIHP 50-80-14-6901 Feature 4 in bottom left corner of wall profile, view to the west 11
Figure 42. Backhoe Trench 4, north wall profile with SIHP 50-80-14-6901 Feature 5 12
Figure 43. Photo of Backhoe Trench 4, with SIHP 50-80-14-6901 Feature 5, view to the northeast....13

Figure 45. Backhoe Trench 3, north wall profile with SIHP 50-80-14-6901 Feature 6 14
Figure 44. Photo of Backhoe Trench 3, with SIHP 50-80-14-6901 Feature 6, view to the north .15
Figure 47. Backhoe Trench 12, SE wall profile with SIHP 50-80-14-6901 Feature 6.....16
Figure 46. Photo of Backhoe Trench 12, with SIHP 50-80-14-6901 Feature 6, view to the east .17
Figure 48. Backhoe Trench 4, West Wall Profile, with SIHP 50-80-14-6902, Burial 1 20
Figure 49. Backhoe Trench 19, North Wall Profile, with Burials 2 and 3 of SIHP 50-80-14-690221
Figure 50. Representative sample of artifacts from features 1-4. Scale units are centimeters. 1
Figure 51. Two bottle bases from Trench 26, feature 4, showing pontil scars. Accession number 39 at left, 40 at right (refer to Table 5) 8
Figure 52. A variety of wine, beer and gin bottles as well as a stoneware jug. Accession numbers noted above each artifact (refer to Table 3, Table 4 and Table 8). 10
Figure 53. From left to right: soda, condiment, medicinal and perfume bottles. Accession numbers noted above each artifact (refer to Table 3). 10
Figure 54. Sample of ceramics from trenches 3 and 26, features 1 and 4 respectively. Accession numbers noted above each artifact (refer to Table 6 and Table 9) 11
Figure 55. "E WOOD & SONS" saucer – three views (refer Table 8).....15
Figure 56. A small sample of the artifacts from Features 5-7 17
Figure 57. Photo of Accession # 24, 27, 36, 39 & 40, diagnostic glass bottles. Note the embossing on Acc. # 24 “Mary T. Goldman, St. Paul Minn.” 20
Figure 58. Photo of Accession #2, 17, 18 & 19, ceramic sherds of a matching tableware set.....24
Figure 59. Photo of Accession #2, ceramic sherds, notice the green makers mark on both fragments.....24
Figure 60. An add printed in a January 15, 1913 issue of Vogue for O.P. CO. Syracuse China displaying a pattern identical to the patter observed on Accession #’s 2, 17, 18 & 19. 25
Figure 61. Photo of Accession #20, notice the green makers mark.....26
Figure 62. Photo of Accession #1, hand painted ceramic pot lid 26
Figure 63. Photo of Accession #51, bone utensil handle, and #52 pearl shell button 27

List of Tables

Table 1. Previous Archaeological Work Near the Project Area, Represented by Geographical Location 36
Table 2. Trench 3, SIHP 50-80-14-6901, Feature 1, Trash Pit within Stratum II (80 50-95 cmbs) - Glass Bottles 3
Table 3. Trench 18, SIHP 50-80-14-6901, Feature 2, Trash Pit within Strata II and III (30-240 cmbs) - Glass Bottles 3
Table 4. Trench 22; Stratum Ic, Feature 3 (105 cmbs) - Glass Bottles.....6
Table 5. Trench 26; Stratum II, Feature 4 (35-140 cmbs) – Glass Bottles 7
Table 6. Trench 3, SIHP 50-80-14-6901, Feature 1, Trash Pit – Other Artifacts.....12
Table 7. Trench 18, SIHP 50-80-14-6901, Feature 2, Trash Pit - Other Artifacts 13
Table 8. Trench 26, Stratum II, Feature 4 (35-140 cmbs) – Other Artifacts 14
Table 9. SIHP 50-80-14-6901 Features 5, 6 & 7, Representative sample of Glass bottles (See Table 11 and Table 12 below for full catalogue).....18
Table 10. SIHP 50-80-14-6901 Features 5, 6 & 7, Representative Sample of Other Artifacts (See Table 11 and Table 12 below for full catalogue).....22
Table 11. SIHP 50-80-14-6901 Features 5, 6 & 7, Catalogue of Glass bottles.....29
Table 12. SIHP 50-80-14-6901 Features 5, 6 & 7, Other Artifact Catalogue 31

Section 1 Introduction

1.1 Project Background

At the request of SSFM International, Inc., Cultural Surveys Hawai‘i Inc. (CSH) completed this Archaeological Monitoring Plan for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua‘a, Honolulu District, Island of O‘ahu, TMK: (1) 2-1-042:004 & 013. The project area consists of the existing Alapai Transit Center, located at 710 and 752 South King Street. The project area is bounded by King Street to the south (makai), Alapai Street to the west, the mauka edge of Hotel Street to the north (mauka), and Kealamakai Street to the east. This area is depicted on the 1998 Honolulu USGS 7.5-minute topographic quadrangle, a Tax Map Key (TMK), an aerial photograph, and the overall project area site plans (Figure 1, Figure 2, Figure 3, and Figure 4).

The Alapai Transit Center (ATC) is located within the County's Hawai‘i Capital Special District, requiring a Special District Permit (Major). The project area is zoned as BMX-3, Community Business Mixed Use District within the Hawai‘i Capital Special District – Alapai Precinct. The Alapa‘i site has been in municipal use as a bus transit center and parking area since circa 1938. It was purchased in 1973 with Federal Transit Authority (FTA) funds; use of federal grant monies requires that the site remain in transit-related land use.

The proposed development of the Alapai Transit Center (ATC) and Joint Traffic Management Center (JTMC) site will involve the construction of a new bus transit center to include: a bus staging area, passenger-loading zone, and a throughway for buses; a multi-story parking structure; and the Joint Traffic Management Center (Appendix C, Figure 26 through Figure 29). Utility hookups associated with the project may extend into adjacent City-owned streets. Project-related ground disturbance will involve grading and excavation for building foundations, utility installation, and landscaping.

The ATC and JTMC Project is defined as the entire approximately 4-acre area proposed for development (see Figure 1 through Figure 4). The 4-acre project area is an asphalt paved parking lot and bus depot area; no surface cultural resources are extent. The project area's surrounding built environment is urban (paved streets and low rise and high rise buildings), and the proposed construction poses no additional auditory, visual, or other environmental impacts to any surrounding potential historic properties (for example historic buildings or structures).

To fulfill the ATC / JTMC development's historic preservation review requirements, in 2007 CSH completed an archaeological inventory survey (AIS) and cultural impact evaluation for the project area (O'Hare et al. 2007). Two cultural resources were identified: SIHP # 50-80-14-6901, post-contact trash pits; and SIHP # 50-80-14-6902, three human burials. The archaeological inventory survey and cultural impact evaluation report was reviewed and approved by the Hawai‘i State Historic Preservation Division (SHPD) (SHPD correspondence 7 December 2007 LOG NO: 2007.3993 / DOC NO: 0712ED04; Appendix A). A Burial Treatment Plan was prepared by O'Hare et al. (2008) to address the burial treatment and preservation measures for SIHP # 50-80-14-6902. This plan was approved by SHPD on 10 March 2008 (SHPD correspondence LOG. NO: 2008.0556 DOC NO: 0803KP10; Appendix A). In 2009, the project

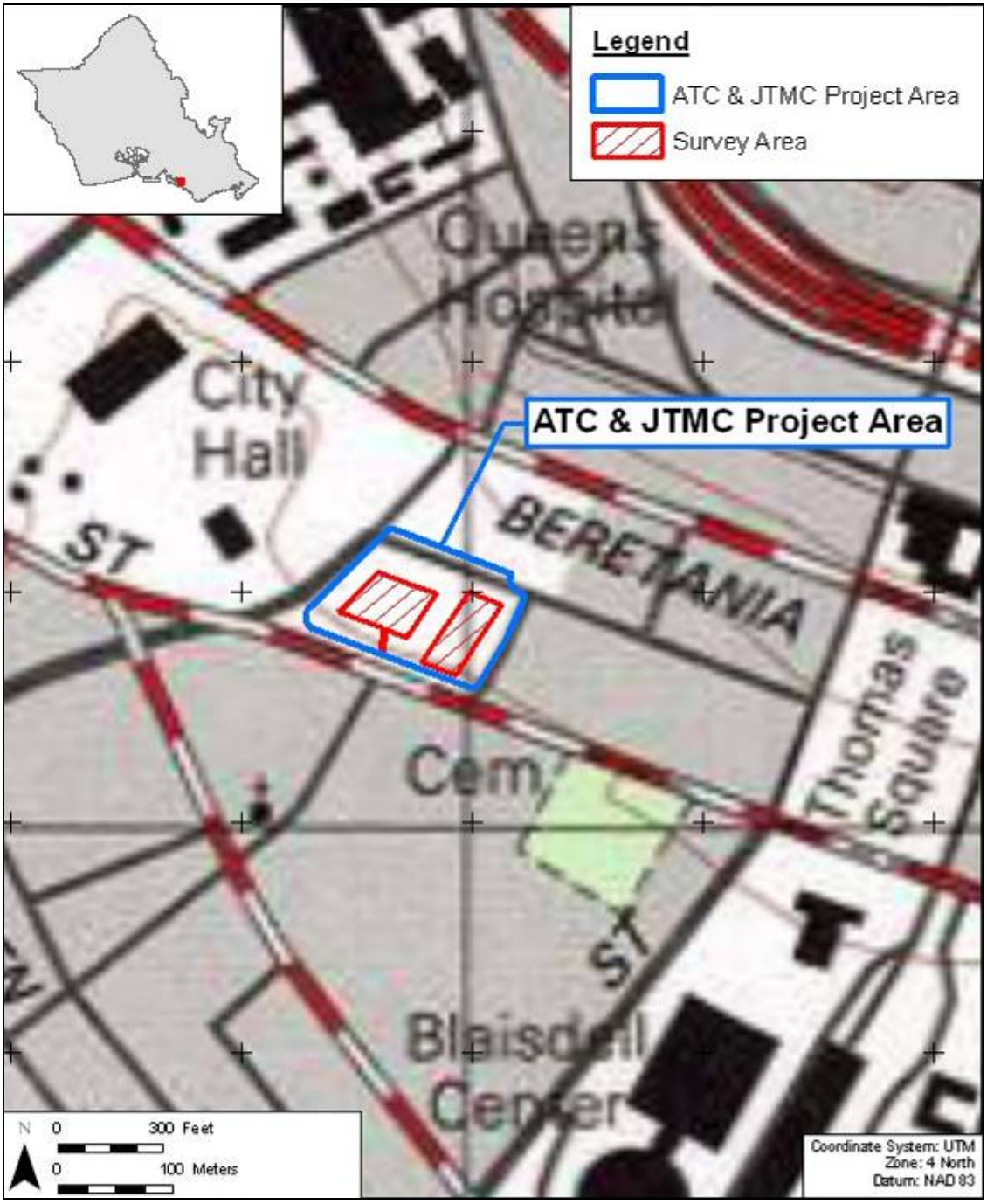


Figure 1. 1998 USGS 7.5-Minute Series Topographic Map, Honolulu Quadrangle, showing the current survey area in relation to the ATC & JTMC Project Area

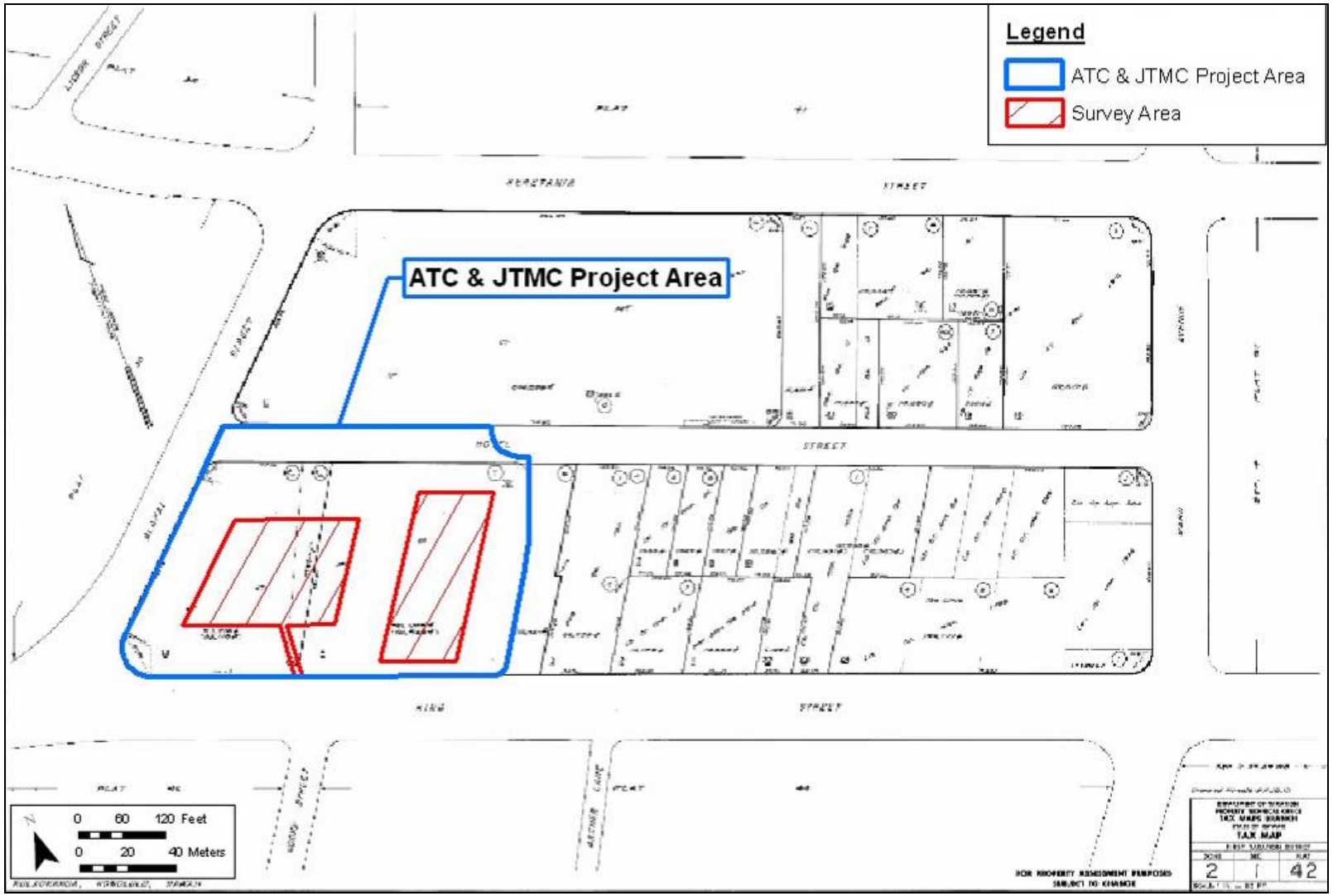


Figure 2. TMK [1] 2-1-042 showing the current survey area in relation to the ATC & JTMC Project Area

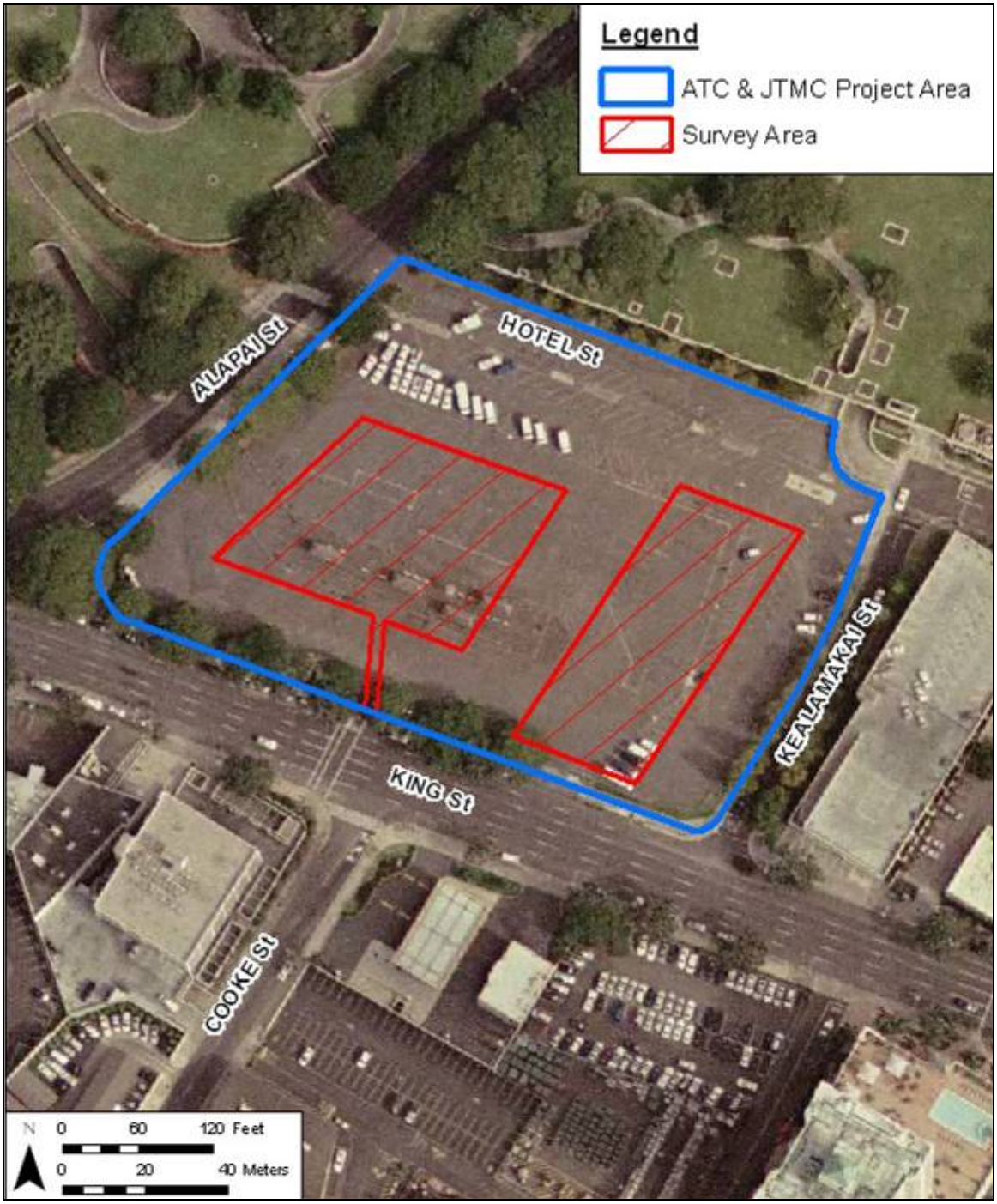


Figure 3. Aerial photograph showing the location of the current survey area in relation to the ATC & JTMC Project Area (source: U.S.G.S Orthoimagery 2005)

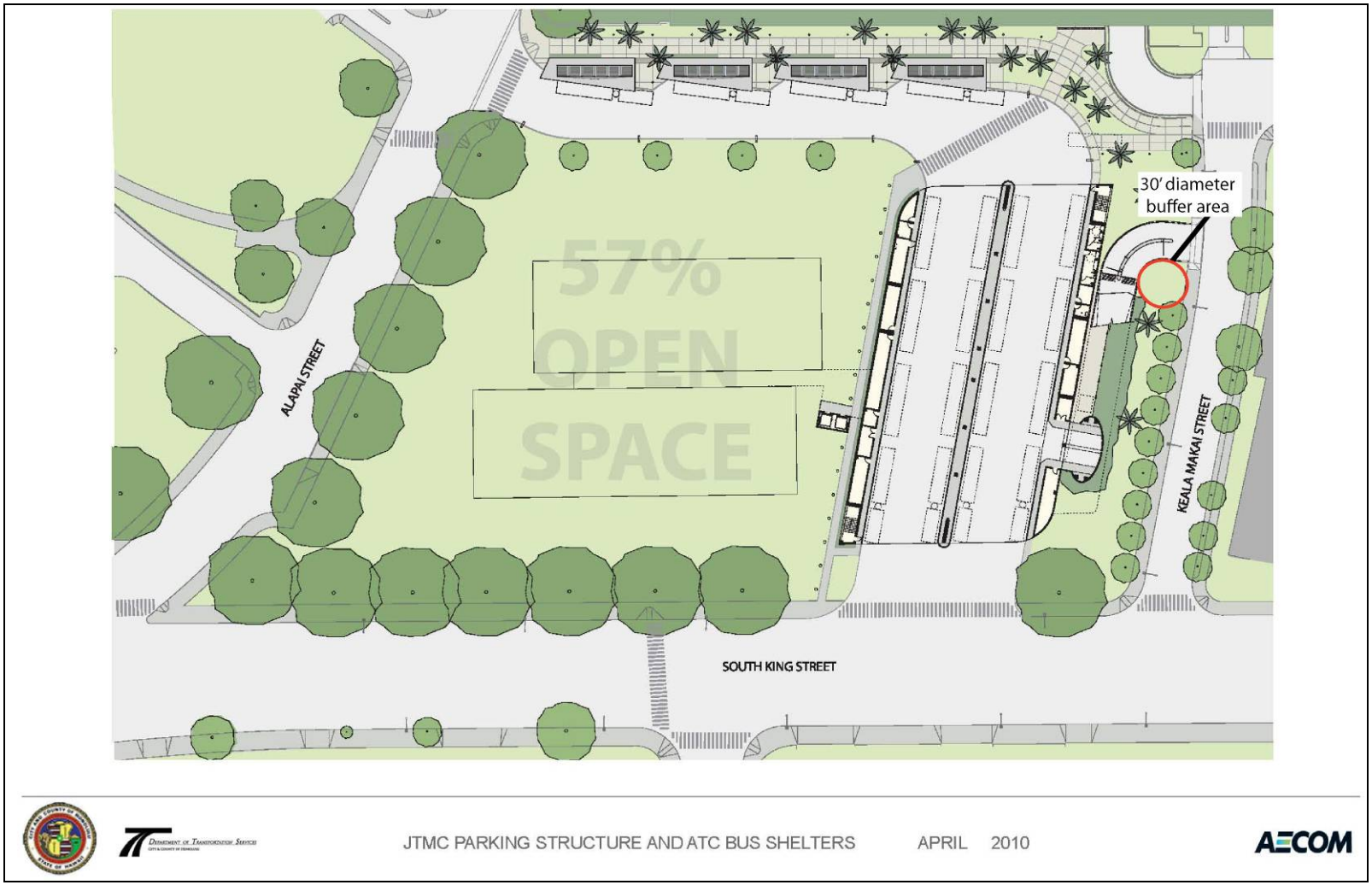


Figure 4. The Alapai Site Plan showing how the ATC and JTMC Parking Structure come together once the two projects are completed. Note the burial preserve area, a circle depicting a 30’ buffer area located immediately makai of the Kealamakai Street parking structure ramp.

was redesigned and the proposed building footprints were moved. As a result, an addendum AIS was conducted to investigate the new areas of impact under the new building footprints (Pammer et al. 2009). This addendum AIS was reviewed and approved by SHPD (SHPD correspondence 6 November 2009 LOG. NO: 2009.4418 DOC NO: 0911NM18; Appendix A). The archaeological monitoring program described in this document is one of the ATC / JTMC project's historic preservation mitigation measures that resulted from the project' historic preservation review. The other mitigation measure is the implementation of the project's burial treatment plan which describes how the project's three previously identified burials will be preserved in place.

This archaeological monitoring program is to be implemented to facilitate the identification and treatment of any burials or human skeletal remains that might be discovered during subsurface disturbance and to mitigate the project's effect on any non-burial archaeological deposits that might be uncovered during project construction. The monitoring program also describes how the burial preservation measures described in the project's burial treatment plan (O'Hare et al. 2008), will be implemented during project construction. The plan was prepared in consideration of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation and was prepared to fulfill the requirements of HAR Chapter 13-279. It is intended for review and approval by the City and SHPD.

As a City project located on municipal land, the ATC / JTMC project is subject to State of Hawaii historic preservation review legislation (Hawaii Revised Statutes [HRS] Chapter 6-E and Hawaii Administrative Rules [HAR] Chapter 13-275). Additionally, due to at least partial federal funding, the ATC / JTMC development is a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA).

1.2 Environmental Setting

1.2.1 Natural Environment

According to the 1983 USGS Honolulu Quadrangle map, the parcel is between 15-20 ft (feet), or 4.5-6 m (meters) AMSL (above mean sea level). It is located approximately 1 mile (1.6 kilometers) inland of the shore. Although the seaward portions of the project area are slightly lower in elevation, this topographic relief is negligible. Temperatures of downtown Honolulu range from 52 to 95°F, with the warmest temperatures in September and the coolest temperatures in January. Average annual rainfall ranges between 20 to 30 inches, with 15 to 20 inches between November and March and 0 to 5 inches between June and August (Armstrong 1973:62-64). The soil matrix within the project area is classified as Makiki clay loam (MkA) with 0 to 2 percent slopes. The Makiki soil series consists of well-drained soils on alluvial fans and terraces in the City of Honolulu. These soils formed in alluvium mixed with volcanic ash and cinders. Makiki clay loam is found on smooth fans and terraces (Foote et al. 1998:3-5; Figure 5). Adjacent areas of downtown Honolulu have been observed to have substantial deposits of a coarse black cinder. These cinder deposits are understood to relate to one or more eruptions from the Puʻu ʻŌhiʻa, Puʻu Kāhea and/or Puʻu ʻUalakaʻa volcanic events.

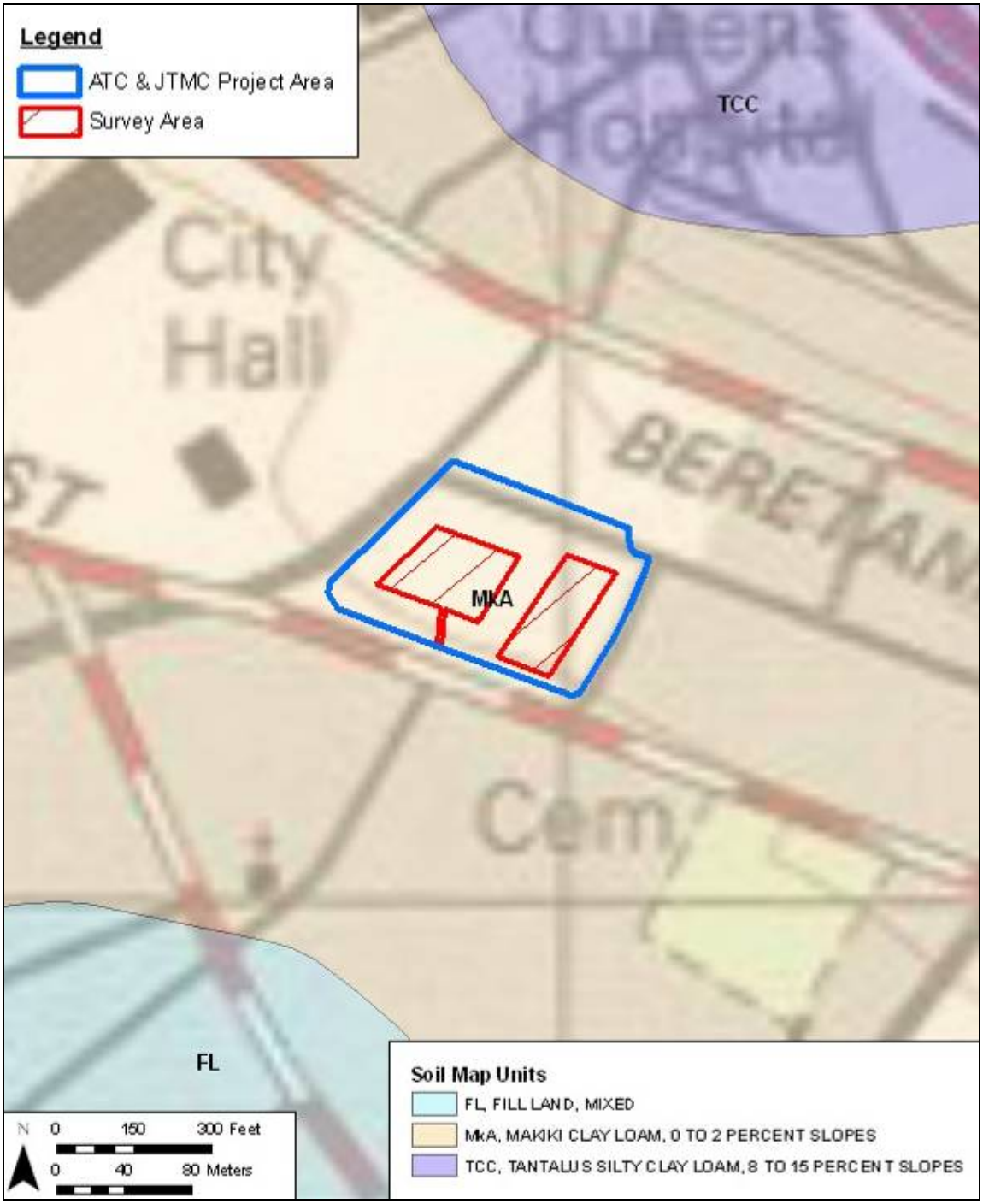


Figure 5. Overlay of Soil Survey of the State of Hawai‘i (Foote et al. 1972), showing sediment types within the project area

1.2.2 Built Environment

The APT & JTMC project area consists of a flat, asphalt paved lot (see Figure 3). There are two access points, one to Alapa‘i Street and one to King Street. Presently, the only structures on the lots are four bus shelters and wooden benches on a central raised concrete island. The area is used only as a bus transit area and as an overflow parking area for municipal vehicles.

Section 2 Background Research

2.1 Oral History and Documentary Background Research

2.1.1 Oral History and Mythological Accounts

The area of Honolulu known as Kulaokahu‘a, which translates as “The Plains,” seems to have consisted of the *mauka* portions of the lands of Kewalo, Kaka‘ako, Makiki, Pāwa‘a, and Mō‘ili‘ili (Fitzpatrick 1989:25). The project area is in the *mauka* section of Kewalo, as can be seen in an 1847 map (Figure 6) and thus would have been a part of Kulaokahu‘a. In *Place Names of Hawai‘i*, (Pukui et al. 1974:123), Kulaokahu‘a is defined as “old name of a section of Honolulu between Alapa‘i and Punahou streets, inland of King street . . . *Lit*., plain of the boundary.”

In 1865, John Papa ‘Ī‘ī identified Kulaokahu‘a as a “play ground, where the ‘maika’ etc. was played” (Boundary Commissioners Record Book, Kewalo, cited in King 1989:26). *Maika* is a Hawaiian sport that uses a disc-shaped stone, called an ‘*ulu maika*, for a bowling type of game. The flat sparsely-vegetated, plain would have been a favorable place to play this sport. Pukui et al. (1974:142) state that the name *makiki* comes from the type of stone used to make octopus lures. This is the same type of stone that was used to make ‘*ulu maika*, and Fitzpatrick (1989:29) has speculated that the name of the *ahupua‘a* may have originated from its association with the *maika* sport rather than, or in addition to, the making of octopus lures. Several legends are associated with Kalaokahu‘a.

Hi‘iaka, sister of the goddess Pele, passed through this area before her departure from O‘ahu:

> . . . she wasted no time in leave-taking . . .Their route lay eastward across the dusty, wind-swept plain of *Kula-o-kahu‘a* – destined in the coming years to be the field of many a daring feat of arms; - then through the wild regions of Ka-imu-ki, thickset with bowlders [*sic*] – a region at one time chosen by the dwarf Menehune as a sort of stronghold where they could safely plant their famous ti ovens and be unmolested by the nocturnal depredations of the swinish Kama-pua‘a. Hi‘iaka saw nothing or took no notice of these little rock-dwellers. Her gaze was fixed upon the ocean beyond, whose waves and tides they must stem before they reached and passed Moloka‘i and Maui, shadowy forms that loomed in the horizon between her and her goal [Emerson 1915:185-186].

The description of this area as a playing field (a place for “daring feat of arms”) is also recounted in the “Legend of Pikoi the Rat Killer.” In this tale, a chief on Kaua‘i had eight children, six “god daughters or demi-gods,” one human daughter, and one human son. The human son, Pikoi, became a noted rat hunter on Kaua’i, using a bow and arrow to kill the rats. The human daughter moved to O‘ahu and married the chief of Mānoa. One day Pikoi and his father decided to travel to O‘ahu to visit their sister at Mānoa. While in O‘ahu, Pikoi wandered from Mānoa toward the harbor at Honolulu:

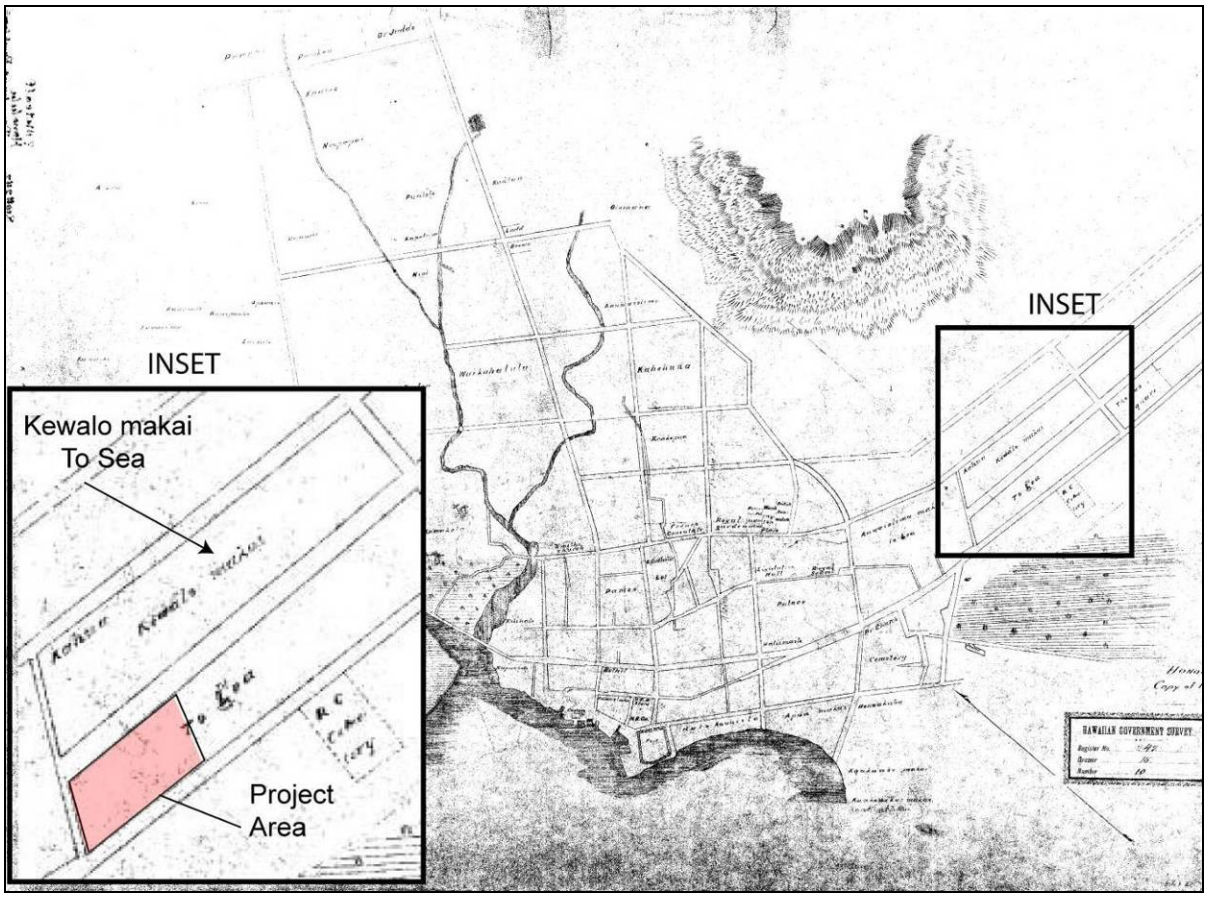


Figure 6. 1847 map by T. Metcalf of upper Honolulu, showing project area within “Kewalo”

> On the plain called *Kula-o-ka-hua* he saw a chiefess with some of her people. This plain was the comparatively level ground below Makiki Valley. Apparently it was covered at that time with a small shrub or dwarf-like tree, called aweoweo. Rats were hiding under the shelter of the thick leaves and branches [Westervelt 1963:160].

Pikoi impressed the chiefess and her followers by shooting at a hidden rat, and striking and entangling the whiskers of three rats in one shot. He then proceeded to kill an additional number of rats in one shot, all strung along the length of the arrow.

This arid plain was also mentioned in the “Legend of Hanaaumoe” as a place that must be crossed to travel to the more agriculturally productive area of Nu‘uanu. Halali‘i, the king of the spirits, designated the spirit, Hanaaumoe, to guard the coasts of O‘ahu. When canoes from other islands were seen, Hanaaumoe invited the crews to land and promised them food and wives. One day several canoes appeared with friends of the king of Kaua‘i, including a lame man named Kaneopa. Hanaaumoe enticed them to land at Kou and sleep in the canoe shed while they waited for the food and wives that he had promised. When the spirit thought that everyone was asleep, he returned to the shed and said:

Kahea ana o Hanaaumoe, moe ea? Asleep are you?

Halahala kau e,	Piled on one another,
Halahala kau e,	Scattered here and there,
Ua moe oukou?	Are you all asleep?

Only the man Kaneopa was awake. Beginning to suspect Hanaaumoe was a spirit who wished to eat the people, Kaneopa answered that all were awake and waiting for the food, meat, and wives promised. Hanaaumoe lied and said that these things could not arrive quickly since the road down from Nu‘uanu (Valley) was long, the climb from Kapūkaki (crater near Pearl Harbor) was long, and the plain of Kulaokahu‘a (plain in Makiki) was far off. When Kaneopa could stay awake no longer, he dug a hole under the sill of the house, knowing that if the king of the spirits came to the house, he would sit at this place of honor. Hanaaumoe came back to the house and again asked if everyone was sleeping. When he got no reply, he summoned the rest of the spirits, including the king Halali‘i, who sat on the sill of the house. The spirits ate all of the people inside, and dug up the floor to search for anyone hiding. The only place they did not dig was the spot under the sill where the king was sitting.

When the spirits left, Kaneopa came out of his hiding place, launched a canoe, and fled back to Kaua‘i. He told the king of Kaua‘i about the evil spirits. The king and his followers returned to O‘ahu, bringing with them a number of wooden carvings made to look like men. They landed at Lē‘ahi (Diamond Head). Hanaaumoe again enticed the people to land and sleep in the canoe shed by promising food and wives. When Hanaaumoe left, the people left the wooden carvings in the shed and went back to their canoes to wait. The spirits with their king entered the shed and began to gnaw on the wooden idols. When all of the spirits were within, the Kaua‘i people crept up on them and burned the house down (Fornander 1917, Vol. IV:476-482; 1919, Vol. V:428-434).

This legend led to a Hawaiian saying, used to describe any unkept promise of food, fish, etc. (Pukui 1983:84-85).

He Lō‘ihi o ‘Ewa; he pali o	‘Ewa is a long way off;
Nu‘uanu; he kula o Kulaokahu‘a;	Nu‘uanu is a cliff; *Kulaokahu‘a* is a dry plain;
He hiki mai koe.	but all will be here before long.

2.1.2 Pre-Contact and Early Post-Contact Honolulu

By the time of first contact with Europeans during the late eighteenth century, the area today encompassed by downtown Honolulu – also known to the Hawaiians as Kou – had long been an area of population and activity on the south shore of O‘ahu. Kou comprised shoreward fishponds and taro *lo‘i* (irrigated fields) fed by ample streams descending from Nu‘uanu and Pauoa Valleys, but it was Waikīkī to the southeast that could claim pre-eminence as the traditional residence of the *ali‘i* (Hawaiian aristocracy) and as the center of political power on the island. Thus, it was in Waikīkī that Kamehameha would take up residence after he had wrested control of O‘ahu in 1795.

Increasing commerce and association with newly-arrived foreigners would alter the traditionally evolved patterns of Hawaiian life on O‘ahu, typified by the shifting fortunes of Waikiki and Honolulu. By the first decade of the nineteenth century, as Ralph S. Kuykendall notes:

> Honolulu was becoming a place of some importance commercially. It is situated in a rich and productive island and its protected harbor, the only accessible one in the entire group, caused foreign ships to go there in preference to other places. To the Hawaiians themselves, Honolulu and its snug harbor had been of very little importance compared with the nearby reef-protected romantic beach and town of Waikiki. But the foreigners' rendezvous at Honolulu caused the natives to congregate in the place [Kuykendall 1938:27].

By 1899, Kamehameha himself had moved his residence to Honolulu. Francisco de Paula Marin, a Spaniard who'd arrived in the Hawaiian islands in 1793 or 1794, and had become a confidant of the king, recorded in his journal:

> In the end of 1809 & beginning of 1810 was employed building a stone house for the king. . . . [cited in Gast and Conrad 1973:200].

This was the first stone structure in Honolulu, which, according to Ross Gast, was:

. . . [by 1810] a village of several hundred native dwellings centered around the grass house of Kamehameha on Pakaka Point near the foot of what is now Fort Street. Of the sixty white residents on Oahu, nearly all lived in the village, and many were in the service of the king [Gast and Conrad 1973:29].

Kamehameha himself likely never resided in the completed house, as in 1810 he returned to Hawai‘i Island where he lived the remainder of his life. Building in Honolulu, however continued apace with Marin and other foreign residents building their own stone houses and buildings during the ensuing decade. Thus, a visitor to Honolulu in 1819 could report:

> The port of Onorourou [Honolulu], generally frequented today by all the European vessels that come to the Islands, is without doubt the most favorable location with respect to shelter, commerce, and resources necessary for the supply of ships. . . .
>
> The town of Onorourou is located on a large, flat plain. It is on the shores of a bay of the same name. The houses similar for the most part to those of Owhyhi and of Mowi, are however interspersed with a certain number of houses built of stone that belong for the most part to Europeans or to Anglo-Americans [de Freycinet 1978:40-42].

The area that today comprises the portion of downtown Honolulu that surrounds Honolulu Harbor was known to the Hawaiians as "Kou," a center of population and activity, similar to Waikīkī, its preeminent neighbor to the southeast. The present project area lies just outside the eastern periphery of Kou, on what some referred to the barren, leeward plains. Kou stretched from "Nu‘uanu to Alakea streets and from Hotel Street to the sea" (McAllister 1933:80) and possessed shoreward fishponds and irrigated fields fed by streams descending from Nu‘uanu and Pauoa valleys. Kou was known as a place where chiefs gathered to play and where the people gathered to watch them. Pukui (1983:1128) relates the poetical saying *"Hui aka nā maka i Kou"* ("the faces will meet at Kou") in reference to just such gatherings. In the accounts of the Pele and Hi‘iaka saga (Emerson 1915:168), Hi‘iaka from Hawai‘i Island and Lohi‘au chief of Kaua‘i,

joined with Pele‘ula, chiefess of O‘ahu, for pleasure at Kou. This vignette probably was based on a long tradition of Kou as a royal center where the *ali‘i* would meet and entertain.

Kou was somewhat slow to catch on as a major destination for foreigners visiting the archipelago. The only stop of Cook's ships on O‘ahu was at Waimea Bay (1779), not viable as a significant port owing to the famous winter swell that breaks there. A discouraging factor for early trade at O‘ahu was political instability. The ruling chief Peleiōhōlani died around 1780, and his heir, Kumuhana was almost immediately deposed in a *coup d'etat*. A period of political unrest followed including the successful invasion by Kahekili of Maui in 1783, the bloody crushing of the O‘ahu rebellion in 1786, the invasion by the Kaua‘i ruler, Ka‘eokūlani in 1791, the passing of the rule following Kahekili's death in 1794 to Kalanikūpule, and finally, his defeat by Kamehameha I in 1795. These events all contributed to political and economic instability, and in turn, delayed the development of Honolulu as a major port. In addition, such events as the *Daedalus* killings in 1792, the mysterious death of Captain Kendrick in 1794, the seizure of the *Jackal* and *Prince Lee Boo* ships with the killing of Captains Brown and Gordon in 1795, and the wreck of the *Arthur* under Captain Henry Barber in 1796 did not enhance O‘ahu's reputation as a port of call. The earliest accounts of the south shore of O‘ahu relate the fear of attack and the difficulty of getting water and food, particularly yams (Portlock 1968), and in one instance, the efforts of natives to seize a whaleboat (Dixon 1789).

Another factor for the delay in development of Kou as a major port was the relatively late discovery of Honolulu harbor, attributed to Captain William Brown in early 1793. Furthermore, Honolulu's prominence had to await the peace established by Kamehameha I and his encouragement of trade there. Kamehameha defeated Kalanikūpule at the battle of Nu‘uanu in 1795, and in 1809, moved his court, government, and residence from Waikīkī to Honolulu.

2.1.3 1815 to 1850: Honolulu in Transition

The development of Honolulu during the nineteenth century was inevitably a rapid substitution of the traditional patterns that had once shaped the land by new responses to the pressures of a burgeoning western presence. Into the 1820s, Honolulu remained more notable for its native culture than for any western urbanization imposed on that culture.

Accounts written by Protestant missionaries who first arrived in 1820 depict Honolulu as it had evolved by the first quarter of the nineteenth century. In 1820, the American Board of Commissioners for the "Foreign Missions Sandwich Islands" arrived in Hawai‘i and quickly made Honolulu its headquarters. As a member of that mission, Reverend Hiram Bingham, writing in 1847, describes Honolulu as viewed from "Punchbowl Hill" in 1820:

> From the highest part of the rim we had a beautiful view of the village and valley of Honolulu, the harbor and the ocean, and of the principal mountains of the island. . . . 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. Through this valley, several streams descending from the mountains in the interior, wind their

> way, some six or seven miles, watering and overflowing by means of numerous artificial canals, the bottoms of kalo patches, and then, by one mouth, fall into the peaceful harbor [Bingham 1981:92-93].

In contrast to this idyllic evocation is Bingham’s terse record of the land, today the site of the Mission Houses Museum and the Kawaiaha‘o Church, designated by the *ali‘i* for the missionaries’ use in 1820:

> Boki [governor of O‘ahu] at length, by the order of the king, gave the mission a building spot for the Honolulu station, on the arid plain, about a half a mile east of the landing, then some distance from the village, but now [1847] included in it [Bingham 1981:112].

Bingham’s characterization of the Honolulu mission site is seconded by another early missionary, C.S. Stewart, who, arriving in Lahaina on Maui, proclaimed it “so refreshing an asylum [after] four weeks’ residence on the dreary plain of Honoruru” (Stewart 1970:177).

Another visitor to Honolulu in the 1820s, Jacobus Boelen (1988), hints at the possible pre-contact character of the Honolulu lands that include the present project site:

> It would be difficult to say much about Honoruru. On its southern side is the harbor or the basin of that name . . . 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 [Waikīkī] the soil around the village is less fertile, or at least not as greatly cultivated [Boelen 1988:62].

Boelen’s description suggests that the present project site lay within that portion of Honolulu where the soil “is [was] less fertile, or at least not as greatly cultivated.”

By the 1840s, western commercial and missionary interests had supplanted the native Hawaiian traditions that had previously shaped the environment. D. Gilman (1903:97), who arrived in Honolulu in 1841, described the limits of the town of Honolulu during the early 1840s:

> The boundaries of the old town may be said to have been, on the *makai* side, the waters of the harbor; on the *mauka* side, Beretania Street; on the Waikīkī side [i.e., the area just beyond Punchbowl Street], the barren and dusty plain, and on the ‘ewa side, the Nu‘uanu stream.

The plain was called “Kulaokahu‘a,” a dry, dusty wasteland without a shrub to relieve its barrenness. From 1840 to 1875, only a few unpaved roads were in the area, probably along the present course of King, Young, Beretania, and Punahou Streets. These roads “ran a straggling course which changed as often as the dust piled up deep” (Clark 1939:12). There were several horse paths criss-crossing the Kulaokahu‘a Plains. In the 1840s, it was described as “nothing but a most exceedingly dreary parcel of land with here and there a horse trail as path-way” (Gilman 1909:91). The flat plains were perfect for horse racing, and the area between present-day Pi‘ikoi and Makiki Streets were a well-known racing track (Peterson 1984:371)

About Punchbowl Street, Gilman (1903:89) remembered:

> There was on the entire length of this street, from the *makai* side to the slopes of Punchbowl, but one residence, the two-story house of Mr. Henry Dimond, *mauka* of King Street. Beyond the street was the old Kawaiahao church and burying ground. A more forsaken, desolate-looking place than the latter can scarcely be imagined.

Thus, the present project site, which is east of Kawaiaha‘o Church, was situated between the boundary of the "old town" to its west and the "barren and dusty plain" beyond Punchbowl Street to its east.

The latter half of the nineteenth century was a period of rapid change for Honolulu. An excellent overview of Honolulu from the harbor to Beretania Street, circa 1850, constructed by Albert Peary, is located at the Judiciary History Center across from the ‘Iolani Palace. Reverend Sereno Bishop (1916:58) offers a unique perspective of the changes in the layout of Honolulu and the structures that lined the streets:

> When I returned to Honolulu in 1853, after an absence of thirteen years, I was struck by the many changes. . . . [in 1840] the major portion of the residents of Honolulu still lived in thatched houses. In fact the town was almost entirely composed of this kind of dwellings. . . .
>
> When I went away there were only Punchbowl Road, Beretania Street, King Street and Merchant Street. This was the condition of the city in 1840. . . .
>
> The settled portion of the city was then [1853] substantially limited by the present Alapai and River streets and mauka at School street. There was hardly anything outside of those limits and the remainder was practically an open plain.
>
> Above Beretania street, on the slopes and beyond Alapai street, there was hardly a building of any nature whatever. . . .
>
> The plains remained open until within twenty-five years [ca. 1878], before there was any building there of any description.

A map of 1855 (Figure 7) shows the grid of Honolulu streets at mid-nineteenth century, with Beretania Street still defining the *mauka* edge of the town, and trails or roads leading to Nu'uanu and Pauoa valleys, and Pūowaina (Punchbowl Crater). Houses are shown adjacent to the eastern boundary of the project area, but not within the project area itself.

2.1.4 Early 1800s – the Oahu Charity School

The first record for historic use of the Alapai Transit Center property is associated with the establishment of a school for the children of Hawaiian mothers and foreign fathers. The school was run by Mr. and Mrs. Andrew Johnstone, who had arrived as missionaries of the American Board of Commissioners for Foreign Missions (ABCFM) in 1831. Mr. Johnstone had originally taught students at the Kawaiaha‘o Seminary, but also helped out handing religions material to sailors at the harbor and in downtown Honolulu (Kamakau 1992:305). From this contact, he became aware of the problem of the number of children with Hawaiian mothers and foreign

fathers, often sailors. These children had no access to education. He contacted several prominent businessmen in Honolulu, including the well-known resident Stephen Reynolds, who recorded the progress of the school several times in his daily journal. A subscription was raised for the erection of a school house, fist called the Oahu Charity School for "English-speaking children." A large donation was submitted by the seaman of the U.S. Frigate *Potomac*. The lot for the school house was purchased from the *ali‘i* (chiefess) Ka‘upena, wife of Manuia (commander of the Honolulu fortifications) (Kamakau 1992:295) on the *makai* side of Punchbowl and King Street, west of Kawaiaha‘o Church, in an area of Honolulu called "Mililani." Ali‘iōlani Hale, the Judiciary Building, now stands on the spot where this school was built.

Many of the Honolulu businessmen were often in opposition to missionaries' efforts, and did not want the new school to be a "religious" school, so Mr. Johnstone dissolved his connection to the American Missions Board. Since he could no longer look to the Mission to provide room and board, he petitioned the trustees of the school to provide him with a salary and a residence. A salary of $500 per annum was granted, and, for the residence:

> Several meetings of the subscribers were held, at which various plans were proposed, but finally in October, 1836, it was decided to offer Harry Zupplien $1800 "for his place on the plains," which he accepted. This place was situated on the southeast corner of King and Alapai streets, and is now [in 1909] owned by Mr. C. H. Atherton.
>
> By Mr. Reynolds' advice, a second story (of wood) was built upon the first story of stone, and verandahs were added to the house [Alexander 1909:28].

Thus the O‘ahu Charity School itself was built west of Kawaiaha‘o Church (as seen in Figure 9), and the residence for the schoolteacher was built east of the church, within the current project area. Subscribers not only built the schoolhouse structure, but also built the house for the teacher (Dibble 1909:295).

In a reminiscence of the streets of Honolulu in the early 1840s, Gorman D. Gilman (1903:84) wrote of the dwelling house:

> This school was conducted by Mr. A. Johnstone, whose square two story residence stood the last house on the mauka side of King street before coming to the plains, called Kulaokahua. I think that the present residence of Mr. C. H. Atherton occupies the spot where Mr. Johnstone's house stood. Beyond this the plain stretched from the slopes of Punchbowl to the sea, broken only by two residences . . . [Gilman 1903:84].

Although on the edge of the dry, arid, Kulaokahu‘a plains, the dwelling lot was a pleasant place, with an uninterrupted view of the coast and the mountains, according to Gustavus Hines, a missionary who visited the islands for a few days during a voyage around the world in 1840:

> It fell to my lot, with my family, to be entertained by Mr. and Mrs. Johnstone, the teachers of Oahu Charity School, whose dwelling commands a fine view of the mountain scenery, the rolling surf, and the city and harbor of Honolulu [Hines 1852:78].

Figure 7. Portion of 1855 La Passe map of Honolulu, showing no development of the project area

Figure 8. Photograph of Honolulu taken in 1854 from Kawaiaha‘o Church, view to the west; the Oahu Charity School, with the tall bell tower, is in the center of the photograph (Photo from *Honolulu Advertiser* Archives)

Mr. Johnstone moved into the new house on May 16, 1837. Because of disputes with some of the trustees, Mr. Johnstone resigned as the teacher of the Oahu Charity School in 1844 and tried to open his own private school. He moved out of the Alapa‘i house, which was then “rented to Mr. Sea for a term of years” (Alexander 1909:32).

Various short-term teachers followed Mr. Johnstone at the O‘ahu Charity School, but it does not seem that they lived at the Alapa‘i residence, rather the residence was rented out and the funds were used to help run the school. The records for the school show that the residence was rented to a Mr. Henry S. Swinton on March 7, 1849 for $10 a month and finally sold for $1500 dollars to a Mr. Chas. Taner in 1854 (Alexander 1909:34-35). Thus, the connection of the Alapa‘i residence lot to the Oahu Charity School was severed in 1854.

In 1847, the Hawaiian serial, the *Polynesian*, conducted a survey of Honolulu, the number of native and foreign residents, the number and types of buildings, and a list of foreigners residing in Honolulu, along with their occupation (type of work) and address of business. Richard Greer (1970:92-95) reproduced this list of foreigners in Honolulu for an article in *The Hawaiian Journal of History*, and added to the list all names of resident foreigners mentioned in 1847 from the serials the *Polynesian* and *The Friend*. Several of the principals mentioned in the early history of the Oahu Charity School are found in this article. Andrew Johnstone, who had resigned as the teacher for the school three years earlier, is listed as a “Book-keeper.” One of the major trustees for the school, Stephen Reynolds, is listed as “Merchant-Bremen Consul.” Henry

Sea, who was the High Sheriff of O‘ahu for many years, is listed (Greer 1968:8). This may be the same Henry Sea who was the second tenant of the Alapa‘i residence.

Also listed is an H. Zupplein, “Retail spirit dealer.” Thus the former owner of the land on which the teacher’s residence on Alapa‘i Street was built, may be a colorful early resident of the islands called Henry Zupplein, also called “Dutch Harry,” who opened a grog shop in 1823 in Honolulu, called at various times the “Dog and Bell, the “Rising Sun” and the “White Swan.” In 1833, this grog-shop was on King Street, opposite the Seaman’s Bethel Church in Honolulu, near present day Bethel Street (Greer 1994:56-57). Although Harry Zupplein supplied the land, he was not necessarily a supporter of the Oahu Charity School. When the school was dedicated in January of 1833, a grand procession through Honolulu was planned.

> “Dutch Harry” refused to lend his bass drum for the grand procession and was insolent to the King. He worked up such a tizzy that he grabbed an ax and split the drum. Zupplien’s mood proved contagious. The King had Harry’s house nailed shut (a favorite gambit) and turned him out with very little of his property. “Many residents exulted.” Their exultation faded three days later when Zupplien coughed up $100 and got his place back. He was still at his old stand in the late 1840s (Greer 1994:57).

Neither Mr. Swinton nor Mr. Taner, the last tenant and the first owner of the house on Alapa‘i Street, are mentioned in the 1847 list of foreign residents, so either they came to Hawai‘i later or were omitted from the list. Greer (1970:95) mentions that the census of Honolulu indicates that there were as many as 100 additional residents of Honolulu in 1847 that are not on the list for some reason or other.

2.1.5 Mid 1800s and the *Māhele*

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

The Kulaokahu‘a Plains were awarded to the Crown in March of 1848 (Chinen 1961:54) during the Great *Māhele*. These Crown lands, set aside for Kamehameha II, were leased to private individuals. The *mauka* section was later divided into lots and sold to private individuals between 1877 and 1882.

Title of the land for the Oahu Charity School and the land for the Alapa‘i residence were confirmed during the *Māhele*, when both lots were awarded to the Oahu Charity School in 1848 as Land Commission Award #8511, Royal Patent #1880½ (full text of LCA 8511 presented in Appendix B, downloaded from www.waihona.com):

> To the Board of Commissioners, &c. Gentlemen,

> In behalf of the Trustees, Friends and Patrons of the Oahu Charity School, I beg leave to call your attention to their claims to two plots of ground, one on which the schoolhouse stands, and the other on which the dwelling house is situated. . . .
>
> No. 8511, F. W. Thompson for the Trustees Oahu Charity School, 21 March 1853.
>
> John Meek, sworn, says he knows the School house lot and also the house lot. I [Thompson] built the adobie wall round the house lot myself some years ago for the benefit of the charity.
>
> S. Reynolds, sworn, says the dwelling house lot claimed by the Trustees was purchased of Harry Zupplien for $1500. There was a vacant piece of ground between the original lot & the road which was subsequently got from the King. The Trustees have held undisturbed possession of this lot ever since 1836. The adobie wall by which the lot is at present enclosed is the true boundary.

The funding for the Oahu Charity School could not keep up with expenses, and in 1851 a bill was passed to support the school with a tax on all foreigners. The name of the school was changed to the Town Free School. In 1865, it was decided that girls and boys should be taught at separate schools; all boys were then sent to the Royal School on the corner of Punchbowl and Emma Streets, and the Oahu Charity School became the Mililani Girls' School (Alexander 1909:35). In 1874, the Board of Education traded the schoolhouse lot to the Department of the Interior. The upper story of the school house was moved to a location on Punchbowl Street called Pohukaina; the new school was Pohukaina School. The rest of the Oahu Charity School was then demolished to build Ali‘iōlani Hale, the Judiciary Building (Putzi and Dye 2004:8).

2.1.6 Late 1800s to 1900s: The Atherton Family and "Fernhurst"

In the reorganization of the government in 1846, Dr. Gerrit P. Judd, in charge of the finances of the kingdom, suggested that funds for the government should be raised by selling some of the government and crown lands in fee simple title. They selected an area in Kulaokahu‘a and placed an advertisement in the newspaper, the *Polynesian* on November 21, 1846. Sale of the lots was slow, as there was no available water in this area. As an incentive, the government allowed aliens to obtain title to the lands after a commutation fee, with the restriction that they could only sell the land to Hawaiian subjects. This spurred sales of the lots. In 1846, 850 acres were sold; by 1852, the yearly sales of lands reached 7,938 acres. Many of the lots were sold to prominent Honolulu businessmen, who bought the land as an investment (Greer 1992:133-139). Although a few people began to dig wells on their lots, T. Blake Clark (1939:12) has noted that "the settling of the Plains did not come until the 1880s, after water was brought from Makiki Valley." The majority of the buyers bought the land as an investment, not for their own residence (Greer 1992:133-139).

A 1906 Land Court Application map (LCAp 93; Figure 9) shows some of these lots. The southwestern section on Alapa‘i Street was the original Oahu Charity School residence lot, listed as LCA 1880½. The remaining portion of the project area consisted of: a triangular lot in the northwest, R. P. (Royal Patent) Grant 197 to Warren Goodale; a rectangular lot in the center,

R.P. Grant 646 to B. Soden; a rectangular lot in the northeast, R.P. Grant 197 to J. Sweetman; and, two rectangular lots to J. [John] A. Magoon in the southeast corner of the project area.

Included on two of the pages of the Index of Grants Kulaokahu‘a (Figure 10), compiled between 1846 and 1857, are several of the names shown on the LCAp 93 map: Bartholomew Soden, W. Goodale, and J. Sweetman (Greer 1992:133-139).

B. Soden is probably Bartholomew Soden, a short-term teacher at the charity school from 1850 to 1851 (Alexander 1909:36), Warren Goodale was the Collector of Customs for the Kingdom for many years, and J. Sweetman may be the same as the John Sweetman, a mason, who is mentioned in the 1847 list of foreign residents (Greer 1970:95). John Sweetman's purchase was something of an embarrassment to the government, as the four lots that he bought for $40 a piece, actually belonged to Mataio Kekūanāo‘a, the Governor of O‘ahu. Greer (1992:134) notes that Kekūanāo‘a "got a $160 credit." From LCAp 93, J. A. Magoon is probably John Alfred Magoon, a lawyer in Honolulu who married Emmeline Marie Afong, the daughter of a wealthy Chinese businessman in Hawai‘i (Dye 1997:211-212). There is no evidence that these grantees built houses on these lots in the 1840s and 1850s; they may simply have bought the lots for land speculation or as an investment.

LCAp 93 map (see Figure 9) shows that in 1906, the entire project area was owned by a J. B. Atherton. Joseph Ballard Atherton came to Hawai‘i in 1858 and soon became the chief clerk at the company of Castle and Cooke, a major investment firm and the agent for many of the Hawaiian sugar plantations. In 1865, he married Juliette Montague Cooke, the daughter of Samuel Northrup Cooke and Juliette Montague Cooke (mother and daughter have the same name) and became a junior partner in the firm. He held the position of the president of the firm from 1894 to 1903, the year of his death. He was a strong supporter of many organizations, such as the Kawaiaha‘o Seminary, the O‘ahu College, and the YMCA (Taylor et al. 1976:81-81, 135).

From the LCAp 93 map (see Figure 9), it can be seen that the original owner of the western portion of the lot was J. P. Cooke, or Joseph Platt Cooke, the brother of Juliette Atherton, and thus the brother-in-law of J. B. Atherton. In 1871, the western section was subdivided into two lots; Joseph Cooke sold the eastern half to Joseph Atherton. This can be clearly seen on an 1873 map of Makiki, which shows the two lots and their owners (Figure 11).

In a letter dated May 26, 1871 by Juliette Montague Cooke (Juliette Atherton's mother), she writes of this property:

> Joe [Cooke] is to move down near us so as to superintend the doings on his new lot. I believe I wrote you that my two Joes [Joseph Cooke and Joseph Atherton] have bought a lot together and are to build soon. So they have fenced and laid on water and are now endeavoring to gather trees of every sort to make a young forest around them for the district is dry and dusty and a little hot [Richards 1941:517].

On Nov. 7, 1871, Juliette Cooke wrote:

> Joe's [Cooke] home is almost done; it is much praised as being in very good taste. If I was an artist, I would give you a view of it. His little boy is beautiful and bright but delicate. . . .

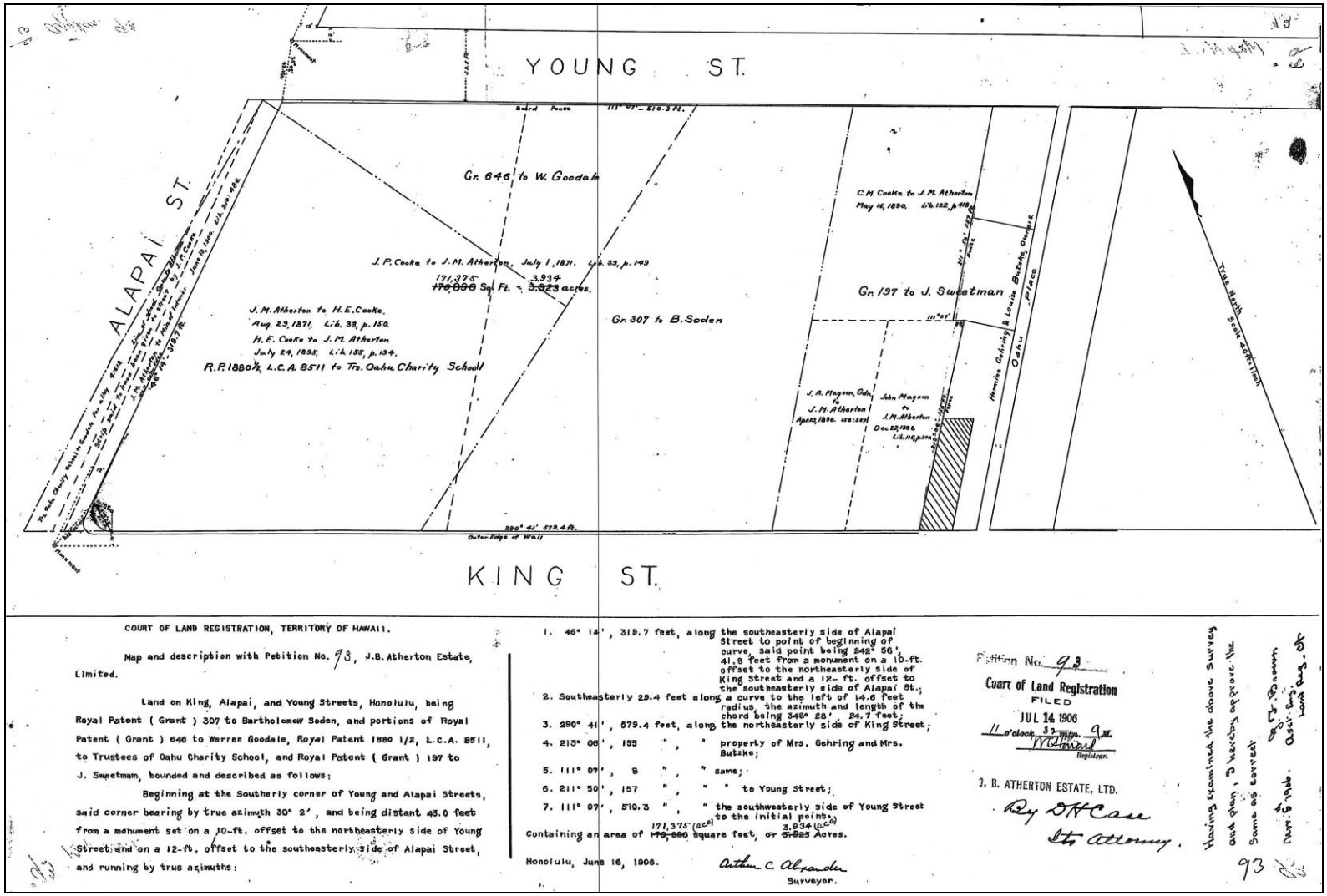
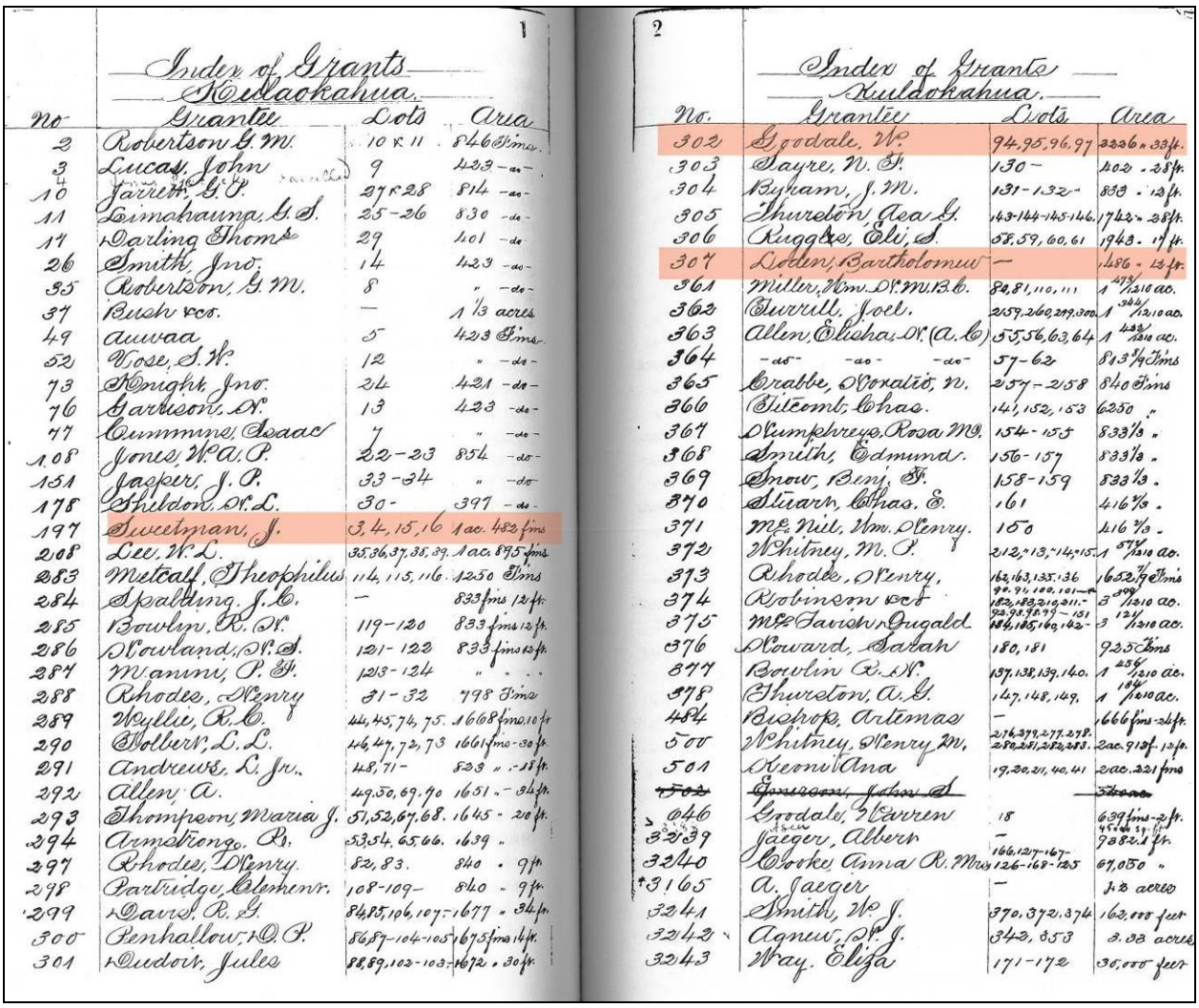


Figure 9. 1906 Land Court Application 93, Map 1, showing project area owned by J. B. Atherton



1

Index of Grants
Kulaokahua.

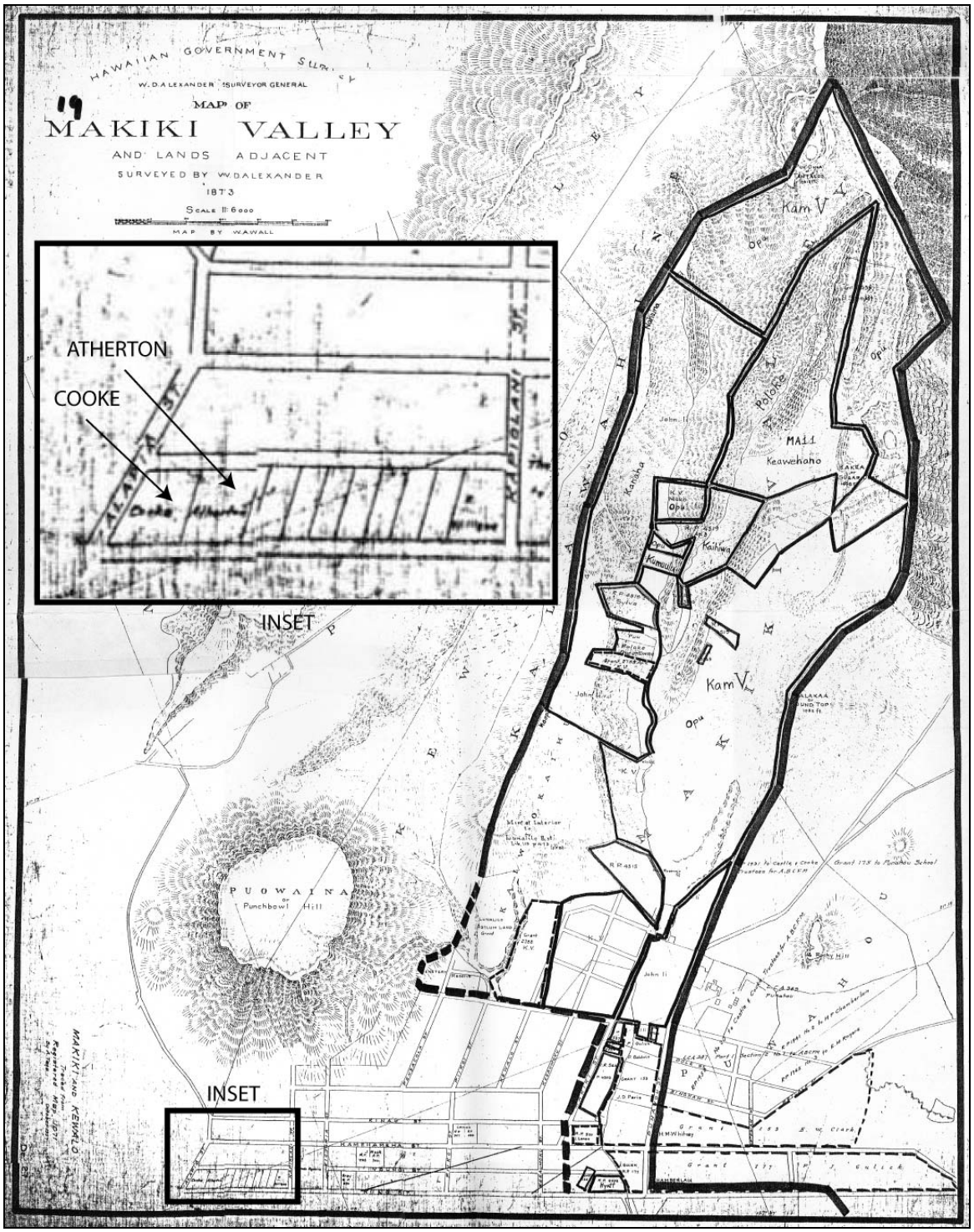
No	Grantee	Lots	Area
2	Robertson G. M.	10 & 11	846 Fms.
3	Lucas, John	9	423 -do-
10	Jarrett, G. P.	27 & 28	814 -do-
11	Kimahaunu, G. S.	25-26	830 -do-
17	Darling Thos	29	401 -do-
26	Smith, Jno.	14	423 -do-
35	Robertson, G. M.	8	" -do-
37	Bush & co.	—	1 1/3 acres
49	Auwaa	5	4213 Fms.
52	Rose, S. W.	12	" -do-
73	Knight, Jno.	24	421 -do-
76	Garrison, W.	13	423 -do-
77	Cummins, Isaac	7	" -do-
108	Jones, W. A. P.	22-23	854 -do-
151	Jasper, J. P.	33-34	" -do-
178	Sheldon, W. L.	30-	397 -do-
197	Sweetman, J.	3, 4, 15, 16	1 ac. 482 fms
208	Lee, W. L.	35, 36, 37, 38, 39.	1 ac. 895 fms
283	Metcalf, Theophilus	114, 115, 116	1250 Fms
284	Spalding, J. C.	—	833 fms 12 ft.
285	Bowlin, R. W.	119-120	833 fms 12 ft.
286	Howland, W. S.	121-122	833 fms 12 ft.
287	Manini, P. K.	123-124	" " "
288	Rhodes, Henry	31-32	798 Fms
289	Wyllie, R. C.	44, 45, 74, 75.	1668 fms. 10 ft
290	Wolbert, L. L.	46, 47, 72, 73	1661 fms - 30 ft.
291	Andrews, L. Jr.	48, 71-	823 " - 18 ft.
292	Allen, A.	49, 50, 69, 70	1651 " - 34 ft.
293	Thompson, Maria J.	51, 52, 67, 68.	1645 " - 20 ft.
294	Armstrong, R.	53, 54, 65, 66.	1639 "
297	Rhodes, Henry.	82, 83.	840 " 9 ft.
298	Partridge, Clement.	108-109-	840 " 9 ft.
299	Davis, R. G.	84, 85, 106, 107-	1677 " 34 ft.
300	Penhallow, W. P.	86, 87-104-105	1675 fms 14 ft.
301	Dudoit, Jules	88, 89, 102-103-	1672 " 30 ft.

2

Index of Grants
Kulaokahua.

No.	Grantee	Lots	Area
302	Goodale, W.	94, 95, 96, 97	3226 " 33 ft.
303	Sayre, N. S.	130 —	402 " 28 ft.
304	Byham, J. M.	131-132-	833 " 12 ft.
305	Thurston, Asa G.	143-144-145-146.	1742 " 28 ft.
306	Ruggles, Eli, S.	58, 59, 60, 61	1943 " 14 ft.
307	Loden, Bartholomew	—	1486 " 12 ft.
361	Miller, Wm. W. M. B. C.	80, 81, 110, 111	1 47/210 ac.
362	Burrill, Joel.	259, 260, 299, 300.	1 344/1210 ac.
363	Allen, Elisha W. (A. C.)	55, 56, 63, 64	1 422/1210 ac.
364	-do- -do- -do-	57-62	843 3/4 Fms
365	Crabbe, Horatio, N.	257-258	840 Fms
366	Titcomb, Chas.	141, 152, 153	6250 "
367	Humphreys, Rosa M.	154-155	833 1/3 "
368	Smith, Edmund.	156-157	833 1/3 "
369	Snow, Benj. F.	158-159	833 1/3 "
370	Stuart, Chas. E.	161	416 2/3 "
371	McNiel, Wm. Henry.	150	416 2/3 "
372	Whitney, M. P.	212, 213, 214, 215.	1 576/1210 ac.
373	Rhodes, Henry,	162, 163, 135, 136	1652 1/2 Fms
374	Robinson & co	98, 99, 100, 101— 182, 183, 210, 211.-	3 399/1210 ac.
375	Mrs Davidson Gugald	93, 98, 98, 99 — 151 184, 185, 160, 162-	3 124/1210 ac.
376	Howard, Sarah	180, 181	925 Fms
377	Bowlin R. W.	137, 138, 139, 140.	1 256/1210 ac.
378	Thurston, A. G.	147, 148, 149,	1 164/1210 ac.
484	Bishop, Artemas	—	1666 fms - 24 ft.
500	Whitney, Henry M.	276, 279, 277, 278. 280, 281, 282, 283.	2 ac. 910 f. 12 ft.
501	Keoniana	19, 20, 21, 40, 41	2 ac. 221 fms
~~502~~	~~Emerson John S~~		~~Stone~~
646	Goodale, Warren	18	639 fms - 2 ft.
3239	Jaeger, Albert	—	9882 1/2 ft.
3240	Cooke, Anna R. Mrs	166, 127-167- 126-168-125	67,050 "
*3165	A. Jaeger	—	1 1/2 acres
3241	Smith, W. J.	370, 372, 374	162,000 feet
3242	Agnew, W. J.	342, 353	3.33 acres
3243	Way, Eliza	171-172	30,000 feet

Figure 10. Two pages from Index of Grants Kulaokahu‘a, 1846-1857; pertinent names are highlighted (reproduced in Greer 1970:95)


HAWAIIAN GOVERNMENT SURVEY
W. D. ALEXANDER SURVEYOR GENERAL
MAP OF
MAKIKI VALLEY
AND LANDS ADJACENT
SURVEYED BY W. D. ALEXANDER
1873
SCALE 1:6000
MAP BY WAWALL
ATHERTON
COOKE
INSET
INSET
PUOWAINA
Punchbowl Hill
Kam V
Kam V
Palolo
MA11
Keawehaho
Kaihiwa
Kaniha
Kawaiiki
Opia
Opia
John Ii
Kapiolani
Alakea
Kawaiahao
Kawaiahao
Kawaiahao

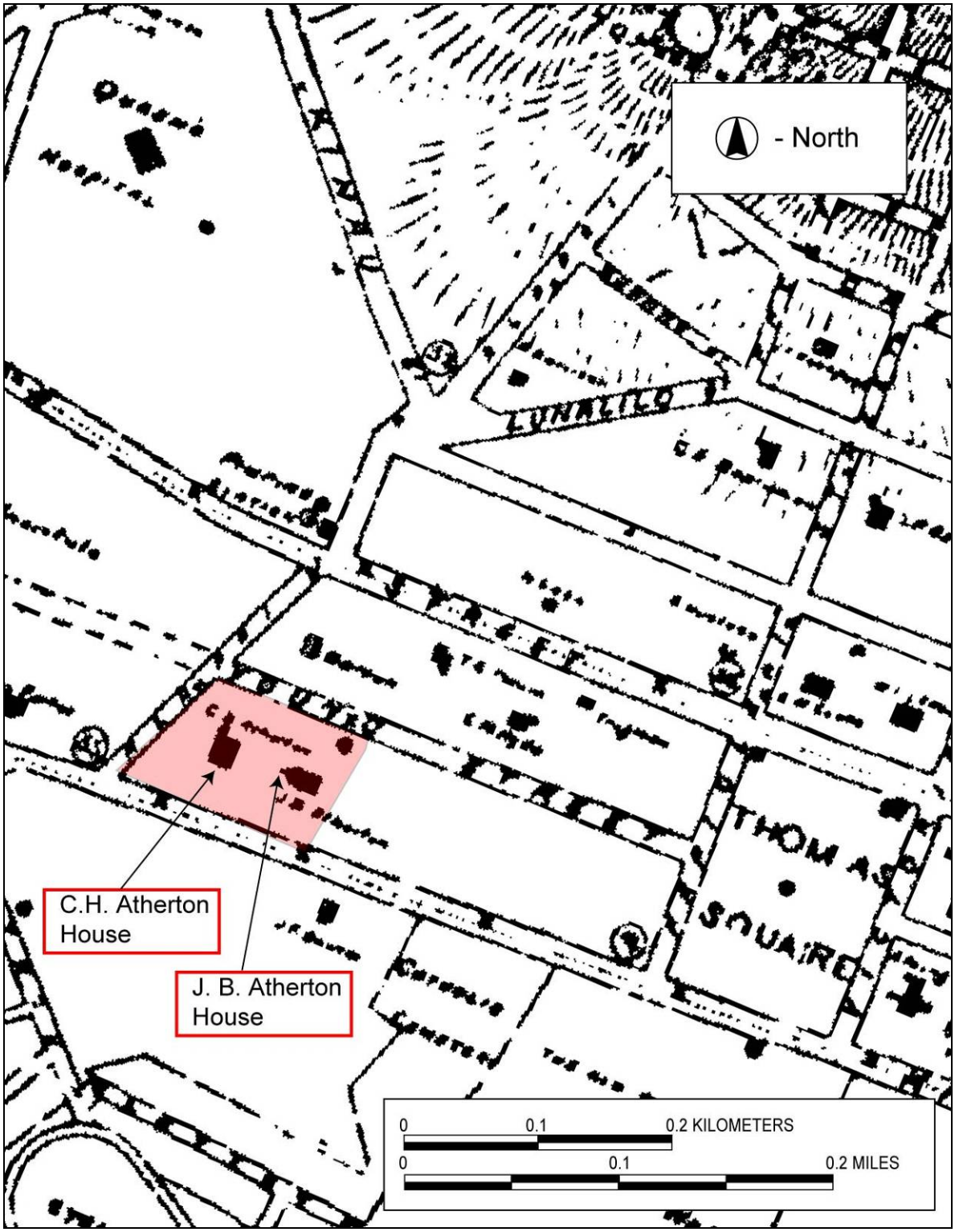


Figure 12. 1897 Monsarrat map of Honolulu, showing the C.H. Atherton house and the J.B. Atherton house within the shaded (red) project area

> Mr. Atherton has over two hundred trees planted on his lot which is over two acres in extent. Beautiful pines and other shade and ornamental trees, also many fruit trees. Julie has over sixty roses planted, about thirty five different kinds. She is beginning to have flowers. When I returned from the States, the lot was a barren waste without tree or shrub. It proved excellent soil and they proved diligent workers [Richards 1941:520-521].

The Athertons expanded their lot in 1888 when they bought the eastern Magoon lot, in 1890 when they bought the Sweetman lot, and in 1896, when they bought the western Magoon lot. Joseph Platt Cooke died in 1879, and J.B. Atherton bought the Cooke lot from his widow, Harriet Emilita Wilder Cook in 1895 (see Figure 9).

Sometime after Joseph Cooke’s death, the J. P. Cooke house was inhabited by Charles H. Atherton, son of J. B. and Juliette Atherton. It is this house, on the western section of the project area, which is often mentioned as the former location of the Oahu Charity School residence lot (Alexander 1909:28). These two houses can be seen on an 1897 map of Honolulu (see Figure 12). By 1906, J. B. Atherton owned the entire 3.9-acre lot. His two-story house was in the center of the project area, and was called “Fernhurst.”

> In 1871, the family moved to a beautiful home on King St. near the corner of Alapai St. The two-story colonial building, surrounded by extensive gardens, was given the name of Fernhurst. It was Mrs. Atherton’s home [Juliette Atherton] for 42 years [Allen 1970:33].

The Athertons were noted for their hospitality, inviting the social elite, visiting sea captains, and even poor teachers, such as Theodore Richards, who married their daughter Mary at Fernhurst in 1892 (Allen 1970:28). J. B. Atherton, and his son Charles H. Atherton, took care in the landscaping of their properties, as can be seen in these two photos (one dated 1912) of the C. H. Atherton house and the lot (Figure 13 and Figure 14).

In 1918, use of the Fernhurst property was given to the Y.W.C.A (Allen 1970:124) in memory of the J. B. and Juliette’s daughter, Kate Atherton. They donated money to erect a new building to house 50 girls, which was designed by the noted architect, Julia Morgan (Thrum 1927:64). This large three-story structure can be seen in two photographs (one dated ca. 1930) (Figure 15 and Figure 16).

The new structure was dedicated on November 13, 1921, as reported by Thomas Thrum in the *Hawaiian Annual* for 1922:

> . . . in the presence of some 200 Y.W. members and friends. The new home is three stories in height, with built-in lanais; has thirty-five bedrooms, roomy halls and stairways, and has been constructed specially to meet the needs of the Association with tropic comfort [Thrum 1921:87].

Around 1938, the original Fernhurst Y.W.C.A. was demolished and the property was sold to the Honolulu Rapid Transit Co. for the parking of buses. A new Y.W.C.A. was built at the corner of Punahou and Wilder Street in 1952, and the name Fernhurst was chosen for this new building (Pukui et al. 1974:29).

A series of Sanborn Fire Insurance maps shows the evolution of the property in the early nineteenth century. The Atherton house, Fernhurst, is shown on a 1914 fire insurance map (Figure 17) in the middle of this large estate, with several outbuildings, including a garage and servants' quarters. The C. H. Atherton home is not shown, so it must have been demolished by this time. Some portion of this house may have been modified into the servants' quarters (see Figure 9). The 1927 fire insurance map (Figure 18) shows the Fernhurst Y.W.C.A., which is a much larger structure than the Atherton home, but was built over the general location of the house. The next fire insurance map shows changes made to the area between 1927 and 1951 (Figure 19), but doesn't document the exact year of the change. On this map, the Fernhurst Y.W.C.A. building is in the same area, and a large tennis court has been added to the western half of the lot, over the former location of the C.H. Atherton house and the preceding Oahu Charity School residence. The 1927-1956 fire insurance map (Figure 20) shows an empty lot for the property labeled "Bus Parking." The property was sold to the Honolulu Rapid Transit Co. around 1938, so this change was probably made to the Sanborn fire insurance map at this time.

2.1.7 Modern Land Use

The Honolulu Rapid Transit and Land Co. (HRT&L) was first organized in 1898 by Hawaiian businessmen, including Clinton Ballentyne, and James B. Castle of Honolulu. Before this time, mass transit in Honolulu consisted of mule-drawn tram cars. A local experiment with electric streetcars in the Pacific Heights subdivision preceded the HRT&L's endeavor, and was later absorbed into their system. The first electric cars on tracks in Honolulu ran in 1901 (Simpson and Brizdle 2000:25, 29, 35). Ridership of the streetcars reached its peak in 1923, but declined steadily afterwards, as automobiles became more affordable to the average family, and jitney buses became a major rival for the electric streetcar (Simpson and Brizdle 2000:111). To face this competitive threat, HRT&L bought their first gasoline-operated coach buses in 1933 and added electric trolley cars (no tracks) in 1938. The streetcars were phased out in 1940, and the trolley cars in 1957 (Simpson and Brizdle 2000:126-127, 151).

A series of labor disputes and strikes in the 1960s and 1970s led to the takeover of the system in 1970 by the City and County of Honolulu, which operates it as the Mass Transit Line (MTL) (Schmitt 1979:102). The complex of buildings that made up the transit station on the *mauka* side of Hotel/Young Street (on the opposite of King Street to the present project area) consisted of a large car barn, various wood and metal maintenance and repair shops, and buildings for the employees, such as a clubhouse and a pool. These can be seen in the series of Sanborn Fire Insurance maps from 1914 to 1956 (see Figure 17 to Figure 20). As noted before, the HRT&L bought the property on the *makai* side of Hotel/Young Street (the present project area), around 1938 for bus parking. The property is illustrated on a c. 1927-1956 map as an empty lot (see Figure 20).

Figure 13. Home of C. H. Atherton, view to north, photograph ca. 1912 (Hawai‘i State Archives)

Figure 14. Home of C. H. Atherton, view to northeast, undated photograph (Hawai‘i State Archives)

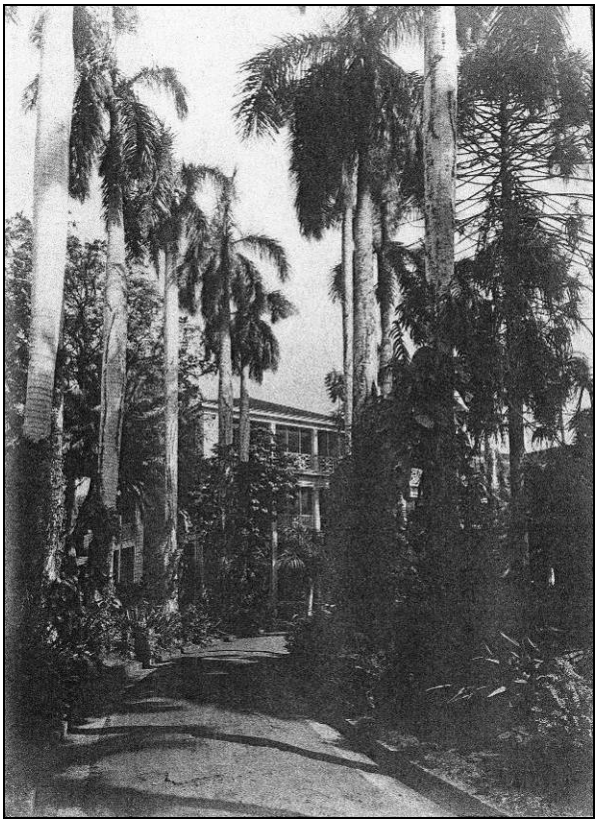


Figure 15. Fernhurst Y.W.C.A., view to northeast, photograph ca. 1930 (Hawai‘i State Archives)

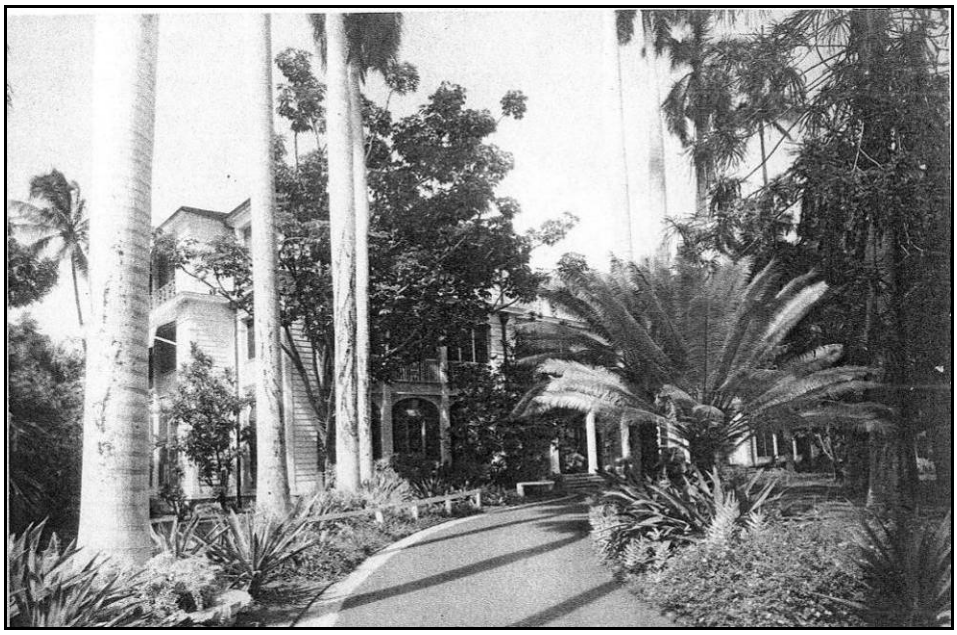


Figure 16. Fernhurst Y.W.C.A., view to northeast, undated photograph (Hawai‘i State Archives)

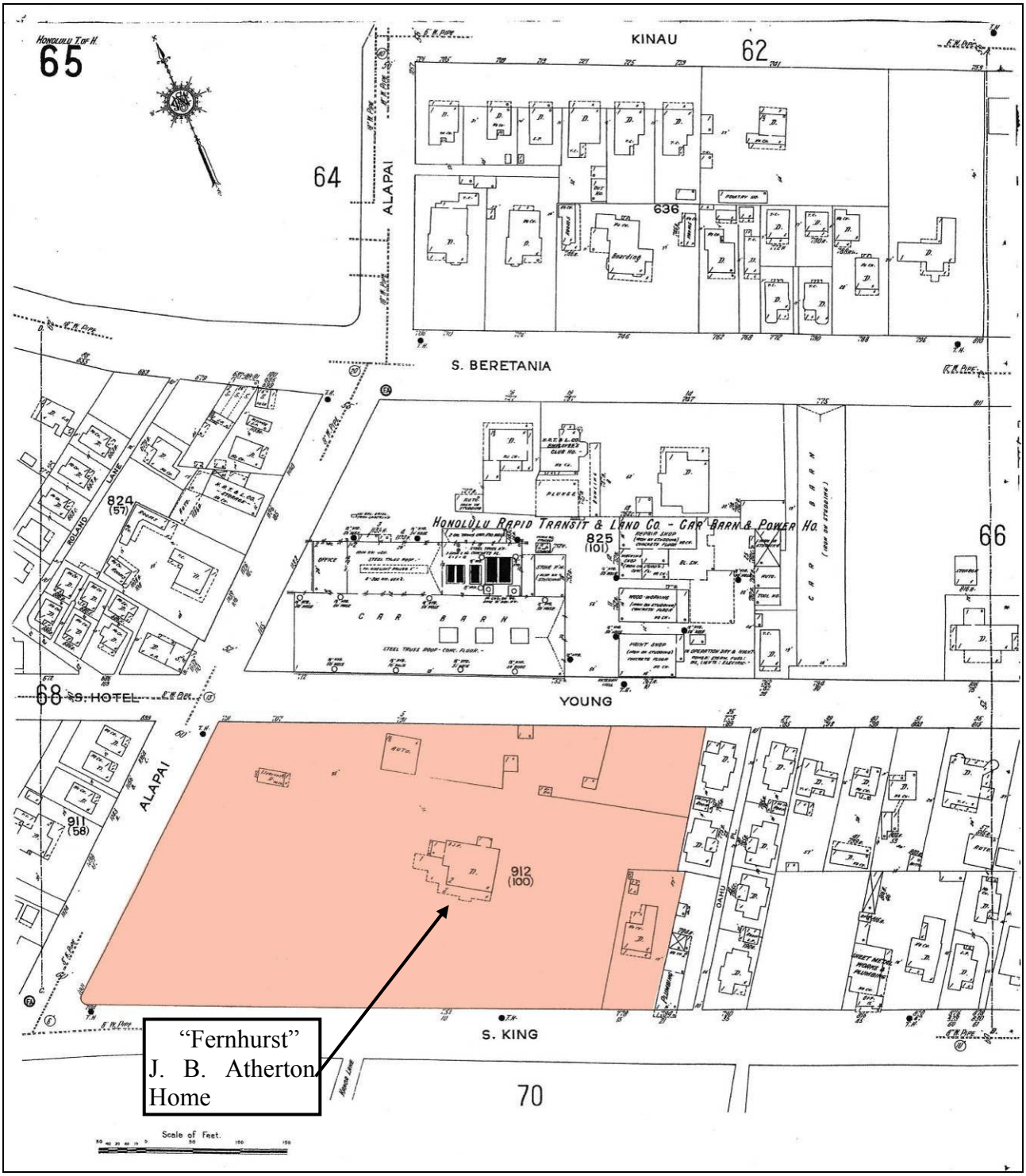


Figure 17. 1914 Sanborn Fire Insurance map, showing Atherton House "Fernhurst" in project area; structure in left upper corner is "Servant's Quarters"; upper central structure labeled "Auto"; structure on lower left is a dwelling (D)

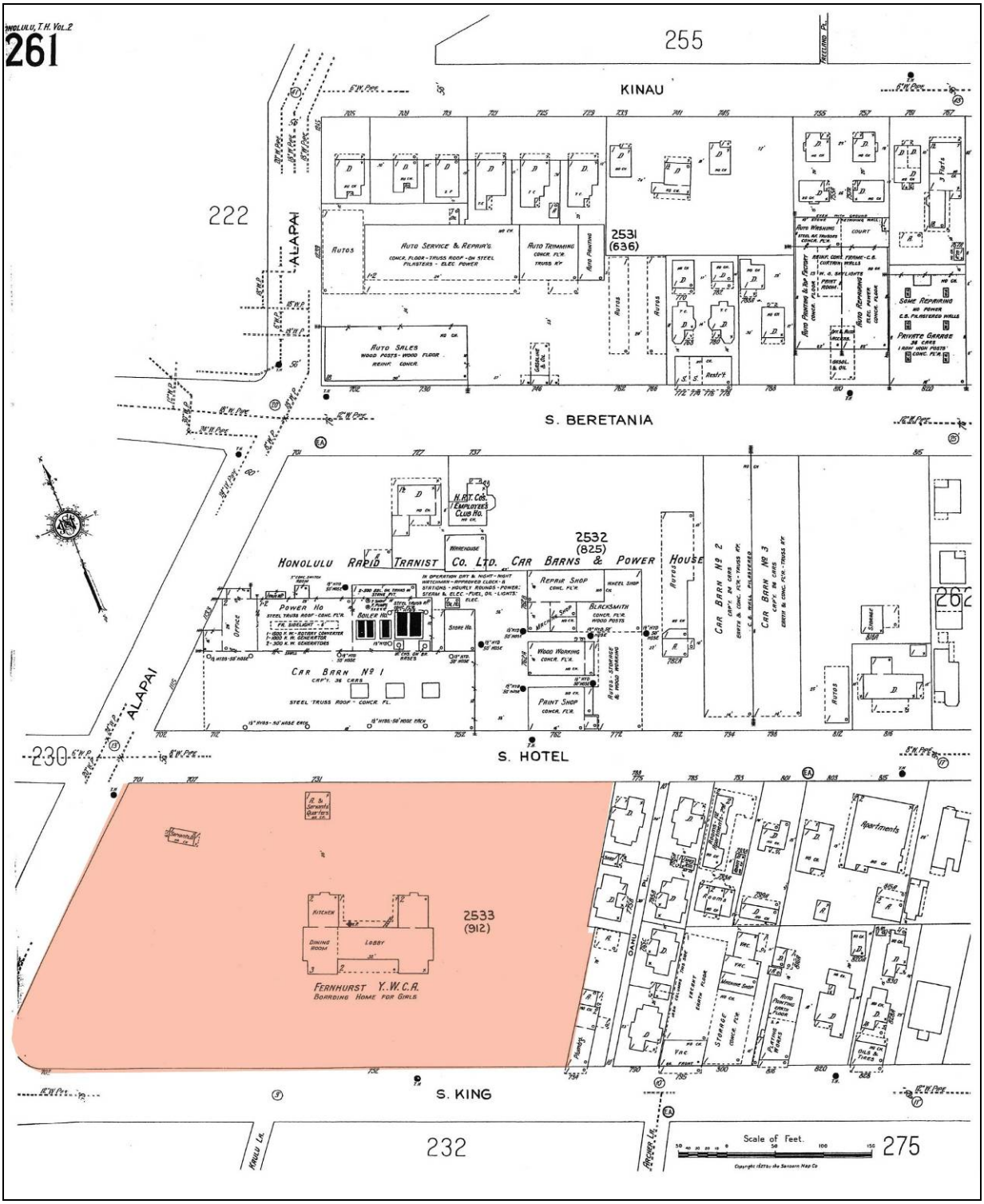


Figure 18. 1927 Sanborn Fire Insurance Map, showing Fernhurst Y.W.C.A., which was built in 1921 in the project area

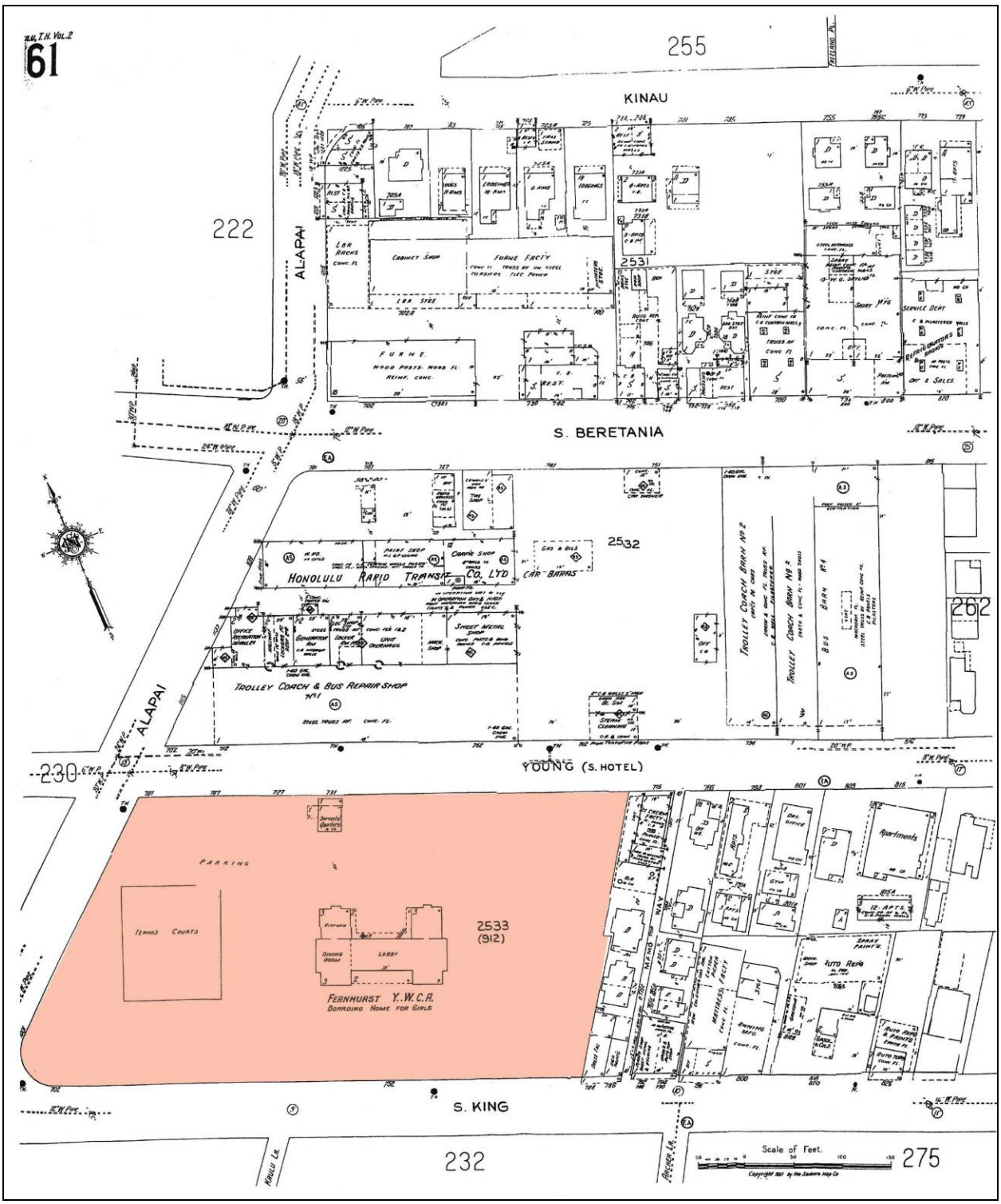


Figure 19. 1927-1951 Sanborn Fire Insurance Map, showing addition of tennis court to the Fernhurst Y.W.C.A.

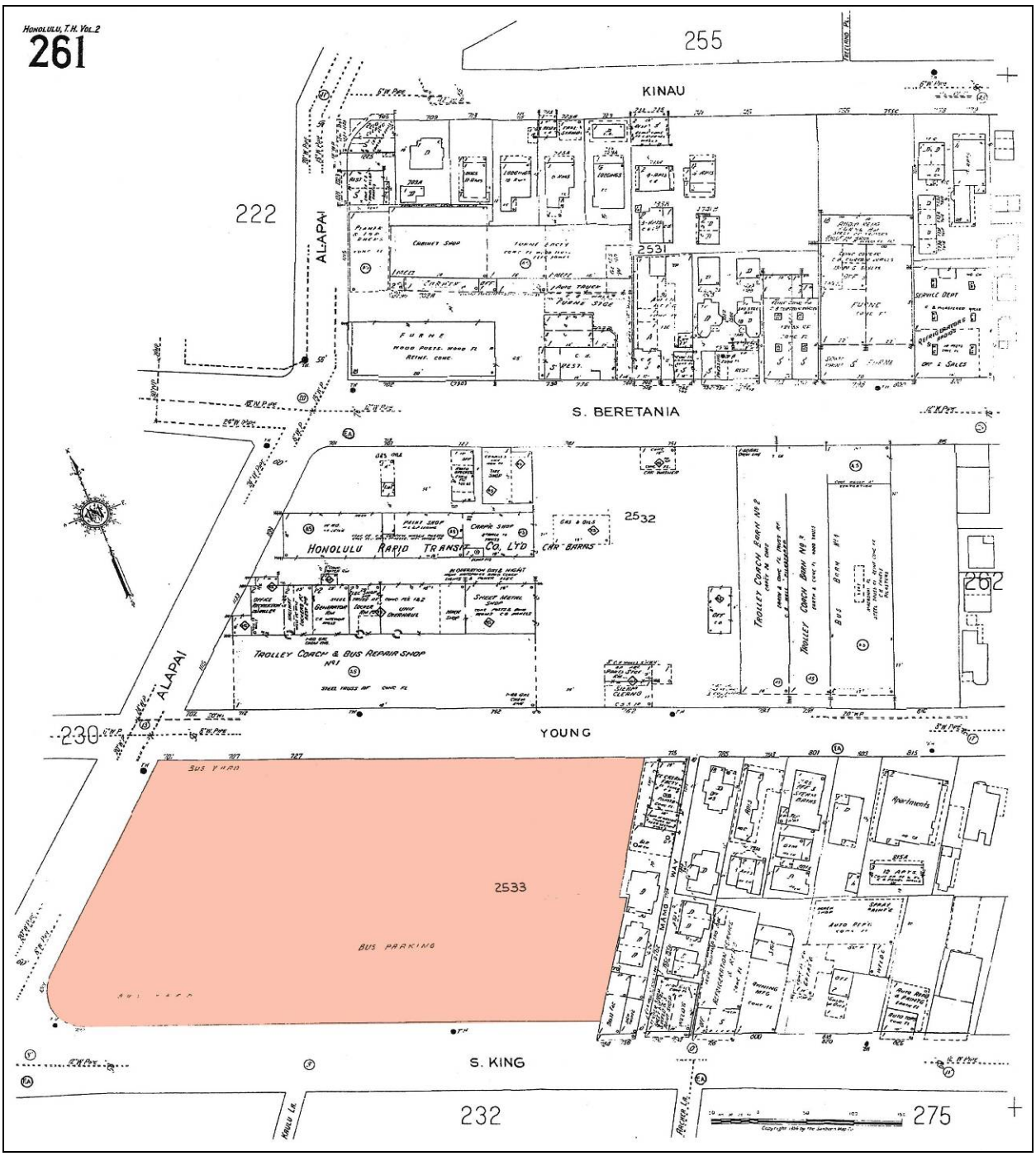


Figure 20. 1927-1956 Sanborn fire insurance map, showing project area used for " Bus Yard" and "Bus Parking;" property sold to HRT & L around 1938

2.2 Previous Archaeological Research

Several studies have been conducted in the Civic Center (also called the Capitol District) and the Capitol Historic District (a section within the Civic Center/Capitol District) of the city of Honolulu. Projects conducted within a block or two of the Alapai Transit Center are discussed below. Locations for these project areas are illustrated on Figure 21 and a summary of the projects is presented in Table 1.

2.2.1 Miller Street Block

In 1994, Cultural Surveys Hawai‘i conducted an archaeological assessment of an 8.4-acre parcel between Punchbowl Street, Miller Street, and Beretania Street (Chiogioji and Hammatt 1994). No surface structures or remnants of archaeological concern were found on the project area, but the background research did suggest that pre-contact and historic artifacts and cultural deposits could be found intact during any subsurface excavations.

On these grounds are now the Department of Health Building (Hale Kīna‘u), the Armed Forces Memorial, and a roadway connecting Punchbowl Street to the underground parking area of the State Capitol Building via a tunnel across Beretania Street. A total of eight land commission awards were claimed within this property, including two for foreign residents, Henry Farmer and Stephen Reynolds. Farmer took possession of the land in the 1820s and built a house on the property, and Reynolds acquired his land in the 1840s, where his family lived. By 1892, this area, called the “Miller Street Block” was fully developed as a residential block of downtown Honolulu.

2.2.2 Washington Place

Washington Place is a 3-acre parcel of land on the west side of Miller Street, one block west of Queen’s Medical Center. It is currently the official residence for the Governor of Hawai‘i. The lot now has eight buildings, a main house built in 1842-1846, an adjacent house, and six modern buildings. The property, LCA 850, was granted to the British Consul, Richard Carlton, who sold it to the ship captain John Dominis in 1840. Dominis built a coral block building on the property in 1842, which was completed in 1846 and 1847. His son, Governor John Owen Dominis, moved into the house after his father’s death in 1847 and also rented some of the rooms to the American Commissioner, Anthony TenEyck. He christened the house “Washington Place,” after George Washington, founder of American Independence (Jackson 1964). In 1862, John Owen Dominis married Lydia K. P. Kapa‘akea, who became Queen Lili‘uokalani in 1891, two years after her husband’s death. She lived in this house from 1862 until her death in 1917. Prince Kalaniana‘ole suggested that the house should be purchased by the Territory of Hawai‘i and used as the Governor’s mansion (Dockall 2003:5-6).

There are four archaeological studies concerning the Washington Place property: the monitoring of sidewalk construction by State Park archaeologists (Majors and Carpenter 2000); the Bishop Museum archaeological inventory survey (Dockall 2003) of the portion of the Washington Place grounds to be impacted by construction of a new Governor’s residence; the monitoring of a trench along Beretania Avenue, which extended into Washington Place (Dye 2002); and, archaeological monitoring of construction associated with improvements to the

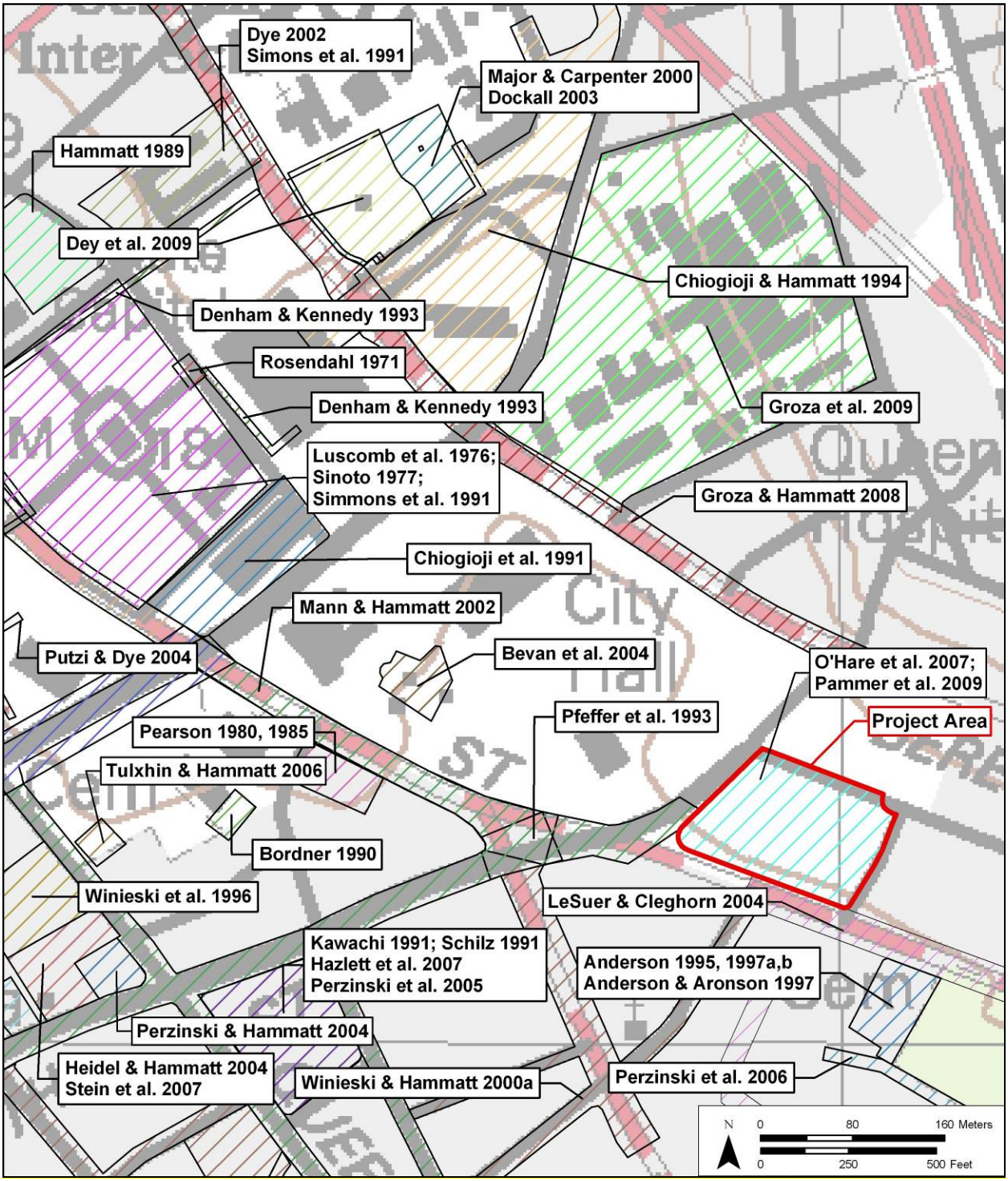


Figure 21. U.S. Geological Surveys 7.5-Minute Series Topographic Map, Honolulu Quadrangle, Honolulu Quad, showing previous archaeological work near the project area

Table 1. Previous Archaeological Work Near the Project Area, Represented by Geographical Location

Report Author (s)	Year	Type of Work	Location	*SIHP # (50-80-14)	Findings
Chiogioji & Hammatt	1994	Assessment	Miller St. Block		No surface archaeological or historic features
Majors & Carpenter	2000	Monitoring	Washington Place	-9907	Historic artifacts found during monitoring of sidewalk construction
Dye	2002	Monitoring	Washington Place	-9907	Only historic artifacts found during monitoring of trench across Beretania Street into Washington Place
Dockall	2003	Monitoring	Washington Place	-9907	Historic artifacts and a few volcanic glass and basalt flakes were recovered during monitoring of a new governor's residence
Dey et al.	2009	Monitoring	Washington Place		No findings other than secondarily deposited historic and modern artifacts and midden fragments
Rosendahl	1971	Excavation	‘Iolani Palace	-4606	Excavation of old macadamized road; only historic artifacts found
Luscomb et al.	1976	Monitoring	‘Iolani Palace	-4606	Only historic artifacts found during monitoring
Sinoto	1977	Monitoring	‘Iolani Palace	-4606	Only historic artifacts found during monitoring
Denham & Kennedy	1993	Monitoring	‘Iolani Palace	-4606	Two historic trash pits recorded
Denham & Kennedy	1993	Monitoring	State Capitol Complex	-4605; -4606	A multi-component subsurface cultural deposit, with a fire pit dated to A.D. 1390-1700, was recorded as part of Site 4605 (designation used for entire State Capitol Complex); nine historic trash pits, one with a drilled marine shell

Report Author (s)	Year	Type of Work	Location	*SIHP # (50-80-14)	Findings
					were recorded under a separate site number -4606
Simons et al.	1991	Monitoring	Hawaii State Art Museum (former YMCA)	-1307	Only historic artifacts recovered
Chiogioji et al.	1991	Excavation & Monitoring	Hawai‘i State Public Library	-9959	Historic subsurface features and artifacts were recovered
O'Hare et al.	2006	Monitoring Plan	Queen's Medical Center		The monitoring plan reported that historic bottle dumps had been found during previous construction. Five human burials, probably native Hawaiian, were also found by construction workmen.
Groza et al.	2009	Monitoring	Queen's Medical Center		Four historic trash pit features, no site number given
Perzinski et al.	2006	Inventory Survey	HECO Dispatch Center	-5455	Two historic coffin burials associated with the adjacent historic Catholic Cemetery SIHP #-5455
Mann and Hammatt	2002	Monitoring Report	King Street Rehabilitation Project	-6371	SIHP # -6371, human burial thought to be Native Hawaiian, found at the *mauka/`ewa* corner of South King and Punchbowl Streets
Pearson	1980, 1995	Excavation	Kawaiaha‘o Cemetery	-9991	Test pits were excavated near the Mission Houses (SIHP # -9991); 19th and 20th century artifacts were recovered.
Bordner	1990	Test Excavation	Kawaiaha‘o Cemetery	-9991	SIHP # -9991; the church and church grounds. Some historic artifacts were recovered.
Pfeffer et al.	1993	Monitoring	Kawaiaha‘o Cemetery and Honuakaha Smallpox Cemetery	-3712; -4532; -4533; -4534	Honuakaha Smallpox Cemetery (-3712) at Quinn Lane, 1 historic burial from Punchbowl St. (-4532), 1

Report Author (s)	Year	Type of Work	Location	*SIHP # (50-80-14)	Findings
					possibly pre-contact burial from Halekauwila St. (-4533), and 116 historic burials from Kawaiaha‘o Cemetery (-4534) at Queen St.
Tulchin and Hammatt	2006	Archaeological Investigation	Kawaiaha‘o Cemetery	-4534	Two trenches excavated in the Kawaiaha‘o Cemetery (SIHP # -4534) *makai* of Queen Street; 13 burial pits with coffins were recorded, but no burials were disinterred.
Stein et al.	2007	Monitoring	Kaka‘ako Fire Station	-1346	Kaka‘ako Fire Station lot (SIHP # -1346). No findings.
Heidel & Hammatt	1994	Background Research	Kaka‘ako Fire Station	-1346	Background research on the Kaka‘ako Fire Station building (SIHP # -1346). and lot. No field work.
Perzinski and Hammatt	2004	Monitoring	Kaka‘ako Fire Station	-1346	Monitoring of geotechnical borings at the Kaka‘ako Fire Station (-1346), no cultural material was found in 12 test borings.
Winieski et al.	1996	Monitoring	Honuakaha Housing project	-3712	27 burials from 1853-1854 Honuakaha Smallpox Cemetery (-3712) were disinterred
Kawachi	1991	Monitoring	Queen Emmalani Tower	-1604	1 human skull and 1 femur (SIHP # -1604) were found in the back dirt pile.
Schilz	-1991	Background research and property assessment	Queen Emmalani Tower	-1604	SIHP # -1604.
Perzinski et al.	2005	Inventory Survey	Queen Emmalani Tower	-1604; -6766	SIHP # -1604 - isolated human bones and SIHP # -6766 remnants of historic occupation.

Hazlett et al	2007a, b	Monitoring	Queen Emmalani Tower	-1604	Monitoring at Queen Emmalani project; 2 human skeletal elements found (-1604).
Winieski and Hammatt	2000	Monitoring	Kaka‘ako ID-3 and other parcels	-1388; -4380; -5820	9 burials found at the Pohulani Housing area (-4380) and 11 human burials (-5820) found at Mother Waldron Park (site -1388)
Bevan et al.	2004	Monitoring Report	City Hall Annex	-1321	No significant archaeological deposits found.
Anderson	1995a	Historical Background Research	One Archer Lane aka King Street Place Property		Background research regarding the likelihood of encountering burial or other archaeological deposits in the project area
Anderson	1995b	Sub-Surface Inventory Survey	One Archer Lane aka King Street Place Property	-5373	SIHP # -5373--Historic trash pits and an adze fragment. No burials associated with the adjacent Catholic Cemetery were found; however, testing was deemed insufficient along the cemetery boundary to rule out cemetery-related burials within the project area.
Kapeliela	1996	Inadvertent Burial Discovery Report	One Archer Lane	-5455	Documentation of first inadvertent burial find during One Archer Lane construction (Anderson and Aronson 1997)
Anderson	1997a	Subsurface Testing	One Archer Lane	-5455	Subsurface testing of the proposed reinterment plot for the historic burials (SIHP 3 -5455) found on the One Archer Lane property during archaeological monitoring (Anderson and Aronson 1997)

Anderson	1997b	Monitoring and Archaeological Testing Plan	One Archer Lane	-5373 and -5455	Monitoring plan for storage tank installation, monitoring procedures and assessment of potential for finding additional archaeological deposits
Anderson and Aronson	1997	Monitoring and Emergency Data Recovery	One Archer Lane	-5455	Monitoring and data recovery documentation for the 30 burials found at the One Archer Lane Property during project construction (SIHP # -5455). These burials are located approximately 115 meters (380 feet) outside the current Alapai Transit Center project area.
LeSuer and Cleghhorn	2004	Archaeological Assessment	Honolulu and Waikiki		No finds. Assessment for the Hawaiian Electric Company Transmission project based only on research with no archaeological investigation or testing performed.
Groza and Hammatt	2008	Monitoring	Beretania Street (Between North King and Alapa‘i)		No significant archaeological deposits found.
O’Hare et al.	2007	Inventory Survey and Cultural Impact Assessment	Alapai Transit Center	-6901 and -6902	SIHP # -6901--Historic trash pits and SIHP # -6902—Three human burials
O’Hare et al.	2008	Burial Treatment Plan	Alapai Transit Center	-6902	SIHP # -6902—Three human burials
Pammer et al.	2009	Inventory Survey and Cultural Impact Assessment	Alapai Transit Center	-6901 and -6902	Three additional features within SIHP # -6901--Historic trash pits were encountered; SIHP # -6902—Three human burials

***State Inventory of Historic Places (SIHP) numbers are for the entire property, unless otherwise noted**

walkways and irrigation systems at Washington Place and grounds (Dey et al. 2009). The material collected has primarily consisted of historic artifacts, and is consistent with the findings of other previous archaeological research in the vicinity of the project area.

In 2000, during the placement of footings and foundation material for the construction of sidewalks in compliance with the Americans with Disabilities Act (ADA), State Park archaeologists (Majors and Carpenter 2000) again monitored ground-disturbing activity at Washington Place. Consistent with previous findings, the three excavation trenches yielded historic artifacts, including metal, glass, and building materials. No indigenous artifacts were collected. A higher density of historic cultural material and coral cobbles found in the *makai* half of Trenches 1 and 3 indicated a possible dump or demolished structure, and the area was given the State Site number 50-80-14-5944.

In 2002, T.S. Dye and Colleagues monitored a trench that extended across Beretania Avenue into Washington Place. Stratigraphy was similar to other projects in the area, and only historic artifacts were recovered, including building materials such as window glass, roofing slate, square nails, lead sheeting, iron straps, and white-plastered sandstone and concrete (Dye 2002).

In 2003, Bishop Museum conducted an archaeological inventory survey to locate, identify, and assess the significance of subsurface cultural materials within the portion of the Washington Place grounds *mauka* and east of the current residence to be impacted by construction of the proposed new Governor’s residence. Eleven 1.0 x 0.50 meter test units were excavated, and despite extensive subsurface investigations, the only indigenous artifacts collected were a few scattered volcanic glass and basalt flakes. According to the excavation summary (Dockall 2003:14-15):

> . . . much of the area is composed of three basic strata. Layer I is composed of turf or grass cover and occasional artifacts of various time periods. Layer II is the primary artifact-bearing layer but is similar in overall structure and appearance to Layer I with the exception of fewer roots and more artifacts. Layer III in most areas is a volcanic cinder that is fairly close to the surface in most areas. . . . Layer II contains a mix of artifacts from different time periods. Within every test unit, Layer II yielded primarily 19th and 20th century artifacts related to domestic uses and construction-related debris. Artifact types include window glass fragments, ceramics (Japanese and English/American), machine-cut and wire nails, glass bottle fragments, plastic and rubber fragments.

In addition, three personal items were collected that consisted of a phonograph record fragment, a nineteenth century tobacco pipe stem, and an early twentieth century 2-hole button (Dockall 2003:37). Due to the high level of historic ground disturbance, the cultural materials collected provided little insight into particular residential and building activities.

Based on the results of the inventory survey, the following recommendation for archaeological monitoring was provided:

> The Miller property [Grant 1428/4828] is unique in that its 19th century buildings were spread out over the parcel, leaving open spaces, providing some measure of protection for underlying deposits. It is possible that intact native Hawaiian cultural deposits may still exist; therefore, it is recommended that any

> construction or ground altering processes be monitored to mitigate impacts to cultural resources [Dockall 2003:43].

In 2008, Cultural Surveys Hawaii, Inc. carried out an archaeological monitoring program associated with the improvements to the walkways and irrigation systems at Washington Place and its grounds (Dey et al. 2009). These improvements were carried out along the front walkway (dividing the South Beretania Street lawn) and the northern portion of a sidewalk (just southeast of the front porch). The monitoring program found no significant archaeological deposits and, archaeological observation indicated that much of the areas excavated had been previously disturbed. Only the landscaping fill and previously disturbed sediments yielded any cultural material, which consisted of isolated, secondarily deposited historic and modern artifacts and midden fragments.

2.2.3 City Hall Annex

Between May 2003 and January 2004, Archaeological Consultants of the Pacific, Inc., carried out an archaeological monitoring program associated with the City Hall Annex Auditorium Restoration Project (Beven et. al. 2004). The City Hall Annex Auditorium is listed on the National Register of Historic Places as part of the Capitol Historic District, State Inventory of Historic Properties (SIHP) number 50-8014-1321. The monitoring program found no significant archaeological deposits; archaeological observation indicated that the areas excavated for the restoration project had been disturbed by prior construction and landscaping activity.

2.2.4 King Street Rehabilitation Project

Between August 2001 and June 2002, Cultural Surveys Hawaii, Inc., carried out an archaeological monitoring program associated with the King Street Rehabilitation Project (Mann and Hammatt 2002). The Rehabilitation project was carried out along South King Street from Alapai Street, north to Dillingham Boulevard. A historic trash pit, containing mostly butchered faunal bone was documented at the corner of Richards and South King Streets. Additionally, human skeletal remains of one individual (SIHP # 50-80-14-6371) were documented beneath King Street, in front of Honolulu Hale, immediately Diamondhead of Punchbowl Street. The human remains were poorly preserved and had been previously disturbed by prior utility excavations beneath King Street.

2.2.5 Kaka‘ako Fire Station (New Fire Department Headquarters)

The Kaka‘ako Fire Station lot is located between Queen Street and Quinn Lane and is bound by South Street on the east and the American Brewery Site to the west. An assessment of this study area was first conducted in 1994 (Heidel and Hammatt 1994). Background and archival research was conducted to determine the use of the land area from pre-contact times to the modern area. They discovered that the study area initially was awarded to Hawaiian officials in the nineteenth century, and the parcel eventually came under the control of the government. While under government ownership, the property was used for a hospital and cemetery for the smallpox epidemic of 1853-1854. It was subsequently leased to various individuals until it was designated as the site of one of Hawai‘i original fire stations in 1928 (SIHP # 50-80-14-1346; Fire Stations of O‘ahu Thematic Group). A fire station was constructed on the study parcel in the 1970s. The old fire station is in the southwestern corner of the lot; the new station is in the

northeast corner. In 1979, the old fire station was nominated to the Hawai‘i and National Register of Historic Places for its architectural and social significance. The ‘old’ station presently houses the Fire Department’s Museum.

In 2004, CSH (Perzinski and Hammatt 2004) conducted a surface and subsurface inventory survey of the Fire Station lot and excavated 12 backhoe trenches in the area of the then proposed Fire Department Headquarters Building at the southeast corner of the lot. No burials or other cultural remains were found. The archaeologists concluded, based on the absence of remains in the test trenches, that the *mauka*, northern border of the Honuakaha Cemetery was probably southeast (south of Quinn Lane) and west (under the parking lot surrounding the old fire station).

Subsequent monitoring for the Kaka‘ako Fire Station reconstruction project (Stein et al. 2007) took place between 2004 and 2006. Construction included the building of the new fire department headquarters, trenching for utilities along Queen Street, and most importantly, the excavation of 8 boring holes for parking lot lights in the parking lot area at the southwestern side of the lot. This is the area that was thought to possibly have remains from the Honuakaha Cemetery. The stratigraphy observed during this monitoring project was similar to what had been found during the inventory survey, which was predominately imported fill layers above undisturbed sand deposits with pockets of volcanic cinder. No intact cultural deposits or human remains were found; however, as the eight boring holes were widely spaced across the parking lot, it is still possible that human remains are present below the Quinn Lane corridor and parking lot of the Fire Department Headquarters and museum.

2.2.6 Kawaiaha‘o Church Grounds and the Mission House

Kawaiaha‘o Church was built in 1842, adjacent to the mission station, where the first foreign missionaries made their home upon arriving in Hawai‘i. The church, the church grounds containing two cemeteries, and the mission houses have been designated SIHP # 50-80-14-9991.

Between 1986 and 1987, students from Chaminade University (Bordner 1990) excavated eight test units and trenches on the Kawaiaha‘o Church grounds. Four test pits (TP 1-4) were placed around the old adobe schoolhouse, which was originally built in 1836. Test pit 1 revealed an old road surface at 6-14 cmbs (cm below surface); this roadbed probably dates to c. 1860-1900. Test Pits 3 and 4 were placed near a series of concrete footings in the ground. This is the site of a structure that was on the ground in the 1950s, possibly moved from an earlier location on the corner of King and Kawaiaha‘o Streets, at the northeast corner of the church lot. Surprisingly, no historic debris was found in this area. Test pits near several crypts revealed a sophisticated construction covered by a layer of painted plaster. Several historic artifacts were recovered in this area in the top layer of soil. Four test units were also placed at the northeast corner of the church lot (TP 5-8), where a 1900 photograph shows a building was once located, possibly the same one that was later moved close to the schoolhouse. No evidence for the house structure or any historic debris was found in these units; however, the test units excavated were very shallow.

In 1968 to 1970 (Pearson 1980; 1995), excavations were carried out at the Hawaiian Mission property east (Diamond Head) of Kawaiaha‘o Church. Excavations were conducted adjacent to the Bingham house. No human burials were found, although the early missionary Mrs. Loomis mentions in her diary (archived at the Mission Houses Museum, Honolulu) that a Hawaiian

burial was found during the excavation of the framed house cellar in 1821. Excavations were also made adjacent to a bedroom unit. No burials were found, although a pre-contact burial was reportedly found during the original construction of this building in 1841 (Pearson 1995:28). Bottles found in the trenches, units, and wells date the trash to late eighteenth and early nineteenth centuries.

In 1993 (Pfeffer et al. 1993), 116 burial sets were disinterred from below the pavement of Queen Street, which is adjacent to the southern boundary of Kawaiaha‘o Cemetery. This section of the cemetery was designated SIHP # 50-80-14-4534.

In 2006, CSH (Tulchin and Hammatt 2006) excavated two 18-meter long trenches in a 0.2-acre portion of the Kawaiaha‘o Cemetery adjacent to the *makai* side of Queen Street. The intent of the subsurface investigations was to locate coffin/burial pit outlines without directly disturbing human remains in an area for a proposed parking lot. Thirteen coffin burials were noted in one trench and 11 coffin burials were noted in the second trench. The burials were left in place.

2.2.7 Queen Emmalani Tower

In 1991, monitoring and test excavations (Schilz 1991) were recommended for a property bound by Kawaiaha‘o Street (north), South Street (west), Queen Street (south), and Emily Street (east) during the construction of the Queen Emmalani Tower. On the 1867 Lyons map, this area is labeled as “Loko Paki,” although a pond outline is not shown. This suggests that the pond had already been filled-in by the last decades of the nineteenth century, probably with dredged material from Honolulu Harbor.

A kerosene storage facility was built on a portion of this lot as early as 1876, and was present up to 1884. Another portion of the property was used for tenements in the “Magoon Block,” which was used for apartments as early as 1884 and was demolished in 1940.

After testing for hazardous waste materials at the site was completed, it was recommended that only a literature and archival research for the project area should be conducted. From background research, the authors (Schliz 1991) concluded that the area was probably a marshland in the early post-contact period. There was no record of a fishpond in the area. The development and construction that began in the 1880s has probably disturbed any subsurface historic deposits.

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

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

post hole, were considered residential/industrial remains of the late nineteenth/twentieth century occupation and use of the block and were designated SIHP # 50-80-14-6766.

CSH (Hazlett et al. 2007) monitored construction at the Queen Emmalani site (now called the Keola La‘i Condominium). Historic artifacts dating to the decades around the turn of the twentieth century were found in several trenches. Two isolated human skeletal remains in historic fill sediments were discovered in a utility trench near and parallel to Kawaiaha‘o Street. These human remains were considered part of SIHP # 50-80-14-1604. The scattered human remains are from at least four different individuals.

2.2.8 Kaka‘ako Improvement District 3 and Pohulani Elderly Housing

Between November 1990 and September 1992, Cultural Surveys Hawai‘i (Winieski and Hammatt 2000) monitored construction at the Kaka‘ako Improvement District 3 area, the Pohulani Elderly Rental Housing project area, and the Kauhale Kaka‘ako Project area (TMK 2-1-30, 31, 32, 44, 46, 47, 48, 50, 51, 52, 54). Kaka‘ako Improvement District 3 was bounded by Kapi‘olani and King Streets (north), the northern end of Cooke Street (east), Halekauwila Street (south), and South Street (west). It includes extensions of Keawe and Cooke Streets to the south.

The monitoring of sub-surface excavations revealed that although the area had been previously disturbed to a great extent, a cultural layer and *in situ* Jaucas sand and volcanic cinder deposits are still intact below fill layers. The cultural layer contained historic artifacts mixed with scant traditional Hawaiian cultural materials. Twenty human burials were discovered during these projects, 9 at the Pohulani Elderly Rental Housing project (SIHP # 50-80-14-4380) and 11 in and around Mother Waldron Park (SIHP # 50-80-14-5820). Five burials were in an extended position, seven were flexed, and the position of eight could not be determined. One burial was in a coffin and one contained a glass trade bead, suggesting that the burials were of post-contact age. The seventeen burials recovered were reinterred in the northeast corner of Mother Waldron Park. Three were left in place beneath the Pohulani Elderly Rental Housing Facility. These scattered burials are all clustered around the location of LCA 982 to Kukao and the Pu‘unui parcel to Queen Emma, an area with a cluster of Hawaiian houselots shown on several late nineteenth century maps.

2.2.9 ‘Iolani Palace and the Capitol Historic District

Several other archaeological studies have been conducted in the Capital Historic District, especially at ‘Iolani Palace.

In 1971, the Bishop Museum excavated an old macadamed carriage road at ‘Iolani Palace (Rosendahl 1971). In 1976, the Bishop Museum also monitored the installation of public utilities to the main palace building (Luscomb et al. 1976) and at the ‘Iolani Barracks (Sinoto 1977). During these projects, the crew:

> . . . recorded a three depositional phase stratigraphic sequence consisting of Layer 1, an organic A horizon with mixed artifacts throughout, a Layer II, consisting of a highly disturbed matrix with artifacts and features, and a third layer (Layer III) consisting of a culturally sterile Tantalus cinder . . . the materials recorded for these projects consisted of nontraditional artifacts including ceramics, glass, and

> metal, and building materials including bricks, mortar, coral, and stone. None of these projects yielded traditional native Hawaiian artifacts, features, or cultural deposits [Rosendahl 1971; Luscomb et al. 1976, cited in Dockall 2003:9].

In the early 1990s, Archaeological Consultants of Hawai‘i, Inc. monitored subsurface excavations for the State Capitol Complex Telecommunications Conduits, Phase III (Denham and Kennedy 1993). The project area included the grounds of ‘Iolani Palace. Two historic trash pits were encountered during excavations for conduits on the palace ground fronting South King Street. Materials in the trash pit, designated Feature A of site 50-80-14-4606, included:

> . . . a variety of historic materials . . . Of particular interest were a number of ceramic pipes, a glass stopper (WB-009 which dated to the later 1800’s), and selected items of ceramic which dated to the early nineteenth century. In addition to the historic trash, a variety of shells and faunal material were also collected . . . The material present within this trash pit suggested that it dated to the early twentieth century [Denham and Kennedy 1993:10].

The second trash pit encountered along the King Street side of the palace grounds, designated Feature F of Site 50-80-14-4606, contained a variety of historic artifacts:

> While ceramic was collected which dated to the early nineteenth century, no specific pieces of particular interest were collected. In addition to these manufactured items, a variety of shell and faunal material was also collected . . . The material collected from this trash pit suggested that it dated to the mid-nineteenth century [Denham and Kennedy 1993:44].

The ARCH report (Denham and Kennedy 1993) also contained the monitoring results for the State Capitol Complex outside of the ‘Iolani Palace grounds. Two sites were identified. SIHP 50-80-14-4605 is a multi-component site with a historic trash pit, a ditch, a pit, a firepit, six postholes, and a burial; the firepit was dated to A.D. 1390-1700, and the posthole was dated to A.D. 830-1330. Site 50-80-14-4606 consisted of nine historic trash pits. Only one traditional artifact, a drilled *Nerita* shell, was found; the rest of the artifacts were all historic, dating to the late nineteenth and twentieth century.

In 1991, Bishop Museum’s Applied Research Group (Simons et al. 1991) conducted archaeological monitoring and data recovery services during the historic renovation of the Armed Forces Young Men’s Christian Association (YMCA) Building, SIHP site 50-80-14-1307. The building was constructed in 1927 and is considered part of the Hawai‘i Capitol Historic District, which is listed on the National Register of Historic Places. In the late nineteenth century, structures on the property included the Hawaiian Hotel, built in 1872, native huts, a bath house, hotel cottages, domestic dwelling, and storage sheds. In 1914, this building was leased to the Armed Forces YMCA; they bought the buildings and land in 1917, demolished the old buildings, and then built a new structure, the present one (in 1991, the date of the report) in 1926 (Simons et al. 1991:6-13). For the subsurface testing, no pre-Contact features were observed; the only artifacts recovered were manufactured in the United States and Europe and dated from the late eighteenth to early twentieth centuries (Simons et al. 1991:73).

Archaeological investigations were conducted at the Hawai‘i State Public Library Addition Site (SIHP site 50-80-14-9959) by CSH in 1991 (Chiogioji et al. 1991). The present library building was built in 1911 and opened in 1913. The investigations included preliminary test excavations and on-site monitoring during construction activities. These procedures revealed the presence of sixteen features, two of which, a manhole shaft and a coral construction fill layer, were assessed as modern – related to maintenance or landscaping activities on the library grounds. The remaining fourteen features – which included trash pits, privies, septic tanks, and a posthole – were determined to have dated from the last half of the nineteenth century to the first quarter of the present century, when the project area was incorporated into the Library of Hawai‘i grounds.

A total of 344 historic era artifacts were recovered from the features and from random localities within the project area. Sixty-five percent of the artifacts were of glass and included many whole champagne, liquor, beer, soda, medicine, and perfume bottles. These bottles provided the clearest evidence dating the features within the project are to the period between the 1880s and the 1920s. Historical research conducted by Cultural Surveys Hawai‘i suggested that this was the period when the project area was most likely to have been intensively utilized.

2.2.10 1971 Construction Excavations at Queen's Medical Center

As reported in a monitoring plan (O'Hare et al. 2006), in the fall of 1971, excavation for a new Community Mental Center was in progress at the Queen's Medical Center; this would later become the site of the Kekela Building, now used for psychiatric services and classrooms. In September (*Honolulu Advertiser/Star-Bulletin* Sept. 19, 1971), the construction crew related to the daily newspapers that many glass bottles had been found during the excavation for this building. During excavations for the new foundation, over 100 artifacts were found, including many "caches" of bottles. This portion of the southeastern corner of the Queen's Medical Center grounds, in the early twentieth century, was used for outbuildings, such as a chicken yard and a laundry, and for residential dwellings.

The bottles were for patent medicines, castor oil, whiskey, beer, rice wine, vinegar, olive oil, vanilla, and Worcestershire sauce. The project director believed the bottles and other artifacts were discarded trash from the residential dwellings on the southeastern corner of the property. Some of the bottles were medicines with patent dates of 1877, 1903, and 1906. These patent dates cannot be used to identify the bottles, however, since the medicines may have been manufactured for many years. The director remarked that the bottles were "common household items 50 years ago." The type of bottles found does support the suggestion that the refuse is from habitation debris, not related to the hospital operations.

In October (Altonn 1971), construction workers at the same construction site found human bones at a depth of six feet (1.8 meters). The bones were from five individuals. The workers called the Rev. Abraham Akaka of Kawaiaha‘o Church to bless the site and called the Medical Examiner to examine the bones. There were no coffins or associated artifacts; one Hawaiian minister believed that at least some of the burials were native Hawaiian based on their "position." This is not explained further, but it probably means the burials were found in a flexed or semi-flexed position. The project director also believed that more burials could be "concealed in the earth banks."

The newspaper article mentioned that the construction workers planned to call in the Bishop Museum to inspect the remains. On August 23, 2005 a telephone call was placed to Ms. Betty Lou Kam of the Cultural Division of the Bishop Museum. She checked the museum records for 1971 and stated that there were no records that the Bishop Museum either inspected the bones or took possession of the bones. She believed that considering the large number of individuals (five), that there would definitely be some record of this find if the Bishop Museum had been involved. On August 25, 2005 a fax was then sent to the State Historic Preservation Division, Burials Program, to determine if the SHPD had any records of this burial find. The SHPD responded on September 21, 2005 to say that their burial records did not extend back to the year 1971, and they had no information on these burials.

In 2008, Cultural Surveys Hawaii, Inc. carried out an archaeological monitoring program associated with the redevelopment of the Queen’s Medical Center (Groza et al. 2009). The redevelopment was carried out in three phases within the Queen’s Medical Center grounds. No historic properties were identified during monitoring. Phase 1 was an approximately 0.06 acres area and -primarily involved the construction of a new four-story 7,663-square-foot generator building with minor ancillary modifications. This was located in the immediate vicinity of the area between Physicians Office Building (POB) 1 Parking Garage and the Pa‘ahana (Utility Plant) Building located in the northwest corner of The Queen’s Medical Center campus. No cultural deposits were identified in Phase 1 and the majority of the soils encountered were fill.

Phase 2 was an approximately 0.03 acre area and included trenching for the installation of the new electrical line and switch pad at Miller Street, just mauka of the new generator building project. Two trash pit features were encountered during excavations, containing historic glass bottle and ceramic fragments, a few pieces of metal, and butcher-cut faunal bone. The majority of sediments encountered were fill soils that had also been disturbed by utilities and may also be related to original construction of adjacent buildings, and subsequent construction of buildings near Miller Street. No significant finds, historic properties, or burials were encountered during this phase.

Phase 3 was an approximately 0.06 acre area located in the alley between the Harkness Café and the UH Cancer Research Center of Hawaii, south of the Harkness Café. It included trenching for the installation of the new Harkness Café grease interceptor, and trenching to tie into the sewer line. Two trash pit features were encountered during excavations; one feature contained broken bottles and refuse and the other contained sea urchin, ‘opihi, and broken bottles. This feature is likely historic and the marine shells were likely discarded remnants of someone’s lunch. Sediment generally consisted of fill soils mixed with volcanic cinder from undisturbed Stratum III.

2.2.11 One Archer Lane

Ogden Environmental and Energy Services Co., Inc. (OGDEN) conducted historical background research for the proposed One Archer Lane Development (Anderson 1995a). The results indicated that there was potential for archaeological deposits, including the remains of historic residences, within the One Archer Lane project area. Regarding burials from the adjacent Catholic Cemetery (refer to Figure 21) within the One Archer Lane project area, based on Anderson’s (1995a) research, it appeared that the boundaries of the cemetery had not extended

into the One Archer Lane project area and that it was unlikely that historic burials from the Catholic Cemetery extended into the project area. Anderson (1995a) recommended a subsurface inventory survey to establish whether or not burials from the adjacent cemetery extended into the One Archer Lane parcels.

OGDEN carried out subsurface inventory survey at One Archer Lane (Anderson 1995b). Eight backhoe trenches were excavated and historic subsurface features (SIHP # 50-80-14-5373) were encountered. Anderson concluded:

> The lack of historic era burials present in Trench 1 may indeed indicated that the cemetery boundary adjoining the project area has remained constant through time and that no historic era burials extend into the project area. Since only a small portion of the trench was actually excavated, however, we cannot fully conclude this at this point in the study (Anderson 1995b:83).

Anderson (1995b) recommended that archaeological monitoring take place during the construction activities along the project area boundary shared with the Catholic Cemetery.

In 2006, during the course of this recommended archaeological monitoring of construction activities at One Archer Lane, a single human burial (SIHP # 50-80-14–5455) was inadvertently encountered (Anderson 1997b; Kapeliela 1996). Following the discovery of the human burial, it was believed that any further work would not intrude into the cemetery boundary. As a result, in consultation with the SHPD, monitoring was halted for the remainder of the project. Later, a concentration of burials was inadvertently encountered during construction activities. In all, a minimum of 30 individuals were encountered. Analysis of the burials showed that the burials dated from the mid-1800s to the 1920s (Anderson 1997b), suggesting that the burials were associated with the adjacent cemetery. The burials were regarded as portions of the already designated SIHP # 50-80-14-5455 (Anderson and Aronson 1997:73 ff.). These 30 burials are located approximately 115 meters (380 feet) southeast of the current Alapai Transit Center project area.

OGDEN also completed subsurface testing of the proposed reinterment plot for the burials discovered at One Archer Lane (Anderson 1997a) and archaeological monitoring for the excavation of an underground storage tank (Anderson 1997b). Disarticulated human remains were found during the excavation of the One Archer Lane reinterment plot (Anderson 1997b)

2.2.12 Hawaiian Electric Company (HECO) Dispatch Center

Between November 2004 and February 2005, Cultural Surveys Hawaii, Inc. (CSH) carried out archaeological inventory survey investigations related to the proposed HECO Dispatch Center project (Perzinski et al. 2006). The project area abuts the southern boundary of the Catholic Cemetery on King Street (refer to Figure 21), and one of the research objectives was to determine if historic burials associated with the Catholic Cemetery extended south, outside the current cemetery boundaries into the HECO project area. Two historic coffin burials associated with the adjacent historic Catholic Cemetery were documented as additional features of the already designated SIHP # 50-80-14-5455 (refer to the discussion of One Archer Lane, above).

2.2.13 Beretania Street Rehabilitation

Between September 2006 and June 2007, Cultural Surveys Hawaii, Inc., conducted archaeological monitoring associated with the rehabilitation of Beretania Street (Groza et al. 2008). The rehabilitation was carried out in an approximately 1,800 m (5,900 ft.) long portion of Beretania Street, between North King Street and Alapa‘i Street. Monitoring identified no cultural deposits or evidence of pre-contact land use. The majority of the soils encountered consisted of fill materials, indicating that there was significant alteration to the natural ground surface.

2.3 Previous Work Within the Current Project Area

2.3.1 Archaeological Inventory Survey

In 2007, CSH completed an archaeological inventory survey of the Alapai Transit Center and Joint Traffic Management Center project area (O’Hare et al. 2007). As the project area consisted of a paved parking lot, the inventory survey consisted primarily of subsurface testing. 28 backhoe trenches, each 6 m long, were excavated within the project area, focused in areas proposed for building construction and subsurface utility installation (Figure 22).

In general the observed and documented stratigraphy consisted of modern asphalt paving, with its associated base course (either basalt gravel or crushed coral fill) overlying naturally deposited clay loam alluvium and volcanic cinder. There was relatively little indication of prior subsurface ground disturbance, the exception being in the form of post-contact trash pits.

Two cultural resources were identified: SIHP 50-80-14-6901, four post-contact trash pits containing historic material dating to the late nineteenth-early twentieth century (ca. 1850-1920); and SIHP 50-80-14-6902, three human burials (see Figure 22). The full historic property descriptions can be found in Appendix D.

The four trash pits identified within the project area (SIHP #50-80-14-6901, Features 1 to 4) contained a variety of artifacts typical for nineteenth and early twentieth century household refuse. The most common types of artifacts were bottles or bottle glass fragments. The bottles were for wine/champagne, gin, beer/whiskey/ale, soda/mineral water, beverages, condiments, medicine, and perfume. Most of the bottles date from 1850 to no later than 1920. Other artifacts from the site include glass household items, ceramic dinnerware, one glass bead, a chert core, a bone toothbrush, a corkscrew, a golf ball, and rusted metal fragments. The artifact assemblage shows strong Euro-American affinities. Identified countries of origin for the artifacts include the United States, the Netherlands, France, England, and Hawai‘i. While mid and late 1800s residents of Honolulu of various ethnicity would use a variety of products from various countries of origin the assemblages are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with refuse from the Cooke and Atherton families or their neighbors’ resident in the immediate area in the indicated timeframe.

SIHP 50-80-14-6902 consists of human burials. Two of these burials were in coffins (Burials 1 & 2). In the third (Burial 3) the presence or absence of a coffin was not determined before all work in the vicinity was halted (following consultation with SHPD). The three burials

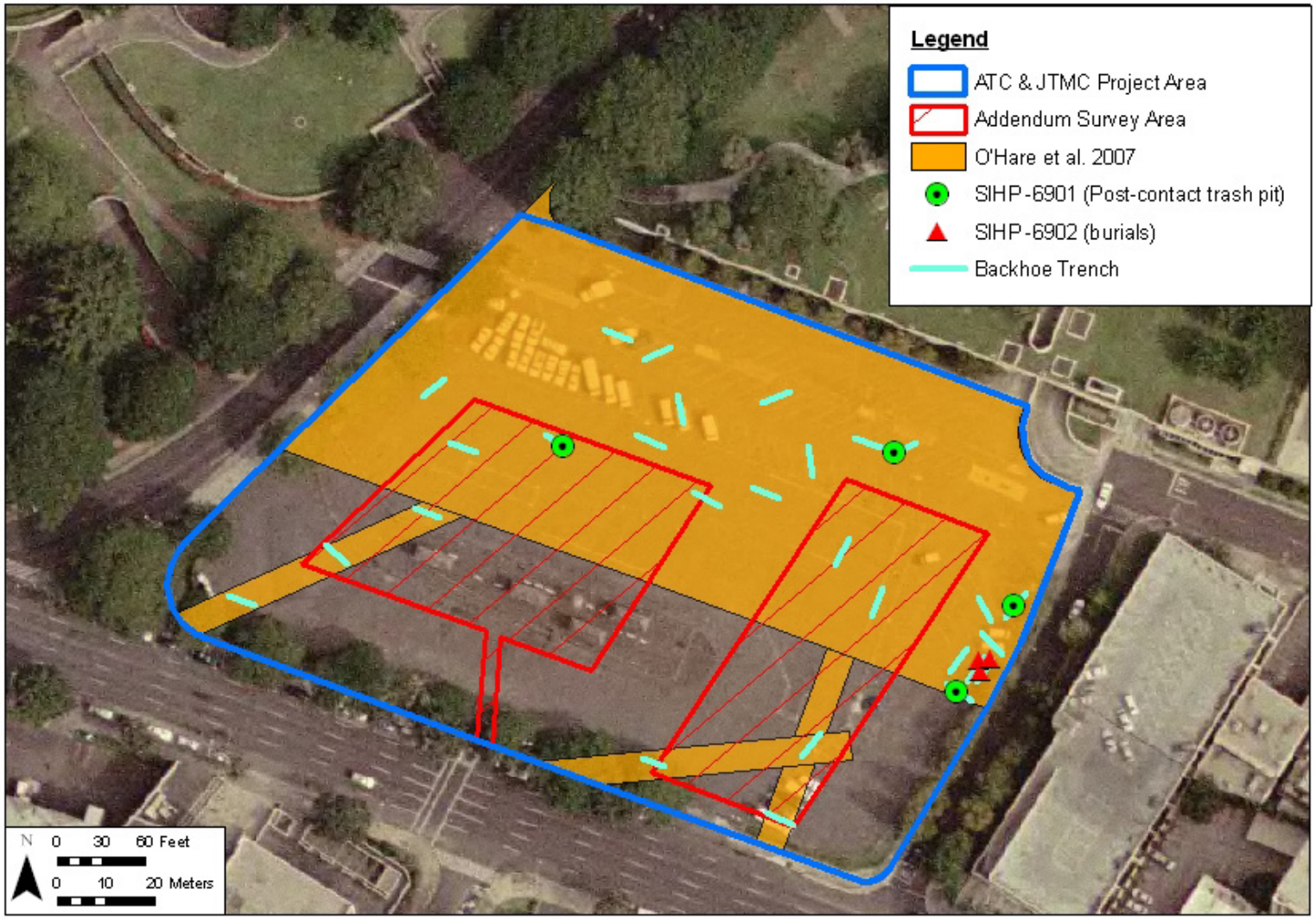


Figure 22. Aerial photograph showing O’Hare et al. (2007) survey area and backhoe trench locations in relation to the ATC & JTMC project area and the current survey area (indicated in red)

constituting SIHP 50-80-14-6902, are by definition “previously identified” because they were found during archaeological inventory survey investigations (HAR Chapter 13-300-2).

Following the procedures of HRS Chapter 6E-43/HAR Chapter 13-300, SHPD determined the remains were over 50 years old. Based on available information SHPD determined there was insufficient information to make a burial ethnicity determination for the burials. Burial treatment for SIHP 50-80-14-6902 was addressed in a burial treatment plan (O’Hare et al. 2008), which was reviewed and approved by SHPD (LOG NO: 2008.0556 / DOC NO: 0803KP10; see Appendix A).

SIHP 50-80-14-6901, four historic trash pits, was recommended eligible to the National and Hawai‘i Register under Criterion D (for its information content). SIHP 50-80-14-6902, three post-contact human burials, was recommended eligible to the National and Hawai‘i Register under Criteria D and E (Hawaii Register-only— for its potential traditional cultural significance to an ethnic group).

The inventory survey report also contained a cultural impact evaluation component (O’Hare et al. 2007). This was addressed through an analysis of background research to establish if any traditional cultural practices were being conducted within or in the vicinity of the project area. Other than the possible interment of the dead, there was little evidence of past traditional Hawaiian use of the project area lands. Based on available information, there was no indication of on-going traditional cultural practices within the project area (O’Hare et al. 2007).

2.3.2 Burial Treatment Plan

Following the review and acceptance of the 2007 O’Hare et al. archaeological inventory survey report, a burial treatment plan was prepared that described the preservation in place of all three burials (O’Hare et al. 2008). The burial treatment plan was intended to provide the SHPD with detailed information to support the burial treatment decision-making process. The burial treatment and preservation measures provided in the burial treatment plan are included below in a burial treatment and protection section. The burial treatment plan was reviewed and approved by SHPD on 10 March 2008 (SHPD correspondence LOG. NO: 2008.0556 DOC NO: 0803KP10; Appendix A).

2.3.3 Addendum Archaeological Inventory Survey

Following the O’Hare et al. (2007) study, project plans were revised and the footprint of the proposed building construction was relocated. As a result, additional subsurface testing was needed and an addendum archaeological inventory survey investigation was conducted (Pammer et al. 2009). The addendum report was prepared to address the project redesign and provide the results of additional subsurface testing conducted within the ATC & JTMC project area.

Fifteen test trenches, placed throughout the project area within the new building footprint, were excavated in order to document potential subsurface cultural deposits and stratigraphy (Figure 23 and Figure 24). It seemed likely that some areas of subsurface cultural deposits within the project area were significantly impacted, if not destroyed, during previous construction activities, including the construction of the bus parking area currently occupying the project area. Subsurface impacts to portions of the project area consisted of large areas of modern trash dumps full of construction debris (concrete slabs, asphalt, brick, old pipe) to a known depth of 160cmbs.

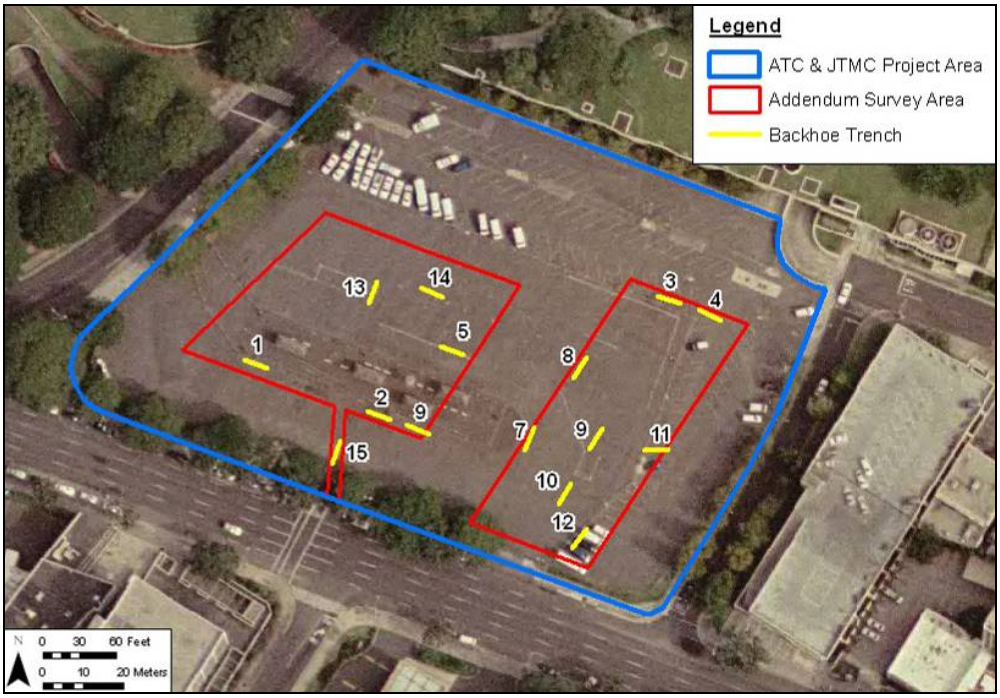


Figure 23. An aerial photo of the project area depicting the new building footprint with the locations of the 15 excavated trenches for the addendum inventory survey

Figure 24. An aerial photo of the project area depicting the new building footprint with the locations of the 7 historic trash pits, (Features 1-4 previously identified by O’Hare 2007), and the burial locations

In general, the observed and documented stratigraphy consisted of: asphalt road surface, overlying a crushed coral or gravel base course, overlying naturally occurring clay loam alluvium (Makiki clay loam) overlying natural volcanic cinders. Additional layers of fill and subsurface disturbances were also observed in several trenches. These observations were consistent with the test trenches undertaken in the original inventory survey conducted in 2007 by O' Hare et al.

Additional features of SIHP #50-80-14-6901, previously recorded by O'Hare et al. in 2007, were observed in the northern and eastern portions of the project area (see Figure 24). Three additional historic trash pit features were observed (SIHP 50-80-14-6901, Features 5 through 7) containing historic materials including bottles, ceramics and faunal bone. The artifact dates indicated that the cultural layer was utilized during the turn of the 19th Century. The full historic property descriptions can be found in Appendix D.

Deep deposits of construction fill were observed in areas where modern subsurface construction trash dumps excavated into and disturbed lower strata. Large concrete slabs were present in several of the trenches, associated with old pipes, nails and other construction debris. These concrete slabs prohibited the excavation of portions of several trenches throughout the project area.

What appeared to be an A horizon, or former land surface deposit, was observed in two of the test trenches. The presence of oil and tar suggested a former road or driveway, but a study of the maps and photos of the Atherton house and of the project area could not confirm this. The A-horizon did not possess the integrity required to become a historic property based on lack of evidence to support it and therefore was not considered a cultural layer.

2.4 Background Summary and Predictive Model

The documentary review in this report suggests that the present project area may not have been intensively utilized or populated during the centuries before Western contact – Hawaiian land use in the vicinity was concentrated at the coast and along the margins of Nu‘uanu and Pauoa Streams. During the first decades after contact, while other areas of Honolulu were developed in response to Western commerce, the area around Pūowaina (Punchbowl Crater) could still be described as part of the "dreary plain of Honolulu."

Several archaeological projects have been conducted in one or two blocks around the project area. Many of these studies have documented subsurface pits, features, and artifacts dating to the nineteenth or twentieth century. It is therefore unlikely that pre-contact/early post-contact Hawaiian habitation sub-features, agricultural features, or concentrations of traditional Hawaiian artifacts would be found in the survey area. The previous archaeological inventory survey and the addendum archaeological inventory survey of the ATC & JTMC project area kept with this trend, identifying post-contact trash pits (SIHP 50-80-14-6901) and burials (SIHP 50-80-14-6902) (O'Hare et al. 2007; Pammer et al. 2009).

Land modifications within the project area associated with the development of the existing ATC have caused extensive land disturbances (i.e. grading, leveling, filling, etc.) which would have destroyed and/or buried any evidence of both pre- and post-contact land use. However, it is very likely that additional subsurface cultural resources, associated with post-contact land use,

are present within the survey area in the form of cultural layers and/or structural remnants buried by modern and/or historic fill layers. Further evidence of post-contact land use could be in the form of human burials, trash pits, privies, and building foundations.

Section 3 Burial Treatment and Protection

3.1 Statement of Proposed Treatment

The landowner will preserve the SIHP # 50-80-14-6902 burial site in place, and will establish a permanent burial site preserve consisting of a 30-foot diameter circular area centered on the burial site. SIHP # 50-80-14-6902 is located in an area that will not be developed. Construction phase protective measures for the burial site will include appropriate fencing. The implementation of these burial treatment measures, including the short term construction and long term preservation measures will be implemented as part of the current archaeological monitoring plan.

3.2 Treatment During and After Discovery

In accordance with the inventory survey rule [HAR Chapter 13-276-4(c)], the trenches within which the burials were exposed were immediately backfilled and returned to their pre-trenching condition as soon as their assessment was completed. The burials have remained undisturbed (in situ) and backfilled since their initial discovery. No osteological analysis of the human skeletal remains has been conducted.

When it was first discovered, SIHP # 50-80-14-6902 was blocked off from vehicular traffic with several ‘Jersey barriers’ (water-filled type) with all activity within the area prohibited. These barriers remain in place, surrounding SIHP # 50-80-14-6902.

3.3 Burial Location

The burials are located along the eastern portion of the project site, in TMK: (1) 2-1-042:004, within an area currently utilized for parking. Figure 25 shows the GPS data location of the three burial finds at SIHP No. 50-80-14-6902. UTM Coordinates for the three burials are as follows (Datum, NAD 83, Projection, UTM Zone 4 North):

Burial 1	E 0619025.6
	N 2356160.4
Burial 2	E 0619027.7
	N 2356163.0
Burial 3	E 0619025.4
	N 2356162.9

The center point of the circular burial site buffer will be the equidistant point between these three coordinates. The 15-foot radius preserve area will extend out from this center point (see Figure 4 and Appendix C, Figure 28).

Figure 25. 30-foot diameter Burial Preserve Area for SIHP No. 50-80-14-6902 projected on a satellite image of the project area (see text for UTM coordinates)

3.4 Short-Term Burial Protection Measures

Prior to any construction activities, a temporary barrier consisting of a fence (constructed of 2” x 4” and plywood , sturdy enough to prevent traffic) will be constructed around the 30’ buffer surrounding the burials. No storage of materials or equipment is allowed in this area, which will be kept cleaned of any trash or other foreign objects. The barriers shall remain in place until construction is completed and the permanent barrier is in place.

3.5 Burial Site Preparation

The permanent burial preserve shall be defined by a low soil mound with three boulders on top. Because the burials are currently located beneath an existing parking lot, saw cutting and removal of the top four to eight inches of asphalt and compact fill will be necessary to prepare the site for landscaping. The top of the soil mound should be approximately two-feet above the surrounding ground surface. The soil mound shall be installed by a professional landscaper in order to ensure that it is properly tamped down and constructed of appropriate sediments that will not erode away but will create a suitable home for the *laua‘e* and *tī.* Three small boulders shall be placed around the top of mound. They may be partially set into the mound sediments but may not extend below the level of the current ground surface. All land disturbance activity within the 30 ft buffer surrounding the burials, including the removal of the asphalt surface and the landscaping, should be performed under the supervision of an archaeological monitor.

Landscaping within the preserve area will be limited to three *tī* leaf plants, planted evenly around the boulders, and *laua‘e* ground cover. There will be no signs or plaques.

3.6 Long-Term Burial Protection Measures

Once the burial site is prepared according to the specifications outlined above, the following permanent (long term) burial site protection measures will be implemented. No activity or work shall take place within the burial site preserve; no subsurface excavation shall be allowed, except for landscape-related digging in the soil mound for the purposes of planting and maintaining the vegetation within. No storage of materials or equipment shall take place within the burial site preserve. No trash or other foreign objects shall be allowed within the burial site preserve, which shall be cleared debris regularly. Landscaping and maintenance of the plants within the burial site preserve shall only be conducted using hand tools; no power tools shall be used.

Should the burial site preserve be damaged by natural or man-made causes, the SHPD shall be contacted and consulted prior to making any additional repairs or changes to the site. In the unlikely event that human skeletal remains are exposed, they should be temporarily covered and protected from the weather, from onlookers, and / or from any other potential agents of harm until the SHPD has been consulted. If applicable, remedial steps needed to repair the burial site preserve shall be determined by the SHPD.

The metes and bounds of the permanent burial site buffer will be recorded by a certified land surveyor and registered at the Bureau of Conveyances by the landowner, in order to protect the burial site in perpetuity.

Section 4 Archaeological Monitoring Provisions

In consultation with SHPD, it was determined that a monitoring program was warranted as an historic preservation mitigation measure for the planned ATC and JTMC project. The following discussion outlines the provisions and procedures that will govern the project's archaeological monitoring program.

Under Hawai‘i State historic preservation legislation, "Archaeological monitoring may be an identification, mitigation, or post-mitigation contingency measure. Monitoring shall entail the archaeological observation of, and possible intervention with, on-going activities which may adversely affect historic properties" (HAR Chapter 13-279-3). For this project, the proposed monitoring program will serve as a mitigation measure that insures proper documentation should historic properties be encountered during water main work.

Hawai‘i State historic preservation legislation governing archeological monitoring programs requires that each monitoring plan discuss eight specific items (HAR Chapter 13-279-4). The monitoring provisions below address those eight requirements in terms of the archaeological monitoring for the construction within the project area.

Several archaeological projects have been conducted in one or two blocks around the project area. Many of these studies have documented subsurface pits, features, and artifacts dating to the nineteenth or twentieth century. It is therefore unlikely that pre-contact/early post-contact Hawaiian habitation sub-features, agricultural features, or concentrations of traditional Hawaiian artifacts would be found in the survey area.

However, it is very likely that additional subsurface cultural resources, associated with post-contact land use, are present within the survey area in the form of cultural layers and/or structural remnants buried by modern and/or historic fill layers. Further evidence of post-contact land use could be in the form of human burials, trash pits, privies, and building foundations.

1. Anticipated Historic Properties:

   Based on background research, many studies in the near vicinity of the project area have documented subsurface pits, features, and artifacts dating to the nineteenth or twentieth century. It is therefore unlikely that pre-contact/early post-contact Hawaiian habitation sub-features, agricultural features, or concentrations of traditional Hawaiian artifacts would be found in the survey area. However, it is very likely that additional subsurface cultural resources, associated with post-contact land use, are present within the survey area in the form of cultural layers and/or structural remnants buried by modern and/or historic fill layers. Further evidence of post-contact land use could be in the form of human burials, trash pits (likely associated with SIHP # 50-80-14-6901), privies, and building foundations.

2. Locations of Historic Properties:

   Historic properties may be encountered throughout the entire project area. Complete descriptions of the historic properties already found within the project area can be found in Appendix D.

3. Fieldwork:

   The fieldwork component of the archaeological monitoring program may be carried out under archaeological permit number 10-10 issued to Cultural Surveys Hawai‘i, Inc. (CSH) by the Hawai‘i State Historic Preservation Division/ Department of Land and Natural Resources (SHPD/DLNR), per Hawai‘i Administrative Rules (HAR) Chapter 13-282.

   On-site monitoring is recommended for all ground disturbance activities. A qualified archaeologist will monitor all ground disturbance associated with the project’s construction. Any departure from this will only follow consultation with, and written concurrence from, SHPD/DLNR.

   The monitoring fieldwork will likely encompass the documentation of subsurface archaeological deposits (e.g, trash pits and structural remnants) and will employ current standard archaeological recording techniques. This will include drawing and recording the stratigraphy of excavation profiles where cultural features or artifacts are exposed as well as representative profiles. These exposures will be photographed, located on project area maps, and sampled. Photographs and representative profiles of excavations will be taken even if no historically-significant sites are documented. As appropriate, sampling will include the collection of representative artifacts, bulk sediment samples, and/or the on-site screening of measured volumes of feature fill to determine feature contents.

   If human remains are identified, no further work will take place, including no screening of back dirt, no cleaning and/or excavation of the burial area, and no exploratory work of any kind unless specifically requested by the SHPD. All human skeletal remains that are encountered during construction will be handled in compliance with HRS Chapter 6E-43 and HAR Chapter 13-300 and in consultation with SHPD/DLNR.

4. Archaeologist's Role:

   The on-site archaeologist will have the authority to stop work immediately in the area of any findings so that documentation can proceed and appropriate treatment can be determined. In addition, the archaeologist will have the authority to slow and/or suspend construction activities in order to insure that the necessary archaeological sampling and recording can take place.

5. Coordination Meeting:

   Before work commences on the project, the on-site archaeologist shall hold a coordination meeting to orient the construction crew to the requirements of the archaeological monitoring program. At this meeting the monitor will emphasize his or her authority to temporarily halt construction and that all historic finds, including objects such as bottles, are the property of the landowner and may not be removed from the construction site. At this time it will be made clear that the archaeologist must be on site during all subsurface excavations.

6. Artifact Collection, Documentation, and Laboratory work:

The project's two past inventory investigations (O'Hare et al. 2007 and Pammer et al. 2009) have already documented and collected a large amount of historic artifacts from the seven known trash pits that make up SIHP 50-80-14-6901. Accordingly, the collection of large amounts of additional historic artifacts as part of the project's monitoring effort may be redundant. The additional documentation of the historic features that make up SIHP 50-80-14-6901 should focus on recording these features' location so that their distribution can be considered in relation to historic land use of the project area. It should also focus on collecting sufficient artifact information to characterize the feature's age, and possibly the feature's duration of use, and to characterize the feature's function, for example residential versus commercial or industrial refuse disposal. Much of the artifact documentation, for example with redundant bottle types, faunal remains, etc. can be done in the field with photographs and written descriptions. The collection of artifacts should be limited to highly diagnostic, highly interpretive items, or items that cannot be readily identified in the field that will require further analysis in the laboratory. Of course, if new classes of artifacts or other archaeological material are found associated with SIHP 50-80-14-6901, materials that were not previously documented for these trash pit features, then appropriate collections of these materials will be made for laboratory analysis and curation.

As appropriate, laboratory analysis of the collected non-burial related materials will include standard artifact and midden recording, as follows: Artifacts will be documented as to provenience, weight, length, width, type of material, and presumed function. Bone and shell midden materials will be sorted down to species, when possible, then tabulated by provenience, and presented in table form.

7. Report Preparation:

   The report will contain a section on stratigraphy, description of archaeological findings, monitoring methods, and results of laboratory analyses. The report will address the requirements of a monitoring report (HAR section 13-279-5). Photographs of excavations will be included in the monitoring report even if no historically-significant sites are documented. Should burial treatment be completed as part of the monitoring effort, a summary of this treatment will be included in the monitoring report. Should burials and/or human remains be identified, then other letters, memos, and/or reports may be requested by the Burial Sites Program.

8. Archiving Materials:

   All burial materials will be given to SHPD/DLNR for storage. Materials not associated with burials will be temporarily stored at the contracted archaeologist's facilities until an appropriate curation facility is selected, in consultation with the landowner and SHPD.

4.1 Research Focus

Previously documented deposits within the current project area include: SIHP #50-80-14-6901, seven Historic Trash Pits, located in the northern and eastern portions of the project area

(O’Hare et al. 2007; Pammer et al, 2009), and SIHP #50-80-14-6902, three human burials, of undetermined ethnicity located in the eastern edge of the project area (O’Hare et al., 2007). The three burials were observed during the initial archaeological inventory survey investigation (O’Hare et al., 2007).

The current project will likely provide the opportunity to gather additional information on the archaeological sites previously identified during the archaeological inventory surveys. Research questions that could be answered as a result of monitoring activities related to the ATC and JTMC project include:

a. Currently there is no evidence of pre-contact land use within the project area. Will excavations provide evidence of pre-contact activity? and if so, in what form?
b. What is the geographic extent of SIHP #50-80-18-6901? The network of excavations associated with this project will be fairly extensive and there is an opportunity to better define the boundaries of the historic trash pits as the ground disturbance will likely pass through the SIHP #50-80-14-6901 boundaries.
c. Based on the monitoring results, we may be able to better characterize the age, duration of use, and function of the SIHP #50-80-18-6901 trash deposits.
d. What information can be gained on the historic structures previously located within the project area (i.e. Atherton house and the Fernhurst Y.W.C.A)?

If the above questions can be addressed, then we may be able to better characterize past land-use of this portion of Honolulu, and the archaeological deposits that can be expected in the area.

Section 5 References Cited

Allen, Gwenfread E.
1970 Bridge Builders. The Story of Theodore and Mary Atherton Richards. Hawai‘i Conference Foundation, Honolulu.

Alexander, W. D.
1909 The Oahu Charity School. 16th Annual Report of the Hawaiian Historical Society, pp. 20-38.

Altonn, Helen
Construction Crew Finds a Graveyard. Honolulu Star-Bulletin October 12, 1971.

Anderson, Lisa
1997a An Exploratory Excavation of the Proposed Reinterment Plot for One Archer Lane, OGDEN

Anderson, Lisa
1997b Monitoring and Archaeological Testing Plan for the Proposed KITV4 Underground Storage Tank Placement at One Archer Lane, Honolulu, Hawai‘i (TMK No. 1-2-1-044: 041, 042, and 043) OGDEN

Anderson, Lisa
1995a Historical Background Research The King Street Place Property, (TMK No. 1-2-1-044: 041, 042, and 043) Honolulu Hawai‘i OGDEN

Anderson, Lisa
1995b Archaeological Subsurface Inventory Survey of the King Street Place Property, Honolulu Hawai‘i 96813 (TMK No. 1-2-1-044: 041, 042, and 043) OGDEN

Anderson, Lisa and K. Aronson
1997 Archaeological Monitoring and Emergency Data Recovery of One Archer Lane, Honolulu, Hawai‘i (TMK: No. 1-2-1-44:041, 042, and 043). OGDEN

Armstrong, R. Warwick (editor)
1973 Atlas of Hawai‘i. University of Hawai‘i Press, Honolulu.

Beven, Amy, Michelle Elmore, Joseph Kennedy
2004 An Archaeological Monitoring Report for the City Hall Annex Auditorium Restoration Project Located at TMK: 2-1-33:07 (Por.) in Honolulu Ahupua`a, Kona District, Island of O`ahu. Archaeological Consultants of the Pacific, Inc., Haleiwa, HI

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

Bishop, Sereno Edwards
1916 *Reminiscences of Old Hawaii*. Hawaiian Gazette Co., Ltd.

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

Bordner, Richard
1990 *The Change in Church and Community in Honolulu: Kawaiahao Church Field Research.* Chaminade University Archaeology Club. Copy on file at Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.

Bureau of Land Management (U.S. Dept. Interior)
2007 Historic Glass Bottle Identification and Information Website. (http://www.blm.gov/historic_bottles/index.htm). Downloaded February 14, 2007.

Chinen, Jon J.
1961 Original *Land Titles in Hawaii*. Privately Published, Honolulu.

Chiogioji, Rodney, and Hallett Hammatt
1994 An Archaeological Assessment of an 8.4-Acre Parcel in Downtown Honolulu, Island of O‘ahu (TMK 2-1-18:46 and Pors. 1, 11, 16 & 47). Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Chiogioji, Rodney, Matthew M. McDermott, Douglas Borthwick, and Hallett H. Hammatt
1991 Archaeological Investigations at the Hawai‘i State Public Library Addition Site. Cultural Surveys Hawai‘i, Kailua, Hawai‘i.

Clark, T. Blake
1939 Honolulu’s Streets. Papers of the Hawaiian Historical Society 20:5-26.

de Freycinet, Louis C. de S.
1978 *Hawai‘i in 1819: A Narrative Account.* Pacific Anthropological Records No. 26, Bernice P. Bishop Museum, Honolulu.

Denham, Tim, and Joseph Kennedy
1993 Monitoring Report for Excavations Associated with the State Capital Complex Telecommunication Conduits, Phase III, Kona District, Honolulu Ahupua‘a, Island of O’ahu. Archaeological Research Center Hawai‘i, Haleiwa, Hawai‘i.

Dey, Darienne, Douglas Borthwick and Hallett H. Hammatt
2009 *FINAL Archaeological Monitoring Report for Improvements to Walkways and Irrigation Systems at Washington Place and Grounds (SIHP 50-80-14-9907), Honolulu [Kona] District, Nu‘uanu Ahupua‘a, O‘ahu Island (TMK [1] 2-1-018:001)*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Dibble, Sheldon
1909 A History of the Sandwich Islands. T. G. Thrum, Honolulu.

Dixon, George
1789 A Voyage Round the World, but More Particularly to the North-west Coast of America: Performed in 1785, 1786 and 1788 in the King George and Queen Charlotte by Captains Portlock and Dixon. George Goulding, London.

Dockall, John E.
2003 Phase I Archaeological Inventory Survey and Monitoring, Washington Place (50-80-14-9907) TMK 2-1-18:1 Project No. 542. Bernice P. Bishop Museum, Honolulu.

Dye, Bob
1997 Merchant Prince of the Sandalwood Mountains. Afong and the Chinese in Hawai‘i. University of Hawai‘i Press, Honolulu.

Dye, Tom S.
2002 Archaeological Monitoring Report of Renovation to No. 1 Capitol District Building. T.S. Dye and Colleagues, Archaeologists, Inc., Honolulu.

Elliott, Rex R., and Stephen C. Gould
1988 *Hawaiian Bottles of Long Ago. A Little of Hawaii‘s Past.* Hawaiian Service, Inc., Honolulu.

Emerson, Nathaniel B.
1915 *Pele and Hi‘iaka.* ‘Ai Pōhaku Press, Honolulu.

Fitzpatrick, Stephanie Lei
1989 Wandering Boundaries and Waning Hawaiians: Makiki’s People and Land in Mid-Nineteenth Century Hawai‘i. Thesis, University of Hawai‘i at Mānoa, Honolulu.

Foote, Donald E., E.L. Hill, S. Nakamura, and F. Stephens
1972 Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii. U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham
1917 “Legend of Hanaaumoe.” *Fornander Collection of Hawaiian Antiquities and Folklore*, Vol. IV, pp. 476-482. Bishop Museum Press, Honolulu.

1919 “Brief Stories of Ghosts and Cunning.” *Fornander Collection of Hawaiian Antiquities and Folklore*, Vol. V, pp. 418-435. Bishop Museum Press, Honolulu

Gast, Ross, and Agnes C. Conrad (ed.)
1973 Don Francisco de Paulo Marin: A Biography and the Letters and Journal of Francisco de Paula Marin. University of Hawai‘i Press, Honolulu.

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

Greer, Richard A.
1968 A Sketch of Ke-Kua-Nohu, 1845-1850, with Notes of Other Times Before and After. *The Hawaiian Journal of History* 2:3-41.

1970 Honolulu in 1847. The Hawaiian Journal of History 4:59-95.

1992 Kulaokahu‘a and Thomas Square: From Boom to Bust to Now. *The Hawaiian Journal of History* 26:133-156.

1994 Grog Shops and Hotels: Bending the Elbow in Old Honolulu. *The Hawaiian Journal of History* 28:35-67.

Groza, Randy and Hallett H. Hammatt

2008 *FINAL Archaeological Monitoring Report For the Rehabilitation of Streets Project, Unit 5A, Beretania Street (Between North King and Alapa‘i Streets), Honolulu Ahupua‘a, Kona District, Island of O‘ahu. TMK: [1] 1-7-004, -005, -026, 027; 2-1-003, - 04, -009, -010, -017, -018, -024, -033-036*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Groza, Randy, Douglas Borthwick and Hallett H. Hammatt

2009 *Final Archaeological Monitoring Report for the Queen’s Medical Center Redevelopment Project, Honolulu (Kona) District, Honolulu Ahupua‘a, Island of O‘ahu TMK: [1] 2-1-018:048; [1]-2-1-035:001, 003-008, and 010; [1] 2-1-037:002*. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Hazlett, Alexander, Mary Carney, and Hallett H. Hammatt

2007a *Archaeological Monitoring Report for the Honolulu Design Center Phase III Project, Waikiki Ahupua‘a, ‘Ili of Kewalo, Honolulu (Kona) District, O‘ahu Island, TMK: [1] 2-3-010:048, 050, 052, 053, 054, 055, 056.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

2007b *Archaeological Monitoring Report for the Moana Pacific Towers Project, 1250 Kapiolani Boulevard, Waikīkī Ahupua‘a, Kona District, O‘ahu, Island (TMK 1-2-3-10:28, 48, 50, 52-56).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Heidel, Melody J., and Hallett H. Hammatt

1994 *Archaeological Assessment of the Kaka‘ako Fire Station, Honolulu Ahupua‘a, Kona District, Island of O‘ahu (TMK 2-1-31:18).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Hines, Gustavus

1852 *Life on the Plain of the Pacific.* George H. Derby and Co. Chicago.

Honolulu Advertiser/Honolulu Star-Bulletin

1971 Queen’s Construction Site Yields Treasure. *Honolulu Advertiser/Honolulu Star-Bulletin* Sunday Edition, September 19, 1971.

‘Ī‘ī, John

1959 *Fragments of Hawaiian History*. Bishop Museum, Bernice P. Bishop Museum, Honolulu.

Jackson, Frances

1964 *Historic American Building Survey.* Historical Data and Written Description (HA-6).

Kamakau, Samuel M.

1992 *Ruling Chiefs of Hawaii*. Revised Edition. Kamehameha Schools Press, Honolulu.

Kapeliela, Kanai

1996 *Inadvertently Discovered Human Remains at One Archer Lane, King Street, O`ahu.* Letter report on file at the Hawaii State Historic Preservation Division, Kapolei, Oahu.

Kawachi, Carol T.
1991 *Queen Emmalani Tower Project Monitoring, Kaka‘ako, Kona, TMK 2-1-48: 8-19.* Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai‘i.

King, Pauline N. (editor)
1989 Journal of Stephen Reynolds, Volume 1: 1823-1829. Ku Pa‘a Incorporated, Honolulu.

Kuykendall, Ralph S.
1938 *The Hawaiian Kingdom. Volume 1: 1778-1854*. University of Hawai‘i Press, Honolulu.

LeSuer, Celeste C and Paul Cleghorn
2004 *Archaeological Assessment for the Hawaiian Electric Company, Inc.: East O‘ahu Transmission Project - 46kV Phased Project.* Pacific Legacy, Inc., Kailua, HI.

Luscomb, Margaret, Roland Reeve, and Aki Sinoto
1976 Archaeological Surveillance and Salvage During the Electrical Conduit Excavations on the Grounds of Iolani Palace, Honolulu, Oahu. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Mann, Melanie and Hallett H. Hammatt
2002 Archaeological Monitoring Report for the King Street Rehabilitation Project, Honolulu Ahupua`a, Kona District, Island of O`ahu (TMK 2-1 por. And 1-7 por.). Cultural Surveys Hawaii, Inc., Kailua, HI

Majors, Maurice, and Alan Carpenter
2000 *Archaeological Monitoring at Washington Place (Governor's Residence)*. Department of Land and Natural Resources, Division of State Parks, Honolulu.

McAllister, J. Gilbert
1933 *Archaeology of O‘ahu.* Bernice P. Bishop Museum Bulletin 104, Honolulu.

Mills, Peter R.
2007 Stone Corral Complex at Keanakolu (50-10-15-24250), Keanakolu ("The Three Caves") artifacts, http://www.uhh.hawaii.edu/~anthro/Keanakolu.htm. Downloaded February 14, 2007.

O'Hare, Constance R., Chris Monahan, and Hallett H. Hammatt
2008 Burial Treatment Plan for the Alapai Transit Center, Honolulu District, Honolulu Ahupua‘a, Island of O‘ahu, TMK: (1) 2-1-042:004, 013. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

O'Hare, Constance R., David W. Shideler, and Hallett H. Hammatt
2006 Inventory Survey Plan in Support of The Queen's Medical Center Redevelopment Project, Honolulu (Kona) District, Honolulu Ahupua‘a, Island of O‘ahu, TMK: 1-2-1-018:048; 1-2-1-035:001, 003-008, and 010; 1-2-1-037:002. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

2007 Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua‘a, Honolulu District, Island of O‘ahu, TMK: (1) 2-1-042:004, 013. Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Pammer, Michelle F., Jon Tulchin and Matt McDermott

2009 *Addendum to an "Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project, Honolulu Ahupua‘a, Honolulu District, Island of O‘ahu, TMK: (1) 2-1-042:004, 013.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Pearson, Richard

1980 *A Brief Report on Test Excavations at the Hawaiian Mission, Honolulu. University of British Columbia.* Copy on file at the SHPD library, Kapolei, Hawai‘i.

1995 A Brief Report on Test Excavations at the Hawaiian Mission, Honolulu. *Hawaiian Archaeology* 4:27-33.

Perzinski, David, and Hallett H. Hammatt

2004 *Archaeological Inventory Survey for the Kaka‘ako Fire Station Renovation Project, Honolulu, HI, (TMK 2-1-031:015 and 018).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Perzinski, David, Todd Tulchin, and Hallett H. Hammatt

2005 *Archaeological Inventory Survey of a 2.7-Acre Parcel at the Intersection of Queen and South Streets, Honolulu Ahupua‘a, Kona District TMK: 2-1-48:008, Island of O‘ahu.* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Perzinski, David, David W. Shideler, and Hallett H. Hammatt

2006 Archaeological Inventory Survey of the Kewalo HECO Dispatch Center, Honolulu Ahupua`a, Kona District, O`ahu. Cultural Surveys Hawaii, Inc., Kailua, HI.

Peterson, Barbara Bennett

1984 *Notable Women of Hawaii.* University of Hawai‘i Press, Honolulu.

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.

Portlock, Nathaniel

1968 *A Voyage Round the World . . . in 1785, 1786, 1787 and 1788: but More Particularly to the North- West coast of America*. Da Capo Press, New York.

Pukui, Mary Kawena

1983 *‘Olelo No‘eau: Hawaiian Proverbs and Poetical Sayings*. Bishop Museum Special Publication No. 71, Bishop Museum Press, Honolulu.

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

1974 *Place Names of Hawaii*. University of Hawai‘i Press, Honolulu.

Putzi, Jeffrey L. and Thomas S. Dye
2004 *Archaeological Monitoring Report for Architectural Barrier Removal Work at Ali‘iōlani Hale in Downtown Honolulu, Hawai‘i (TMK: 2-1-25:003).* T.S. Dye and Colleagues, Archaeologists, Inc., Honolulu.

Pynn, Bruce
2004 Antique Ceramic Toothpaste Pots. Oral Health and Dental Practice

Richards, Mary Atherton
1941 *Amos Starr Cooke and Juliette Montague Cooke. Their Autobiographies Gleaned from Their Journals and Letters.* The Daughters of Hawai‘i, Honolulu.

Rosendahl, Paul H.
1971 *A Report on the Archaeological Excavation and Exploration of the Old Carriage Road at Iolani Palace.* Anthropology Department, Bernice P. Bishop Museum, Honolulu.

Schilz, Allan J.
1991 *An Evaluation of the Archaeological Resources at the Proposed Site of Queen Emmalani Tower, Kakaako, Honolulu, Hawaii, TMK 2-1-48:8-19.* Environmental and Energy Services, Honolulu.

Schmitt, Robert C.
1979 Some Transportation and Communication Firsts in Hawaii. *The Hawaiian Journal of History* 13:99-123.

Simons, Jeannette, Carol Kawachi, Katherine Rogers, Gwen Hurst, and Jane Allen
1991 *Historical Research, Archaeological Monitoring, & Artifact Analysis, Armed Forces YMCA Rehabilitation Project, Downtown Honolulu, O‘ahu.* Applied Research Group, Bernice P. Bishop Museum, Honolulu.

Simpson, MacKinnon, and John Brizdle
2000 *Streetcar Days in Honolulu: Breezing through Paradise*. JLB Press, Honolulu.

Sinoto, Aki
1977 *Archaeological Surveillance and Salvage during Trenching and Installation of Service Conduit for Iolani Barracks, Grounds of Iolani Palace*. Department of Anthropology, Bernice P. Bishop Museum, Honolulu.

Stein, Erica, Anthony Bush, and Hallett H. Hammatt
2007 *Archaeological Monitoring Report for the Demolition and Construction of the Kaka‘ako Fire Station Renovation Project, Honolulu Ahupua‘a, Kona District, O‘ahu Island TMK: (1) 2-1-031:015 and 018.* Cultural Surveys Hawai‘i, Inc. Kailua, Hawai‘i.

Stewart, Charles S.
1970 *Journal of a Residence in the Sandwich Islands, during the Years 1823, 1824, and 1825*. University of Hawai‘i Press, Honolulu.

Stoke on Trent
2007 Stoke on Trench. Resources on the North Staffordshire Pottery Industry. http://www.the potteries.org/potters/wood.htm, downloaded 6-28-2007.

Taylor, Frank J., Earl M. Welty, and David W. Eyre

1976 *From Land and Sea. The Story of Castle & Cooke of Hawaii*. Chronicle Books, San Francisco.

Thrum, Thomas G.

1921 New Y.W.C.A. Homestead. *Hawaiian Almanac and Annual* for 1922, p. 87. Thos. G. Thrum, Honolulu.

1927 Honolulu's YWCA Achievement. *Hawaiian Almanac and Annual* for 1928, pp. 61-66. Thos. G. Thrum, Honolulu.

Toulouse, Julian

1971 *Bottle Makers and Their Marks.* Thomas Nelson, Inc., New York.

Tulchin, Jon, and Hallett H. Hammatt

2006 *An Archaeological Subsurface Investigation at Kawaiaha‘o Church Cemetery, Honolulu Ahupua‘a, Kona District, Island of O‘ahu [TMK: (1) 2-1-032:016 & 017].* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Westervelt, William D.

1963 "Pikoi the Rat-killer." *Hawaiian Legends of Old Honolulu*, pp. 157-172. Charles E. Tuttle Co., Rutland, Vermont.

Winieski, John P., and Hallett H. Hammatt

2000 *An Archaeological Monitoring Report for Kaka‘ako Improvement District 3 Pohulani Elderly Rental Housing and Kauhale Kaka‘ako, Honolulu, O‘ahu, Hawai‘i (TMK 2-1-30,31,32,44,46,47,48,50,51,52,54).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Winieski, John P., Patricia Kalima, and Hallett H. Hammatt

1996 *An Archaeological Summary of the Burial Disinterments and Construction Monitoring at the Honuakaha Affordable Housing and American Brewery Renovation Project, Honolulu, O‘ahu (TMK 2-1-31:21).* Cultural Surveys Hawai‘i, Inc., Kailua, Hawai‘i.

Appendix A SHPD Correspondence

SHPD Acceptance of the Archaeological Inventory Survey

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

December 7, 2007

Matt McDermott
Cultural Surveys Hawai'i, Inc.
P.O. BOX 1114
Kailua, Hawai'i 96734

LOG NO: 2007.3993
DOC NO: 0712ED04
Archaeology

Dear Mr. McDermott:

SUBJECT: Chapter 6E-8 Historic Preservation Review –
Revised Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project
Honolulu Ahupua'a, Kona District, Island of O'ahu
TMK: (1) 2-1-042:004 and 013

Thank you for submitting the revised aforementioned report by O'Hare *et al* (November 2007), which we received via hand delivery on November 30, 2007. The aforementioned report documents the results of the archaeological inventory survey conducted between December 2006 and July 2007 for a total of approximately 17 person days.

In previous letters dated May 24, 2007 (LOG NO: 2007.1625, DOC NO: 0705amj22) and July 5, 2007 (LOG NO: 2007.2317, DOC NO: 0707MC01), we stated that upon completion of the 9 additional test trenches provided that no significant resources were identified, we will conclude that the fieldwork portion of the project area will be complete. Therefore, given that no significant resources were identified in the nine additional trenches, we conclude that the fieldwork portion of this project is completed.

In our previous letter dated November 20, 2007 (LOG NO: 2007.2522, DOC NO: 0711ED21), we requested two revisions to the archaeological inventory survey report. Both revisions have been made to our satisfaction; and thus, we accept this report as meeting the requirements of §13-276-5, Hawai'i Administrative Rules (HAR).

We concur with your recommendation for archaeological monitoring. We request that an archaeological monitor be present during all ground disturbing activities.

Finally, we believe that although a good faith effort was made to determine the ethnicity of the three burials identified during the archaeological survey, no ethnicity could be determined. There is no archaeological evidence or oral or written evidence available to determine the ethnicity of the burials beyond reasonable belief. Additionally, as per §13-300-31(h), where a previously identified burial site is proposed to be preserved in place, no osteological or disturbing archaeological investigations shall occur; and thus, it is unknown whether burial goods or other indicators of burial treatment indicative of a native Hawaiian burial is present. Therefore, as per §13-300-31(h)(4), Hawai'i Administrative Rules (HAR), where existing evidence fails to clarify ethnicity beyond reasonable belief, appropriate treatment of the human skeletal remains shall be determined by the department. We concur with your proposal for preservation in place of the three burials identified during the archaeological inventory survey.

Mr. McDermott
Page 2

We look forward to receiving an archaeological monitoring plan and a burial treatment plan for review and approval.

Please contact Teresa Davan at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Melanie Chinen, Administrator
State Historic Preservation Division

ED

SHPD Acceptance of the Burial Treatment Plan

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESEERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

March 10, 2008

Matt McDermott
Cultural Surveys Hawaii, Inc.
P.O. Box 1114
Kailua, HI 96734

LOG NO: 2008.0556
DOC NO: 0803KP10
Culture

Dear Mr. McDermott,

SUBJECT: BURIAL TREATMENT PLAN FOR ALAPAI TRANSIT CENTER BURIAL (SHIP'# 50-80-14-6902) HONOLULU AHUPUA'A, KONA DISTRICT, ISLAND OF O'AHU [TMK: (1) 2-1-042: 004, 013]

On December 26, 2006 and January 23, 2007 a total of 3 adult individuals were discovered while conducting an Archaeological Inventory Survey on the above mentioned property. Ethnicity of the 3 individuals could not be positively determined from the context of the burial site and the limitations for analysis by the State Historic Preservation Division (SHPD). Therefore the determination to relocate or preserve in place falls under the jurisdiction of SHPD. The decision to preserve in place was given greater consideration based upon the following criteria:

1. The landowner's willingness to preserve in place
2. The cultural appropriateness to preserve in place

The next step of the process required the preparation of a Burial Treatment Plan.

Your Archaeological firm, Cultural Surveys Hawaii, Inc., has presented the aforementioned plan to our office for review and acceptance. We have reviewed and accepted that plan.

Should you have any questions or concerns, please feel free to contact our Cultural Specialist, Ms. Kaleo Paik at 692-8015.

Sincerely,

Nancy McMahon, Acting Branch Chief
State Historic Preservation Division

cc: City & County of Honolulu, Department of Transportation Services

SHPD Acceptance of the Addendum Archaeological Inventory Survey

LINDA LINGLE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

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

November 6, 2009

Matt McDermott
Cultural Surveys Hawai'i, Inc.
P.O. BOX 1114
Kailua, Hawai'i 96734

LOG NO: 2009.4418
DOC NO: 0911NM18
Archaeology

Dear Mr. McDermott:

SUBJECT: Chapter 6E-8 Historic Preservation Review –
Addendum Archaeological Inventory Survey and Cultural Impact Evaluation for the Alapai Transit Center and Joint Traffic Management Center Project
Honolulu Ahupua'a, Kona District, Island of O'ahu
TMK: (1) 2-1-042:004 and 013

Thank you for submitting the revised aforementioned addendum report by Pammer *et al* (October 2009), which we received on October 5, 2009. The aforementioned report documents the results of the addendum archaeological inventory survey conducted in August 2009 for a total of approximately 10 person days which cover 1.3 acres where 2 historic properties (6901 – historic trash pits and 6902 – three human burials) were identified. This addendum work found three additional trash pit features of site 50-80-14-6901. Fifteen backhoe trenches were dug in the project area.

The three new features of site 6901 are significant under criteria D which we concur with. No more additional archaeological work is needed for this site.

We accept this report as meeting the requirements of §13-276-5, Hawai'i Administrative Rules (HAR).

All three burials will be preservation in place that were identified during the archaeological inventory survey. An acceptable BTP was submitted (2008.0556/0803KP10).

We concur with your recommendation for archaeological monitoring. We request that an archaeological monitor be present during all ground disturbing activities.

We look forward to receiving an archaeological monitoring plan for review and approval.

Please contact me at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

Nancy A. McMahon

Nancy McMahon, Deputy Administrator
State Historic Preservation Division

Appendix B Land Commission Award 8511 to the Oahu Charity School

No. 8511, [Oahu Charity School], F.W. Thompson, Honolulu, 12 February 2, 1848

F.R. 24v3

To the Board of Land Commissioners, &c. Gentlemen, In behalf of the Trustees, Friends and Patrons of the Oahu Charity School, I beg leave to call your attention to their claims to two plots of ground, one on which the schoolhouse stands, and the other on which the dwelling house is situated.

All the documents relating to these plots are in my possession, subject to your orders,

Signed &c. F.W. Thompson, Secretary, Oahu Charity School

F.T. 445-446v3

No. 8511, F.W. Thompson for the Trustees Oahu Charity School, 21 March 1853

John Meek, sworn, says he knows the School house lot and also the house lot. I built the adobie wall round the house lot myself some years ago for the benefit of the charity.

The house lot, I understood, was purchased by the Trustees from Harry Zupplien. Thinks the survey made by Mr. Metcalf is correct as to boundaries.

The School House lot was purchased, I believe, from Kaupena with the consent of the Government, and has remained in possession of the Trustees ever since without dispute. Thinks the survey made by Mr. Metcalf is correct as to the boundaries.

S. Reynolds, sworn, says the dwelling house lot claimed by the Trustees was purchased of Harry Zupplien for $1500. There was a vacant piece of ground between the original lot & the road which was subsequently got from the King. The Trustees have held undisturbed possession of this lot ever since 1836. The adobie wall by which the lot is at present enclosed, is the true boundary.

The school house lot was got from Kaupena in the year 1832, with the consent of the Government. The Trustees paid Kaupena about $500 for her rights. This lot was formerly fenced in, and the foundation of the adobie wall may still be seen. The Trustees have held quiet possession of this lot ever since 1832.

T.C.B. Rooke, sworn, confirms in full the testimony of the former witnesses. The consent of the King was granted to the purchase of these two lots, and the Trustees have held peaceable possession of them since they got them.

During the last year I was a Trustee in 1847, perhaps, Namauu applied to me to exchange a part of the school house lot for a piece of ground adjoining which application I laid before the Trustees. How they settled it I do not know.

Appendix C Project Area Site Plans

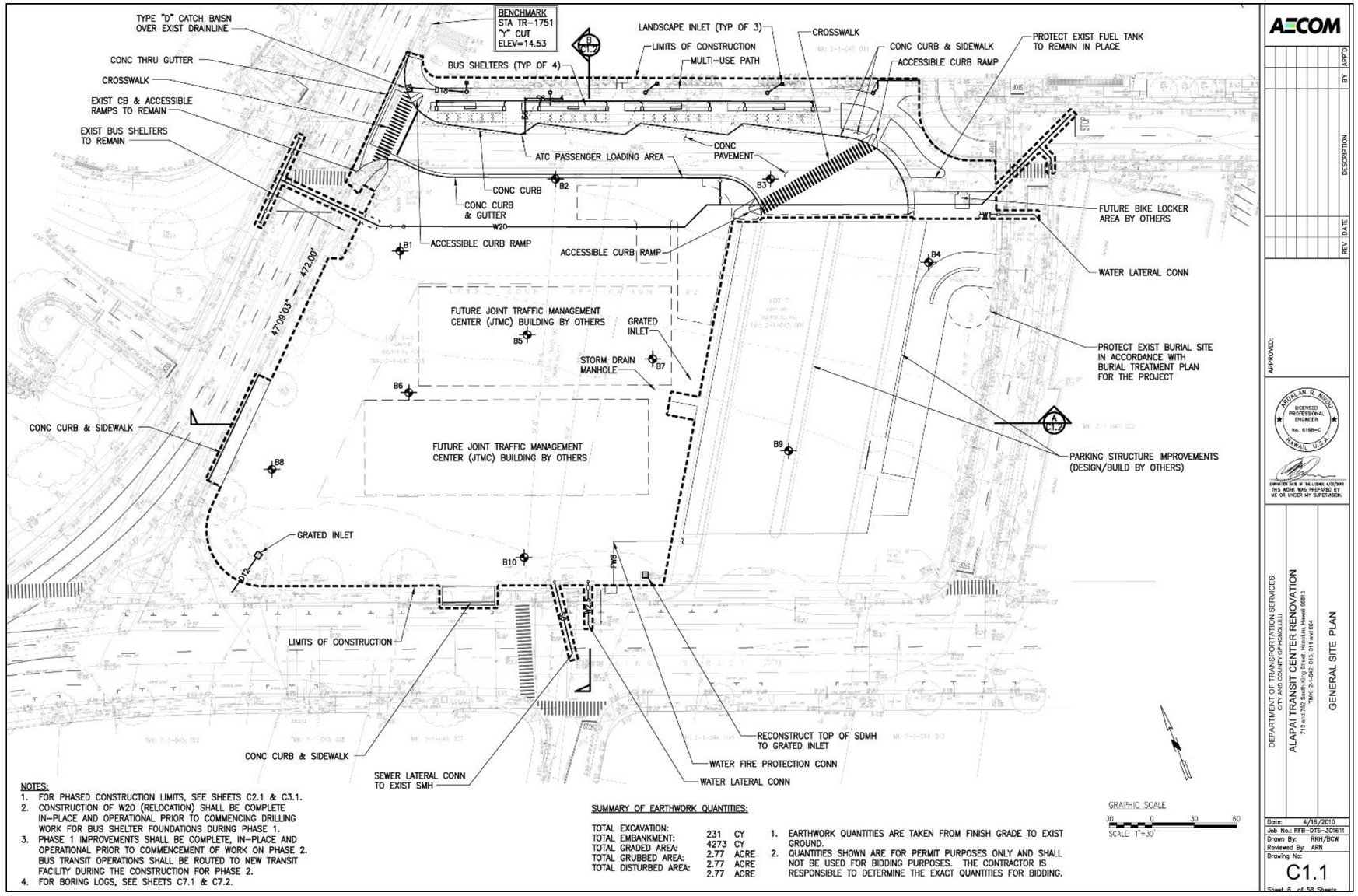
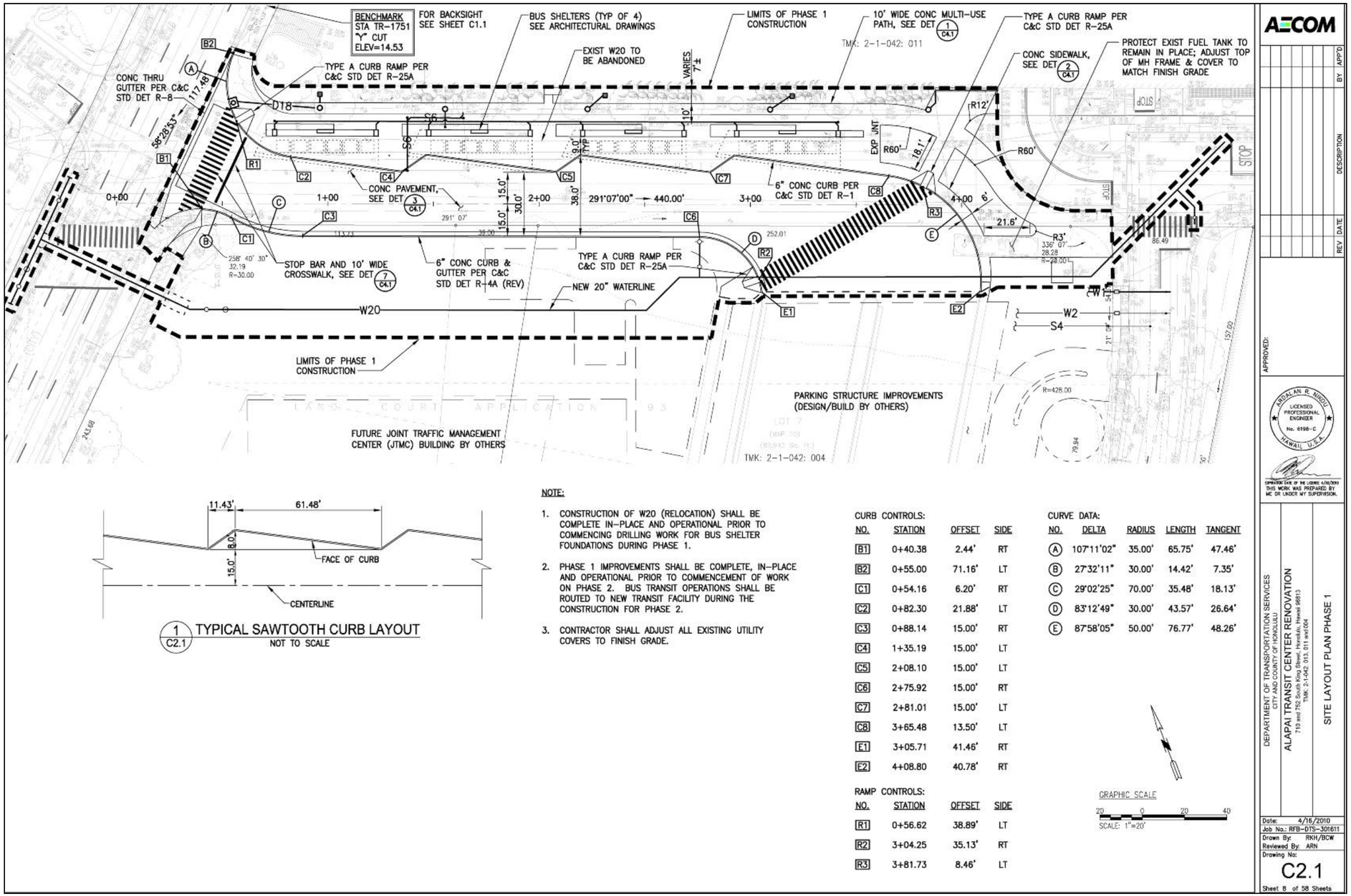


Figure 26. Project area plans showing the plans for the ATC renovation. Note the burial preserve area, a circle depicting a 30’ buffer area located immediately makai of the Kealamakai Street parking structure ramp



1 C2.1 TYPICAL SAWTOOTH CURB LAYOUT
NOT TO SCALE

NOTE:

1. CONSTRUCTION OF W20 (RELOCATION) SHALL BE COMPLETE IN-PLACE AND OPERATIONAL PRIOR TO COMMENCING DRILLING WORK FOR BUS SHELTER FOUNDATIONS DURING PHASE 1.
2. PHASE 1 IMPROVEMENTS SHALL BE COMPLETE, IN-PLACE AND OPERATIONAL PRIOR TO COMMENCEMENT OF WORK ON PHASE 2. BUS TRANSIT OPERATIONS SHALL BE ROUTED TO NEW TRANSIT FACILITY DURING THE CONSTRUCTION FOR PHASE 2.
3. CONTRACTOR SHALL ADJUST ALL EXISTING UTILITY COVERS TO FINISH GRADE.

CURB CONTROLS:

NO.	STATION	OFFSET	SIDE
B1	0+40.38	2.44'	RT
B2	0+55.00	71.16'	LT
C1	0+54.16	6.20'	RT
C2	0+82.30	21.88'	LT
C3	0+88.14	15.00'	RT
C4	1+35.19	15.00'	LT
C5	2+08.10	15.00'	LT
C6	2+75.92	15.00'	RT
C7	2+81.01	15.00'	LT
C8	3+65.48	13.50'	LT
E1	3+05.71	41.46'	RT
E2	4+08.80	40.78'	RT

RAMP CONTROLS:

NO.	STATION	OFFSET	SIDE
R1	0+56.62	38.89'	LT
R2	3+04.25	35.13'	RT
R3	3+81.73	8.46'	LT

CURVE DATA:

NO.	DELTA	RADIUS	LENGTH	TANGENT
A	107°11'02"	35.00'	65.75'	47.46'
B	27°32'11"	30.00'	14.42'	7.35'
C	29°02'25"	70.00'	35.48'	18.13'
D	83°12'49"	30.00'	43.57'	26.64'
E	87°58'05"	50.00'	76.77'	48.26'

GRAPHIC SCALE
SCALE: 1"=20'

Figure 27. Project area plans providing more renovation details for the ATC

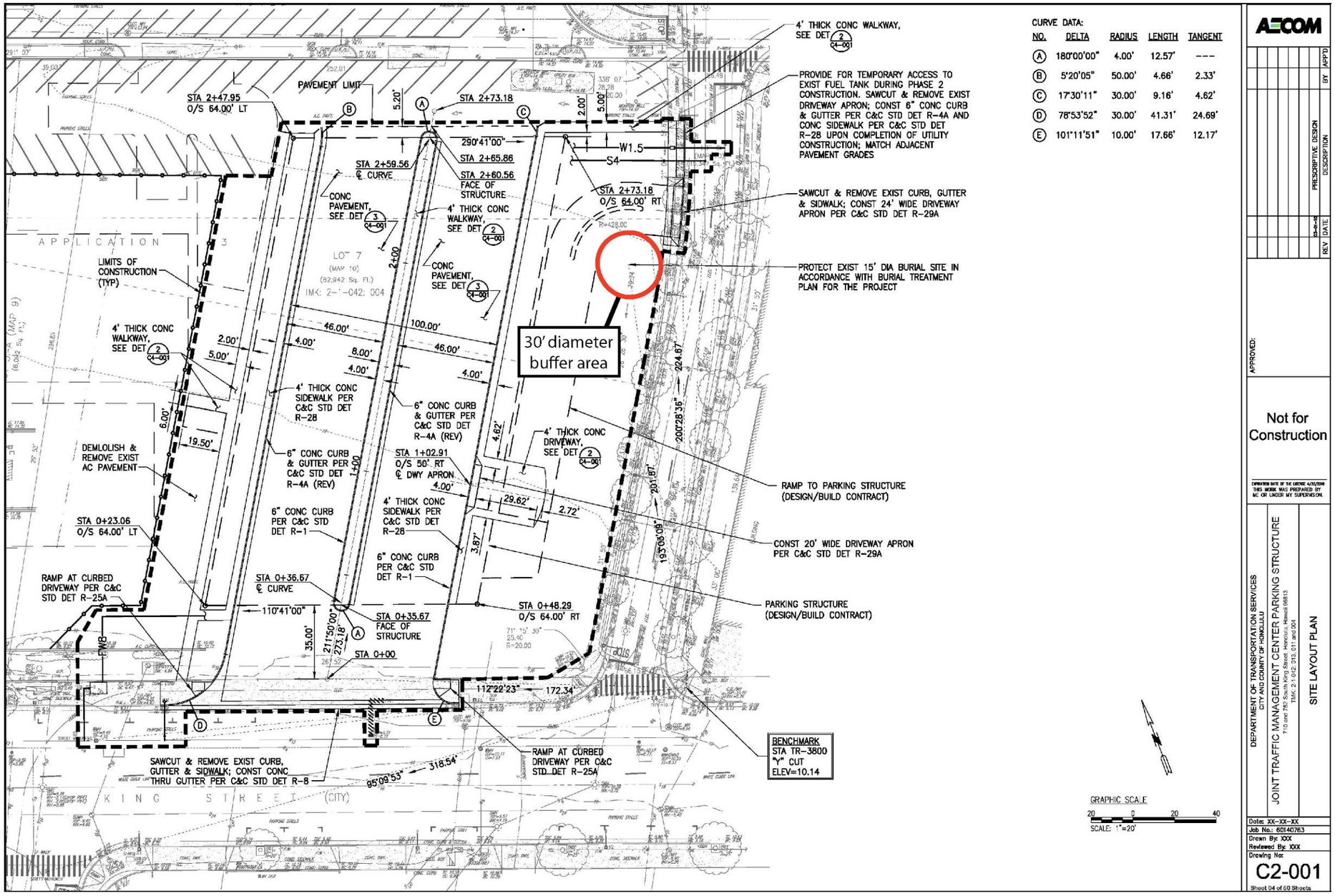


Figure 28. Project area plans showing the layout of the JTMC Parking Structure. Protection for SIHP # 50-80-14-6901, burial, will be included

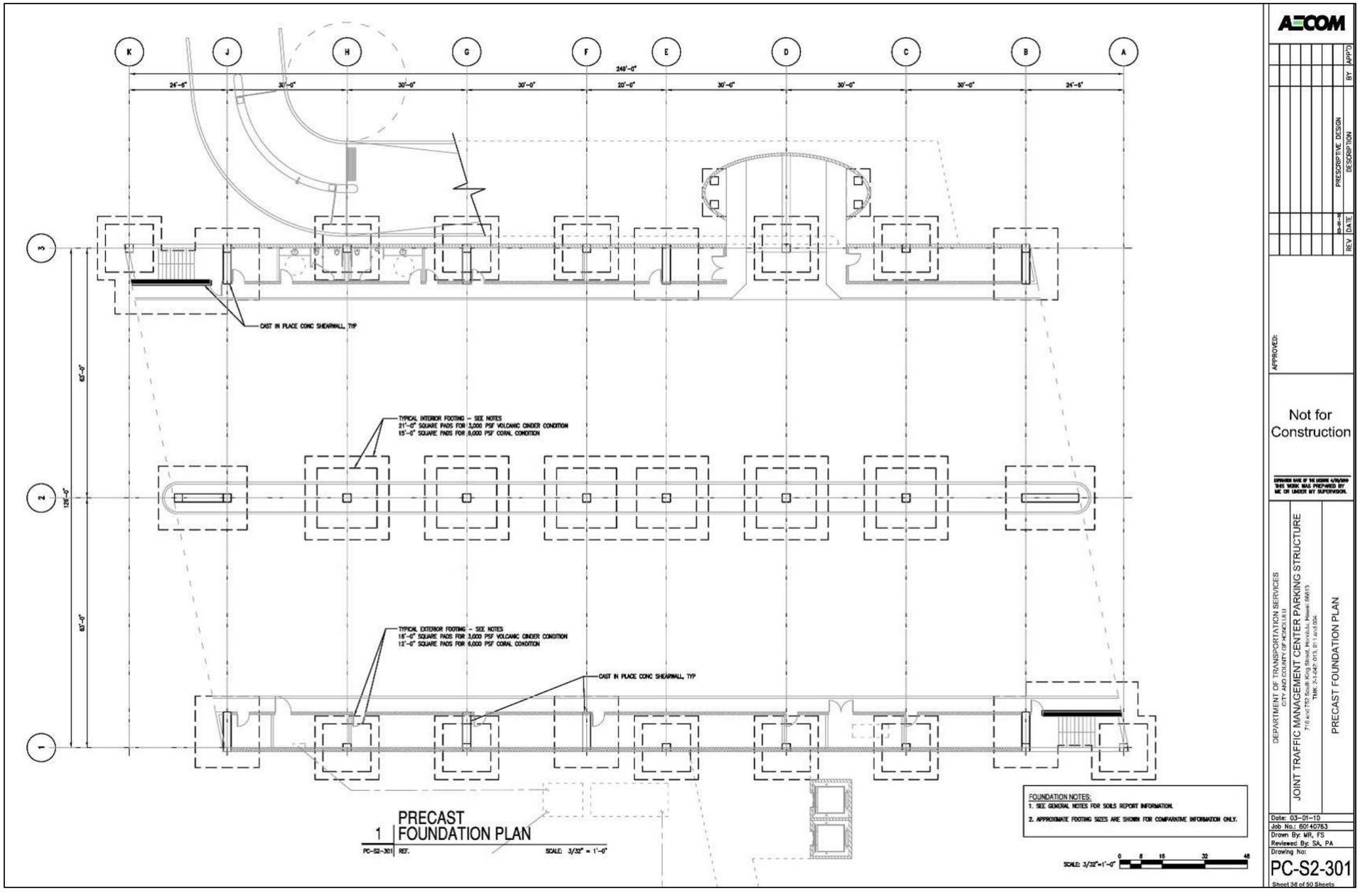


Figure 29. Project area plans showing the foundation plan for the pre-cast JTMC parking structure. Note that this is not a final plan therefore the layout will change slightly

Appendix D Historic Property Descriptions

SIHP 50-80-14-6901

FORMAL TYPE:	Historic Trash Pits
FUNCTION:	Historic refuse dump
# OF FEATURES:	Seven
AGE:	A.D. 1850 to 1930
DISTRIBUTION:	Approximately 3 acres
LOCATION:	Located in the northern and eastern portions of the project area
TAX MAP KEY:	[1] 2-1-042:004, 013
LAND JURISDICTION:	Municipal, City and County of Honolulu (County)

SIHP # 50-80-14-6901 consists of seven historic trash pits, dating to between A.D. 1820 and 1930 (Figure 30 and Figure 31). This site is recommended as eligible to the National and Hawai‘i Register under Criterion D (for its information content). During the course of the two inventory survey investigations, seven features of SIHP # 50-80-14-6901 were identified (O’Hare et al 2007, Features 1-4 and Pammer et al 2009, Features 5-7).

During the original inventory survey for the current project area O’Hare et al. (2007) identified 4 features (SIHP 50-80-14-6901, Features 1 to 4) located in the northern and eastern portions of the project area (Figure 32). These four pits contained a variety of artifacts typical for nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments. The bottles were for wine/champagne, gin, beer/whiskey/ale, soda/mineral water, beverages, condiments, medicine, and perfume. Most of the bottles date from 1850 to no later than 1920. Features 1-3 are believed to most likely post-date 1850 but to date to no later than 1920. Three bottles from Feature 4 may have been manufactured at an earlier date than the bottles from Features 1-3 and suggest mid 1800s deposition. While mid and late 1800s residents of Honolulu of various ethnicity would use a variety of products from various countries of origin the assemblages of SIHP 50-80-14-6901 are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with refuse from the Cooke and Atherton families resident in the immediate area in the indicated timeframe. A complete artifact analysis can be found in Appendix E.

During the addendum inventory survey investigation Pammer et al. (2009) identified 3 additional features (SIHP 50-80-14-6901, Features 5 to 7) located in the northeastern and southeastern portions of the project area (Figure 33). These three features contained artifacts dating to between A.D. 1903 and 1930. All of the pit outlines contained sediment consistent with the naturally occurring alluvial sediment which overlies the sterile volcanic cinder.

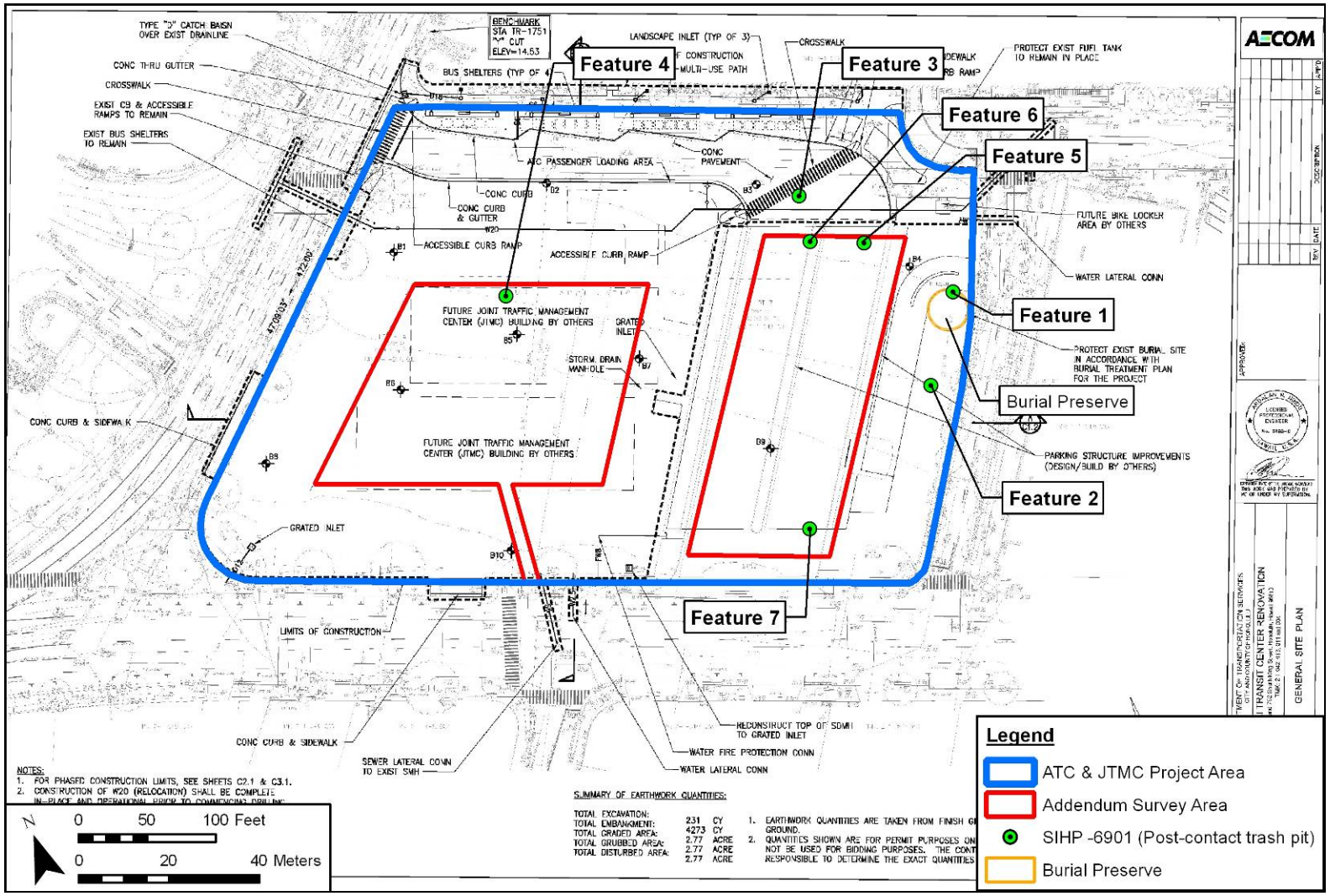


Figure 30. Project area plans with an overlay of SIHP 50-80-14-6901 and the estimated location of the SIHP 50-80-14-6902 burial preserve in relation to the parking structure.

Figure 31. An aerial photo of the project area depicting the new building footprint with the locations of the 7 features of SIHP 50-80-14-6901 and the SIHP 50-80-14-6902 burial locations

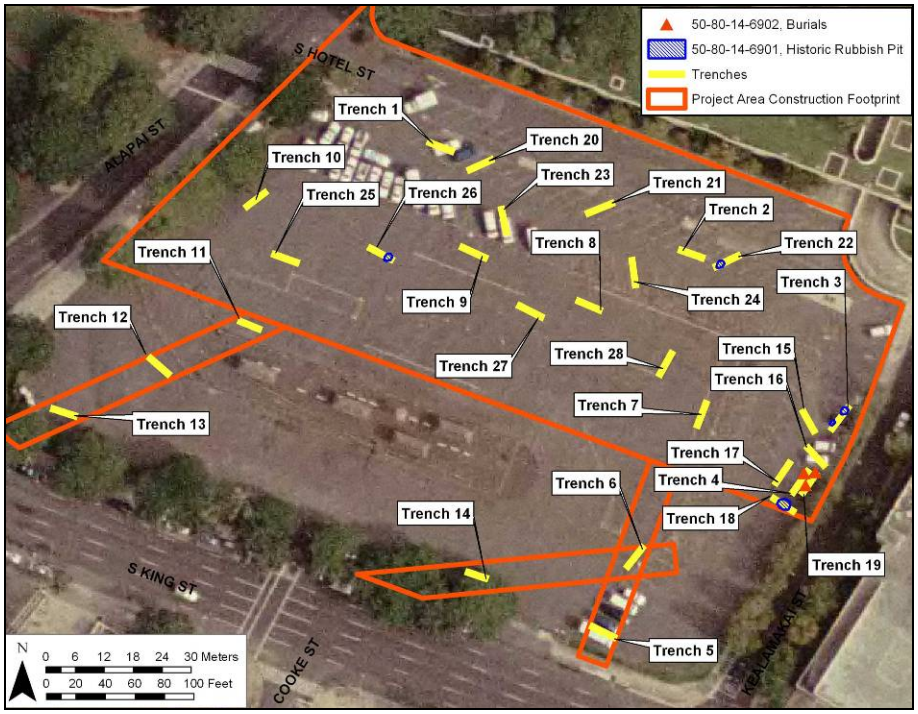


Figure 32. Aerial photo showing location of Trenches 1-28 excavated during the O’Hare et al. (2007) inventory survey and the locations where SIHP 50-80-14-6901 was found

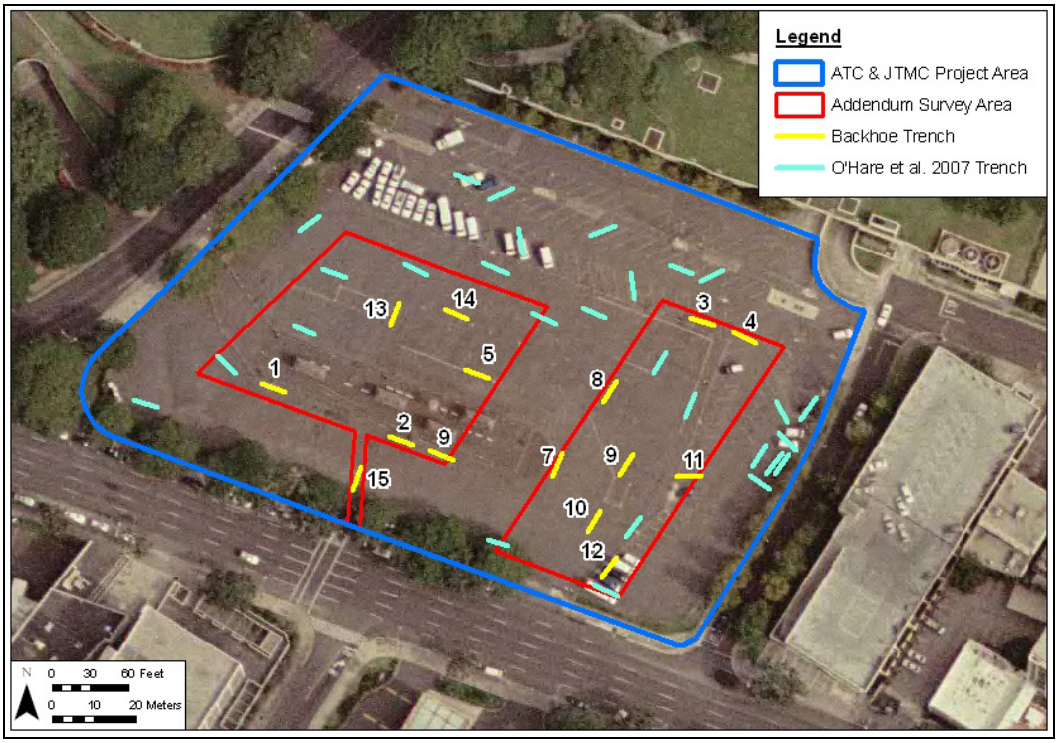


Figure 33. An aerial photo of the new building footprint with the locations of the 15 additional excavated trenches with the marked locations of the previous 28 O’Hare et al. (2007) trench.

The three trash pits documented during the addendum inventory survey efforts (Pammer et al 2009; SIHP 50-80-14-6901, Features 5 to 7) contained a variety of artifacts typical for late nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments and ceramics. The bottles were typically medicine bottles in addition to cosmetic and perfume. Most of the bottles date from 1900 to no later than 1930. Features 5 is believed to most likely post-date 1903 but to date to no later than 1930. Features 6 and 7 are made up of non diagnostic materials, preventing a date from being determined. While residents of Honolulu in the late 1800’s and early 1900’s of various ethnicity would use a variety of products from various countries of origin, the assemblages of SIHP 50-80-14-6901 are suggestive of relatively affluent American or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with household refuse disposal from the Cooke and Atherton families resident in the immediate area in the indicated timeframe. A complete artifact analysis can be found in Appendix E.

Feature 1

Backhoe Trench 3 from the O’Hare et al. 2007 investigation (Figure 34 and Figure 35) contained historic material throughout Stratum II, including a trash pit with historic artifacts, designated **SIHP 50-80-14-6901, Feature 1**. The pit contained bone, glass, bottles, ceramic, and housewares. The four glass bottles were dated to A.D. 1850-1920.

Stratum	Depth (cmbs)	Description
Ia	0-15	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary
Ib	15-25	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary
II	25-80	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; has subfeature: **SIHP 50-80-14-6901, Feature 1;**the trench also contained a small pocket of pale yellow (2.5 Y 8/2) silty clay loam with some fragments of window glass, a large concrete fragment, a red brick, and a pocket of white sand
III	80-125(BOE)	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

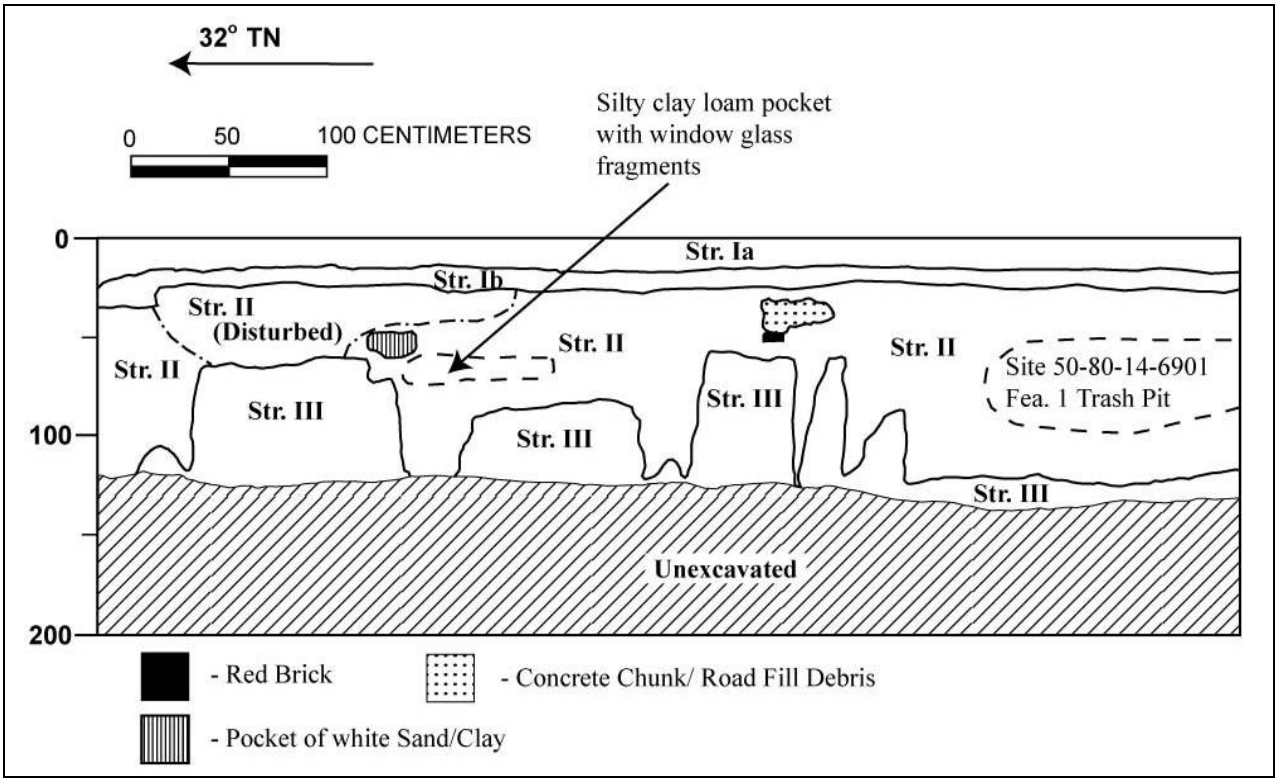


Figure 34. Backhoe Trench 3, northeast quadrant of project area, west wall profile, with SIHP 50-80-14-6901 Feature 1

Figure 35. Photo of Trench 3 containing SIHP 50-80-14-6901 Feature 1, view to the north

Feature 2

Backhoe Trench 18 from the O'Hare et al. 2007 investigation (Figure 36 and Figure 37) contained a large trash pit feature, possibly a privy, designated **SIHP 50-80-14-6901, Feature 2.** All glass bottles from this pit were dated to A. D. 1850-1920. Several bottles with narrow age ranges were dated to pre-1870 to 1904.

Stratum	Depth (cmbs)	Description
Ia	0-25	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary
II	26-115	10 YR 3/3, dark brown; clay loam; moderate, granular structure; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; Glass bottles, ceramic tablewares, a cork screw, and bird and cow bones were within a large pit, possibly a privy, designated **SIHP 50-80-14-6901, Feature 2**
III	70-250(BOE)	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; bottom of excavation.

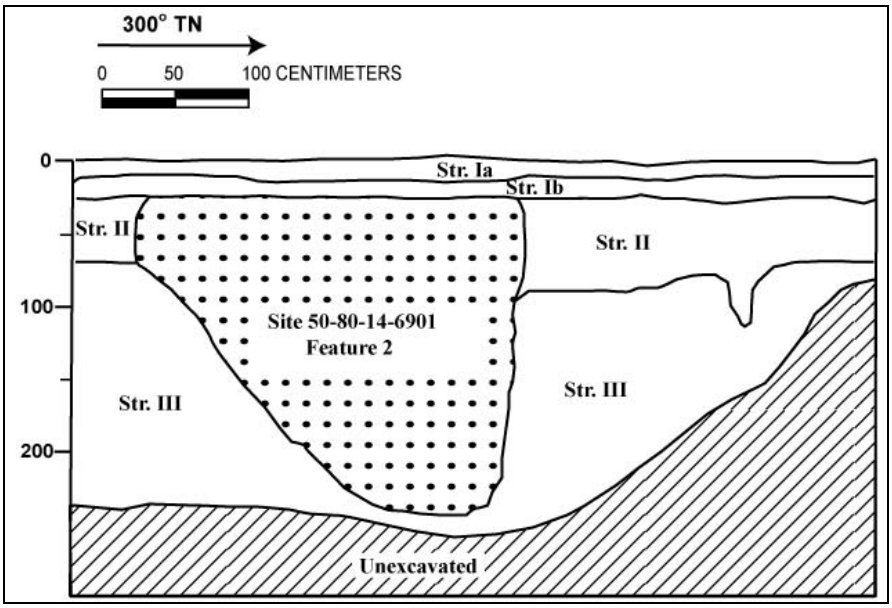


Figure 36. Backhoe Trench 18, northeast quadrant of project area, south wall profile, with SIHP 50-80-14-6901 Feature 2 Trash Pit

Figure 37. Photo of SIHP 50-80-14-6901 Feature 2, from within Trench 18, view to the southeast

Feature 3

Backhoe Trench 22 from the O'Hare et al. 2007 investigation (Figure 38 and Figure 39) contained a large trash pit feature, designated **SIHP 50-80-14-6901, Feature 3.** All glass bottles from this pit were dated to A. D. 1820-1920. Several bottles with narrow age ranges were dated 1850 to 1890. Unburned dog bone (much of skeleton – both humeri, skull fragments, teeth, mandible fragments, ribs, tibia, podials, and metapodials) was found just above the semi-circular layer within Strata Ic.

Stratum	Depth (cmbs)	Description
Ia	0-12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary
Ib	12-26	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary
Ic	28-160	Disturbed Fill; 7.5 YR 3/1, very dark grey; medium sand and clay loam; granular; fine and medium grains; moist; very friable; no cementation; terrestrial sediments; clear boundary; wavy topography; Glass bottles, pottery, metal, dog and cattle bone, semi-circular layer of black and orange stained sediment, designated **SIHP 50-80-14-6901, Feature 3**. A ceramic pipe was embedded in the wall next to, but not part of, Feature 3.
II	28-88	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; irregular
III	32-152(BOE)	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

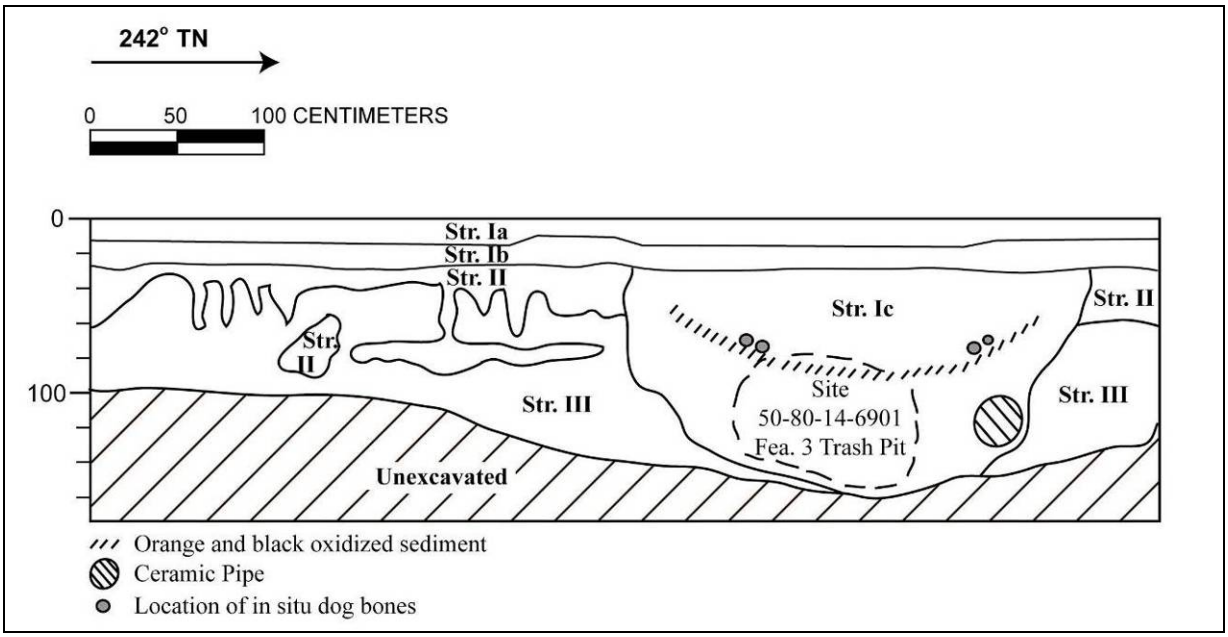


Figure 38. Backhoe Trench 22, northeast quadrant of project area, South Wall profile with SIHP 50-80-14-6901 Feature 3

Figure 39. Photo of close-up of Backhoe Trench 22, SIHP 50-80-14-6901 Feature 3, view to the west

Feature 4

Backhoe Trench 26 from the O'Hare et al. 2007 investigation (Figure 40 and Figure 41) contained a large trash pit feature, designated **SIHP 50-80-14-6901, Feature 4**, containing historic household refuse, including bottle glass, porcelain, whiteware and stoneware. A whiteware saucer fragment had a maker's mark that dated the manufacture of the saucer from 1818-1846.

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary
Ib	10-30	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary
II	28-48	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; irregular. Glass bottles (one with a pontil scar), ceramics, ceramic gin bottles, plates, bowls, butchered bone, and a possible glass oil lamp fragment, designated **SIHP 50-80-14-6901, Feature 4**
III	35-160(BOE)	10 YR 2/1, black; cinders; structureless; loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

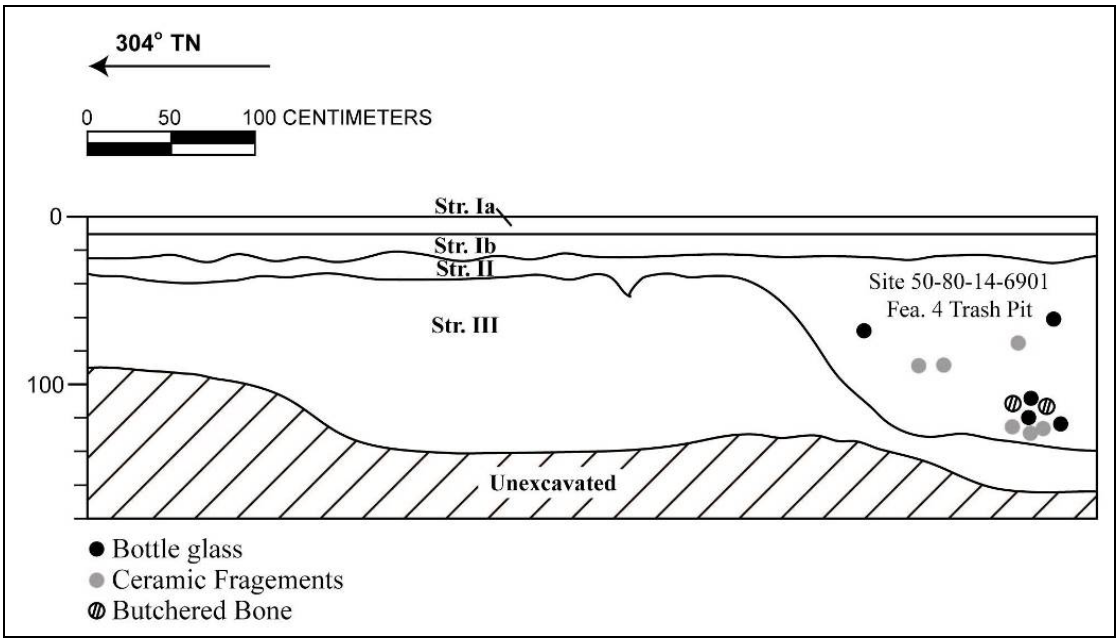


Figure 40. Backhoe Trench 26, northwest quadrant of project area, NE Wall profile with SIHP 50-80-14-6901 Feature 4

Figure 41. Photo of Backhoe Trench 26 with SIHP 50-80-14-6901 Feature 4 in bottom left corner of wall profile, view to the west

Feature 5

Excavation of Trench 4 from the Pammer et al. 2009 investigation (Figure 42 and Figure 43) revealed a trash pit feature, designated **SIHP 50-80-14-6901, Feature 5.** This feature contained historic artifacts including bottles and bottle fragments, ceramic plate and bowl fragments, milk glass containers and fragments, a light bulb, nails, glass fragments and faunal bone. The feature appeared to have been burned as there was a large amount of charcoal observed and many of the artifacts were burned or melted. The only datable material found during the Pammer et al. 2009 testing came from Feature 5. An Amber glass bottle with "Mary T. Goldman, St. Paul, Minn." embossed on the body dated the manufacture of the bottle from 1903-1924, and another bottle showed a manufacturing type (turn mold) dating from 1850-1920. Ceramic fragments were also found in Feature 5, with maker’s marks that dated the manufacture of the saucer from the early 1900’s.

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt; 10 YR 2/1 (black); very abrupt smooth lower boundary
Ib	10-25	Fill; 10YR 8/2 (very pale brown); mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; crushed coral base course
II	25-125	10 YR 3/3 (dark brown); clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; partially disturbed; bottles and bottle fragments, ceramic plate and bowl fragments, milk glass containers and fragments, a light bulb, nails, glass fragments and faunal bone, **SIHP 50-80-14-6901, Feature 5 (25-125cmbs)**
III	45-160 (BOE)	10 YR 2/1 (black); volcanic cinders; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation

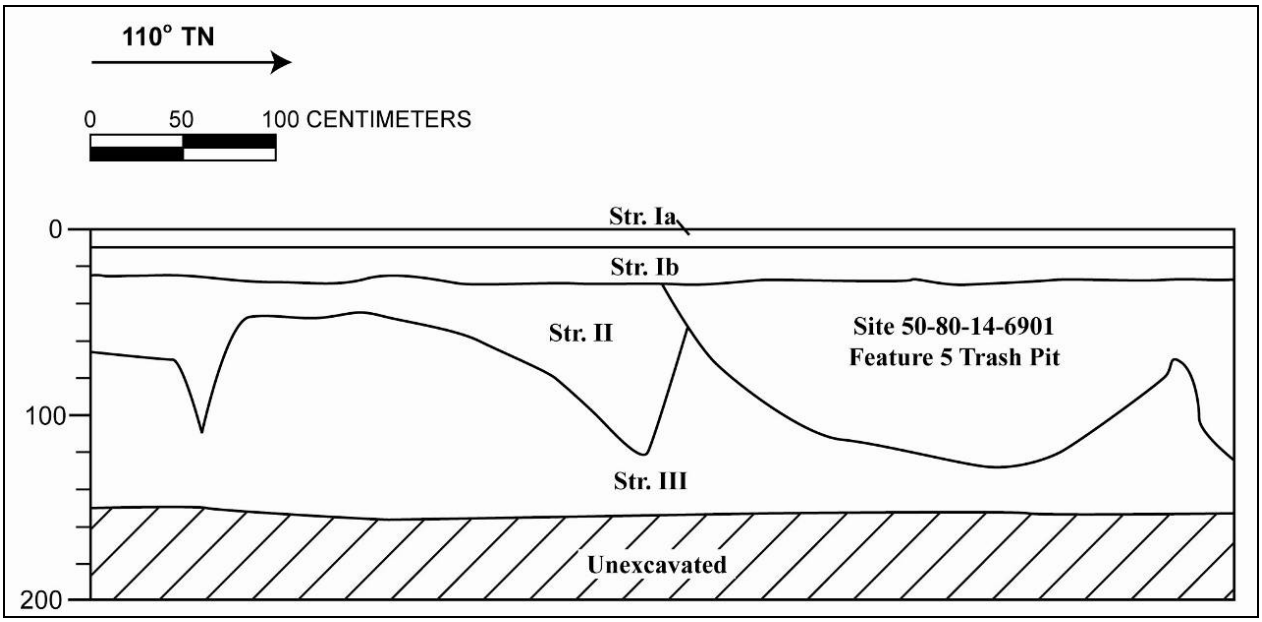


Figure 42. Backhoe Trench 4, north wall profile with SIHP 50-80-14-6901 Feature 5

Figure 43. Photo of Backhoe Trench 4, with SIHP 50-80-14-6901 Feature 5, view to the northeast

Feature 6

Excavation of Trench 3 from the Pammer et al. 2009 investigation (Figure 45 and Figure 44) revealed a trash pit feature, designated **SIHP 50-80-14-6901, Feature 6** containing historic artifacts, including several non diagnostic earthenware fragments, a terra cotta flower pot fragment and flower pot tray, a glass candy bowl lid fragment, a ceramic fragment that appears to be a strainer, rusted nails and faunal bone. See below for a discussion on these artifacts. None of the artifacts observed in Feature 6 were diagnostic.

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt; 10 YR 2/1 (black); very abrupt smooth lower boundary
Ib	10-25	Fill; 10YR 8/2 (very pale brown); mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; crushed coral base course

II	25-60/135	10 YR 3/3 (dark brown); clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; earthenware fragments, a terra cotta flower pot tray, a glass candy bowl lid fragment, a ceramic fragment, rusted nails and faunal bone, **SIHP 50-80-14-6901, Feature 6 (25-160cmbs)**
III	50-135(BOE)	10 YR 2/1 (black); volcanic cinders; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation

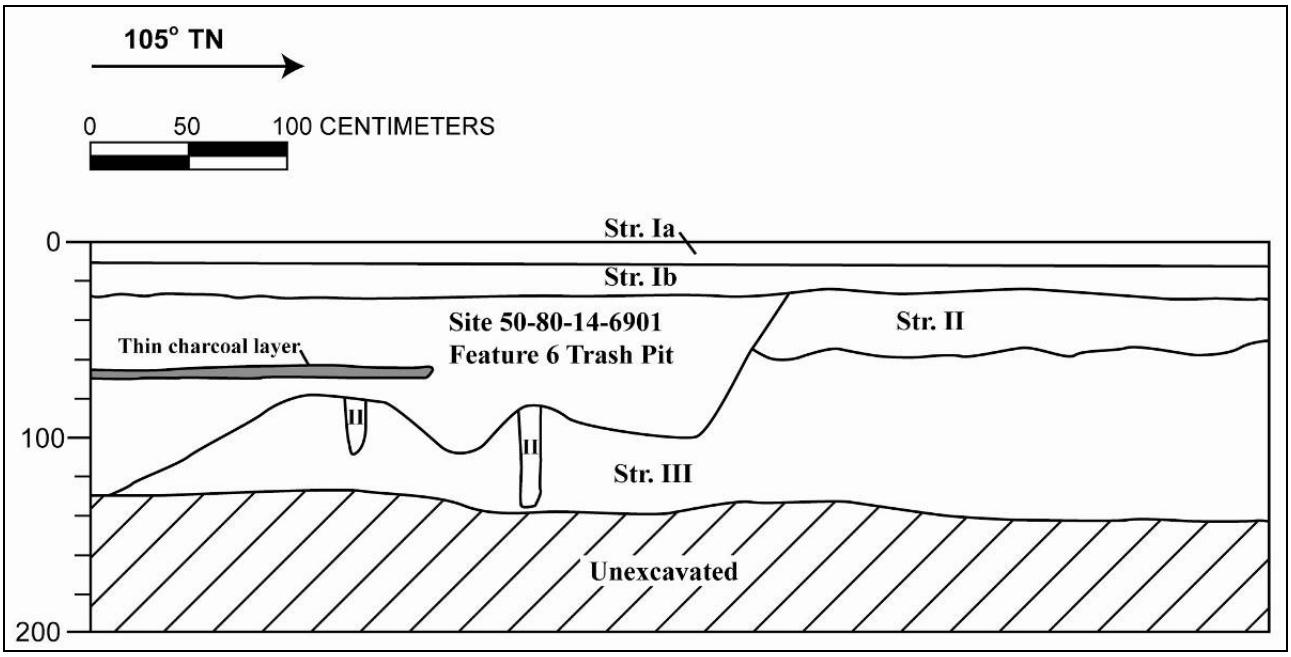


Figure 44. Backhoe Trench 3, north wall profile with SIHP 50-80-14-6901 Feature 6

Figure 45. Photo of Backhoe Trench 3, with SIHP 50-80-14-6901 Feature 6, view to the north

Feature 7

Excavation of Trench 12 from the Pammer et al. 2009 investigation (Figure 47 and Figure 46) revealed a trash pit feature, designated **SIHP 50-80-14-6901, Feature 7** containing historic artifacts including, plate glass, ceramics, terra cotta flower pot, a pearl shell button, a bone knife or utensil handle and faunal remains. Areas of charcoal concentration were also observed in this feature as illustrated on the trench profile. An additional pit feature was observed to a depth of 165 cmbs in the south end of the trench, extending into the west and south walls. This pit was explored by a CSH archaeologist with a trowel and shovel to determine the function. No cultural materials were observed within this feature, with the exception of one small fragment of shale. It was determined to be a previous disturbance from an unknown source and was not given a feature number. None of the artifacts observed in Feature 7 were diagnostic.

Stratum	Depth (cmbs)	Description
Ia	0-10	Asphalt; 10 YR 2/1 (black); very abrupt smooth lower boundary
Ib	10-25	Fill; 10YR 8/2 (very pale brown); mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary; crushed coral base course

II	25-28/40	2.5 YR 3/1 (very dark gray); clay loam; moderate, medium, crumb structure; slightly hard dry consistency; firm moist consistency; slightly plastic; no cementation; terrestrial sediment; clear wavy lower boundary; A-horizon, former land surface
IIIa	25-165	10 YR 3/3 (dark brown); clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; backfill pit feature, mix of natural alluvium and cinder layers, no cultural materials present
IIIb	28-115	10 YR 3/3 (dark brown); clay loam; moderate, granular structure; weakly coherent dry consistency; friable moist consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; undisturbed; plate glass, ceramics, terra cotta flower pot, a pearl shell button, a bone knife or utensil handle and faunal remains, SIHP 50-80-14-6901, Feature 7
IV	95-250 (BOE)	10 YR 2/1 (black); volcanic cinders; structureless, loose dry consistency; non-plastic; no cementation; bottom of excavation; coral shelf found at 250cmbs

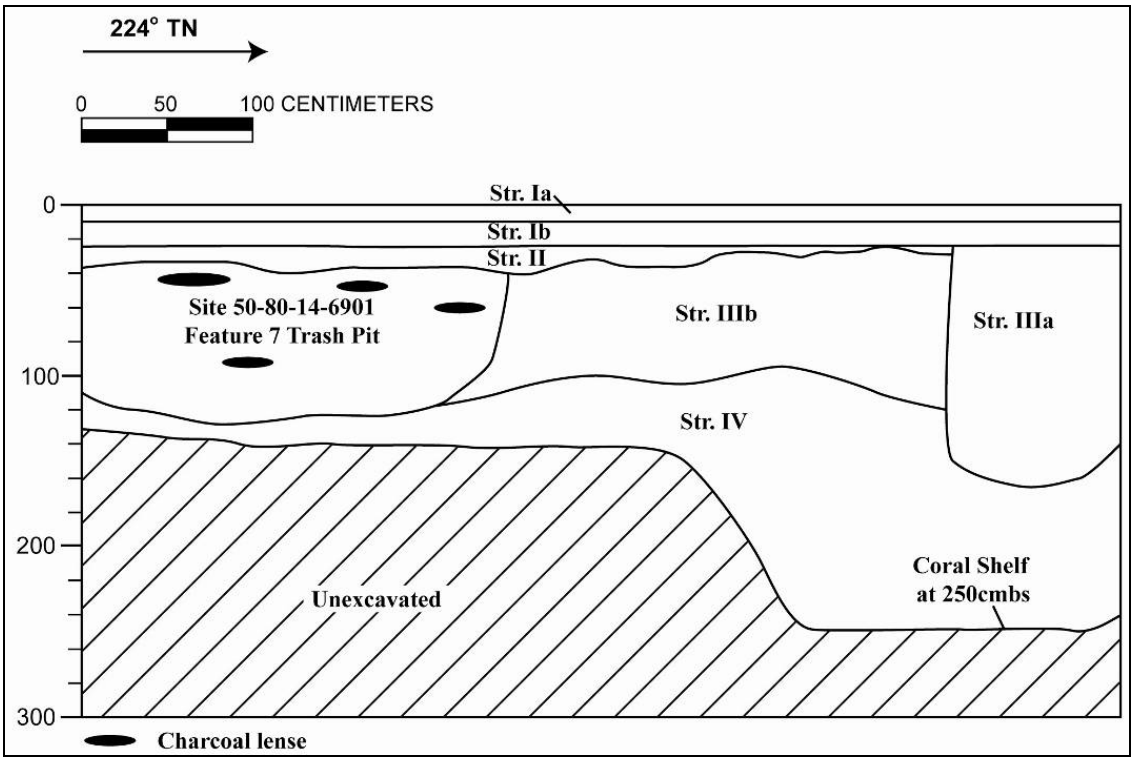


Figure 46. Backhoe Trench 12, SE wall profile with SIHP 50-80-14-6901 Feature 6

Figure 47. Photo of Backhoe Trench 12, with SIHP 50-80-14-6901 Feature 6, view to the east

SIHP 50-80-14-6902

FORMAL TYPE:	Burial
FUNCTION:	Historic refuse dump
# OF FEATURES:	Three
AGE:	Unknown
DISTRIBUTION:	30 feet
LOCATION:	Located eastern edge of the project area
TAX MAP KEY:	[1] 2-1-042:004
LAND JURISDICTION:	Municipal, City and County of Honolulu (County)

During the O’Hare et al. 2007 inventory survey investigation, three burials were discovered in the eastern edge of the project area (see Figure 30 and Figure 31). Burial 1 was discovered on the 4th trench, located in the first row of parking stalls along Kealamakai Street, halfway between King and Hotel Streets. Working in close consultation with the State Historic Preservation Division an additional five trenches (Trenches 15 to 19) were excavated to delimit the extent of the burials. Two additional burials were encountered in Trench 19. Two of these burials were perceived to be in coffins (Burials 1 & 2) and in the third case (Burial 3) the presence or absence of a coffin was not determined before all work in the vicinity was halted (as per present norms following the identification of human remains). These three burials are collectively considered as constituting SIHP 50-80-14-6902.

The three burials of SIHP 50-80-14-6902, by definition “previously identified” because they were found during inventory survey investigations (HAR Chapter 13-300-2), were documented. Following the procedures of HRS Chapter 6E-43/HAR Chapter 13-300, SHPD determined the remains were over 50 years old. Based on available information, SHPD determined there was insufficient information to make a burial ethnicity determination for the burials.

In a November 29 2007 review letter of the draft of this archaeological inventory survey report, the State Historic Perseveration Division (SHPD) asked, “Is it possible that the burials [SIHP # 50-80-14-6902] identified during the AIS of the subject property [Alapai Transit Center] are a part of the Roman Catholic Cemetery [on King Street]?” (LOG NO: 2007.2522 DOC NO: 0711ED21). Based on CSH’s review of the evidence, it appears very unlikely that the burials found within the current project area are part of the historic Catholic Cemetery on the *makai* side of King Street.

There has been ample documentation of the Catholic Cemetery’s dimensions and it is clear from this documentation that the Catholic Cemetery boundaries have changed over time (Anderson 1995a:6 and Figures 4, 5, 6, 7, 9, and 10). Based on Anderson’s (1995a:6) research, the Catholic Cemetery was likely started in 1840 or 1841. At this time, King Street, forming the *mauka* boundary of the cemetery, was already established in very near its modern alignment (again refer to Anderson 1995a Figures 4, 5, 6, 7, 9, and 10). Despite the various fluctuations in the cemetery boundaries over the years as documented by Anderson (1995a), the boundaries never extend *mauka* across King Street. It is of course possible, maybe even probable, that some burials related to the cemetery are located beneath modern day King Street, immediately in front of the cemetery—especially as the Street was widened in the 1900s—however, based on historic maps, it appears very unlikely that burials related to the cemetery would be found *mauka* of King Street, which is where the current Alapai Transit Center can be found.

It is clearly true that burials associated with the historic Catholic Cemetery have been documented outside the current cemetery boundaries. For example, the two burials found immediately outside the current southern boundary of the cemetery during the HECO Dispatch Center archaeological inventory survey (Perzinski et al. 2006) and the 30 burials found immediately outside the current western cemetery boundary during the construction of the One Archer Lane project (Anderson 1997b) (refer to Figure 21). In each of these cases, the burials found outside the current cemetery boundaries, designated SIHP # 50-80-14-5455, were found in close proximity to the current cemetery boundaries. In the case of the HECO Dispatch Center project, the two burials were found less than 2 meters (six feet) south of the current southern

boundary of the cemetery (Perzinski et al. 2006:41). With the 30 burials found at One Archer Lane, the burial found furthest west from the current western cemetery boundary was only 12 meters (40 feet) from the current western cemetery boundary (Anderson 1997b:Figure 3). The three burials in the current Alapai Transit Center project area that make up SIHP # 50-80-14-6902 are approximately 150 meters (500 feet) to the northwest of the westernmost burials known from the Catholic Cemetery—those found in the One Archer Lane project area (Anderson 1997b).

A 1902 letter to the President of the Board of Health from the Honolulu City Sanitary Officer (quoted in Anderson 1995a:6-7) describes the Catholic Cemetery's dimensions as "about 500 feet long on King Street by 400 feet deep." These dimensions are from the time period when the cemetery was in use and reaching capacity—"The ewa half of the cemetery is badly crowded and it is doubtful if a grave could be dug and not find a coffin. The new [Diamond] portion is also pretty well filled and very little space remains." The current dimensions of the Catholic Cemetery, measured off an aerial photograph taken in 2005, are approximately 380 feet (115 meters) along King Street by 360 feet deep (110 meters) perpendicular to King Street. These differences in dimensions between 1902 and 2005 are undoubtedly the reason that burials were discovered during the adjacent One Archer Lane (Anderson 1997b) and HECO Dispatch Center (Perzinski et al. 2006) projects. Clearly burials associated with the Catholic Cemetery can be expected around the outside of the current cemetery boundaries. It is not reasonable to expect burials associated with the Catholic Cemetery approximately 500 feet northwest from the westernmost burials currently known from the cemetery—those from One Archer Lane.

Burial 1

Backhoe Trench 4, from the O'Hare et al. (2007) investigation, (Figure 28) contained one burial pit, designated Burials 1 of SIHP 50-80-14-6902. The trench is located in the northeastern quadrant of the project area, along the central eastern edge.

Stratum	Depth (cmbs)	Description
Ia	0-15	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary
Ib	15-33	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary
II	33-70	10 YR 3/3, dark brown; clay loam; moderate, granular structure; loose moist consistency; sticky wet consistency; slightly plastic; no cementation; very abrupt wavy lower boundary; nails and wood from Burial 1# were noted
Burial Pit	38-120	**Burial Pit, SIHP 50-80-14-6902, Burial #1** 10 YR 3/2, very dark grayish brown; sandy loam; weak, granular structure; loose dry consistency; non-sticky wet consistency; slightly plastic; no cementation; abrupt smooth lower boundary; SIHP 50-

		80-14-6902, Burial 1 and coffin - nails and wood were recorded
IV	70-120 (BOE)	10 YR 2/1, black; volcanic cinders; structureless; loose dry consistency; non-plastic; no cementation; some nails and wood from Burial 1 were present; bottom of excavation.

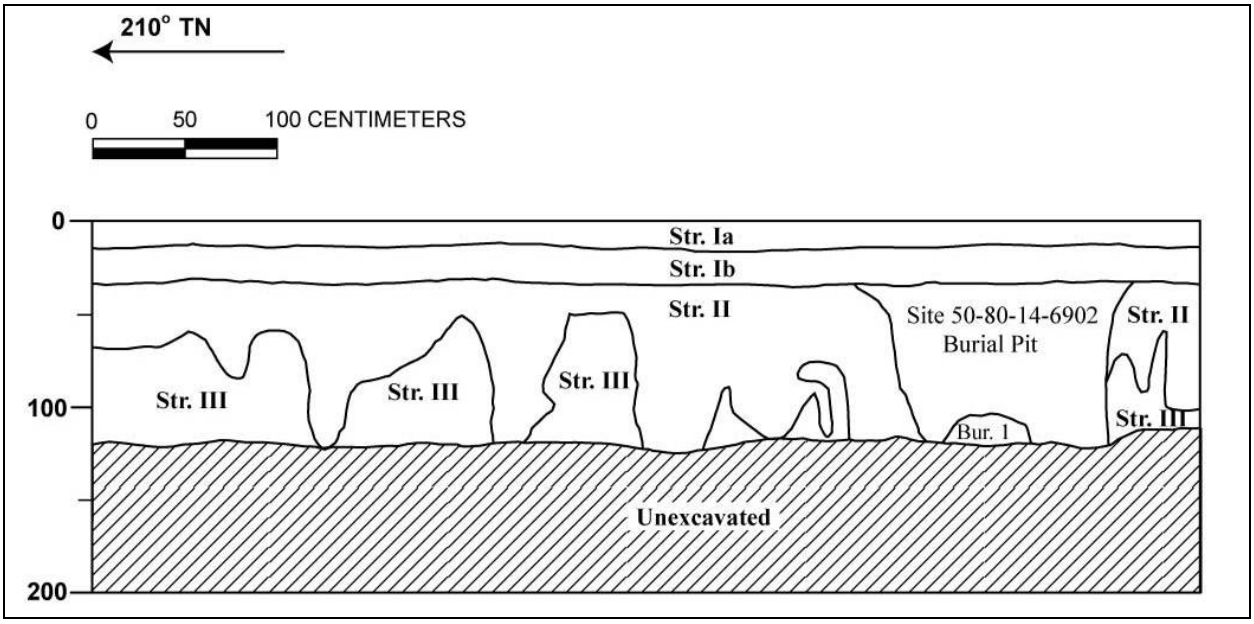


Figure 48. Backhoe Trench 4, West Wall Profile, with SIHP 50-80-14-6902, Burial 1

Burials 2 and 3

Backhoe Trench 19 (Figure 29) contained two burial pits, designated Burials 2 and 3 of SIHP 50-80-14-6902. Trench 19 is 1 m east and parallel to Trench 4, which contained Burial 1 of SIHP 50-80-14-6902.

Stratum	Depth (cmbs)	Description
Ia	0-12	Asphalt; 10 YR 2/1, black; very abrupt smooth lower boundary
Ib	12-28	Fill; 10 YR 8/2, very pale brown; mixed coral fill; moderate, blocky structure; weakly coherent dry consistency; non-plastic; no cementation; very abrupt smooth lower boundary
II	28-90	10 YR 3/3, dark brown; clay loam; moderate, granular structure; sticky wet consistency; slightly plastic; weak cementation; abrupt wavy lower boundary; no cultural material

Burial Pit	30-121	**Burial Pits, SIHP 50-80-14-6902, Burials 2 and 3** 10 YR 3/2, very dark grayish brown; sandy clay; weak, granular structure; loose moist consistency; non-sticky wet consistency; non-plastic; no cementation; clear smooth lower boundary; SIHP 50-80-14-6902, Burials 2 and 3 and coffin nails were within this stratum, no other cultural material
IV	68-138 (BOE)	10 YR 2/1, black; volcanic cinders; structureless, loose dry consistency; non-sticky wet consistency; non-plastic; no cementation; bottom of excavation.

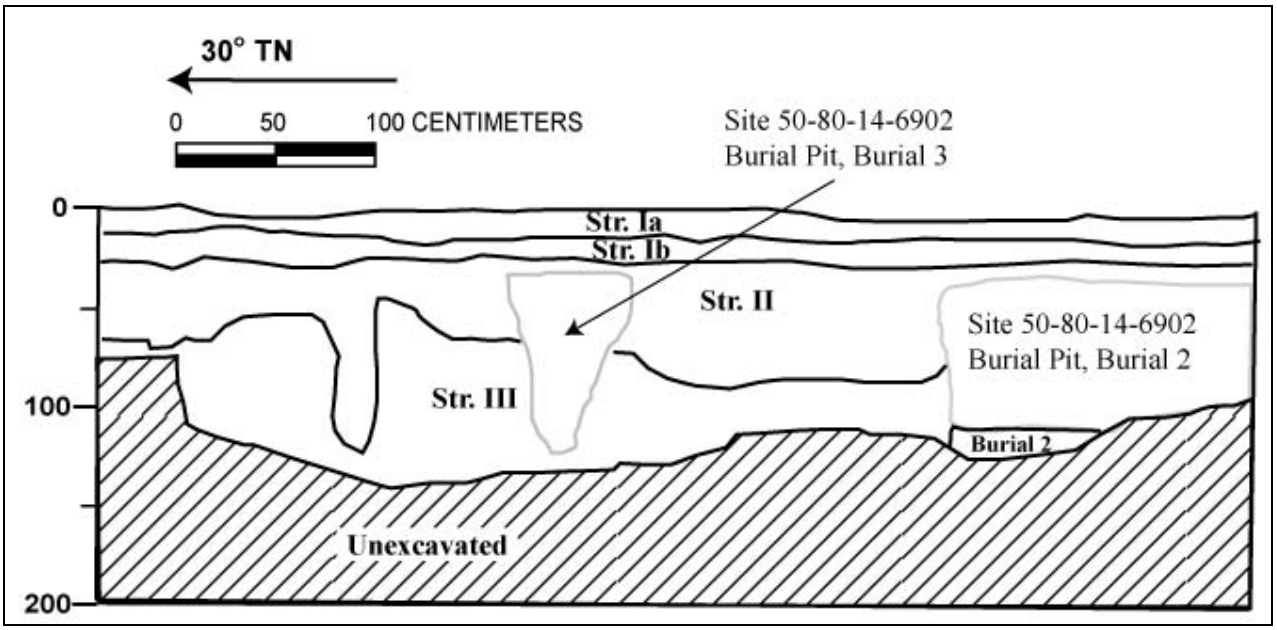


Figure 49. Backhoe Trench 19, North Wall Profile, with Burials 2 and 3 of SIHP 50-80-14-6902

Appendix E Complete Artifact Analysis

Analysis from O’Hare et al. 2007, Features 1-4

Representative samples of both diagnostic and non-diagnostic artifacts were collected from the four trash pits observed in the 2007 O’Hare et al. study (Features 1-4). Figure 50 shows a representative sample of the collected ceramics, stoneware and bottles found in Features 1-4.

Figure 50. Representative sample of artifacts from features 1-4. Scale units are centimeters.

Bottle Glass Analysis

A total of 41 glass bottle fragments were collected during the 2007 O'Hare et al. study from the Alapai Transit Center project area, Features 1-4:

- **SIHP 50-80-14-6901, Feature 1 -** 4 fragments from a trash pit 80 cm (centimeters) below surface in Trench 3;
- **SIHP 50-80-14-6901, Feature 2 -** 26 bottle fragments from a trash pit (30-240 cmbs) in Trench 18;
- **SIHP 50-80-14-6901, Feature 3 –** 7 bottle fragments from a trash pit (Stratum Ic, 105 cmbs) in Trench 22; and,
- **SIHP 50-80-14-6901, Feature 4** – 4 bottle fragments from a trash pit (Stratum II, 35-140 cmbs) in Trench 26

Based on the completeness of the bottles, their color, and type, the fragments from Features 1 - 4 represent a minimum of 39 bottles. The analysis of the bottle characteristics is presented in Table 2 through Table 5.

All terminology used to describe bottle traits and all bottle dating information was taken from the Bureau of Land Management (U.S. Dept. Interior) "Historic Glass Bottle Identification and Information Website" (http://www.blm.gov/historic_bottles/index.htm).

Two bottles, both from Feature 4, have pontil marks, a distinguishing characteristic of the free-blown bottle (Figure 51). Most bottles after 1865 were blown in molds and do not have pontil marks, thus these two bottles were probably made before 1865. One has a "blow-pipe" (also called a "ring" or a "tubular" pontil), which was formed when a blow-pipe was attached and used to hold the base of the bottle while the lip of the bottle was finished by hand. This type of pontil is usually found on bottles made before 1865. The second bottle has a "glass-tipped" pontil (also called an "open" pontil), which formed when a solid-iron rod tipped with molten glass was used to hold the bottle base. Bottles with this type of pontil were also generally made before 1865. The third bottle from Feature 4 that could be dated was blown in a Rickets mold, invented in 1823 and used up to the 1920s.

The remainder of the bottles (base and body fragments) from Features 1, 2, and 3 were blown in molds, generally used after 1850. None of the bottles were manufactured by the Automatic Bottle Machine (ABM) method, which can be recognized by a side seam that extends from the heel of the bottle to and over the lip. The first ABM machine was invented in 1903, and by 1920, most of the American bottle manufacturers had switched to this new technique. Thus the pontilled bottles from Feature 4 could all date before 1865, while the blown-in-mold bottles from Features, 1, 2, and 3 probably date after 1850 and up to 1920.

Some narrowing of this date range can be made on some of the blown-in-mold bottles. Early mold-blown bottles were blown in dip molds, which often extended from the bottle base to the shoulder. Bottles made in this type of mold usually have a horizontal seam around the bottle body or shoulder. Dip molds were generally phased out by 1870. Five black glass beer/whiskey/ale bottles from Feature 2, one olive green beer/whiskey/ale bottle from Feature 3, and one clear beverage (probably mineral water or soda bottle) have a shoulder seam and thus

Table 2. Trench 3, SIHP 50-80-14-6901, Feature 1, Trash Pit within Stratum II (80 50-95 cmbs) - Glass Bottles

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip Finish	Lip Type	Function	Embossing/ Surface	Mfg. Date
1	Lip & Neck fragment	7.5+	--	Clear	--	No Seams Visible	Unknown	Tooled (1880-1920)		Unknown	None	1880-1920
2	Lip & Neck fragment	5.5+	--	Aqua	--	No Seams Visible	Unknown	Tooled (1880-1920)		Unknown	None	1880-1920
3	Base to shoulder	13.4+	6.5	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920
4	Base to shoulder	12.5+	6.4	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920

Table 3. Trench 18, SIHP 50-80-14-6901, Feature 2, Trash Pit within Strata II and III (30-240 cmbs) - Glass Bottles

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
5	Complete	22.9	6.6	Black	Round with Kick-up	Seam around shoulder	Dip mold (-1870	Applied (1800-1890)	Brandy (1860-1920)	Beer/Ale/ Whiskey	Hammered surface (ends in 1920); no embossing	1860-1870
6	Base to Neck	21.3+	6.7	Black	Round with Kick-up	Seam around shoulder	Dip mold (-1870	--	--	Beer/Ale/ Whiskey	Hammered surface; no embossing	1850-1870
7	Base/ 1/2 body	15.0+	6.7	Black	Round/ with kick-up	Seam around shoulder	Dip mold (-1870)	--	--	Beer/Ale/ Whiskey	Hammered surface; no embossing	1850-1870
8	Lip & Neck (may fit #7)	8.7+	--	Black	--	--	--	Tooled (1880-1920)	Brandy (1860-1920)	Beer/Ale/ Whiskey	Hammered surface; no embossing	1880-1920

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
9	Base/ 1/2 body	9.6+	8.6	Black	Round/ kick-up	--	--	--	--	Beer/Ale/ Whiskey	Hammered surface; no embossing	1850-1920
10	Complete	39.6	6.8	Amber	Round with Kick-up	Horizontal indention round body	Dip mold (-1870	Applied (1800-1890)	Champagne (1850-1890 for Applied lips)	Cham-pagne/ Wine	None	1850-1870
11	Base to shoulder	12.2+	6.5	Olive Green	Round/ with kick-up	Horizontal seam around shoulder	Dip mold (-1870)	--	--	Beer/Ale/ Whiskey	None	1850-1870
12	Lip & Neck	12.7+	--	Amber	Round	Vertical seam ends on neck	--	Tooled (1880-1920)	--	Beer/Ale/ Whiskey	None	1880-1920
13	Base/ 1/2 body	10.5+	7.3	Amber	Round	--	3 pc. Mold (1830s-1920)	--	--	Beer/Ale/ Whiskey	None	1830-1920
14	Complete	23.8	6.3	Dk. Brown	Round	No Seams Visible	Turn Mold (1850-1920)	Tooled (1880-1920)		Beer/Ale/ Whiskey	None	1880-1920
15	Complete	24.2	6.3	Dk. Brown	Round	No Seams Visible	Turn Mold (1850-1920)	Tooled (1880-1920)		Beer/Ale/ Whiskey	None	1880-1920
16	Base	12.0+	9.0	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920
17	Lip & Neck (may fit #16)	11.8+	--	Olive Green	--	No Seams Visible	Turn Mold (1850-1920)	Tooled (1880-1920)		Beer/Ale/ Whiskey	None	1880-1920
18	Base/ 1/2 body	9.4+	6.4	Olive Green	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920
19	Base/ 1/2 body	11.5+	6.4	Amber	Round	No Seams Visible	Turn Mold (1850-1920)	--	--	Beer/Ale/ Whiskey	None	1850-1920

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
20	Base fragment	--	--	Olive Green	Round/ with kick-up	--	--	--	---	Beer/Ale/ Whiskey	None	1850-1920
21	Complete	29.7	7.0	Amber	Round	Vertical seam ends on neck	Cup Mold (1850s-present)	Tooled (1880-1920)	Blob Top (1870-1910 for beer bottles)	Beer/Ale	BUFFALO/BREWING Co./ SACRAMENTO/ CAL (on body); M. G. Co. 6 (on base): Dating: Base marking for Modes Glass Co. (1895-1904); brewery in operation from 1890-1942	1895-1904
22	Base to Shoulder	19.0+	7.3	Dr. Emerald Green	Square with beveled corners (1860-1930s)	No Seams Visible	Turn Mold (1850-1920)	--	--	Case Gin	J.T.BEUKERS/ SCHIEDAM.	1860-1930s*
24	Base to Neck	20.1+	5.6	Pale Gr. Aqua	Oval	No Seams Visible	Codd's Marble Stopper (1884-1898 in Hawai‘i)	--	--	Soda	HOLLISTER & Co. HONOLULU H.I./ (on body); BARNETT & FOSTER MAKERS LONDON N/ THE NIAGARA BOTTLE RD 65433 (on heel)	ca. 1893
25	Complete	18.8	5.4	Aqua	Round	Vertical seam ends at neck (ends 1890 for Lea and Perrins)	Cup Mold (1850s-present)	Tooled (1870-1920)	Club Sauce	Condiment	WORCESTERSHIRE (around shoulder); LEA & PERRINS (vertical on body); J D S 57 (on base); Dating: company began in 1830s; JDS, for John Duncan and Sons added in 1877 when bottles made in America	1877-1890
26	Base to Neck	8.3+	4.9 x 2.8	Clear	Fluted Oblong	No Seams Visible	Turn Mold (1850-1920)	--	--	Medicinal	None (Bottle has panels for paper labels)	1850-1920

Acc. No.	Portion	Height (cm)	Base Diam. (cm)	Color	Body/ Base Shape	Seams	Mfg. Technique	Lip/ Finish	Lip (Type)	Function	Embossing/ Surface	Mfg. Date
27	Complete	14.5	4.8 x 2.4	Aqua	Oblong Prescrip-tion	Vertical seam ends at lip	Turn Mold (1850-1920)	Applied (1800-1890)	Extract	Medicinal	None (Bottle has panels for paper labels)	1850-1920
28	Complete	9.5	3.6	Clear	Round	Vertical seam ends at top of shoulder	Cup Mold (1850s-present)	Tooled (1870-1920)	Flat/ with glass stopper intact	Perfume	LUBIN/PARFUMEUR, / PARIS	1850-1920
29	Complete	7.6	4.5	Clear	Round	No Seams Visible	Turn Mold (1850-1920)	Applied (1800-1890)	Wide-Mouth Patent	Household (Pomade, Shoe Polish)	295/A (on base)	1850-1920
30	Lip & Neck	3.4+	2.3	Clear	--	--	Unknown	Applied (1800-1890)	--	Unknown	None	1800-1920

Table 4. Trench 22; Stratum Ic, Feature 3 (105 cmbs) - Glass Bottles

Acc. No.	Portion	Height (mm)	Base Diam. (mm)	Color	Body / Base Shape	Seams	Mfg. Technique	Lip Type	Lip Finish	Function	Embossing/ Surface	Mfg. Date
31	Complete	63	23	Olive green	Round with push-up	Seam around shoulder	Dip Mold (1800-1920s)	Applied (1820-1890s)	Mineral (1820-1920s)	Beer/Ale/ Whiskey	None	1820-1890s
32	Body Fragment/ Base	--	60	Light bluish-green	Round with push-up	No seams visible	Turn Mold (1865-1920s)	--	--	Unknown	None	1865-1920s
33	Lip and Neck	--	--	Dark em’rald green	Round	--	--	Applied (1820-1890s)	Wide Patent (1850-1890s)	Unknown	None	1850-1890s
34	Whole	60	23	Dark olive green	Round	No seams visible	Turn Mold (1865-1920s)	Applied (1820-1890s)	Mineral (1820-1920s)	Beer/Ale/ Whiskey	None	1865-1890s

Acc. No.	Portion	Height (mm)	Base Diam. (mm)	Color	Body / Base Shape	Seams	Mfg. Technique	Lip Type	Lip Finish	Function	Embossing/ Surface	Mfg. Date
35	Lip/ Neck/ Body Fragment	--	--	Clear	Round	Seam around shoulder	Dip Mold (1800-1920s)	Applied (1820-1890s);	Tapered/ Rounded Blog Top (1840-1870s)	Beverage	None	1840-1870s
36	Base to Neck	--	63	Dark olive green	Round with push-up	No seams visible	Turn Mold (1865-1920s)	--	--	Beverage	None	1865-1920s
37	Base Fragment	--	--	Clear	Round	--	--	--	--	Ink company founded in 1857	SANFORD'S (on base)	1857-present

Table 5. Trench 26; Stratum II, Feature 4 (35-140 cmbs) – Glass Bottles

Acc. No.	Portion	Height (mm)	Base Diam. (mm)	Color	Body / Base Shape	Seams	Mfg. Technique	Lip Type	Lip Finish	Function	Embossing/ Surface	Mfg. Date
38	Lip and Neck	--		Dark olive green	--		--	Applied (1820-1890s)	Mineral (1820-1920s)	Beer/ Ale/ Whiskey	None	1820-1890s
39	Body Fragment/ Base	--	44	Light bluish-green	Round	No seams visible	Free-Blown; Blow-Pipe Pontil (pre-1865)	--	--	Unknown	None	pre 1865
40	Body Fragment/ Base	--	87	Clear	Round	No seams visible	Free-Blown; Glass-tipped Pontil (pre-1865)	--	--	Unknown	None	pre 1865
41	Body Fragment/ Base		74	Light. green	Oval	No seams visible	Ricketts Mold (1823-1920s)	--	--	Unknown	None	1823-1920s

1.

Figure 51. Two bottle bases from Trench 26, feature 4, showing pontil scars. Accession number 39 at left, 40 at right (refer to Table 5)

were probably manufactured in a dip mold before 1870. Other collected bottles were made in a cup-mold (mold seam around base and up each side) or in a turn mold (seams are obliterated by firing process); however, the dates of these manufacturing techniques (1850-1920) do not give us any narrower date range for manufacturing.

When bottles were free-blown or blown in a mold, the lip of the bottle was finished by hand as the last step. Beginning in the 1800s, additional glass was “applied” around the lip as a bead or collar, usually to stabilize the lip or to provide a protuberance for some type of metal closure. Beginning in the 1870s, the technique changed, and the neck and the lip of the bottle were re-fired (without adding additional glass) and molded with a “lipping tool.” These tools were quickly adopted, and by the 1890s applied lips were phased out and lips were finished by lipping tools. Eleven bottle/lip fragments in our collection have applied lips (1800-1890) and nine have tooled lips (1870s-1920). As noted, by 1920, most American manufacturers had switched to the Automatic Bottle Machine, which automatically formed the lip as part of the complete bottle mold.

There are a variety of lip finish types for bottles in the collection, including a “champagne” finish for a wine/champagne bottle, a “brandy” finish for two beer/whiskey/ale bottles, a mineral finish (similar to the brandy finish) for three beer/whiskey/ale bottles, one “blob top” finish for a beer/ale bottle, one blot top for a beverage (probably mineral water or soda), three “flat” (patent) type finishes for a medicinal/extract type bottle and two wide-mouthed jars, one extract finish for a medicinal/extract type bottle, and one club sauce finish for a Lea and Perrins Worcestershire bottle. Some types of finishes can be used to narrow the date ranges for these bottles. The champagne finish for applied lips was used from 1850-1890, the brandy finish was

used between 1860-1920; the mineral finish was used between 1820 and the 1920s, the blob top on beer bottles was used from 1870-1910, a tapered or rounded blob top for sodas and mineral water was used from 1840 to the 1870s, and the club sauce finish was used from 1830 to the present.

Additional dating information can be collected from embossing on bottles. Only six of the bottles contain any embossing.

A case gin bottle embossed “J. T. Beuckers/Schiedam” (Figure 52, accession #22) was collected from Trench 18. No information could be found concerning this company, but the style of the case gin (base with beveled corners) was usually made after 1860.

One perfume bottle is embossed “Lubin Parfumeur, Paris” (Figure 53, accession #28). The Lubin perfume house was established in Paris in 1798. In America, it marketed its wares to the “plantation culture of the southern United States” (Now Smell This 2007). These bottles have been found at other archaeological sites on Hawai‘i, such as at Luluku (near Kāne‘ohe), O‘ahu and at the Keanakolu site on Mauna Kea on Hawai‘i Islands (Mills 2007).

There is one amber bottle with a blob top finish, embossed “Buffalo Brewing Co., Sacramento” on the body and “M. G. Co.” on the base. The Buffalo Brewing Co. was open from 1890-1942. The glass bottle was made by the Modes Glass Co. (M. G. Co.), which used this base mark from 1895-1904 (Toulouse 1971:360).

One Codd’s Marble Stopper bottle embossed with “Hollister & Co., Honolulu” was collected (Figure 53, accession # 24). The authors of a book on Hawaiian bottles (Elliott and Gould 1988) show (in their illustrations), that Hawaiian Codd’s Marble Stoppers bottles were filled with water or soda by at least four companies in Hawai‘i between 1884 to 1898. The Codd’s bottle in the Alapai Transit collection is also embossed “The Niagara Bottle” on the heel. Elliott and Gould (1988:26) discovered that Hollister & Co., an early Honolulu drugstore, acquired a Niagara filling machine in the early 1890s and used it until about 1894. They (Elliott and Gould 1988:113) illustrate a Hollister & Co. bottle identical to the Alapai Transit bottle, dated to circa 1893.

One bottle is embossed “Worcestershire Sauce” around the shoulder, “Lea and Perrins” vertically on the body, and “J D S 57” on the base (Figure 53. accession # 25). Lea and Perrins Worcestershire Sauce was invented in the 1830s in England. The bottles were first imported from England, but in 1877, the American agents, John Duncan and Sons began to bottle the sauce in America. At that time they embossed “J D S” on the American-made bottles. The company began to use a semi-automatic bottle machine in the 1890s, so the lips after this date would not be applied or tooled. The Lea and Perrins bottle from Trench 18 has “J D S” embossed on the base and has a tooled lip, and thus was not made by a semi-automatic machine. It therefore dates from 1877 to 1890.

One bottle base fragments is embossed “SANFORD’S”. Sanford’s is an ink manufacturer established in 1857 and still in business today.

In conclusion, 4 bottles from Feature 3 date from pre-1865 to the 1920s, and may all date before 1865. This feature seems to contain older material than the other three trash pits. It is located in the general location of the former Atherton houses and may be refuse from these nineteenth century residents.

Figure 52. A variety of wine, beer and gin bottles as well as a stoneware jug. Accession numbers noted above each artifact (refer to Table 3, Table 4 and Table 8).

Figure 53. From left to right: soda, condiment, medicinal and perfume bottles. Accession numbers noted above each artifact (refer to Table 3).

The other 35 bottles from the O’Hare et al. (2007) investigation of the Alapai Transit Site probably date between ca. 1850 and 1920. At least six bottles were made before 1870 (dip mold-shoulder seam), a champagne bottle was made between 1850-1890, one Lea and Perrins bottle was made between 1877-1890, one beer bottle was made between 1895-1904, and one Codd’s Marble Stopper bottle was made ca. 1893.

Other Artifacts

Thirty other artifacts (some fragmented) were collected from Trenches 3, 18 and 26 (**SIHP 50-80-14-6901, Features 1, 2, and 4**) (Table 6 to Table 10). Most are not useful for dating the age of deposition for the trash pits. They consist of two glass lamp chimneys, two glass vials, a glass object (possibly a candlestick holder), a black glass fragment, a glass bead, 12 whiteware ceramic dinnerware (Figure 54 accession #s 51 & 64), one stoneware crock, one stoneware jug, one porcelain lid (Figure 54 accession # 66), six rusted metal fragments, one corkscrew with a handle made of antler, one golf ball fragment, five cut/sawn mammal bones, one chicken bone, one chert core, and one bone toothbrush handle.

This may indicate that all of the bottles were manufactured in the late nineteenth century to around the turn of the century. This would date the bottles to the time of the Atherton residence and possibly afterwards.

Figure 54. Sample of ceramics from trenches 3 and 26, features 1 and 4 respectively. Accession numbers noted above each artifact (refer to Table 6 and Table 9)

Table 6. Trench 3, SIHP 50-80-14-6901, Feature 1, Trash Pit – Other Artifacts

Acc. No.	Material	Artifact Type	Portion	Length (cm)	Width/ Diam. (cm)	Comments	Function
42	Glass	Unknown	Corner fragment	7.5+	2.4	Black glass fragment from a base or a tray	Unknown
43	Glass	Vial/ Ampoule	End broken	5.5+	0.7	Clear Glass; patent lip	Medicinal
44	Glass	Lantern Chimney	Fragment	3.8+	--	Clear glass	Household
45	Glass	Bead	Complete	--	0.7	Lt. green bead faceted along diameter	Decoration
46	Whiteware	Bowl/ Basin	Base	--	14.5	Possibly a water basin or a chamber pot	Household
47	Whiteware	Cup	Complete cup with broken handle	6.0	6.3	One gold band; possible sake cup	Household
48	Metal	Unknown	5 fragments	--	--	rusted fragments	Unknown
49	Chert	Core	Complete	5.5	5.5	Chert core; one face (20%) has cortex; five rectangular flakes removed	Possible core to make gun flints or lighting flints
50	Bone	Toothbrush	Handle fragment	10.4	1.3 x 0.8	Polished bone handle; biconvex and curved in profile; one end rounded; broken end narrows for connection to brush section (not present); etched on one side "EVERY BRUSH WARRANTED"	Household
51	Whiteware	Lid	Complete	0.8 cm flange	5.1	Whiteware with red, monochrome, geometric decal around rim; conical top	Household, possible teapot lid

Table 7. Trench 18, SIHP 50-80-14-6901, Feature 2, Trash Pit - Other Artifacts

Acc. No.	Material	Artifact Type	Portion	Length (cm)	Width/ Diam. (cm)	Comments	Function
52	Glass	Lantern Chimney	Complete	21.2	7.2	Has one hole in side	Household
53	Glass	Vial	Complete	4.4	1.2	Clear Glass; rolled lip	Medicinal
54	Whiteware	Plate	Fragment	17.7	--	Serving platter	Household
55	Iron	Horseshoe	Complete	14.0	12.1	Rusted	Transportation
56	Metal	Unknown	Fragment	--	--	Rusted metal fragment	Unknown
57	Metal/ Antler	Corkscrew	Complete	17.5	13.8	Corkscrew made of metal; handle made of antler	Household
58	Rubber	Golf Ball	Fragment	--	4.8	-	Recreation
59	Bone	Butchered Bone	5 fragments	--	--	Chopped and sawn bone mammal bone fragments; probably cow or pig	Household
60	Bone	Bone	Fragment	--	--	Chicken bone	Household

Table 8. Trench 26, Stratum II, Feature 4 (35-140 cmbs) – Other Artifacts

Acc. No.	Material	Artifact Type	Portion	Length/ Height (cm)	Width/ Diam. (cm)	Comments	Function
61	Glass	Candlestick Holder?	Fragment	73	75	Clear, round tiered glass object	Household
62	Stoneware	Crock	Rim Fragment			Tri-color hand painted bands; orange, blue and white, and yellow glaze	Household
63	Whiteware	Bowl	3 fragments			Tri-color; ribbed banding	Household
64	Whiteware	Cup (rice)	5 fragments			Has foot and fluted undersides; brown transfer print; interior and exterior thistle design	Household
65	Whiteware	Small Pitcher (gravy0	5 fragments			Blue transfer print; exterior and interior near rim; Willow pattern	Household
66	Porcelain	Lid (ginger jar)	1 fragment	1.5 cm flange	9.5	Flow blue design; thick porcelain	Household
67	Whiteware	Cup	1 body fragment			Blue decal, possible Willow pattern on exterior; blue decal geometric interior	Household
68	Whiteware	Pitcher	1 body fragment			Blue transfer print; possible Willow pattern; very similar to gravy pitcher, but not from same vessel	Household
69	Whiteware	Saucer	Base fragment			Makers mark on base bottom: Jester holding a sign that reads "E WOOD & SONS"; purple transfer print interior design of Japanese house, stream, boat, and landscape; Makers mark for the pottery company of Enoch Wood and Sons, Burslem, England, who used this mark from 1818-1846	Household
70	Whiteware	Pitcher	Body fragment			Rounded body with missing handle scar	Household
71	Stoneware	Jug with missing handle	3pcs (lip to base but not complete)			Orange glaze; beverage bottle	Household

One saucer base (Figure 55, three views) from Feature 4 has a maker’s mark, showing a jester holding a sign for “E WOOD & SONS.” E. Wood and Sons was a pottery company based in Burslem, England that used this mark from 1818 to 1846 (Stoke-on-Trent 2007).

Figure 55. "E WOOD & SONS" saucer – three views (refer Table 8)

The chert core is of a dense gray material and may have been used to strike off gunflints or flints for striking sparks. The material is not the type of chert found in Hawai‘i and must have been imported.

The bone toothbrush is etched/stamped “EVERY BRUSH WARRANTED.” The first European-style toothbrush was invented in 1780 in England. It consisted of a handle and brush base made of cattle bone. Pig bristles were placed in drilled holes in the brush portion. The brush portion of the Alapai Transit toothbrush is missing. In the 1920s, a new plastic called celluloid was used to make the handles, and in 1938, nylon replaced the pig bristles; thus, the collected toothbrush dates between 1780 and 1920.

Summary of Historic Artifacts

The four trash pits observed in the O'Hare et al. (2007) study (**SIHP 50-80-14-6901, Features 1 to 4**) contained a variety of artifacts typical for nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments. The bottles were for wine/champagne, gin, beer/whiskey/ale, soda/mineral water, beverages, condiments, medicine, and perfume. Most of the bottles date from 1850 to no later than 1920. Three bottles from Feature 4 may have been manufactured at an earlier date than the bottles from Features 1-3. Two bottles were probably manufactured before 1865. This would correlate with another artifact from Feature 4, a whiteware saucer fragment, which had a maker's mark that dated the manufacture of the saucer from 1818-1846.

The artifact assemblage shows strong Euro-American affinities. Identified countries of origin for the artifacts include the United States (accession #s 21 & 25), the Netherlands (accession # 22), France (accession # 28), England (accession # 69) and Hawai‘i circa 1893 (accession # 24). No artifacts of a clearly Asian origin were identified and possibly all of the artifacts were of European, English or American origin (the affinities of the ginger jar lid accession # 66 are uncertain). While mid and late 1800s residents of Honolulu of various ethnicity would use a variety of products from various countries of origin the assemblages are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with refuse from the Cooke and Atherton families or their neighbors resident in the immediate area in the indicated timeframe.

Other artifacts from the O'Hare et al. (2007) investigation include glass household items, ceramic dinnerware, one glass bead, a chert core, a bone toothbrush, a corkscrew, a golf ball, and rusted metal fragments. Although these were not useful in dating the deposition for the trash pits, the variety of objects do support the suggestion that the trash pits contain refuse from individual households.

Analysis from Pammer et al. 2009, Features 5-7

Representative samples of both diagnostic and non-diagnostic artifacts were collected from the three trash pits observed during the Pammer et al. (2009) investigation (SIHP 50-80-14-6901, Features 5-7). Figure 56 shows a representative sample of the collected ceramics, stoneware, artifacts, and bottles.

Bottle Glass Analysis

Twenty-one glass bottle fragments were collected from the Alapai Transit Center project area:

> **SIHP 50-80-14-6901, Feature 5 –** 21 bottle fragments from a trash pit (25-125 cmbs) in Trench 4

All terminology used to describe bottle traits and all bottle dating information was taken from the Bureau of Land Management (U.S. Dept. Interior) "Historic Glass Bottle Identification and Information Website" (http://www.blm.gov/historic_bottles/index.htm).

Figure 56. A small sample of the artifacts from Features 5-7

Table 9. SIHP 50-80-14-6901 Features 5, 6 & 7, Representative sample of Glass bottles (See Table 11 and Table 12 below for full catalogue)

Acc. #	Trench	Feature	Stratum	Portion	Color	Ht. (cm)	Dia. (cm)	Base Shape	Mfg. Tech.	Lip Finish	Lip Type	Embossing and other comments	Function	Date
23	4	5	II	Complete w/ small chip off lip	Amber	10.75	4.25	Excelsior or rounded cornered blake	ABM	ABM	Prescription	No embossing, double ringed O on base. Non diagnostic	Medicine	Unknown
24	4	5	II	complete	Dark Amber	14	6	Blake Varient 1	ABM	ABM	Bead ?	"Mary T. Goldman, St. Paul, Minn." on body. "6" on base which dates from Diamond Glass Co. pre-1924	Gray hair color restorer	1903-1924
26	4	5	II	Complete	Clear	7.5	2.75	Hub or golden gate oval	Cup mold	Tooled	Prescription "patent"	'1/2' on shoulder	Medicine	Unknown
27	4	5	II	Complete	Clear	6.25	4.75	--	ABM	ABM	Ink pot	ink pot, 2oz on neck, lip seam smoothed out. Owens suction scar	Ink pot	1860-1930
28	4	5	II	Fragment Lip and neck	Aquamarine	--	--	--	ABM	ABM	crown	LHC on lip	Unknown	Post 1903
36	4	5	II	complete	Clear	15.25	4.75	Round	ABM	ABM	Prescription	"Lavoris Minneapolis Chemical Co." on base. "Lavoris" and a star on shoulder. Owens suction scar on base	Medicine	1905/1910 - 1920's
37	4	5	II	complete	Clear	8	3.25	Round	Turn mold	ABM	Prescription	none	medicine	1850-1920
38	4	5	II	complete	Amber	13	4	Round	--	--	--	Metal lid still attached, lip and seam unknown. 'W' on base, possible Wheaton bottle, post mold	Medicine?	1946?
39	4	5	II	complete	Clear	7	3.5	Round	ABM	ABM	Prescription	Seam smooth around lip, tooled? Eagle (?) print on heel	--	--
40	4	5	II	complete, broken in half	Clear	14.75	6.25	Blake Varient 1	ABM	ABM	Flat or patent	Seam to neck, Owens-Illinois emboss on base. 8 (O in a square) 2	Medicine	1922/1932
41	4	5	II	base	Amber	--	--	Round	--	--	--	Owens-Illinois emboss on base. 8 (O in a square) 1. Post mold	--	1921/1931
42	4	5	II	base and body fragment	Clear	--	--	Unknown, rectangular	--	--	--	Hinds "Portland Me. USA" on body.	Perfume and creams	--

Pontil marks are a distinguishing characteristic of the free-blown bottle. Most bottles after 1865 were blown in molds and do not have pontil marks, thus all the bottles and bottle fragments represented were likely manufactured after 1865. Early mold-blown bottles were blown in dip molds, which often extended from the bottle base to the shoulder. Bottles made in this type of mold usually have a horizontal seam around the bottle body or shoulder. Dip molds were generally phased out by 1870. None of the bottles collected displayed pontil marks or evidence of dip molds.

Other collected bottles were made in a cup-mold (mold seam around base and up each side) or in a turn mold (seams are obliterated by firing process) which had a date range of 1850-1920. There was one cup mold bottle and one turn mold bottle, both observed in Feature 5. Though post-molds were typically used in the mid nineteenth century, two bottles display post molds, one of them with an Owens bottle date which dates it to either 1921 or 1931. Both of the bottles appear to be medicine bottles which typically were only made in post-mold until 1875, though soda bottles were still being made in post molds after 1900.

Most of the bottles were manufactured by the Automatic Bottle Machine (ABM) method, which can be recognized by a side seam that extends from the heel of the bottle to and over the lip. The first ABM machine was invented in 1903, and by 1920, most of the American bottle manufacturers had switched to this new technique. Thus, the cup mold and turn mold bottles coupled with the ABM bottles suggests a date range of about 1903-1920’s.

When bottles were free-blown or blown in a mold, the lip of the bottle was finished by hand as the last step. Beginning in the 1800s, additional glass was “applied” around the lip as a bead or collar, usually to stabilize the lip or to provide a protuberance for some type of metal closure. Beginning in the 1870s, the technique changed, and the neck and the lip of the bottle were re-fired (without adding additional glass) and molded with a “lipping tool.” These tools were quickly adopted, and by the 1890s applied lips were phased out and lips were finished by lipping tools. None of the bottles have applied lips and one has a tooled lip (1870s-1920) which coincides with the 1903-1920 date range noted above suggested by the bottle seams. As noted, by 1920, most American manufacturers had switched to the Automatic Bottle Machine, which automatically formed the lip as part of the complete bottle mold.

Additional dating information can be collected from embossing on bottles. Only two of the bottles contain any diagnostic embossing.

A medicine bottle embossed “Mary T. Goldman, St. Paul, Minn.” (Figure 57, accession #24) was collected from Trench 4. The bottle contained a gray hair color restorer and which was advertised in magazines as a clear potion which could be used to restore the color to all hair types and colors. The bottle is a Diamond Glass company bottle dating to 1903-1924. This date range was determined by the ABM seam which dates from 1903 to present coupled with a ‘9’ on the base of the bottle. This symbol would have been discontinued in 1924 when the Diamond Glass Co. began using a diamond symbol on the base of their bottles.

A Hinds bottle fragment from Portland, Maine consists of an incomplete base with the lower third of the body remaining. There is enough embossing visible to determine that it is a Hinds bottle that likely contained a perfume or cream product. The Hinds company began in 1875 and

Figure 57. Photo of Accession # 24, 27, 36, 39 & 40, diagnostic glass bottles. Note the embossing on Acc. # 24 “Mary T. Goldman, St. Paul Minn.”

was bought out in 1907 by Lehn and Fink. Hinds Honey and Almond Cream, its best selling product, was sold until 1948. It is not apparent which hinds project was sold in this bottle.

The other bottles from the Alapai Transit Site probably date between ca. late 1800’s and the 1920’s. Most of the bottles were made after 1903 (Automatic Bottling Machine molds), two bottles were made between 1850-1920 (one cup-mold and one turn-mold), one Mary T Goldman hair coloring bottle made between 1903-1924, and one Hinds bottle that could be from anywhere between 1875-1948. There was also a milk glass Mentholatum container which dates from 1906 to late 1900’s, a Lavoris Chemical Company bottle with an Owens suction scar which dates from 1905/1910 – 1920’s and an ink bottle dating from 1900-1930.

This may indicate that all of the bottles were manufactured in the late nineteenth century to early twentieth century. This would date the bottles to the time of the Atherton residence or the Y.W.C.A, which was erected in 1921. The nature of these trash pits is more consistent with a private residence than the Y.W.C.A which housed 50 girls.

In conclusion, only one of the Pammer et al. (2009) trash pits contained bottles. This feature seems to contain the only diagnostic materials observed in all three trash pits. It is located in the general location of the former Atherton houses and may be refuse from these late nineteenth and early twentieth century residents.

Other Artifacts

Many other artifacts (some fragmented) were collected from Pammer et al (2009) Trenches 3, 4 and 12 (SIHP 50-80-14-6901, Features 5, 6 and 7) (Table 10). Most are not useful for dating the age of deposition for the trash pits. The collected artifacts consist of one pot lid, 11 flower printed ceramic dinnerware (Figure 58 accession #s 2, 17, 18 & 19), non diagnostic ceramic fragments, one hand painted ceramic fragment, one ceramic fragment with blue flower, 4 milk glass fragments, one milk glass Palmolive soap fragment, one deformed metal lid with ‘HWH’ embossed on top, milk glass face cream containers, one light bulb, nails, earthenware fragments, flower pot fragment, one egg cup, one bone knife or cutlery handle, one pearl shell button, hand painted bowl fragment, flower pot tray, a glass candy bowl lid fragment, metal fragments, ceramic strainer, unglazed earthenware lid as well as some mammal and fish bone

Two plate fragments (Figure 59) from Feature 5 have a maker’s mark “CANTERBURY Trade Mark Registered, O.P. CO, Syracus, China.” Onandaga Pottery Company (O.P. CO) produced tableware, mainly for hotels and dining cars in trains. A 1913 add for Syracus China (Figure 60) pictures a china pattern identical to the pattern observed on the 11 fragments. This is consistent with the date range suggested by the bottles and bottle fragments.

One bowl fragment (Figure 61) from Feature 5 has a maker’s mark, showing a balloon shaped vase with “VITREOUS” stamped inside it. “Edwin M. Knowles, China Co. 20-1-3” is stamped below the picture. This mark is one of the many forms of a mark trademarked in 1920 and was used for an extensive but unknown amount of time. A faint remnant of a pattern in gold leaf can be seen on the inside lip of the bowl.

A hand painted circular ceramic pot lid (from Feature 5 depicts two women in old fashioned clothes and top hats (Figure 62). These ceramic pot lids were normally used to cover ceramic pots containing toothpaste, bear grease and cosmetic creams as well as potted meats, caviar, shrimp paste and anchovy paste. Since this lid has no writing, it can be assumed that it would have been for a cosmetic cream container, which usually pictured pleasant scenery. The scenery appears to be a farm scene which was intended to suggest a natural, wholesome product (Pynn 2004).The ceramic pots were eventually replaced in WWI when toothpaste tubes and other cheaper forms of packaging came into use (Pynn 2004).

From 1840 to about 1870, during the first 30 years of their production, ceramic pot lids were circular in shape. It was not until 1870 and 1880 that the lids become rectangular and square in shape (Pynn 2004). The pot lid found in Feature 5 is round which suggests a date of 1840-1870, but it is also possible that it is a replica based on the weight of the lid, which would make the date difficult to place. Most pot lids were manufactured in Liverpool, England though America also manufactured a smaller amount which can be found mainly in coastal areas of America.

The remaining two features, Feature 6 and 7, contained many artifacts including earthenware fragments, terra cotta and metal fragments. None of these artifacts are diagnostic (Figure 63).

Table 10. SIHP 50-80-14-6901 Features 5, 6 & 7, Representative Sample of Other Artifacts (See Table 11 and Table 12 below for full catalogue)

Accession #	Material Type	Function	Feature	Trench	Stratum	# of Pieces	Length	Width	Comments
1	Ceramic	Pot lid	5	4	II	1	4.75	--	Hand pained; possibly minimal transfer in outline. 2 ladies with top hats. Dutch?
2	Ceramic	Plate	5	4	II	6	--	--	Flower printed plate fragment "…nterbury registered" makers mark
7	Porcelain	Soap, Palmolive	5	4	II	1	--	--	Emboss on bottom "…soap… palmolive…waukee USA Toronto Canad…"
8	Metal	bottle lid	5	4	II	1	3	2.5	Metal lid, deformed, HWH on top
11	Porcelain	--	5	4	II	1	5	--	Bottom "…latum…mark… REC TRACE" screw top, some lid remains stuck
12	Glass	Glasses lense	5	4	II	1	3.75	2	Round glass, poss. Eye glass lense
16	Porcelain	Cosmetic	5	4	II	1	8.5	--	complete porcelain jar with metal lid rusted on; "marinello" on sides
17	Ceramic	Shallow bowl	5	4	II	3	--	--	3 flower printed fragments
18	Ceramic	Cup	5	4	II	1	--	--	one flower printed cup w/ fragment missing, matches bowl
19	Ceramic	Plate	5	4	II	1	--	--	matches flower printed bowl and cup

20	Ceramic	Bowl	5	4	II	1	--	--	light gold leaf design on lip. Makers mark on bottom. Design with "vitreous Edwin M. Knowles china co. 20-1-3"
21	Metal	Nail	5	4	II	1	10	--	severely rusted nail
48	Terra Cotta	Flower Pot	7	12	III	1	--	--	half flower pot
49	Crockery (earthenware)	egg cup (?)	7	12	III	1	--	--	top half of egg cup, white no decoration
51	Bone and metal	Utensil/Knife handle	7	12	III	1	--	--	knife or cutlery handle broken at metal in middle. Copper nail within
52	pearl shell	button	7	12	III	1	--	--	pearl shell button, 2 holes
56	bone	--	7	12	III	1	--	--	faunal bone
61	Terra Cotta	Tray for flower pot	6	3	III	1	--	--	tray for flower pot, half of tray, no decoration
62	fish bone	--	6	3	III	1	--	--	unidentifiable fish bone
64	glass	lid	6	3	III	1	--	--	Highly decorated clear glass fragments with handle, candy bowl lid (?)
65	ceramic	strainer	6	3	III	1	--	--	white ceramic fragment with holes in bottom, strainer(?) to drain water etc

Figure 58. Photo of Accession #2, 17, 18 & 19, ceramic sherds of a matching tableware set

Figure 59. Photo of Accession #2, ceramic sherds, notice the green makers mark on both fragments

Figure 60. An add printed in a January 15, 1913 issue of Vogue for O.P. CO. Syracuse China displaying a pattern identical to the patter observed on Accession #’s 2, 17, 18 & 19.

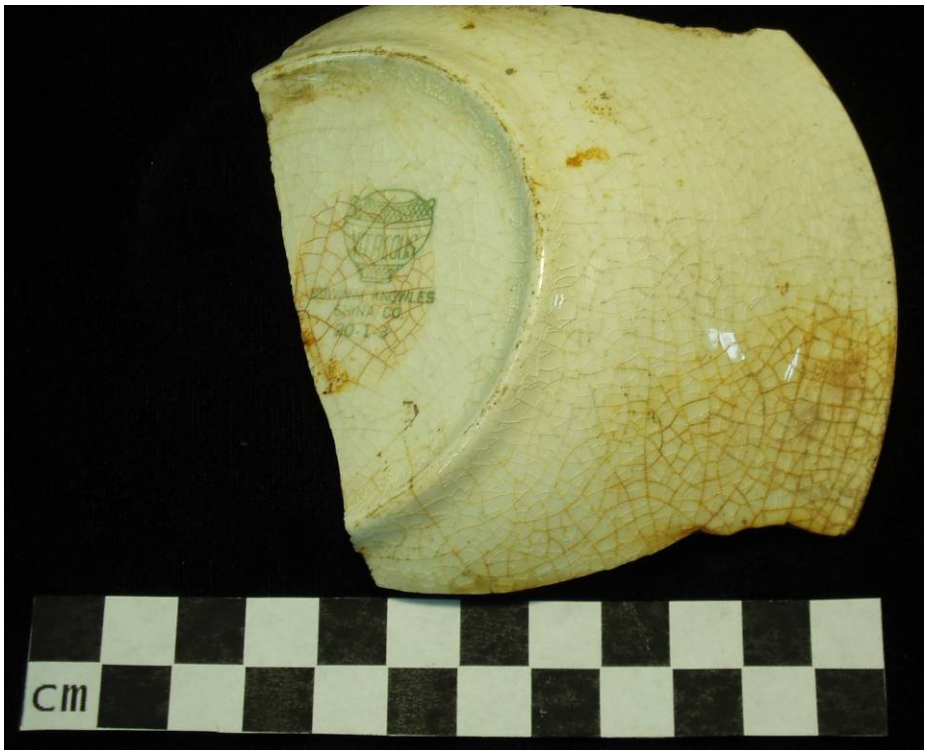


Figure 61. Photo of Accession #20, notice the green makers mark

Figure 62. Photo of Accession #1, hand painted ceramic pot lid

Figure 63. Photo of Accession #51, bone utensil handle, and #52 pearl shell button

Summary of Historic Artifacts

The three trash pits observed in the Pammer et al. 2009 study (SIHP 50-80-14-6901, Features 5 to 7) contained a variety of artifacts typical for late nineteenth and early twentieth century household refuse. The most common type of artifacts were bottles or bottle glass fragments. The bottles were typically medicine and perfume and most of the bottles date from 1900 to around 1920. This would correlate with artifacts from Feature 5, ceramic fragments, which had maker’s marks that dated the manufacture of the saucer from the early 1900’s.

The artifact assemblage shows strong Euro-American affinities. Identified countries of origin for the artifacts include the United States (accession #s 2, 7, 17-19, 20), Canada (accession # 7) and a pot lid that appears to be from England, though it is still uncertain (accession # 1). No artifacts of a clearly Asian origin were identified and possibly all of the artifacts were of European, English or American origin (the affinities of the ceramic pot lid accession # 1 are uncertain). While mid and late 1800s residents of Honolulu of various ethnicity would use a

variety of products from various countries of origin the assemblages are suggestive of relatively affluent European or Euro-American consumption patterns. The pattern of artifacts recovered would be consistent with refuse from the Cooke and Atherton families or their neighbors residing in the immediate area in the indicated timeframe.

Other artifacts from the site include glass household items, ceramic dinnerware, a bone knife or cutlery handle, a pearl shell button, a terra cotta flower pot and flower pot tray, an unknown unglazed clay fragment, a light bulb, an egg cup, one deformed metal lid with ‘HWH’ embossed on top, rusted nails, and rusted metal fragments. Although these were not useful in dating the deposition for the trash pits, the variety of objects do support the suggestion that the trash pits contain refuse from individual households.

Table 11. SIHP 50-80-14-6901 Features 5, 6 & 7, Catalogue of Glass bottles

Acc. #	Trench	Feature	Stratum	Portion	Color	Ht. (cm)	Dia. (cm)	Base Shape	Mfg. Tech.	Lip Finish	Lip Type	Embossing and other comments	Function	Date
23	4	5	II	Complete w/ small chip off lip	Amber	10.75	4.25	Excelsior or rounded cornered blake	ABM	ABM	Prescription	No embossing, double ringed O on base. Non diagnostic	Medicine	Unknown
24	4	5	II	complete	Dark Amber	14	6	Blake Varient 1	ABM	ABM	Bead ?	"Mary T. Goldman, St. Paul, Minn." on body. "6" on base which dates from Diamond Glass Co. pre-1924	Gray hair color restorer	1903-1924
25	4	5	II	Body Fragment	Clear	--	--	--	--	--	--	"…serving co…ia" visible on fragment	--	Unknown
26	4	5	II	Complete	Clear	7.5	2.75	Hub or golden gate oval	Cup mold	Tooled	Prescription "patent"	'1/2' on shoulder	Medicine	Unknown
27	4	5	II	Complete	Clear	6.25	4.75	--	ABM	ABM	Ink pot	ink pot, 2oz on neck, lip seam smoothed out. Owens suction scar	Ink pot	1860-1930
28	4	5	II	Fragment Lip and neck	Aquamarine	--	--	--	ABM	ABM	crown	LHC on lip	Unknown	Post 1903
29	4	5	II	Base and one side of body	Amber	--	--	Excelsior rounded edges	--	--	--	No embossing	Unknown	--
30	4	5	II	base and heel	Clear	--	--		--	--	--	Melted, cannot read	Unknown	--
31	4	5	II	base	Clear	--	--	Round	--	--	--	none	Unknown	--
32		5	II	base	Clear	--	--	Round	--	--	--	none	Unknown	--
33	4	5	II	base	Amber	--	--	Round	--	--	--	none	Unknown	--
34	4	5	II	neck, lip and shoulder	Clear	--	--	--	ABM	ABM	Prescription	none	Medicine	Post 1903
35	4	5	II	neck, lip and shoulder	Amber	--	--	--	ABM	ABM	Stacked ring	none	Medicine	Post 1903

Acc. #	Trench	Feature	Stratum	Portion	Color	Ht. (cm)	Dia. (cm)	Base Shape	Mfg. Tech.	Lip Finish	Lip Type	Embossing and other comments	Function	Date
36	4	5	II	complete	Clear	15.25	4.75	Round	ABM	ABM	Prescription	"Lavoris Minneapolis Chemical Co." on base. "Lavoris" and a star on shoulder. Owens suction scar on base	Medicine	1905/1910 - 1920's
37	4	5	II	complete	Clear	8	3.25	Round	Turn mold	ABM	Prescription	none	medicine	1850-1920
38	4	5	II	complete	Amber	13	4	Round	--	--	--	Metal lid still attached, lip and seam unknown. 'W' on base, possible Wheaton bottle, post mold	Medicine?	1946?
39	4	5	II	complete	Clear	7	3.5	Round	ABM	ABM	Prescription	Seam smooth around lip, tooled? Eagle (?) print on heel	--	--
40	4	5	II	complete, broken in half	Clear	14.75	6.25	Blake Varient 1	ABM	ABM	Flat or patent	Seam to neck, Owens-Illinois emboss on base. 8 (O in a square) 2	Medicine	1922/1932
41	4	5	II	base	Amber	--	--	Round	--	--	--	Owens-Illinois emboss on base. 8 (O in a square) 1. Post mold	--	1921/1931
42	4	5	II	base and body fragment	Clear	--	--	Unknown, rectangular	--	--	--	Hinds "Portland Me. USA" on body.	Perfume and creams	--

Table 12. SIHP 50-80-14-6901 Features 5, 6 & 7, Other Artifact Catalogue

Accession #	Material Type	Function	Feature	Trench	Stratum	# of Pieces	Length	Width	Comments
1	Ceramic	Pot lid	5	4	II	1	4.75	--	Hand pained; possibly minimal transfer in outline. 2 ladies with top hats. Dutch?
2	Ceramic	Plate	5	4	II	6	--	--	Flower printed plate fragment "…nterbury registered" makers mark
3	Ceramic	--	5	4	II	3	--	--	Non diagnostic ceramic fragments, no marks
4	Ceramic	Shallow bowl	5	4	II	1	--	--	Hand painted design in brown. Design non diagnostic; blue tinge to ceramic
5	Ceramic	Bowl	5	4	II	1	--	--	Blue flower design
6	Porcelain	unknown	5	4	II	4	--	--	Non diagnostic porcelain fragments, grip lines on side of one
7	Porcelain	Soap, Palmolive	5	4	II	1	--	--	Emboss on bottom "…soap… palmolive…waukee USA Toronto Canad…"
8	Metal	bottle lid	5	4	II	1	3	2.5	Metal lid, deformed, HWH on top
9	Porcelain	cosmetic	5	4	II	1	4.25	--	Face cream container, screw lid, no embossing
10	Porcelain	cosmetic	5	4	II	1	--	--	Half cosmetic container, no emboss
11	Porcelain	--	5	4	II	1	5	--	Bottom "…latum…mark… REC TRACE" screw top, some lid left

Accession #	Material Type	Function	Feature	Trench	Stratum	# of Pieces	Length	Width	Comments
12	Glass	Glasses lense	5	4	II	1	3.75	2	Round glass, poss. Eye glass lense
13	Glass	Light bulb	5	4	II	6	--	--	Light bulb fragments
14	Metal	Nails	5	4	II	2	3.25 and 10.5	--	2 nails, one large one small
15	Bone		5	4	II	6	--	--	cut faunal bone and fragments
16	Porcelain	Cosmetic	5	4	II	1	8.5	--	complete porcelain jar with metal lid rusted on; "marinello" on sides
17	Ceramic	Shallow bowl	5	4	II	3	--	--	3 flower printed fragments
18	Ceramic	Cup	5	4	II	1	--	--	one flower printed cup w/ fragment missing, matches bowl
19	Ceramic	Plate	5	4	II	1	--	--	matches flower printed bowl and cup
20	Ceramic	Bowl	5	4	II	1	--	--	light gold leaf design on lip. Makers mark on bottom. Design with "vitreous Edwin M. Knowles china co. 20-1-3"
21	Metal	Nail	5	4	II	1	10	--	severely rusted nail
22	Metal	Unknown	5	4	II	1	--	--	unknown metal fragment with rim

Accession #	Material Type	Function	Feature	Trench	Stratum	# of Pieces	Length	Width	Comments
43	Crockery (earthenware)	Bowl	7	12	III	--	--	--	No decoration, light gray, rim fragment
44	Crockery (earthenware)	Bowl	7	12	III	1	--	--	blue-gray color, no decoration, distinct lip
45	Crockery (earthenware)	--	7	12	III	1	--	--	Fragment unknown function, white and light gray
46	ceramic	--	7	12	III	1	--	--	small unknown fragment, white smooth finish
47	clay	--	7	12	III	1	--	--	unglazed clay, design around rim, red
48	Terra Cotta	Flower Pot	7	12	III	1	--	--	half flower pot
49	Crockery (earthenware)	egg cup (?)	7	12	III	1	--	--	top half of egg cup, white no decoration
50	ceramic	--	7	12	III	1	--	--	back flower pattern with gold leaf
51	Bone and metal	Utensil/Knife handle	7	12	III	1	--	--	knife or cutlery handle broken at metal in middle. Copper nail within

Accession #	Material Type	Function	Feature	Trench	Stratum	# of Pieces	Length	Width	Comments
52	pearl shell	button	7	12	III	1	--	--	pearl shell button, 2 holes
53	Bone and metal	--	7	12	III	1	--	--	2 bones (sm) one burnt
54	metal and copper	--	7	12	III	1	--	--	Fragments with copper plating
55	seeds	--	7	12	III	1	--	--	seeds
56	bone	--	7	12	III	1	--	--	faunal bone
57	bone	--	6	3	III	1	--	--	faunal bone
58	crockery (earthenware)	bowl	6	3	III	1	--	--	Fragment, white w/some base, no decoration
59	ceramic	--	6	3	III	1	--	--	lip of table ware, white no decoration
60	crockery (earthenware)	bowl	6	3	III	1	--	--	hand painted design. Leaves and grapes (?) purple and green, purple line around lip
61	Terra Cotta	Tray for flower pot	6	3	III	1	--	--	tray for flower pot, half of tray, no decoration
62	fish bone	--	6	3	III	1	--	--	unidentifiable fish bone

Accession #	Material Type	Function	Feature	Trench	Stratum	# of Pieces	Length	Width	Comments
63	metal	nails	6	3	III	1	--	--	severely rusted
64	glass	lid	6	3	III	1	--	--	Highly decorated clear glass fragments with handle, candy bowl lid (?)
65	ceramic	strainer (?)	6	3	III	1	--	--	white ceramic fragment with holes in bottom, strainer(?) to drain water etc
66	crockery (earthenware)	lid	6	3	III	1	--	--	heavy earthenware lid, unglazed chipped

Appendix C

City and County of Honolulu Emergency Operations Center Traffic Analysis

City and County of Honolulu Emergency Operations Center Transportation Analysis

Prepared for:
G70

January 27, 2020

FEHR PEERS

SD19-0330

Table of Contents

1. Executive Summary **1**

2. Introduction **3**

3. Existing Conditions **7**

3.1 Existing Roadway Facilities 7

3.2 Existing Bicycle Facilities and Bicycle Activity 8

3.3 Existing Pedestrian Facilities and Pedestrian Activity 9

3.4 Existing Transit Facilities and Services 10

3.5 Field Observations 13

3.6 Collision History 14

4. Project Trip Generation Estimates **15**

5. Site Access and Circulation **18**

6. Potential Transportation Impacts **19**

List of Figures

Figure 1 - Project Site Location and Key Intersections 5
Figure 2 - Project Site Plan 6
Figure 3 - Project Trip Assignment 17

List of Tables

Table 1: Bus Routes Serving Alapai Transit Center 11
Table 2: EOC Trip Generation Estimates 15

1. Executive Summary

The City and County of Honolulu (CCH) Emergency Operations Center (EOC) is proposed to be constructed on CCH property in Honolulu, Oahu. The proposed site for the EOC project is located mauka of South King Street and Diamond Head of Alapai Street, adjacent to the recently completed Joint Traffic Management Center (JTMC) and Alapai Transit Center. The site encompasses an approximate 6,535 square-foot portion of a 63,210-square foot parcel identified as Tax Map Key (TMK) parcel (1) 2-1-042:013. The EOC is expected to begin construction in October 2022 and complete construction by April 2024.

The new facility will support the Department of Emergency Management (DEM) and the Office of Climate Change, Sustainability and Resiliency (CCSR) by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. Currently, EOC operations are situated in the basement level of the Frank Fasi Municipal Building. CCSR is located over a mile and a half away at the Kapalama Hale.

The facility will be four stories and will encompass approximately 27,267 square feet of floor area.

Secured employee access will be provided at the north end of the building near the existing pedestrian crossing across Alapai Street. The project access points are shown as green arrows on the project site plan. The project site plan is shown on **Figure 1**. Employees will utilize the existing JTMC parking garage, which is accessed at Kealamakai Street and will travel by foot to the building entrance. Access to the garage is secured with an entry gate and parking attendant. Overflow parking may be available at the parking area that serves the Frank F. Fasi Civic Center Parking Garage. EOC employees and visitors arriving by foot would enter through the main entrance on the mauka side of the building. No public parking or bus passenger parking will be provided on-site.

Existing traffic patterns were observed and the project's effect on traffic was analyzed at the following intersections:

1. South King Street / Alapai Street
2. South Beretania Street / Alapai Street
3. South King Street / Kealamakai Street
4. South Beretania Street/ Hale Makai

Observations in the field showed that excessive queuing on Alapai Street directly ewa of the project site can cause delays for transit as the buses move along Alapai Street or turn onto Alapai Street from the Alapai Transit Center. Other observed queuing issues in the project vicinity were minor.

The project is expected to create no more than 17 trips in a single peak hour and no more than 15 trips are expected to be added to any single turning movement at the study intersections. Therefore, the project is not expected to have adverse effects on existing traffic. Additionally, the situation of the project

is not expected to have adverse effects on the existing transit patterns or existing bicycle and pedestrian facilities.

2. Introduction

The City and County of Honolulu (CCH) Emergency Operations Center (EOC) is proposed to be constructed on CCH property in Honolulu, Oahu. The proposed site for the EOC project is located mauka of South King Street and Diamond Head of Alapai Street, adjacent to the Alapai Transit Center and recently completed Joint Traffic Management Center (JTMC). The site encompasses an approximate 6,535 square-foot portion of a 63,210-square foot parcel identified as Tax Map Key (TMK) parcel (1) 2-1-042:013. The EOC is expected to begin construction in October 2022 and complete construction by April 2024. The project site location and key adjacent intersections are shown on **Figure 1**.

The new facility will support the Department of Emergency Management (DEM) and the Office of Climate Change, Sustainability and Resiliency (CCSR) by providing a new EOC with ancillary support facilities and offices that will support an increase in staff and consolidate DEM and CCSR functions into one space. Currently, DEM and EOC operations are situated in the basement level of the Frank Fasi Municipal Building. CCSR is located over a mile and a half away at the Kapalama Hale.

The new EOC facility will be situated mauka of the JTMC and makai of the Alapai Transit Center's bus passenger pick-up area. The facility will include a four-story building and encompass approximately 27,627 square feet of floor area. The project site plan is shown on **Figure 2**. The first level of the proposed building will include a telecom center, media room, volunteer locker room, equipment storage, bike storage, loading area, fire pump, fuel storage, and other ancillary support rooms. The main EOC will be located on the second floor, and will primarily consist of a Situation Room, communications area, two (2) breakout rooms, conference room, media briefing room, joint information center, copy room, kitchen/food prep area, restrooms, volunteer lockers, equipment storage, AV tech room, siren/Emergency Alert System (EAS) Station, emergency supply storage, division support phone bank, and an outdoor break area. The Situation Room is the core of the EOC during activations. The existing EOC space is insufficient for the staff needed to monitor an emergency during EOC activation. The new EOC will provide the space needed for agencies to collaborate and monitor emergency situations. The third level will be designated for DEM and include office areas, a collaboration area, break room, copy room, reference library. DEM offices may be connected to the existing JTMC via a breezeway. The fourth level will include offices for the CSSR, and will be comprised of office spaces, two (2) conference rooms, a break room, copy room, collaboration areas, and storage.

Secured employee access will be provided at the north end of the building near the existing pedestrian crossing across Alapai Street. The project access points are shown as green arrows on the project site plan. Employees will utilize the existing JTMC parking garage, which is accessed at Kealamakai Street and will travel by foot to the building entrance. Access to the garage is secured with an entry gate and parking attendant. Overflow parking may be available at the parking area that serves the Frank F. Fasi Civic Center Parking Garage, and this parking is only expected to be needed during emergency response situations. EOC employees and visitors arriving by foot would enter through the main entrance on the mauka side of the building. No public parking or bus passenger parking will be provided on-site.

This transportation analysis report provides a summary of observations of existing conditions in proximity to the project site, a trip generation estimate for the EOC given the estimated number of employees assigned to the EOC, a qualitative assessment of potential circulation issues and an evaluation of site access.

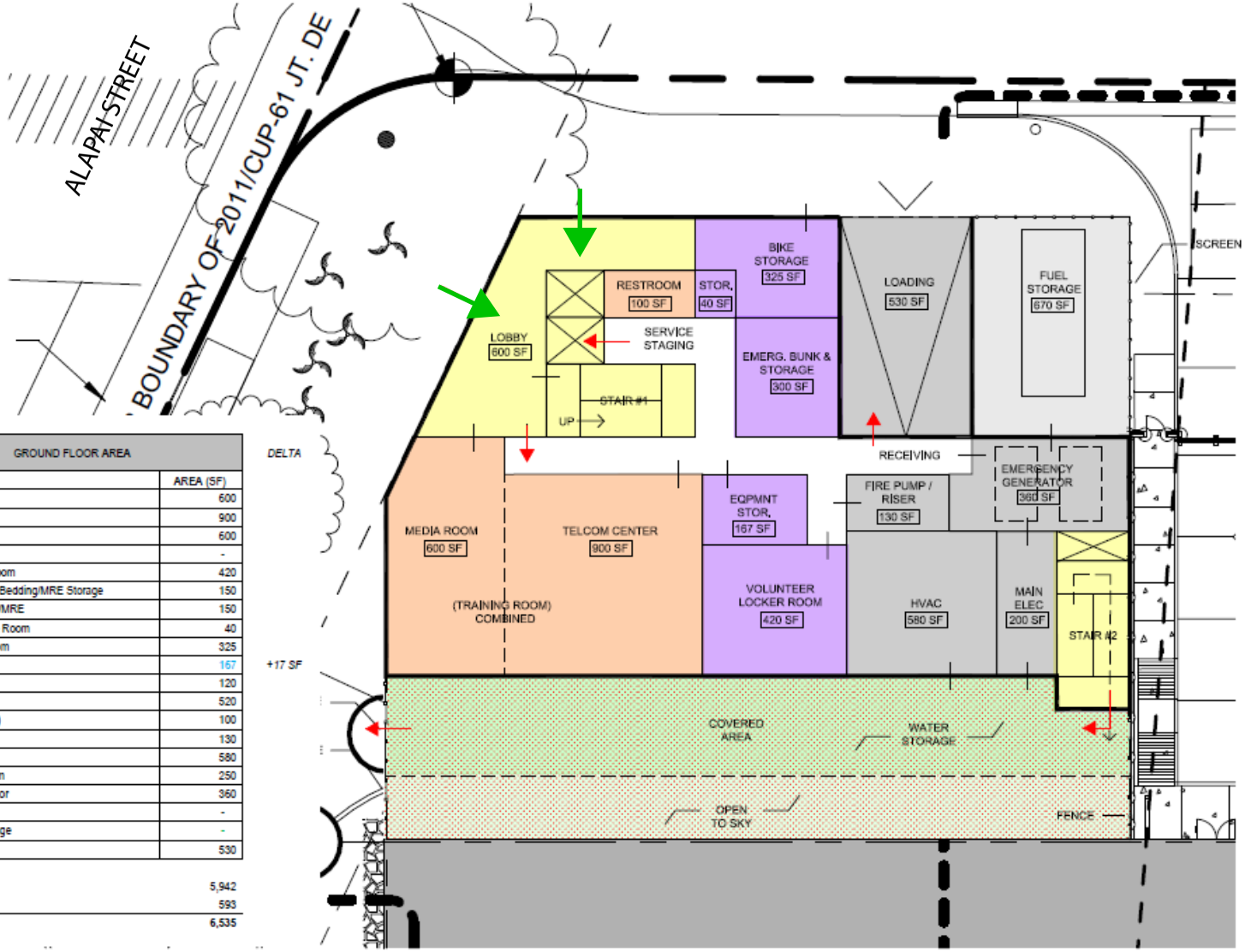
N:\Projects\2019_Projects\0330_CCH Emergency Operations Center\GIS\MXD\StudyIntersections2.mxd

Legend

- Project Site
- Alapai Transit Center
- Study Intersections
- On-Street Bus Stops

Figure 1

Project Site Location and Key Intersections



GROUND FLOOR AREA	
	AREA (SF)
Lobby	600
Telcom Center	900
Media Room	600
Training Room	-
Volunteer Locker Room	420
Emergency Bunks / Bedding/MRE Storage	150
Emergency Storage/MRE	150
Chair/Table Storage Room	40
Bicycle Storage Room	325
Equipment Storage	167
Elevator	120
Stair(s)	520
Public Toilet (Media)	100
Fire Pump/Riser	130
HVAC	580
Main Electrical Room	250
Emergency Generator	360
Fuel Storage	-
Potable Water Storage	-
Loading Bay	530

Subtotal			5,942
GSF Factor	10%	Circulation	593
Sub-Total			6,535

Legend

- Non-Emergency Building Access Points
- Internal Access Points

Figure 2

Project Site Plan

3. Existing Conditions

This chapter of the report summarizes existing vehicular, bicycle, pedestrian, and transit facilities and describes the results of field observations conducted around the project site.

Existing traffic operations were observed at four study intersections adjacent to the site during the AM peak period (6:00 am to 9:00 am) and the PM peak period (3:00 pm to 6:00 pm) on Thursday, October 10th, 2019. The four study intersections are as follows and are illustrated on **Figure 1** in Chapter 2:

1. South King Street / Alapai Street-South Street
2. South Beretania Street / Alapai Street
3. South King Street / Kealamakai Street
4. South Beretania Street/ Hale Makai

Field observations at these locations are presented in **Section 3.5**.

3.1 Existing Roadway Facilities

The key roadways in the study area are described below.

South King Street is an arterial street that extends in an ewa-Diamond Head direction between Puuloa Road mauka of the Daniel K. Inouye International Airport and Kapahulu Avenue on the Diamond Head side of Waikiki. This roadway is designated North King Street ewa of Nuuanu Avenue, and the entire street is under the jurisdiction of CCH and part of a one-way couplet with Beretania Street (located mauka of Hotel Street). South King Street is a one-way, five lane roadway adjacent to the project site. While parking is permitted on one or both sides of the street elsewhere, parking is permitted on the makai side of the road between Alapai Street and Ward Avenue and on the mauka side of the road between Kealamakai Street and Ward Avenue. The posted speed limit is 30 miles per hour (mph).

Alapai Street is an arterial street that extends in a makai-mauka direction between South King Street and Lusitana Street. It is under the jurisdiction of CCH and is a one-way mauka-bound, four-lane roadway in the vicinity of the project site. No parking is permitted on Alapai Street between Beretania Street and South King Street. The posted speed limit is 25 mph.

Beretania Street is an arterial street that extends in an ewa-Diamond Head direction between North King Street in downtown Honolulu (at Aala Park) and South King Street just ewa of University Avenue in the Moiliili neighborhood. It is under the jurisdiction of CCH and is part of a one-way couplet with King Street located makai of Hotel Street. Beretania Street is a one-way, five-lane roadway in the vicinity of the project site. Parallel parking is permitted along most sections of the makai curb lane except between the hours of 6:30am to 8:30am to maximize vehicle throughput. The posted speed limit is 30 mph.

Hale Makai Street is a local street that extends in a makai-mauka direction between Hotel Street and Beretania Street. Hale Makai Street is a two-way, two-lane roadway in the vicinity of the project site. The posted speed limit is 25 mph. Hale Makai Street is under the jurisdiction of CCH.

South Hotel Street is a local street that extends in the ewa-Diamond Head direction between Ward Avenue and Kealamakai Street. South Hotel Street is a two-way, two-lane roadway in the vicinity of the project site. The posted speed limit is 25 mph. South Hotel Street is under the jurisdiction of CCH.

Kealamakai Street is a local street that extends makai-mauka between South King Street and South Hotel Street. Kealamakai Street is a two-way, two-lane roadway that provides access to the employee parking structure for the project. The posted speed limit is 25 mph. Kealamakai Street is under the jurisdiction of CCH.

3.2 Existing Bicycle Facilities and Bicycle Activity

Existing bicycle facilities and bicycle activity observed on each roadway are summarized below:

South King Street: A two-way protected bikeway is currently provided on South King Street adjacent to the project site from Alapai Street to Isenberg Street. Ewa of the South King Street / Alapai Street-South Street intersection bicyclists may use the sidewalk to assist in navigating the intersection and continuing on the two-way protected bikeway provided on South Street makai of the intersection. This protected bikeway was observed to be well-maintained and the asphalt berm with flexible delineators enhances protection for bicyclists. Bicycle signals are provided at the intersections in the immediate vicinity of the project site but separate signal phases for bicycle traffic are not provided. This operation was observed to operate adequately in the field, but this configuration is not consistent with the current interim approval for bicycle signal use administered by the Manual on Uniform Traffic Control Devices (MUTCD). Bicyclists on South King Street were observed using the protected bikeway. No bicyclists were observed cycling in the vehicle travel lanes or on the sidewalk on either side of the street.

Alapai Street: No separate bicycle facilities are provided on Alapai Street mauka of South King Street. No bicyclists were observed on Alapai Street during field observations.

Beretania Street: Bike lanes are not currently provided on Beretania Street in the vicinity of the project. Bicyclists must share the roadway with vehicle traffic. Bicycling on the sidewalk is prohibited in downtown Honolulu except in specified locations, however bicyclists were observed riding on the sidewalk during field observations. A Biki Bikeshare station is located on the makai-Diamond Head corner of the Beretania Street/Ward Avenue intersection. Bicyclists observed checking bikes out from this location generally rode in the makai direction on Ward Avenue on the sidewalk towards the two-way protected bikeway on South King Street.

Hale Makai Street: Bike lanes are not currently provided on Hale Makai Street, and bicyclists must share the roadway with vehicles. However, the traffic volumes and speeds are low enough to provide a reasonable biking environment for most riders. As noted previously, bicycling on the sidewalk is generally

prohibited in downtown Honolulu, but several bicyclists were observed riding on the sidewalk on Hale Makai Street during field observations. A Biki Bikeshare station is located at the makai end of the street on the Diamond Head side. No bicyclists were observed checking bikes out at this station during the AM and PM peak periods.

South Hotel Street: Bike lanes are not currently provided on South Hotel Street and bicyclists must share the roadway with vehicles. However, the traffic volumes and speeds are low enough to provide a reasonable biking environment for most riders. No bicyclists were observed on this roadway during field observations.

Kealamakai Street: Bike lanes are not currently provided on Kealamakai Street and bicyclists must share the roadway with vehicles. However, the traffic volumes and speeds are low enough to provide a reasonable biking environment for most riders. No bicyclists were observed on this roadway during field observations.

3.3 Existing Pedestrian Facilities and Pedestrian Activity

Sidewalks are provided on both sides of all study roadways. In most cases the sidewalk is very wide and all sidewalks were observed to provide adequate width for the volume of pedestrians observed. All pedestrians observed in the study area utilized the sidewalks and crosswalks in the project area. The pedestrian path of travel to access the project entrances is further discussed in **Chapter 5**.

Existing pedestrian facilities and activity observed on each roadway are summarized below:

South King Street: Sidewalks are provided on both sides of South King Street. Striped crosswalks are provided on the ewa, makai, and mauka legs of the South King Street / Alapai Street-South Street intersection. No crossing is allowed across the Diamond Head leg of this intersection. Push button actuated pedestrian signals are provided at all signalized crosswalks.

Alapai Street: Sidewalks are provided on both sides of Alapai Street. As discussed above, striped crosswalks are provided on the ewa, makai, and mauka legs of the South King Street / Alapai Street-South Street intersection. No crossing is allowed across the Diamond Head leg of this intersection. Striped crosswalks are provided on the Diamond Head, makai, and mauka legs of the Beretania Street / Alapai Street intersection. No crossing is allowed across the ewa leg of this intersection. Push button actuated pedestrian signals are provided at all signalized crosswalks. An uncontrolled crossing is provided across Alapai Street and connects the Fasi Building parking area to the project site.

Beretania Street: Sidewalks are provided on both sides of Beretania Street. Striped crosswalks are provided across the makai and Diamond Head legs of the Beretania Street/Hale Makai Street intersection. Push button actuated pedestrian signals are provided at all signalized crosswalks.

Hale Makai Street: Sidewalks are provided on both sides of Hale Makai Street. Striped crosswalks are provided across the south and east legs of the Beretania Street/Hale Makai Street intersection. Push button actuated pedestrian signals are provided at both crosswalks at this intersection. Uncontrolled

striped crosswalks are provided on the mauka and Diamond Head sides of the Hale Makai/ Hotel Street intersection, but the low volume and speed of traffic on these roadways provide a relatively low-stress crossing environment for pedestrians at this location.

South Hotel Street: Sidewalks are provided on both sides of South hotel Street. Uncontrolled striped crosswalks are provided on most legs of South Hotel Street's intersections with other roadways. The low volume and speed of traffic on this roadway provides a relatively low-stress crossing environment for pedestrians.

Kealamakai Street: Sidewalks are provided on both sides of Kealamakai Street. Uncontrolled striped crosswalks are provided across Kealamakai Street at the intersection with South King Street. The low volume and speed of traffic on this roadway provides a relatively low-stress crossing environment for pedestrians.

3.4 Existing Transit Facilities and Services

TheBus is the main public transportation service on the Island of Oahu, where it served over 63 million riders in Fiscal Year 2017-2018. The bus fleet transports over 197,000 riders a week via fixed-route, express, and paratransit service.

Routes 1, 1L, 2, and 2L provide service on Beretania Street with stops on the mauka – Diamond Head corner of the Beretania Street / Alapai Street intersection. Routes 1, 1L, 2, 2L, 83, 84, 85, 86, 87, and 90 provide service on South King Street with stops on the makai-ewa corner of the South King Street / Alapai Street-South Street intersection and the makai side of South King Street near the intersection with Cooke Street. The operating hours and extents of these routes are specified in **Table 1** below.

A direct pedestrian connection is provided from the bus stop on Beretania Street to the project site. From the bus stop near Cooke Street on the makai side of South King Street, pedestrians must cross South Street, cross South King Street and cross Alapai Street again to access to the project site.

The Alapai Transit Center – located on Hotel Street between Kealamakai Street and Alapai Street north of King Street – bounds the project site on two sides. Currently 34 bus routes serve the Alapai Transit Station. Each route's destinations and operating hours are listed in **Table 1** below. Buses are able to enter the site from South King Street, and buses may only exit the site at Alapai Street. Some routes use Alapai Street for boarding and alighting without entering the transit center.

Pedestrian access in the immediate vicinity of Alapai Transit Center is sufficient as sidewalks are provided on both sides of roadways providing access to the transit center and controlled crossing are provided at all signalized intersections.

Table 1: Bus Routes Serving Alapai Transit Center

Route	Route Endpoints	Weekday Operating Hours
1	Kalihi Transit Ctr/ Lunalilo Home Rd & Kolokolo	4:00 AM to 1:20 AM
1L	School-Kam IV Rd/ Lunalilo Home Rd	5:40 AM to 6:12 PM
2	Kalihi Transit Ctr/ Kapiolani Community College	24 hours
2L	Kalihi Transit Ctr/ Campbell Ave & Monsarrat Ave (in opposite direction - Monsarrat Ave & Kalakaua Ave)	5:30 AM 8:30 AM and 3:00 PM to 6:00 PM
15	Pacific Heights/ Alapai St & King St	5:30 AM to 10:20 PM
3	Likini St & Ala Lehua St (in opposite direction - Ala Lilikoi St & Ala Ilima St) / 18th Ave & Iwalani Pl	4:15 AM to 1:15 AM
4	Old Pali Road Mamalahoa Pl/ University Date	5:00 AM to 12:40 AM
9	Landing C-Supply Ctr / Alohea Ave & Makapuu Ave	5:15 AM to11:40 PM
11	Alapai Transit Ctr/ Kaonohi St Moanalua & Rd	5:40 AM to 10:20 PM
19	Hickam AFB- AMC Terminal/ Paki Ave & Monsarrat Ave	3:50 AM to 1:50 AM
43	Alapai Transit Ctr/ Leolua St & Leoku St	7:00 AM to 6:10 PM
51	Ala Moana Ctr & Kona St/ Grand View Pl in Wahiawa Heights California	4:10 AM to 2:20 AM
52	Ala Moana Ctr & Kona St/ Kamehameha Hwy & Weed Circle (in opposite direction - Kamehameha Hwy & Haleiwa Beach Park)	4:40 AM to 1:10 AM
53	Ala Moana Ctr & Kona St/ Komo Mai Dr & Aumakua St	4:40 AM to 11:30 PM
54	Alapai Transit Ctr/ Upper Pearl City (in opposite direction – Lower Pearl City)	4:50 AM to 11:10 PM
80 & 82	Kalama Valley/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St)	5:15 AM to 8:20 AM and 3:50 PM to 7:00 PM
81	Leoku St & Leolua St (in opposite direction - Leoku St & Farrington Hwy) / Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St)	4:20 AM to 8:40 AM and 3:00 PM to 7:15 PM
83	Weed Circle/ Alapai Transit Center (in opposite direction - University of Hawaii)	5:00 AM to 7:20 AM and 3:40 PM to 7:00 PM
84	Wahiawa Park & Ride / Alapai Transit Ctr (in opposite direction - University Dole / Meheula Pkwy & Kuahelani Ave)	4:50 AM to 7:30 AM and 3:45 PM to 6:40 PM
84A	Meheula Pkwy & Kuahelani Ave/ Alapai Transit Ctr (in opposite direction - University Dole)	5:10 AM to 8:00 AM and 4:00 PM to 6:40 PM
85	Kaneohe Bay & Mokapu/ St. Louis & Waialae	5:50 AM to 7:30 AM and 3:00 PM to 6:30 PM
85A	Kahekili Hwy & Kulukeoe St/ St Louis School Waialae Ave (in opposite direction - Alapai Transit Ctr/ Kamehameha Hwy & Kapalai Rd)	6:00 AM to 7:50 AM and 4:10 PM
86	Kahekili & Kulukeoe / Alapai Transit Center (in opposite direction - St. Louis & Waialae / Kamehameha Highway & Kapalai)	6:00 AM to 8:00 AM and 4:10 Pm to 6:00 PM

Table 1: Bus Routes Serving Alapai Transit Center

Route	Route Endpoints	Weekday Operating Hours
87	Kaneohe Bay & Mokapu/ St. Louis & Waialae	5:30 AM to 7:40 AM and 2:50 AM to 5:45 AM
88	Kahekili Hwy & Ahuimanu Pl/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Hui Iwa St & Kahekili Hwy)	6:00 AM to 7:30 AM and 4:10 PM to 6:30 PM
89	Nalu St & Kalanianaole Hwy/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Huli St & Kalanianaole Hwy)	5:40 AM to 7:20 AM and 4:00 PM to 5:50 PM
90	Hoolaulea St & Moanalua Rd/ Alapai Transit Ctr (in opposite direction - University of Hawaii)	6:00AM to 7:40 AM and 4:10 PM to 5:40 PM
91	Kuhina St & Fort Weaver Rd/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Fort Weaver Rd & Hanakahi St)	4:20 AM to 8:20 AM and 3:20 PM to 7:30 PM
92	Palailai St & Akaula St/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Makakilo Dr & H-1)	5:00 AM to 6:45 AM and 4:10 PM to 6:30 PM
93	Makaha Valley Rd & Farrington Hwy/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Huipu Dr & Kili Dr)	3:45 AM to 8:20 AM and 3:00 PM to 8:00 PM
96	Waipio Uka St & Ukee St/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Kamehameha Hwy & Waipio Uka St)	5:45 AM to 7:00 AM and 4:30 PM to 6:10 PM
97	Kupuna Loop & Kunia Rd/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St/ Anonui St & Anoiki St)	5:10 AM to 7:00 AM and 3:30 PM to 6:10 PM
98	Meheula Pkwy & Kuahelani Ave/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St)	5:10 AM to 7:11 AM and 4:10 PM to 6:50 PM
98A	Wahiawa Park & Ride/ Monsarrat Ave & Kalakaua Ave	5:00 AM to 6:40 AM and 4:00 PM to 6:30 PM
101	Kolowaka Dr & Fort Weaver Rd/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St)	4:45 AM to 7:30 AM and 4:00 PM to 6:470 PM
102	Farrington Hwy Fort Barrette Rd/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St / Makakilo Dr & Farrington Hwy)	5:15 AM to 7:10 AM and 4:00 PM to 6:30 PM
103	Lumiaina St & Managers Dr/ Alapai Transit Ctr (in opposite direction - Beretania St & Punchbowl St / Kamehameha Hwy & Lumiauau St)	5:40 AM to 6:50 AM and 4:20 PM to 6:00 PM

Source: Fehr & Peers, 2019.

3.5 Field Observations

Traffic operations observed in the field on Thursday, October 10th, 2019 are summarized below and listed by intersection.

1. South King Street / Alapai Street-South Street: Both the Diamond Head-bound leg (South King Street) and the mauka-bound leg (South Street) were observed with a maximum queue of approximately 10 vehicles per lane in the AM peak hour. No substantial operational issues or blockages were observed in this peak hour. In the PM peak hour, a maximum queue of approximately 15 vehicles per lane was observed on the Diamond Head-bound leg and a maximum queue of approximately 20 vehicles was observed on the mauka-bound leg. No operational issues were observed on South King Street. On South Street, it was observed that only a portion of the vehicles queued at the intersection mauka of the South King Street / Alapai Street-South Street intersection (the intersection of South Street / Kapiolani Boulevard) were able to clear the intersection during the cycle.
2. South King Street / Kealamakai Street: In the AM and PM peak hours, queuing was very limited on Kealamakai Street with a maximum queue of six (6) vehicles observed. Vehicles turning left from Kealamakai Street onto South King experienced little delay after ensuring that no conflicting pedestrian, bicycle, and vehicular traffic was present. On South King Street, vehicles turning left onto Kealamakai Street did not experience any substantial delay and did not significantly slow through vehicles.
3. Beretania Street / Alapai Street: In the AM peak hour, queues on Beretania Street extend back to the intersection with Hale Makai. This queue was observed to clear the intersection during each cycle. The queues on Alapai Street during this same peak hour were observed to extend back past the egress from the Alapai Transit Center to the bus stops on the Diamond Head side of the street. During some cycles, the traffic was queued back to the intersection with South King Street.

   In the PM peak hour, a similar queuing pattern was observed on Alapai Street. During this peak hour, these queues caused a more substantial delay for buses exiting the transit center. Queuing on Beretania Street was limited with a maximum observed queue of six (6) vehicles and substantial congestion was observed primarily during the afternoon peak hour.

4. Beretania Street / Hale Makai: In the AM peak hour, queues were very limited, with a maximum observed queue on Beretania Street of six (6) vehicles and very limited queuing on Hale Makai. During the PM peak hour, queues on Hale Makai were longer with the longest observed queue almost to the intersection with Hotel Street. Queues on Beretania Street were shorter during this peak hour with the longest observed queue being four (4) vehicles.

No severe safety conflicts between vehicles and pedestrians were observed during field observations. Historical crash information for crashes in the project vicinity are discussed in the section below.

3.6 Collision History

Collision data from 2016, 2017, and 2018 was reviewed to identify the occurrence of collisions by mode in the study area. According to the Hawaii State Office of Planning[1], two collisions occurred at the study intersections in 2018. At the South King Street / Alapai Street-South Street intersection, one crash involving a motorcycle occurred and at the Beretania Street / Alapai Street intersection, one crash involving a bicyclist occurred.

In 2017, seven (7) collisions occurred in the project vicinity at the following locations:

- At the South King Street / Alapai Street-South Street intersection, one crash involving a car or truck occurred.
- At the Beretania Street / Alapai Street intersection, two crashes involving a car or truck occurred.
- At the South King Street / Kealamakai Street intersection, two crashes involving a motorcycle or moped occurred.
- On South King Street between Alapai Street and Kealamakai Street, one crash involving a car or truck occurred.
- On Kealamakai Street, one crash involving a car or truck occurred.

In 2016, one collision occurred in the project vicinity on Alapai Street. This crash involved a car or truck.

According to the USDOT Fatality Analysis Reporting System (FARS), no fatal crashes were reported on roadways in the immediate vicinity of the project site.

[1] http://histategis.maps.arcgis.com/apps/webappviewer/index.html?id=2ad9abc4cf064a9dabbf46763eddf8b5

4. Project Trip Generation Estimates

The estimated vehicle, pedestrian/bicycle, and transit trips expected to be generated by this project were calculated using methodologies outlined in the Institute of Traffic Engineers' (ITE), *Trip Generation Manual 10th Edition* and the Fehr & Peers MainStreet web app. MainStreet incorporates ITE trip rates and the Mixed-Use (MXD) Trip Generation Model developed by Fehr & Peers and the Environmental Protection Agency (EPA). This model is based on statistically superior data compared to the mixed-use methodology used by ITE, and accounts for the local context of a project site and the propensity for non-automobile trips based on Census data and/or household travel survey data.

The proposed project use is unique in that it will typically only be accessed by employees and a limited number of visitors (i.e., it will not be open to the general public). According to the project description, a total of 55 employees will work typical business hours from 7:45 AM to 4:30 PM, and an additional 10 employees will work later evening shifts and will travel outside the AM and PM peak commute periods. To estimate the number of vehicle trips generated by the site, the General Office Building (710) ITE land use code was applied, and the average trip generation rate based on the number of employees was used consistent with the guidelines in the ITE manual. The resulting trip generation using the ITE land use code was low and to more accurately reflect the expected trip generation associated with this governmental office the ITE trip generation was doubled. The resulting trip generation and pedestrian/bicycle and transit trip reductions are shown in **Table 2**.

Table 2: EOC Trip Generation Estimates

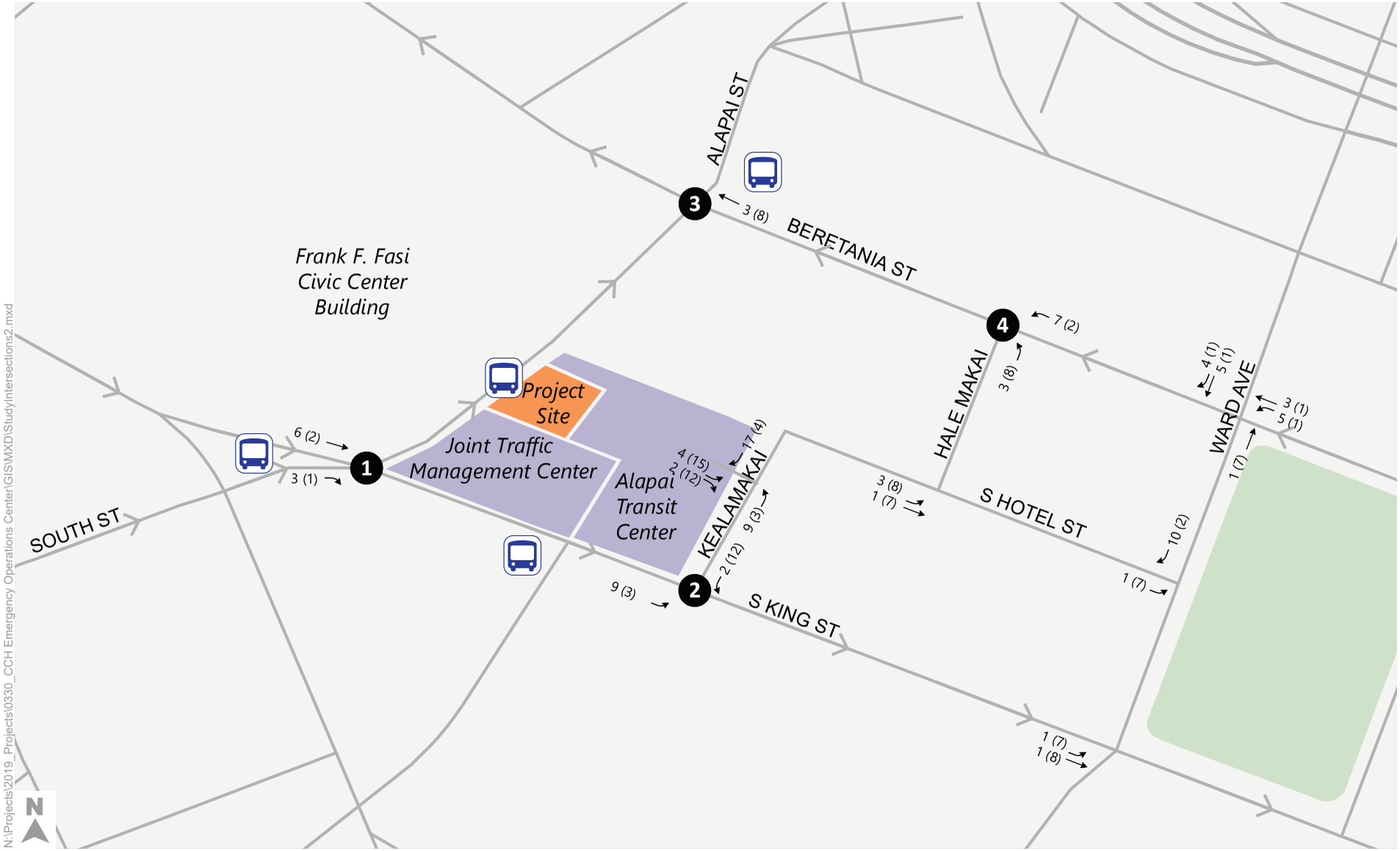
Land Use	Units	#	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
General Office Building*	Employees	55	360	33	7	40	9	35	44
MainStreet Reductions									
Transit Trips			18	2	0	2	1	3	4
Pedestrian/Bicycle Trips			48	5	1	6	1	5	6
Subtotal Reductions			-66	-7	-7	-8	-2	-8	-10
Total Project Trips			**294**	**26**	**6**	**32**	**7**	**27**	**34**

Source: Fehr & Peers, 2019.
* Resulting trip generation from ITE land use code General Office Building (710) was doubled to more accurately result expected trip generation from a government office building.

The estimated project trip generation presented in **Table 2** is anticipated to accurately reflect the operations of the CCH EOC. It can be assumed that on an average day, employees will potentially be on

vacation, on sick leave, at off-site meetings or arriving to the facility outside of peak hours (i.e.- early or late for their shift).

These project trips were assigned throughout the roadway network in the vicinity of the project site. The project trip assignment was based on existing travel patterns and is illustrated on **Figure 3**. As seen in this figure it is expected that the project will add less than 20 trips to any single turning movement. As this number of trips is extremely small, especially when compared to the large volumes of observed traffic in the area, the CCH EOC is not expected to affect the operations of the roadways in the project vicinity or of the study intersections.



Legend

- Project Site
- Alapai Transit Center
- Study Intersections
- On-Street Bus Stops
- Turning Movements
- XX (XX) AM (PM) Trip Assignment

Figure 3

Project Trip Assignment

N:\Projects\2019_Projects\0330_CCH Emergency Operations Center\GIS\MXD\StudyIntersections2.mxd

5. Site Access and Circulation

Vehicular access to the building site area will be restricted and only service trucks will be able to access the site using the bus driveway serving the Alapai Transit Center. EOC employees will park their vehicles in the existing parking garage located above the bus transit center entry and Diamond Head of the EOC building. Vehicle access to this parking garage is available via Kealamakai Street just makai of S. Hotel Street, and employees can drive to the garage via the Beretania Street / Hale Makai, Ward Avenue/South Hotel Street, or South King Street / Kealamakai Street intersections. Given the observed queuing at these intersections, ingress and egress is not expected to result in any substantial vehicle access issues.

Pedestrian access to the EOC will be provided at two entryways on the northwestern corner of the building near the intersection Alapai Street and the primary Transit Center bus driveway located approximately 375 feet mauka of S. King Street. Both the public and employees will access the EOC building using these pedestrian entryways. From the parking structure, employees can use the sidewalk provided on the mauka side of the transit center behind the bus shelters or the sidewalk along Kealamakai Street and South King Street.

Employee overflow parking, if needed, will be available in the parking area that serves the Frank F. Fasi Civic Center. From this parking area, employees have two options to access the EOC building: 1) cross Alapai Street via the existing uncontrolled pedestrian crossing, or 2) walk down to the traffic signal at the S. King Street/Alapai Street-South Street intersection, cross at the signal, and then walk along the sidewalk on the Diamond Head side of Alapai Street to the building entrance. Some pedestrians may be reluctant to use the uncontrolled crossing, especially during the peak commute periods, when there is intermittent queuing on Alapai Street and stopped vehicles may impede other drivers' views of pedestrians. Pedestrians may be more likely to use the uncontrolled crossing during off-peak hours when queuing typically does not occur. Employees using the Fasi Building overflow lot should be encouraged to use the signal to cross Alapai Street.

6. Potential Transportation Impacts

As the estimated trip generation associated with the CCH EOC is expected to be low and it is not expected that more than 15 vehicle trips will be added to any one turning movement in either the AM and PM peak hours, the project is not expected to have any significant adverse effects on existing traffic operations in the study area.

Additionally, the project is proposed to be situated on a portion of the Alapai Transit Center that is currently landscaped and is not expected to conflict with the space needed for transit vehicles to maneuver throughout the site. The building will be appropriately set back from the adjacent streets and the existing sidewalks and paths are expected to be adequate to serve project demand and site access.

Overall, no substantial pedestrian impacts are anticipated based on the facilities fronting the project site and the anticipated new pedestrian demand. The project's primary pedestrian access will be provided on the northwest corner of the site near the existing uncontrolled crosswalk across Alapai Street. It is possible that some EOC site-generated pedestrians may use this crosswalk. To serve these pedestrians, it is recommended that roadside Rectangular Rapid Flashing Beacons (RRFBs) and an overhead RRFB be installed to alert drivers as to the presence of pedestrians at this location. This recommendation is interpretation of the Federal Highway Administration (FHWA) *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations* and industry best practices. Without these RRFB enhancements, pedestrians should be encouraged to use the controlled crosswalk provided at the South King Street / Alapai Street-South Street intersection.

The existing two-way protected bikeways on S. King Street and South Street (makai of S. King Street) provide good areawide bicycle access. The project is not expected to have any impacts on existing bicycle facilities in the project vicinity or generate additional demand that cannot be reasonably accommodated by existing facilities.

During construction, it is not expected that the construction of the EOC will have a substantial impact on the operations of the Alapai Transit Center, including transit center ingress and egress.