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June 28, 2023

Ms. Mary Alice Evans, Director
State of Hawaiʻi
Office of Planning and Sustainable Development
Environmental Review Program
235 South Beretania Street, Room 702
Honolulu, Hawaiʻi 96813

Subject: Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
Final Supplemental Environmental Impact Statement
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7 (por.), 9 (por.), and 13 (por.)
Waikīkī, Island of Oʻahu, Hawaiʻi

Dear Ms. Evans:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa and Park Ala Moana LLC, G70 submits the Final Supplemental Environmental Impact Statement (SEIS) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Oʻahu, Hawaiʻi to the State Office of Planning and Sustainable Development, Environmental Review Program for publication in the July 8, 2023 edition of *The Environmental Notice*. In accordance with Hawaiʻi Administrative Rules (HAR) §11-200.1-5(e)(6)(C), the Final SEIS document package has been simultaneously filed with the City and County of Honolulu Department of Planning and Permitting (DPP), the accepting authority, for acceptance pursuant to HAR §11-200.1-28.

This Final SEIS consists of two volumes, and has been prepared in compliance with the Hawaiʻi Environmental Impact Statement rules (Hawaiʻi Revised Statutes §343) and HAR §11-200.1.

Should you have any additional questions, please contact me at (808) 523-5866.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeffrey H. Overton, AICP, LEED AP
Principal

cc:
Mr. Alex Beatty, DPP
Ms. Laura Mo, DPP

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Wednesday, June 28, 2023 4:08:43 PM

Action Name

Hilton Hawaiian Village - Village Master Plan Improvements, AMB Tower

Type of Document/Determination

Final environmental impact statement (FEIS)

HRS §343-5(a) Trigger(s)

- (5) Propose any use within the Waikīkī area of Oʻahu

Judicial district

Honolulu, Oʻahu

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

Hilton Hawaiian Village Master Plan EIS (2011):
(1) 2-6-5: 1 (portion)
(1) 2-6-8: 1, 2, 3, 5, 7, 12, 19, 20, 21, 23, 24, 27, 31, 34, 37, and 38
(1) 2-6-9: 1, 2, 3, 7, 9, 10, 11, 12, and 13

Supplemental EIS: (1) 2-6-9: 4, 5, 6, 7 (por.), 9 (por.), and 13 (por.)

Action type

Applicant

Other required permits and approvals

Various

Discretionary consent required

Special Management Area Use Permit (Major); Planned Development-Resort Amendment/Major Modification; and, Waikīkī Special District Permit (Major).

Approving agency

City and County of Honolulu, Department of Planning and Permitting

Agency contact name

Laura Mo

Agency contact email (for info about the action)

laura.mo@honolulu.gov

Agency contact phone

(808) 768-8025

Agency address

650 S King St.
7th Floor

Honolulu, HI 96813
United States
Map It

Accepting authority

City and County of Honolulu, Department of Planning and Permitting

Applicant

Hilton Hawaiian Village Beach Resort & Spa and Park Ala Moana LLC

Applicant contact name

Jonathan Fuisz

Applicant contact email

ambtower@g70.design

Applicant contact phone

(571) 302-5757

Applicant address

c/o Park Hotels & Resorts
1775 Tysons Blvd., 7th Floor
Tysons, VA 22102
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

G70

Consultant contact name

Jeffrey Overton

Consultant contact email

ambtower@g70.design

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Consultant address

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Honolulu, HI 96813
United States
Map It

Action summary

In 2011, the Hilton Hawaiian Village (HHV) Master Plan was designed as the next chapter of HHV's continuing dedication to support Waikīkī as a premier visitor destination. The Applicant proposes to expand the HHV Master Plan to include a 0.46-acre site along Ala Moana Boulevard. This expansion includes replacing existing structures at the site with the new AMB Tower, which will provide hotel lodging accommodations that will reflect Hawai‘i’s rich heritage and cultural diversity in a contemporary form. The AMB Tower will reinvigorate and revitalize Ala Moana Boulevard as the primary ‘Ewa gateway to Waikīkī, and enhance the Village experience for both Waikīkī visitors and local residents. The new tower will include a lobby area, porte cochere, ground floor retail accessible to pedestrians, landscaping, pedestrian walkways, food and beverage offerings, pool and recreation area, fitness center, and parking. The project is anticipated to produce new jobs through construction and operation.

Attached documents (signed agency letter & EA/EIS)

- Park-AMB-Tower_Final-SEIS-Vol-I-FINAL-SEIS_06282023.pdf
- Park-AMB-Tower_Final-SEIS-Vol-II-APPENDICES_06282023.pdf
- AMB-Tower-Draft-SEIS_ERP-Publication-Letter-06282023.pdf

Shapefile

- The location map for this Final EIS is the same as the location map for the associated Draft EIS.

Action location map

- ProjectSite.zip

Authorized individual

Noelle Besa Wright

Authorization

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

HILTON HAWAIIAN VILLAGE (HHV) VILLAGE MASTER PLAN IMPROVEMENTS - AMB TOWER

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT
VOLUME I: SEIS DOCUMENT

WAIKĪKĪ, OʻAHU, HAWAIʻI

APPLICANTS:

PARK ALA MOANA LLC

HILTON HAWAIIAN VILLAGE BEACH RESORT & SPA

PREPARED BY:

G70

JULY 2023

HILTON HAWAIIAN VILLAGE (HHV) VILLAGE MASTER PLAN IMPROVEMENTS - AMB TOWER

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT VOLUME I: SEIS DOCUMENT

WAIKĪKĪ, OʻAHU, HAWAIʻI

TMKs (1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)

APPLICANTS:

PARK ALA MOANA LLC

HILTON HAWAIIAN VILLAGE BEACH RESORT & SPA

PREPARED BY:

G70

111 S. KING STREET, SUITE 170
HONOLULU, HI 96813

This Draft Supplemental Environmental Impact Statement and all ancillary documents were prepared under my direction or supervision, and the information submitted, to the best of my knowledge, fully address document content requirements set forth in Hawaiʻi Revised Statutes, Chapter 343 and Hawaiʻi Administrative Rules § 11-200.1 Subchapter 10.

Jeffrey H. Overton
Principal Planner

June 28, 2023
Date

JULY 2023

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Appendices

A. *Supplemental Environmental Impact Statement (SEIS) Comment Letters*

A-1: Supplemental Environmental Impact Statement Preparation Notice (SEISPN) Comment Letters

A-2: Draft SEIS Comment Letters

B. Archaeological Inventory Survey (AIS) Report for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, *Waikīkī Ahupua'a, Honolulu (Kona) District, O'ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013*, September 2022. Cultural Surveys Hawai'i, Inc.

C. *Cultural Impact Assessment (CIA) for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupua'a, Honolulu (Kona) District, O'ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013,* September 2022. Cultural Surveys Hawai'i, Inc.

D. *Hilton Hawaiian Village AMB Tower Pedestrian Wind Study*, August 23, 2022. RWDI.

E. *Air Quality Technical Report: Hilton Hawaiian Village AMB Tower*, September 2022. Arcadis.

F. *Tree Assessment at Hilton Hawaiian Village AMB Tower,* July 28, 2022. Tree Solutions and Environmental Consulting Services, Inc.

G. *Environmental Due Diligence Summary, Hilton Hawaiian Village Ala Moana Tower 3 Site*, July 26, 2022. ENPRO Environmental.

H. *Phase 1 Environmental Site Assessment, Hilton Hawaiian Village Ala Moana Tower 3 Site*, May 11, 2017. ENPRO Environmental.

I. *Traffic Impact Report for Park Hotel and Resorts*, April 2022. Wilson Okamoto Corporation.

J. *Park Hotels and Resorts – Ala Moana Boulevard Tower: Sidewalk Assessment*, April 6, 2022. Wilson Okamoto Corporation.

K. *Hilton Hawaiian Village AMB Tower Preliminary Engineering Report*, ~~August 2022~~February 2023. BCH, a Bowers + Kubota Consulting, Inc. Company.

L. *Acoustic Study for the AMB Tower Project*, April 2022. Y. Ebisu & Associates.

M. *Economic Impact Analysis and Public Cost Benefit Assessment of the Proposed AMB Hotel Tower at Hilton Hawaiian Village*, September 25, 2022. CBRE, Inc.

Acronyms and Abbreviations

ACM	Asbestos-containing material
ADA	Americans with Disabilities Act
AIS	Archaeological Inventory Survey
AMP	Archaeological Monitoring Plan
AR5	Fifth Assessment Report
BFE	Base Flood Elevation
Bgs	Below ground surface
BMPs	Best Management Practices
BOH	Back of House
BTP	Burial Treatment Plan
BWS	Honolulu Board of Water Supply
CAB	Clean Air Branch, State Department of Health
CAP	Climate Action Plan
City	City and County of Honolulu
CIA	Cultural Impact Assessment
CMP	Construction Management Plan
CPR	Cardiopulmonary resuscitation
CSH	Cultural Surveys Hawai‘i
CWB	Clean Water Branch, State Department of Health
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
dB	Decibel
DBEDT	Department of Business, Economic Development & Tourism
DCAB	Disability and Communication Access Board
DHHL	State Department of Hawaiian Home Lands
DLNR	Department of Land and Natural Resources
DMAP	Destination Management Action Plan
DNL	Day-Night Average Sound Level
DOE	State Department of Education
DP	Development Plan

DPP	Department of Planning and Permitting
DOFAW	Division of Forestry and Wildlife
DTS	Department of Transportation Services
EIS	Environmental Impact Statement
EMS	Emergency Medical Services
EPA	U.S. Environmental Protection Agency
ERP	Environmental Review Program
ESA	Environmental Site Assessment
EV	Electric vehicle
FEMA	Federal Emergency Management Agency
FD WWPS	Fort DeRussy Wastewater Pump Station
FHA	Federal Housing Administration
FIRM	Floor Rate Insurance Map
FTE	Full-Time Equivalent
g-force	Gravitational acceleration
GHG	Greenhouse Gas
HAR	Hawai‘i Administrative Rules
HDOH	Department of Health
HDOT	Department of Transportation
HECO	Hawaiian Electric Company
HEPA	Hawai‘i’s Environmental Protection Act
HFD	Honolulu Fire Department
HGVC	Hilton Grand Vacations® Club
HHV	Hilton Hawaiian Village
HPD	Honolulu Police Department
HRS	Hawai‘i Revised Statutes
HTA	Hawai‘i Tourism Authority
HUD	U.S. Department of Housing and Urban Development
HVCB	Hawai‘i Visitors and Convention Bureau
IBC	International Building Code
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
KMC	Kapi‘olani Medical Center for Women and Children
LID	Low Impact Development

LOS	Level of Service
LRFI	Literature Review and Field Inspection
LUC	Land Use Commission
LUO	Land Use Ordinance
M	Million
m	Meter
Master Plan	Hilton Hawaiian Village Master Plan
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
Mph	Miles per hour
msl	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NOAA	National Oceanic and Atmospheric Administration
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
OIBC	Oʻahu Island Burial Council
OPSD	State Office of Planning and Sustainable Development
PCB	Polychlorinated biphenyls
PacIOOS	Pacific Islands Ocean Observing System
PD-R	Planned Development – Resort
PER	Preliminary Engineering Report
PLOS	Pedestrian Level of Service
PTD	Public Transit Division, City and County of Honolulu Department of Transportation Services
PUC	Primary Urban Center
Q	Stormwater Runoff Flows
QMC	Queen’s Medical Center
REC	Recognized Environmental Conditions
RCP	Representative Concentration Pathways
RLS	Reconnaissance Level Survey
ROW	Right-of-way
ROH	Revised Ordinances of Honolulu
RPT	Real Property Tax
SAAQS	Station Ambient Air Quality Standards

SCP	Sustainable Community Plan
SDG	Sustainable Development Goal
SDO	Special Duty Officers
SDOC	Straub Doctors on Call
SEIS	Supplemental Environmental Impact Statement
SEISPN	Supplemental Environmental Impact Statement Preparation Notice
SFHA	Special Flood Hazard Area
SHPD	State Historic Preservation Division
SHWB	Solid and Hazardous Waste Branch, State Department of Health
SI WWTP	Sand Island Wastewater Treatment Plant
SLR	Sea Level Rise
SLR-XA	Sea Level Rise Exposure Area
SMA	Special Management Area
SOEST	University of Hawai‘i School of Ocean and Earth Science and Technology
State	State of Hawai‘i
TDM	Transportation Demand Management
TCP	Traffic Control Plan
TIA	Traffic Impact Assessment
TIR	Traffic Impact Report
TMK	Tax Map Key
TMP	Traffic Management Plan
TOD	Transit-Oriented Development
UN	United Nations
UH	University of Hawai‘i
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
Village	Hilton Hawaiian Village
Village Master Plan	Hilton Hawaiian Village Master Plan
WBSIDA	Waikīkī Beach Special Improvement District Association
WHC	Waikīkī Health Clinic
WIA	Waikīkī Improvement Association
WLCP	Waikīkī Livable Community Project
WSD	Waikīkī Special District
XTEZ	Extreme Tsunami Evacuation Zone

Section 1

Project Summary

Section 1

Project Summary

1.1 Project Information Summary

Project Applicants:	
Original PD-R Applicant :	Hilton Hawaiian Village Beach Resort & Spa
Owners of ~~Project~~ Parcels to be Added:	Park Ala Moana LLC (owner of 1831 Ala Moana Blvd ~~/~~ (parcel 4), 1835 Ala Moana Blvd (parcel 5), and 1841 Ala Moana Blvd (parcel 6)) 1775 Tysons Boulevard, 7th Floor Tysons, VA 22102[1] ~~SMK, Inc. (owner of 1835 and 1841 Ala Moana Blvd / parcels 5 and 6)~~ ~~766 Pohukaina Street~~ ~~Honolulu, HI 96813~~
Project Contact:	Jonathan Fuisz, Sr. Vice President-Investments Park Hotels and Resorts Phone: (571) 302-5757
Accepting Authority:	City and County of Honolulu Department of Planning and Permitting
Name of Action:	Hilton Hawaiian Village Master Plan – addition of AMB Tower
Planning/Environmental Consultant:	Group 70 International, Inc. dba G70 111 S. King Street, Suite 170 Honolulu, Hawaiʻi 96813 Contact: Jeffrey H. Overton, AICP Phone: (808) 523-5866
Project Location	Waikīkī, Oʻahu, Hawaiʻi (*Figure 1.1*)

[1] SMK, Inc. is no longer an Applicant because Park Ala Moana LLC now owns all three of the Added Parcels (Parcels 4, 5 and 6) following its acquisition of Parcels 5 and 6 from SMK Inc. on March 2, 2023. ~~Park Ala Moana LLC has an option to purchase these parcels and it is expected that Park Ala Moana LLC will own them prior to commencement of construction.~~

Tax Map Keys:

Hilton Hawaiian Village Master Plan EIS (2011):	(1) 2-6-005: 001 (por.); (1) 2-6-008: 001, 002, 003, 005, 007, 012, 019, 020, 021, 023, 024, 027, 031, 034, 037, 038; (1) 2-6-009: 001, 002, 003, 007, 009, 010, 011, 012, and 013 *(Figure 1.2)*
Added Parcels	(1) 2-6-009: 004, 005, 006 (the "Added Parcels")
SEIS Project Area[2]:	(1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), 013 (por.) *(Figure 1.2, Table 3.1)*

Land Area:

Hilton Hawaiian Village Master Plan EIS (2011):	22.24 acres (968,979 square feet (sf))
Added Parcels:	0.46 acres (20,141 sf)
Total Land Area	22.70 acres (989,120 sf)

Location:

Hilton Hawaiian Village Master Plan EIS (2011):	2005 Kālia Road
SEIS:	2005 Kālia Road 1831 Ala Moana Boulevard 1835 Ala Moana Boulevard 1841 Ala Moana Boulevard

State Land Use District:	State Land Use Urban District (*Figure 1.3*)

City and County of Honolulu

Special District Designation:	Waikīkī Special District (*Figure 1.4*)
Zoning (Land Use Ordinance):	Resort Mixed Use Precinct (*Figure 1.4*)
Development Plan Area:	Primary Urban Center (*Figure 1.5*)
Neighborhood Board Area:	Waikīkī Neighborhood Board No. 9

[2] The SEIS Project Area includes the three Added Parcels, plus portions of abutting parcels covered by the Hilton Hawaiian Village Master Plan EIS (2011), and is also referred to herein as the "Project Site." Owners of ~~all affected~~ the parcels comprising the SEIS Project Area are the Applicants for the Project.

Special Management Area (SMA):

Hilton Hawaiian Village Master Plan EIS (2011):	Entire Hilton Hawaiian Village is located within the SMA (*Figure 1.6*)
SEIS:	Entire Project Site is located within the SMA (*Figure 1.6*)

Flood Zone:	Zone AE indicating areas subject to inundation by the 1 percent annual chance flood event and where the BFE has been determined (*Figure 1.7*)

Figure 1.1 **Project Location**

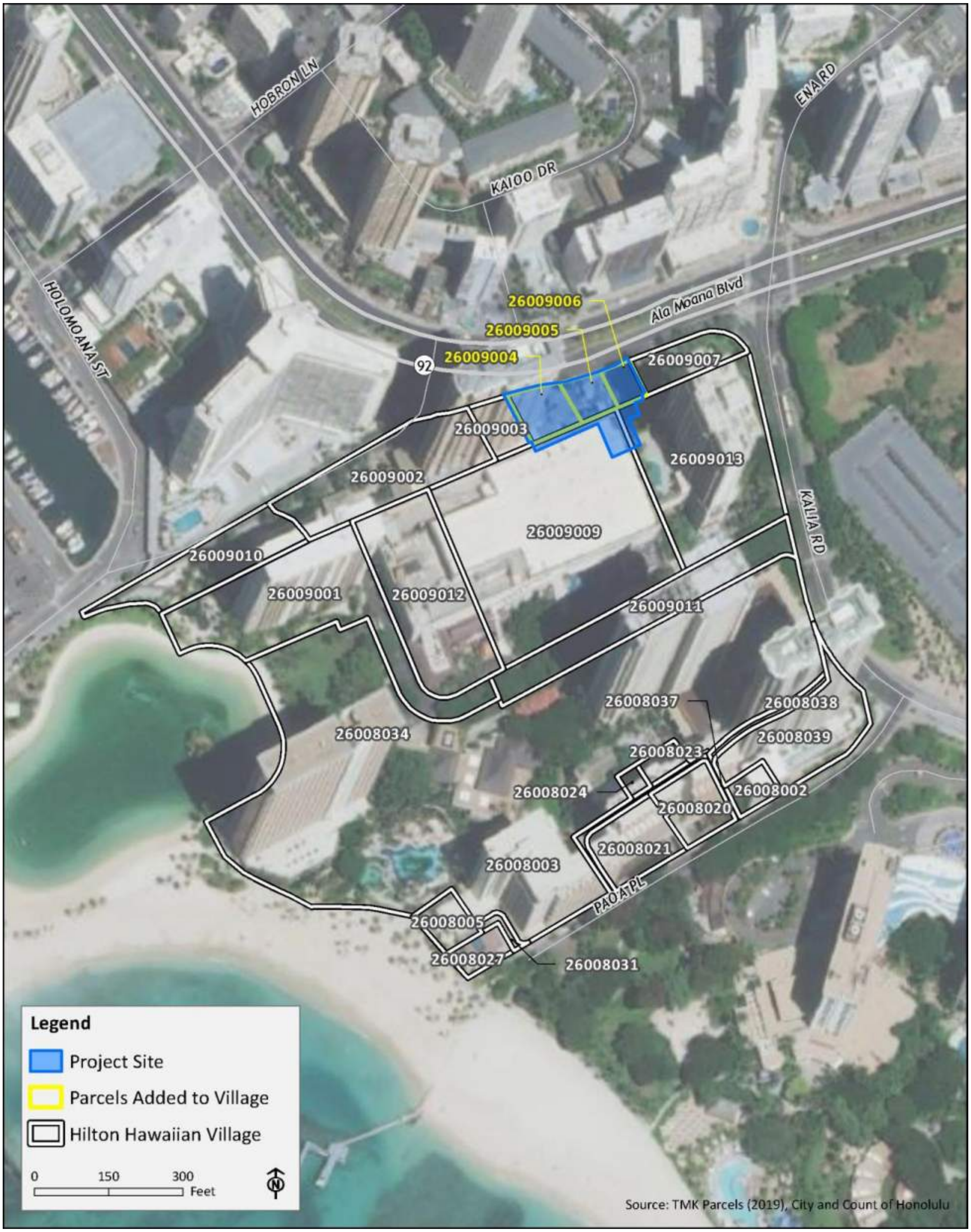

Figure 1.2 **Tax Map Key**

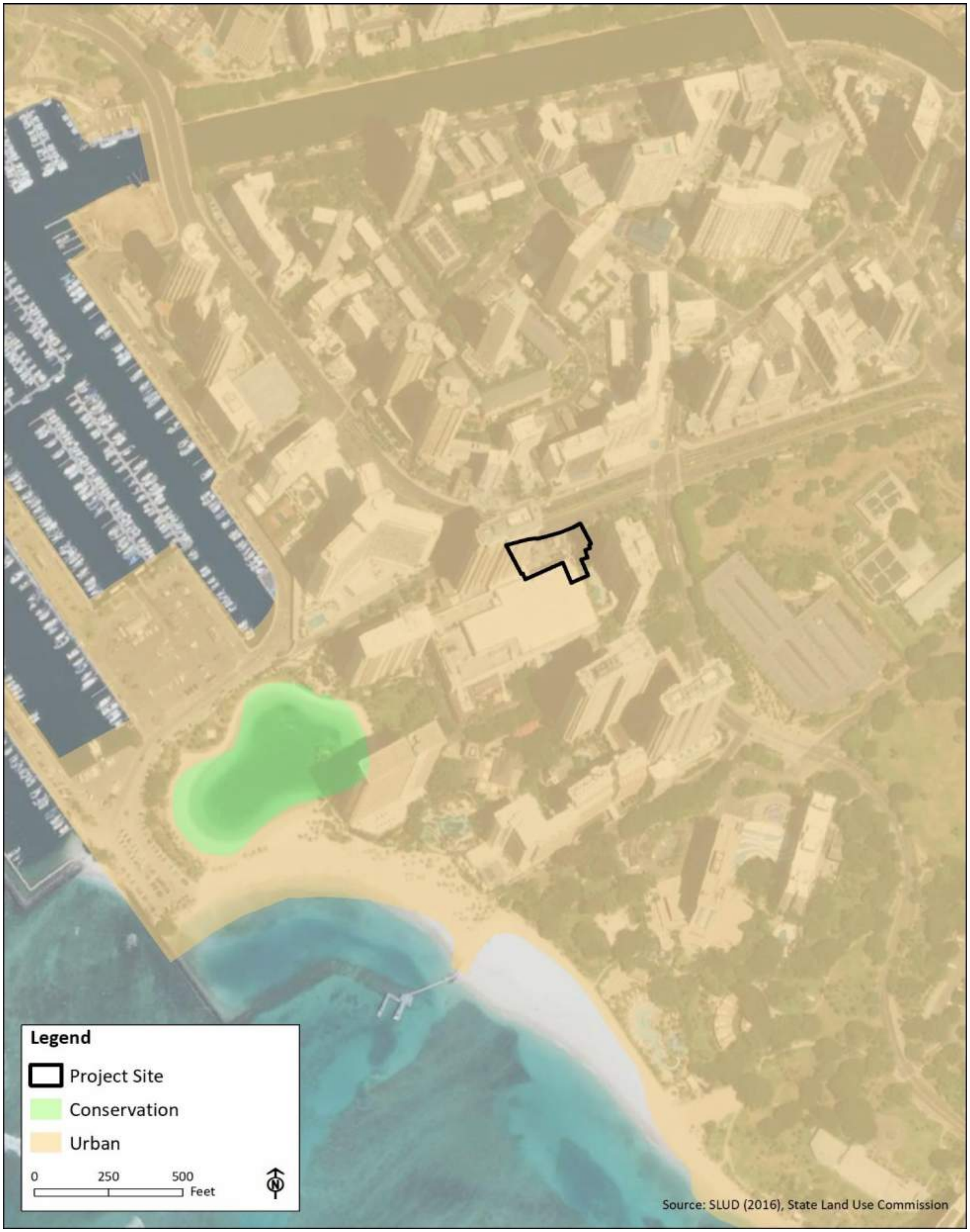

Figure 1.3 **State Land Use District**

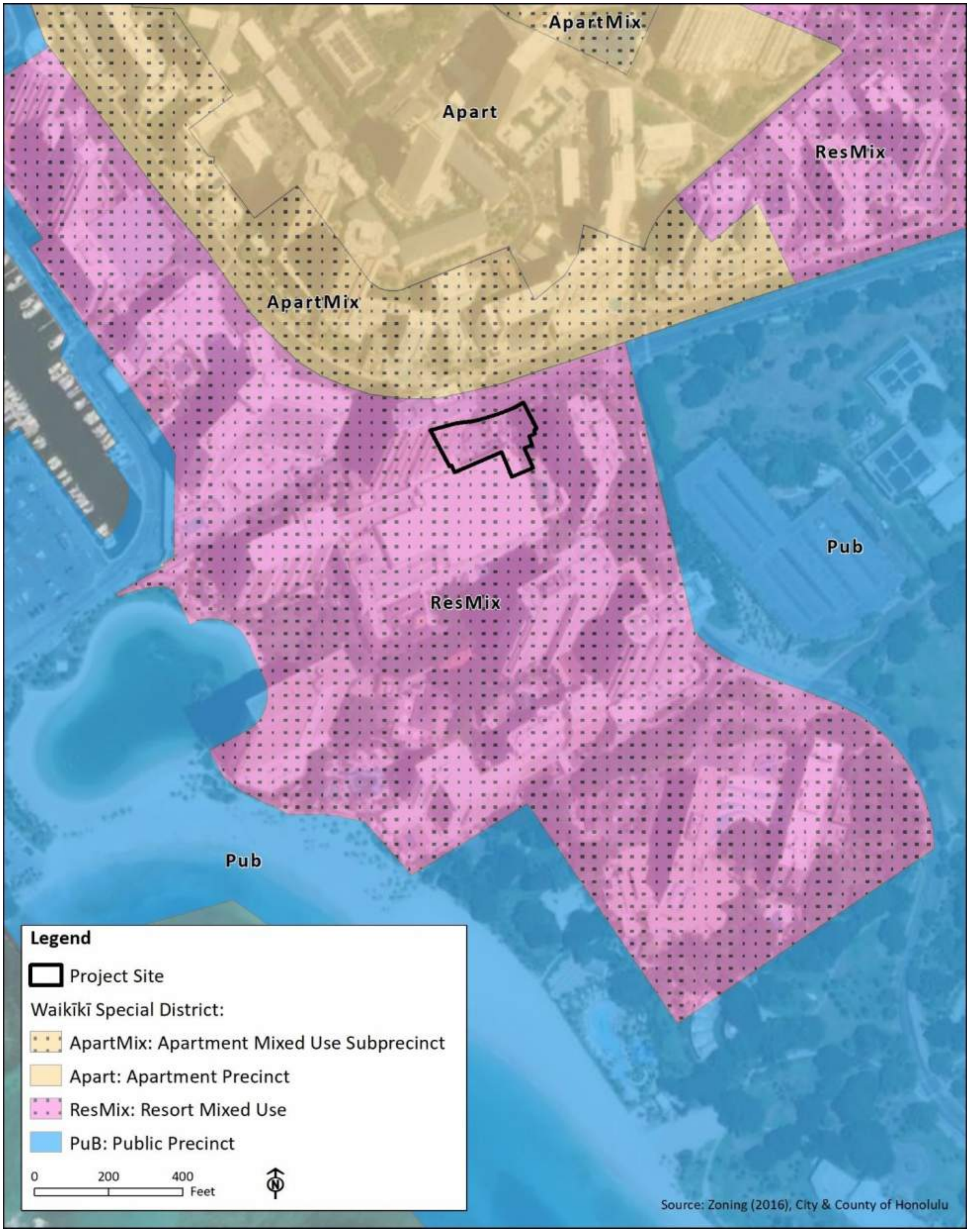

Figure 1.4 **City & County of Honolulu Zoning Special District Designations**

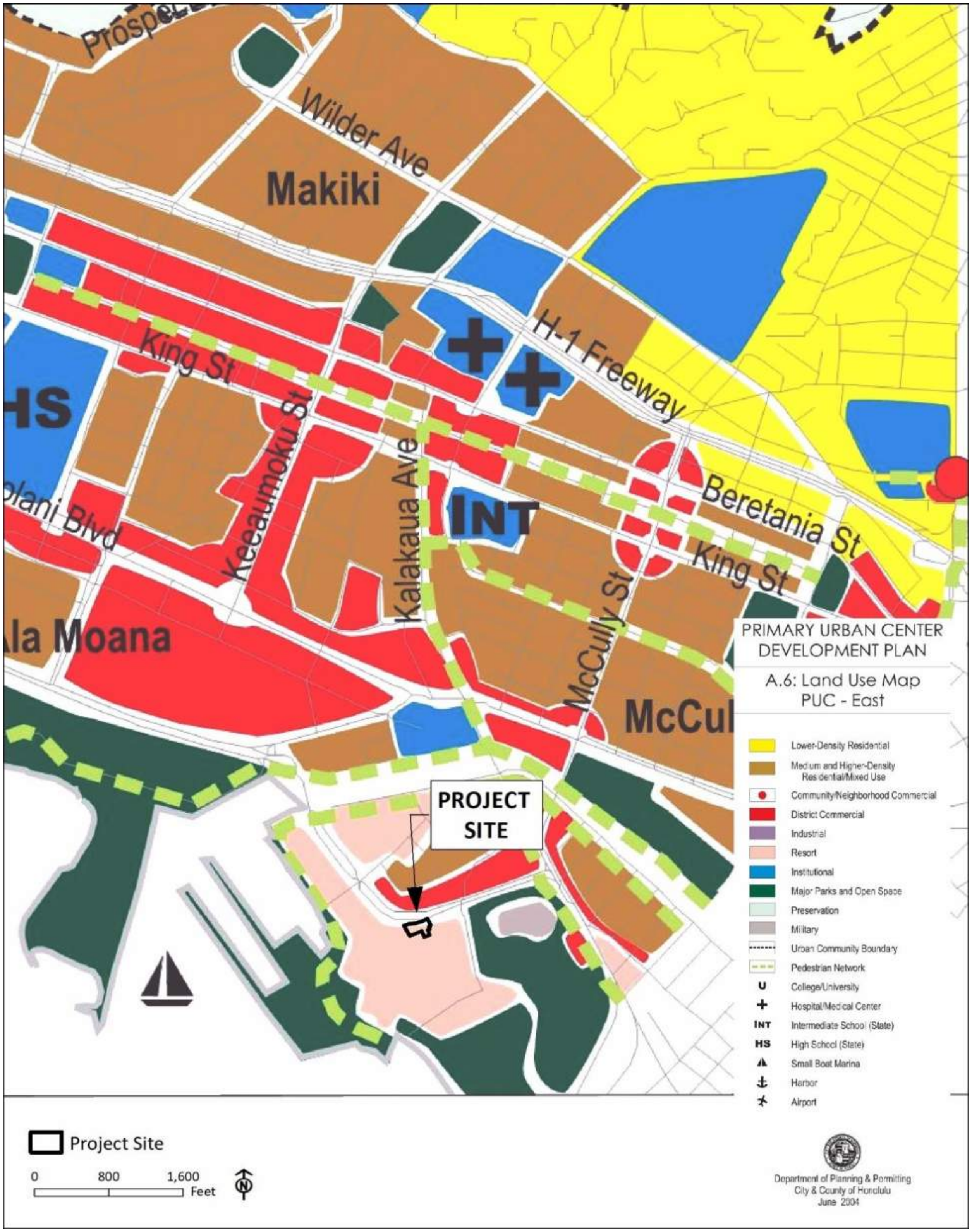

Figure 1.5 **Primary Urban Center Development Plan Area**

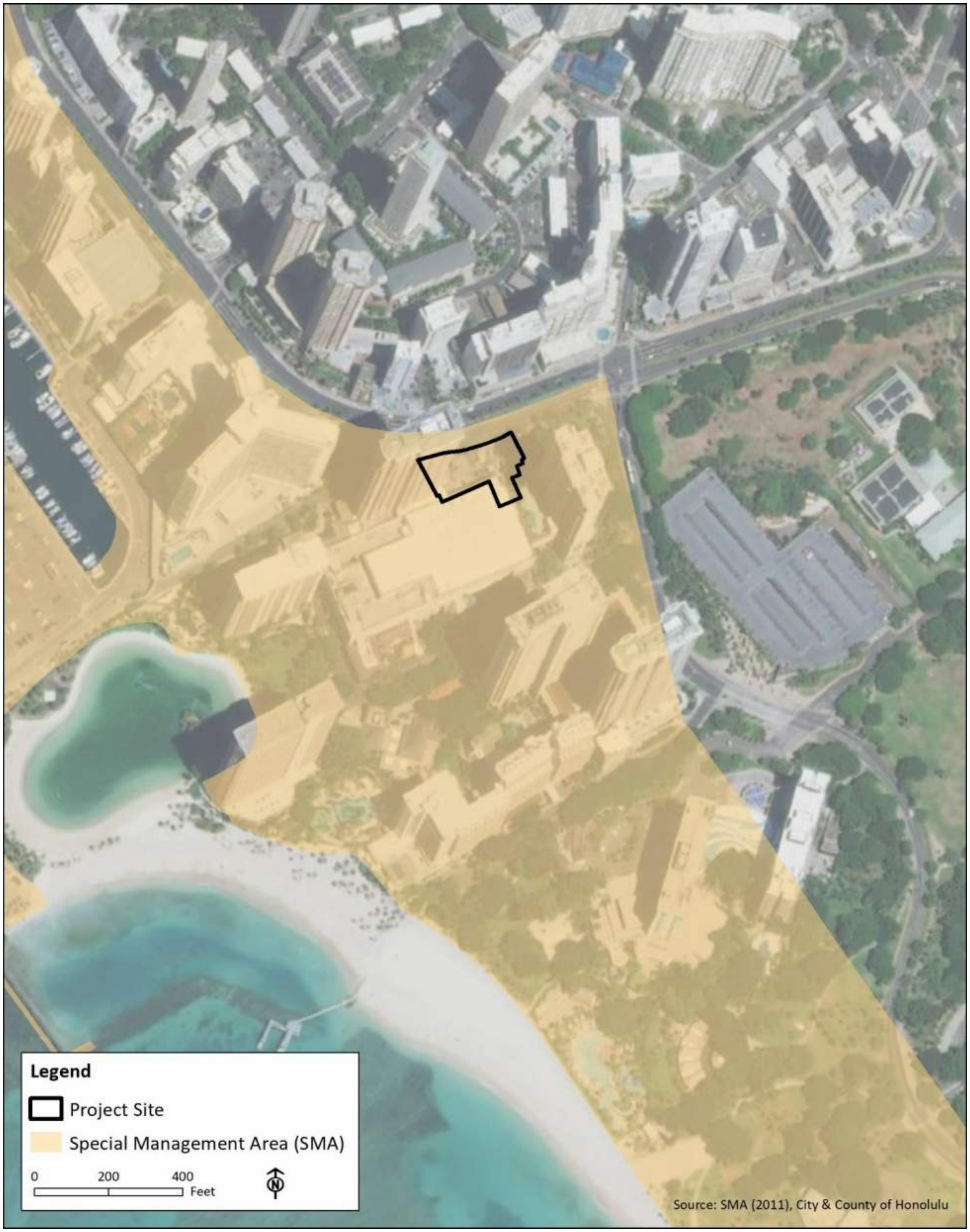

Figure 1.6 **Special Management Area**

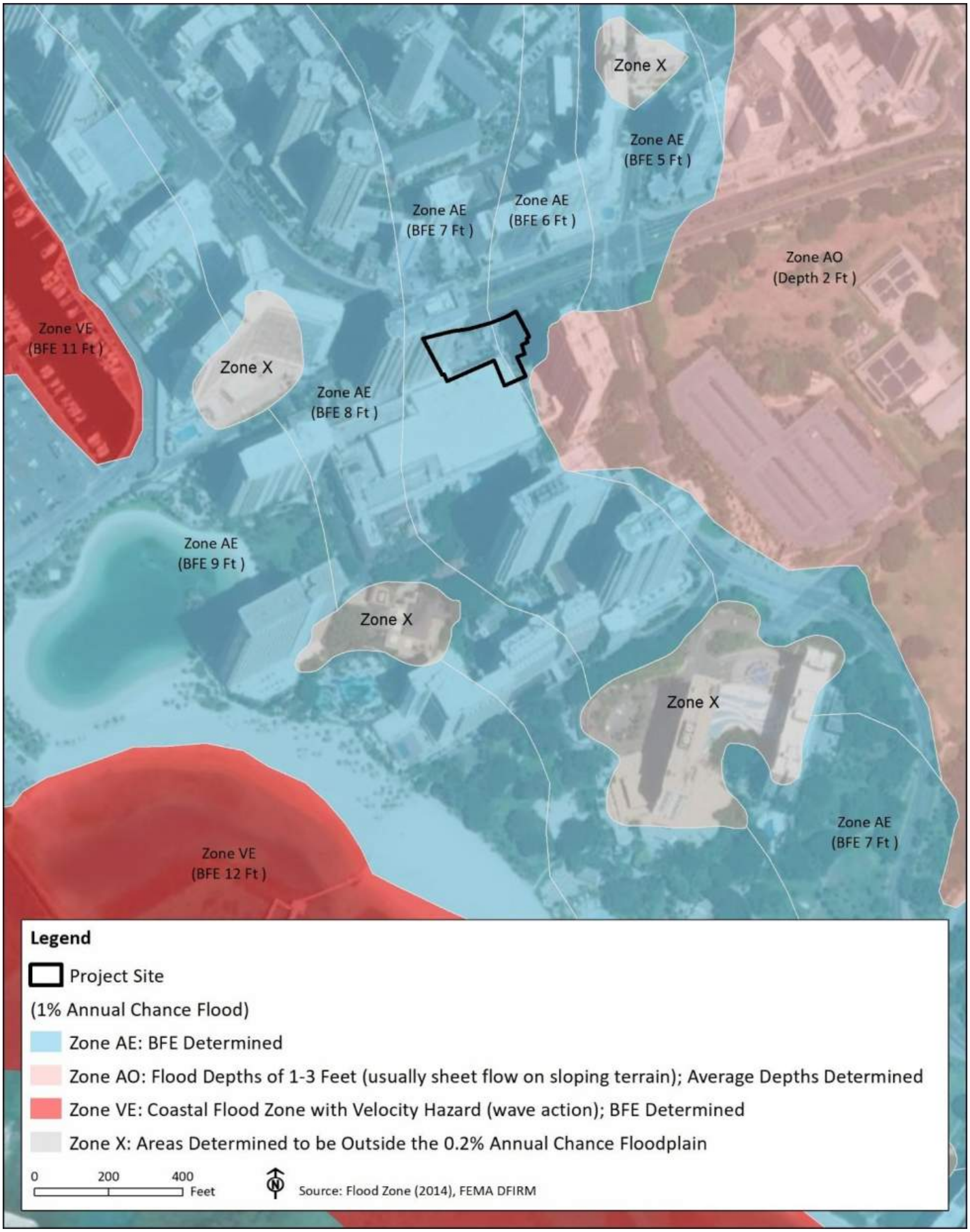

Figure 1.7 **Flood Zone**

1.2 Introduction and Purpose of the SEIS

This document is prepared in accordance with the requirements of Hawai'i's Environmental Protection Act (HEPA), Hawai'i Revised Statutes (HRS), Chapter 343, as amended, and Chapter 11-200.1 of Hawai'i Administrative Rules (HAR), the rules governing the State of Hawai'i (State) Office of Planning and Sustainable Development (OPSD) Environmental Review Program (ERP) (formerly called the Office of Environmental Quality Control).

In 2011, a Final Environmental Impact Statement (EIS) was completed for the Hilton Hawaiian Village (HHV or the Village) – Village Master Plan project. Pursuant to HRS, Chapter 343, the trigger for the EIS was development within the Waikīkī Special District (WSD). The Village Master Plan project provided a master-planned redevelopment of the HHV campus located at the 'ewa gateway of Waikīkī and the heart of Kālia. The Village Master Plan[3] was designed to improve retail flow throughout the HHV campus, add new towers, and expand recreational amenities to enrich the overall guest experience. New landscaping features and connectivity of open spaces were also integrated, including improvements to the sidewalk along Paoa Place and Kālia Road.

Various components approved as part of the overall Village Master Plan have been completed since the 2011 EIS, including construction of a planned timeshare tower (The Grand Islander tower located at the corner of Kālia Road and Paoa Place). Additional improvements approved as part of the Village Master Plan will continue to be planned, designed, and developed.

The Village now has the opportunity to expand the existing 22.24-acre campus by adding three new adjacent parcels on Ala Moana Boulevard, totaling approximately 0.46 acres (20,141 square feet (sf)). The planned expansion will include the new AMB Tower, which will provide hotel lodging accommodations, amenities, and services to guests and visitors, and which will be integrated into the HHV resort. This Supplemental EIS (SEIS) is required to undertake the planned Project within the WSD and to complement the 2011 EIS approved for the Village Master Plan.

As a first step in the environmental process, a SEIS Preparation Notice (SEISPN) was published by the ERP in *The Environmental Notice* on November 8, 2021 to notify agencies, organizations, and individuals that a Draft SEIS would be prepared for the Project. Publication of the SEIS was followed by a 30-day public comment period to solicit guidance on the scope of technical studies and to gather input on topics to be covered in the Draft SEIS. A total of 23 agencies and individuals provided responses during the public comment period. In addition, an SEIS public scoping meeting was held virtually on November 15, 2021 to collect further input.

Subsequently, the Draft SEIS was published in The Environmental Notice on November 23, 2022, followed by the 45-day public comment period. A total of 16 agencies, organizations, and individuals provided comments on the Project. Additionally, presentations were made to the Waikīkī Neighborhood Board No. 9 on November 1, 2022 and to the Waikīkī Improvement Association (WIA) on December 14, 2022 to inform the community about the Draft SEIS publication, and respond to questions about the Project. See *Section 7.0* for a list of agencies and individuals who provided written or oral comments, and the responses provided.

[3] The approved Hilton Hawaiian Village Master Plan is sometimes alternatively referred to in this SEIS as the "Master Plan" or the "Village Master Plan."

For the purposes of this SEIS, the expansion of the HHV campus and development and construction of the proposed AMB Tower will be referred to as the "Project".

1.3 Summary of the Project

Situated at the ʻewa gateway into Waikīkī, one of the world's most iconic visitor destinations, the HHV is a self-contained, world-renowned, premier beachside resort that covers approximately 22.24 acres of land. Since its construction over 60 years ago, HHV has remained strongly committed to the local community and to creating exceptional guest experiences. As such, services and accommodations at the Village must be continuously improved and refreshed to keep Waikīkī vibrant and to meet with the evolving expectations of guests from around the world.

In 2011, the Village Master Plan was designed as the next chapter of HHV's dedication to supporting Waikīkī as a premier world visitor destination. The Project builds on the Village Master Plan and includes the expansion of the HHV campus and development the AMB Tower on the three new Added Parcels (TMK parcels (1) 2-6-9: 4, 5, and 6 located at 1831, 1835, and 1841 Ala Moana Boulevard), and on portions of three adjacent parcels (TMK parcels (1) 2-6-9: 7, 9, and 13) that are already part of the existing HHV Planned Development-Resort (PD-R) Master Plan. The new tower will support HHV's ability to meet a variety of accommodation needs and the expectations and demands of today's resort guest. With the implementation of the Project, the AMB Tower will improve the quality and character of the Ala Moana Boulevard frontage at the ʻewa gateway to Waikīkī and enhance the Village experience for both visitors to Waikīkī and local residents. Existing public benefits at the HHV will continue, while the planned Project will add new public benefits to enhance and maximize the visitor experience and the Waikīkī community as a whole. In addition, the development of the AMB Tower will result in new jobs through construction and long-term operation of the Project.

The Project will create a modern resort facility for visitors and guests that connects seamlessly with the existing HHV campus. The envisioned AMB Tower will provide hotel lodging accommodations on the mauka edge of the HHV property fronting Ala Moana Boulevard. The AMB Tower will feature a culturally appropriate and contemporary design that invokes a Hawaiian sense of place. Design of the tower will complement the ambience of the Village and surrounding area. It will include a lobby area, arrival and departure lounge, welcoming porte cochere, ground floor retail (a flagship ABC Store) accessible to pedestrians along Ala Moana Boulevard, and a modest expansion of parking for visitors and guests. Lush landscaping and water features will be incorporated, and ground floor retail will include an outdoor seating area to activate the streetscape and create a people-oriented experience. Pedestrian walkways will also be included in the Project design to provide pedestrian circulation and enhance walkability. The AMB Tower will include a recreation deck, food and beverage offerings, fitness center amenities, and a connection and improvements to the pool deck at the adjacent Kālia Tower. A detailed Project description is provided in *Section 3.0*.

As an inevitable part of Waikīkī's future, the Project is being proactively planned and designed to be sustainable and resilient, and to address the impacts of climate change and rising sea levels. The AMB Tower will be elevated higher than the Base Flood Elevation (BFE) with a finished floor elevation of 8.0 ~~7.5~~ feet above mean sea level (msl) to mitigate potential impacts related to flooding (*Section 4.4.3*). Utilities will be relocated at higher elevations where feasible. Low Impact Development (LID) measures, such as seepage wells, drywells, or permeable pavement, will be incorporated into the Project design to protect water quality. Landscaping will be integrated at the ground floor and throughout common amenities spaces, and green infrastructure features, such as a green wall on portions of the podium, may be installed where feasible. With the addition of the AMB Tower, at least 50 percent of the Village will remain as open space, helping to control the overall urban heat island effect. As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV's longtime sustainability practices, including the implementation of various recycling programs, the use of low flow water fixtures, incorporation of electric vehicle (EV) charging, and bicycle storage. HHV participates in Hilton's "Light Stay" monitoring program which will also be implemented at the AMB Tower to manage its water and energy consumption. Launched at the Village in 2014, "Light Stay" is a technology program that measures and manages the environmental and social impact of the Village. In addition to tracking water and energy consumption, the platform monitors waste generation, social impact (e.g., volunteering, donations), risk mitigation, and best practice sharing.

See *Section 4.4.5* for further discussion regarding climate change and sea level rise (SLR), and *Section 4.12* for further discussion on sustainable practices.

Inclusion of the new parcels will increase the floor area available to the Village under the Hilton Hawaiian Village PD-R permit, which was approved in 2011 (File No. 2011/SDD-53). Amendments to the existing PD-R permit will require approval by the City and County of Honolulu (City), Department of Planning and Permitting (DPP) in accordance with the process set forth in Revised Ordinances of Honolulu (ROH), Chapter 21, Land Use Ordinance (LUO). As part of the Project, the A~~a~~pplicant will request an increase in the allowable Floor Area Ratio (FAR) within the Village from 3.70 to 4.00, as permitted by existing land use laws. Under the approved 2011 PD-R, 3,943,335 sf of floor area is permitted for the Hilton Hawaiian Village Master Plan. With the proposed campus expansion and increase of FAR to 4.00, the new total floor area available to the Village will be 4,430,548 sf. The Project will consist of an eight-story podium and 28-story tower, for a total of 36 stories. During the PD-R approval process, the Project will request a 350-foot maximum allowable height for the AMB Tower, exclusive of permitted rooftop equipment and structures,[4] all meeting existing height and setback requirements. The AMB Tower's eight-story podium will provide amenities and support spaces, including lobby and reception areas, staff office space, employee areas, parking, retail and commercial space, a recreation deck, a bar and other amenities. The Project is also subject to review and compliance with the WSD design standards.

1.4 Summary of Purpose and Need

Since its construction over 60 years ago, HHV has consistently maintained a committed vision to create exceptional experiences in Waikīkī that support economic development and maintain the region's unique sense of place. As a distinctive part of Waikīkī's ʻewa gateway, HHV introduces visitors and residents to a mix of urban and open space landscaped experiences that reflects Hawaiʻi's rich heritage and cultural diversity in a contemporary form. As such, services and accommodations at the Village must be continuously improved and refreshed to meet the evolving expectations of both residents and guests from around the world. Expanding the Village campus to include the AMB Tower will update an important portion of Waikīkī's ʻewa gateway; strengthen HHV as a major and iconic destination; support Waikīkī's social and economic functions; and, yield a quality experience for its residents, guests, and island visitors. Additionally, as the AMB Tower will be integrated into the 2011 Village Master Plan, the planned Project will meet the Master Plan's stated objectives. See *Section 2.0* for further discussion.

[4] The maximum 350-foot height limit of the AMB Tower excludes permitted rooftop structures for necessary mechanical appurtenances and utilitarian and architectural features. Rooftop structures shall not exceed 18 feet above the maximum height limit for roof forms and 12 feet above the maximum height limit for all other appurtenances and features (ROH, Section 21-9.80-4(g)).

1.5 Summary of Alternatives Considered to the Planned Project

The Village Master Plan represents the current vision and intent to transform the HHV campus through a well-defined and coordinated planning process. Over the decades, HHV has continuously reinvested in its commitment to providing a world-class visitor experience in Waikīkī through its redevelopment and improvement projects. The planned expansion of the HHV campus to include the subject parcels and construct the AMB Tower is a direct fulfillment of HHV's continued commitment.

A range of potential alternative actions could be contemplated for the Village's future. For this SEIS alternatives analysis, several categories of alternatives to the HHV expansion and construction of the AMB Tower are evaluated in *Section 6.0*, including the following:

1. No-Action
2. Alternative Design
3. Alternative Development Site
4. Alternative Use as Timeshare or Condominium/Apartment
5. Alternative Use as a Commercial Development

As the planned Project is envisioned to supplement the Village Master Plan, the alternatives to the Project considered were assessed based on their ability to meet the plan's stated objectives. Alternatives were also analyzed utilizing evaluation criteria established in the 2011 EIS. The following is a summary of the evaluation of the range of alternatives and potential impacts associated with alternative actions, which are discussed in-depth in *Section 6.0*.

1.5.1 No-Action Alternative

The No-Action alternative would maintain the Project area in its existing condition, which currently consists of aging or dilapidated structures. If no action is taken, the properties – which are located at the ʻewa gateway to Waikīkī along Ala Moana Boulevard – would remain dated and inconsistent with the identity of Waikīkī as a premier, global tourism destination. Under this alternative, the Village campus would also be maintained in its existing configuration. Ongoing operations and accommodations at the site would continue; but the AMB Tower and associated amenities, improvements to the pedestrian landscape fronting Ala Moana Boulevard, community benefits, property expansion, and connection within the campus, would not be actualized.

Under the No-Action alternative, existing jobs should not be affected, but the estimated 1,831 worker years on-site and 610 worker years off-site anticipated during construction, and the estimated 370 new full-time equivalent (FTE) jobs on-site and 123 associated secondary /off-site jobs would not be created. As a result, there would be no positive benefit of new employment opportunities for the construction industry or additional long-term operational employment in support of the AMB Tower. Further, the new employment and business associated with ancillary resort operations of retail, dining, and entertainment would not occur. Off-site businesses in Waikīkī that would have provided additional goods and services to the expanded number of Village visitors would also not benefit.

1.5.2 Alternative Design

An alternative design for the AMB Tower was evaluated for the Project which would use all of the existing authorized density (floor area) provided under the Hilton Hawaiian Village PD-R permit or request additional amendments, including increased flexibility for ground level open space, front yards, and transitional height setbacks. Under this alternative, the existing restaurant and retail space on the Added Parcels would be demolished and replaced with a 350-foot hotel tower, as is currently proposed in the Project, but with 689 hotel guestrooms instead of 515 as proposed. However, this alternative design would minimize the setbacks of the property and create a much larger and wider structure. Design would reflect a more massive, covered appearance as compared to a softer and more natural glass structure that blends with the existing setting, as is planned with the AMB Tower. The hotel would reflect a more massive appearance right along Ala Moana Boulevard, which is a key location as the entry to the HHV campus and gateway to Waikīkī. This alternative to the proposed Project would result in the layout and construction of a substantially larger hotel tower. Thus, this Project alternative would result in a larger overall footprint on the site. As a result, improvements to the streetscape and pedestrian walkways would be more limited than in the preferred Project. This alternative design is not the optimum use of the property.

1.5.3 Alternative Development Site

1.5.3.1 Alternative Development Site – Away from HHV

The HHV campus goals are to revitalize and reinvest in the existing Village property, and to support Waikīkī as a world-class visitor destination by revitalizing its ‘ewa gateway. Given this objective, the option to redevelop an alternative site away from HHV is not considered a practical alternative. The Project area is located directly adjacent to the Village and fits with the proposed Village expansion plans. There are no other available properties adjacent to the Village campus that are practical for HHV expansion or redevelopment, or that could be added to the existing PD-R permit. Demolition, infrastructure improvements, and other steps necessary to develop an alternative site could result in significantly greater environmental impacts than with the planned Project. There would be additional traffic to link the alternative site to HHV. Developing the Project at an alternative site would require construction of additional support facilities since the Project would not be able to share amenities and support facilities with the HHV campus, resulting in less efficient economies of scale and potential wasting of resources.

1.5.3.2 Alternative Development Site – Within HHV Campus

Other areas within the HHV campus were considered as possible alternative development sites. However, no other site achieves the Project’s objectives as fully as locating the Project on the Added Parcels. Developing the Project on other locations within the HHV campus would not upgrade the ‘ewa gateway to Waikīkī or eliminate underutilized and deteriorating structures that are currently located on the Added Parcels. The pedestrian experience along Ala Moana Boulevard would not be improved. The location of the alternative development site within the campus would be difficult to connect to the existing parking structure, open-space within the HHV campus would be further impinged, and there would be greater disruption of operations within the Village.

1.5.4 Alternative Use as Timeshare or Condominium/Apartment

Alternative uses for the proposed AMB Tower have been evaluated. One alternative would be developing the AMB Tower for a mix of hotel, timeshare and/or residential apartment or condominium uses. These alternative uses would likely result in a larger floorplate which would result in a larger, more dense structure given that the typical timeshare or condominium/apartment unit is significantly larger than the typical hotel room. In addition, devoting some or all of the Project to these alternative uses would reduce the additional potential hotel room inventory at the Village and in Waikīkī, and with it, reduce the number of hospitality jobs that could be provided. In addition, timeshare or condominium/apartment uses would require more parking than hotel uses and would thereby result in increased traffic related impacts.

Condominium/apartment product is not currently offered at the Village (other than the Diamond Head Apartments, a small apartment building that is used for employee housing and by other short-term apartment renters). Park Ala Moana LLC, as a subsidiary of Park Hotels & Resorts Inc. (a publicly-traded hotel ownership company), would not be interested in acquiring these properties or constructing the Project for timeshare-only use or condominium/apartment use, as it would not meet its business and operational goals as a hotel lodging company.

1.5.5 Alternative Use as Commercial Development

The alternative use of the Added Parcels for commercial development would maintain the existing use of the property. Under this alternative, the existing commercial buildings would be replaced with renovated spaces and/or expanded. Park Ala Moana LLC, as a subsidiary of Park Hotels & Resorts Inc. (a publicly-traded hotel ownership company), would not be interested in acquiring these properties or constructing the Project for commercial redevelopment purposes, as it would not meet its business and operational goals as a hotel lodging company. With this alternative, the HHV campus would not be expanded and additional visitor resort accommodations, experiences, and amenities would not be created.

Under this development alternative, commercial uses would continue to operate independently from the Village campus and this area in Waikīkī's ʻewa gateway would not provide a cohesive resort experience. The existing structures would be replaced with renovated spaces and/or expanded, as is planned for with the proposed Project. Adequate parking to support the potential future renovation of the commercial spaces could not be readily provided on-site due to a lack of physical space. The alternative commercial use of the site is not consistent with the Master Plan, and is not a feasible option that fits with HHV's intended vision and development goals.

1.6 Summary of Impacts and Proposed Mitigation Measures

Resources that may be potentially impacted by the Project in the short- and long-term are identified in *Table 1.1* following this section. The table further identifies mitigation measures proposed to offset potential adverse impacts. In-depth discussion on each resource is provided in *Section 4.0*

The Project improvements include varying levels of activity ranging from demolition and reconfiguration of existing structures, excavation for foundations, and construction of a new building and associated utilities. These improvements will create local short-term construction-related impacts to the environment. Potential short-term adverse impacts primarily relate to soil disturbance; hazardous materials removal/disposal; dust and erosion during demolition and grading; parking and traffic impacts during construction due to the movement of laborers, building materials, equipment and trucks; increased noise during construction; potential drainage and runoff during construction; and, views of construction activity.

Short-term beneficial impacts related to construction will include construction expenditures and employment, as well as the purchase of services and materials to design and construct the proposed improvements. Short-term adverse economic impacts related to construction include the income potentially lost to the hotel and establishments affected by construction.

Development of the AMB Tower within the expanded HHV campus may generate some long-term adverse impacts to the natural and human environment, which will be mitigated to the extent reasonably possible and as required in accordance with law. Potential long-term impacts include effects on the following: drainage and runoff; archaeology, cultural and historic resources; roadways and traffic; noise; air quality; wind conditions; visual resources; public infrastructure; and public services. Material and economic resources will be irretrievably committed to the various facilities and programs implemented.

As positive impacts, the AMB Tower will significantly and positively contribute to the setting of Waikīkī at the heart of Kālia. Expanding the HHV campus and replacing existing outdated or dilapidated structures at the Project Site with the AMB Tower will help to reinvigorate and revitalize Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī. Development of the tower along Ala Moana Boulevard will enhance the immediate pedestrian surroundings for residents and visitors, and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus. Planned improvements to enhance the street frontage include landscaping with water features and an open, welcoming porte cochere. The tower podium will also include ground level retail comprised of a new flagship ABC Store and outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape. Selected building materials will be subdued and natural, contributing to a Hawaiian sense of place and complementing the natural setting and heritage of Waikīkī.

The Project will provide additional hotel lodging accommodation options at the Village and an enhanced visitor experience, ensuring the Village's continued status as a world class resort and major contributor to Waikīkī's position in the highly competitive tourism market. In addition, development of the AMB Tower will generate significant on-going economic and fiscal benefits through increased visitor expenditures, the creation of new jobs to support long-term operations of the Project, and increased State and City revenues (*Section 4.10*).

1.7 Summary of Compatibility with Land Use Policies and Plans

The Project is located makai of Ala Moana Boulevard in Waikīkī, which is a preferred resort locale in Waikīkī. The plans for the Project support continuous reinvestment into Waikīkī in order for it to remain competitive in the global travel marketplace. The planned improvements are also supportive of State and City land use policies related to the natural and social environment, and consistent with applicable land use designations, as discussed in *Section 5.0*. The Project will contribute a wide range of benefits and will further a number of publicly-stated goals, objectives, and policies established by the State and City. In particular, the Project is consistent with the WSD District Design Guidelines and Standards, and meets goals to support Waikīkī as a premier visitor destination, the anchor for the state's tourism industry, a major employment center, and an urban residential neighborhood with a unique Hawaiian sense of place that must be retained and enhanced. The Project also represents a direct fulfillment of the goal identified in the City Primary Urban Center (PUC) Development Plan (DP) (2013) to maintain a vibrant and livable Waikīkī.

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Table 1.1: Summary of Impacts and Mitigation Measures

Resources Affected	Potential Short-term Impacts	Potential Long-term Impacts	Mitigation and Best Management Practices (BMPs)	SEIS Section
Archaeological, Cultural, and Historic Resources				4.1
Archaeological Resources	Potential for iwi kūpuna (Native Hawaiian ancestral remains) and/or cultural finds to be encountered during construction.	• An Archaeological Inventory Survey (AIS) conducted on the Project Site identified three significant historic properties. • Pursuant to HAR, Section 13-284-8, the Project will have an "effect with mitigation commitments." SHPD review and concurrence with the effect determination is forthcoming.	• In the event that iwi kūpuna and/or cultural finds are encountered during construction, earth moving activities in the area will stop and the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) and City and County of Honolulu Police Department (HPD) will be notified pursuant to HAR, Section 13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR, Section 13-300 and HRS, Section 6E-43, is recommended. • In the event that iwi kūpuna and/or cultural finds are encountered during construction, the Applicants will consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan. • In the long-term, planned mitigation for the significant historic properties identified on the Project Site include archaeological monitoring and burial treatment. SHPD review and concurrence with the mitigation commitments is forthcoming. • Accordingly, an Archaeological Monitoring Plan (AMP) and Burial Treatment Plan (BTP) will be prepared in consultation with SHPD and Native Hawaiian cultural descendants.	4.1.1, Appendix B

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Cultural Resources	Potential for iwi kūpuna (Native Hawaiian ancestral remains) and/or cultural finds to be encountered during construction.	• No impacts to ongoing cultural practices and cultural resources. • No impacts to cultural sites and wahi pana. • Potential impacts on archaeological historic properties identified in the AIS.	• In the event that iwi kūpuna and/or cultural finds are encountered during construction, earth moving activities in the area will stop and the SHPD and HPD will be notified pursuant to HAR, Section 13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR, Section 13-300 and HRS, Section 6E-43, is recommended. • In the event that iwi kūpuna and/or cultural finds are encountered during construction, the Applicants will consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan. • Potential impacts to historic archaeological sites will be mitigated by archaeological monitoring and burial treatment. • Accordingly, an AMP and a BTP will be prepared in consultation with SHPD and Native Hawaiian cultural descendants.	4.1.2, Appendix C
Historic Architectural Resources	No adverse impact.	According to prior SHPD determination, no significant architectural historic properties will be affected by the Project.	No mitigation measures required.	4.1.3, Appendix B
Atmospheric and Meteorological Environment				4.2
Climate and Rainfall	No adverse impact.	No adverse impact.	No mitigation measures required.	4.2.1

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Wind Conditions	No adverse impact.	• No significant impact to most pedestrian-level or most above-grade locations of the AMB Tower. • Alleviation of existing uncomfortable pedestrian-level wind conditions through the Kālia Tower and Mid-Pacific Conference Center and Coral Ballroom parking garage passageway. • Uncomfortable pedestrian-level conditions may occur near the northeast corner of the tower due to downwashing and corner acceleration of prevailing winds from the northeast. • Wind speeds at the northeast end of the Floor 8 podium roof may be uncomfortable. However, this area is restricted to the public. If pedestrian access is granted, design options would be integrated.	• Lower wind speeds at the pedestrian-level northeast corner of the tower could be achieved by installing a canopy along the east façade of the tower to deflect winds accelerating down the façade away from the ground. In addition, the existing landscaping at the intersection of Ala Moana Boulevard and Kālia Road, which was not included in the wind tunnel model, is expected to help reduce the wind speeds in this area. • If needed, design features to mitigate potential high wind speeds at Floor 8 podium roof may be integrated and may include, but not be limited to, the following: raised railings with a minimum height of six feet, large canopy, and hard or soft landscaping features.	4.2.2., Appendix D
Air Quality	Construction-related fugitive dust and equipment emissions may result.	• Stationary and mobile sources of emissions may slightly increase. • No significant adverse impacts.	• During construction, work activities will be in compliance with HAR, Sections 11-59 and 11-60. • Construction equipment and vehicles will be maintained in proper working order to reduce air emissions. • Construction activities may be phased. • A construction dust control plan may be prepared. • Non-motorized transportation (walking, cycling, etc.) and public transportation will be encouraged.	4.2.3, Appendix E

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Urban Island Heat Effect	No adverse impact.	• No significant adverse impact. • The addition of AMB Tower leads to denser concentration of buildings at HHV; however, the site is already developed and vegetation is limited. • The Project is not anticipated to significantly exacerbate the urban heat island effect.	• At least 50 percent of the Village will remain as open space. • Landscaping and LID measures, where feasible, will be installed. • Green infrastructure improvements, such as a green wall on portions of the podium, may also be incorporated where feasible.	4.2.4
Terrestrial Environment				4.3
Topography, Geology, and Soil Conditions	Land-disturbing activities may result in soil erosion.	No adverse impact.	• Compliance with the conditions of the City grading permit and applicable provisions of HAR, Sections 11-54 and 11-55. • Erosion control measures will be implemented during construction, and may include but not be limited to, construction phasing, replacing ground cover of disturbed areas, and the use of temporary silt fencing. • Following construction, all areas of ground disturbance will be stabilized with appropriate materials.	4.3.1
Surface Waters and Ground Waters	Construction may result in potential stormwater runoff.	No adverse impact.	• During construction, work activities will be in compliance with HAR, Sections 11-54 and 11-55. • Discharge pollution prevention measures will be employed in all phases of the Project. • Erosion control measures will be implemented during construction, and may include but not be limited to, construction phasing, replacing ground cover of the disturbed area, and the use of temporary silt fencing.	4.3.2

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Botanical Resources	• No significant adverse impact. • Several existing trees within the building footprint may have to be removed during construction.	• No significant adverse impacts. • Several existing trees within the building footprint may be considered for removal due to low species value or poor health.	• During tree removal, the general contractor will minimize the movement of plant or soil material to the extent possible, and all equipment, materials, and personnel will be cleaned of excess soil and debris to minimize the risk of spreading invasive species. • Selected trees within the building footprint may be transplanted. • Landscaping plans will add more trees and other vegetation to the site, and will include appropriate replacements for removed trees. Overall, vegetation on the site will exceed what exists currently. The landscaping palette may consist of native, Polynesian-introduced, or tropical trees and palms of varying sizes that provide shade and screening and contribute to a landscaped urban environment that invokes a welcoming experience at the ʻewa gateway into Waikīkī. • Planned landscaping will complement the HHV campus and will be consistent with WSD guidelines.	4.3.3, Appendix F
Terrestrial Fauna and Avifauna	• Temporary construction-related lighting could pose potential impact to protected seabirds, who may become disoriented by lights during the nesting season. • There may be potential impacts to roosting Hawaiian hoary bat during the clearing and grubbing phase of construction.	• No significant adverse impacts. • Exterior lighting could pose potential impact to protected seabirds, who may become disoriented by lights during the nesting season.	• Trees will be examined for signs of nesting prior to cutting. If nests are discovered, the DLNR Division of Forestry and Wildlife (DOFAW) may be contacted for assistance. • If night-time construction activity or maintenance is required, all associated lights shall be shielded downward. • If night-time construction activity is required during the seabird fledgling season (September 15 to December 15), a qualified biologist may be present at the site to monitor. • In the few areas that have trees or shrubs greater than 15 feet (5.6 meters), trees will be removed or trimmed	4.3.4

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
			outside of the bat pupping season of June 1 to September 15. • The use of barbed wire fencing will be prohibited. • Light fixtures will be designed and installed to reduce glare and shield light from migrating and/or nocturnally flying seabirds.	
Natural Hazards				4.4
Hurricane	No adverse impact.	• No adverse impact. • Though difficult to predict when these events occur, it is reasonable to expect that future events will take place and may increase in frequency due to global climate change.	• The AMB Tower will be designed in compliance with the International Building Code (IBC) and State and City regulations, and will meet safety standards required for wind loads associated with hurricane force wind conditions. • In the event of an emergency weather event, the AMB Tower will implement safety protocols to protect guests and employees, as is currently the standard operating procedure at the HHV campus. Protocols may include vertical relocation to higher floors or relocation to an assigned shelter space.	4.4.1
Earthquake	No adverse impact.	No adverse impact.	• The AMB Tower will be designed in compliance with the IBC and State and City regulations, which include earthquake design provisions. • In the event of an emergency event, the AMB Tower will implement safety protocols to protect guests and employees, as is currently the standard operating procedure at the HHV campus.	4.4.2
Flood Hazards	No adverse impact.	No adverse impact.	• The AMB Tower will be designed with a finished floor elevation of 8.0 ~~7.5~~ feet above msl, exceeding the Federal Emergency Management Agency (FEMA)-designated BFE of 7 feet.	4.4.3

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
			• The Project is located within a designated Special Flood Hazard Area (SFHA). Design will comply with applicable State and City standards, including ROH, Chapter 21A.	
Flood Hazards (continued)			• In the event of an emergency weather event, the AMB Tower will implement safety protocols to protect guests and employees, as is currently the standard operating procedure at the HHV campus. Protocols may include vertical relocation to higher floors or relocation to an assigned shelter space.	
Tsunami Inundation	No adverse impact.	Development within the Extreme Tsunami Evacuation Zone (XTEZ).	• In the event of an emergency weather event, the AMB Tower will implement safety protocols to protect guests and employees, as is currently the standard operating procedure at the HHV campus. Protocols may include vertical relocation to higher floors or relocation to an assigned shelter space.	4.4.4
Climate Change, and Sea Level Rise (SLR)	No adverse impact.	The planned AMB Tower is within the 3.2-foot SLR exposure area (year 2100), which presents a heightened risk of passive flooding.	• The AMB Tower will be designed with a finished floor elevation of 8.0 ~~7.5~~ feet above msl. • Utilities will be relocated at higher elevations where feasible. • At least 50 percent of the Village will remain as open space. • Landscaping will be installed, and vegetation at the Project Site is anticipated to be significantly greater than currently exists. • LID measures, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design. • Green infrastructure improvements, such as a green wall on portions of the podium, may also be incorporated where feasible.	4.4.5

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
			• Non-motorized transportation modes, such as walking and cycling, will be encouraged. • Design of off-street parking stalls will adhere to the City's EV charging standards.	
Climate Change, and Sea Level Rise (SLR) (continued)			• The Hilton "Light Stay" program will be implemented at the AMB Tower to monitor and conserve energy. • Continued contribution and participation with local stakeholders regarding a regional coordinated effort to address the effects of climate change and SLR.	
Hazardous Wastes and Materials	During site demolition, potential hazardous materials present at the site may be disturbed.	• No adverse impact. • The Project will remove potential hazardous materials from the site.	Potential hazardous materials will be properly handled and disposed of in accordance with Federal, State, and City regulations.	4.5, Appendix G, Appendix H
Public Services				4.6
Police Protection	No significant adverse impact.	• No significant adverse impacts. • The increase of visitors/de facto service population to the site may require additional police protection resources.	• To protect public safety during construction, BMPs, such as installation of necessary signs, lights, barricades, and safety equipment, may be implemented. • Surrounding businesses and residents will be notified prior to construction activities that may impact pedestrian or vehicular traffic. • The AMB Tower will provide security to enhance safety at the site. • Where possible, the AMB tower will participate in State and City public safety programs, such as the newly launched Safe and Sound Waikīkī initiative.	4.6.1

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Fire Protection	No significant adverse impact.	• No significant adverse impacts. • The increase of visitors/de facto service population to the site may require additional fire protection resources.	Project plans will be reviewed by the Honolulu Fire Department (HFD) for conformance with Federal, State, and City regulations.	4.6.2
Emergency Medical Services & Hospital Services	No significant adverse impact.	• No significant adverse impacts. • Increase of visitors/de facto service population to the site may require additional emergency medical resources.	• Guests of the AMB Tower will be advised of available surrounding health care services. • In the event of an emergency situation, the AMB Tower will implement safety protocols to protect guests and employees, as is currently the standard operating procedure at the HHV campus.	4.6.3
Educational Facilities	No adverse impact.	No adverse impact.	No mitigation required.	4.6.4
Libraries	No adverse impact.	No adverse impact.	No mitigation required.	4.6.5
Public Parks	No adverse impact.	No adverse impact.	No mitigation required.	4.6.6
Roadways and Circulation				4.7
Traffic	Temporary increases in construction-related traffic may result, particularly during the mobilization and demobilization of the construction area.	No significant adverse impact. Traffic conditions are generally expected to remain similar to without Project conditions.	• To minimize traffic disruption during construction, BMPs to minimize conflicts with traffic will be implemented. BMPs include, but are not limited to: ○ Parking areas will be designated for construction-related vehicles and construction workers to ensure no parking, queueing, or staging of construction-related vehicles occur outside of the designated construction area. ○ Access to the Project Site will be monitored to allow safe passage of pedestrians. ○ Construction materials and equipment may be transferred to/from the Project Site during off-peak	4.7.1, Appendix I

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
			traffic hours to minimize any potential disruption to traffic on adjacent streets. ○ Existing pedestrian, bicycle, and vehicle access/crossings will be maintained with the highest safety measures during construction.	
Traffic (continued)			○ Erosion control measures will be implemented to prevent dirt and debris from being carried off-site onto the surrounding roadways. ○ A street usage permit from the appropriate agency may be obtained as needed for any construction-related work that may require the temporary lane closures along the adjacent roadways. ○ Construction activities will be coordinated with and Project plans will be submitted to the Department of Transportation Services (DTS)-Public Transit Division (PTD) to ensure the Project development does not affect public transit services ○ A more detailed Construction Management Plan (CMP) may be prepared, as required.	
Multi-Modal Facilities	• No significant adverse impacts. • Construction may require short-term road closures or re-routing of multi-modal facilities.	No significant adverse impacts.	• Existing pedestrian, bicycle, and vehicle access/crossings will be maintained with the highest safety measures during construction to the extent practicable. • During construction, the Applicants will coordinate with DTS-PTD to minimize impacts to public transit services. • Neighborhood residents, businesses, and other stakeholders will be kept informed of potential impacts to surrounding multi-modal facilities, as needed. • In the long term, the AMB Tower will encourage non-motorized transportation and maintain the 8-foot-	4.7.2, Appendix I, Appendix J

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
			wide sidewalk width along Ala Moana Boulevard to provide comfortable operating conditions for pedestrians.	
Multi-Modal Facilities (continued)			• Guests of the Project can take advantage of the area's high density of services in the vicinity to reduce vehicular use. • Design of the porte cochere will include a landscaped water feature that will beautify the 'ewa gateway to Waikīkī and enhance the pedestrian environment. • Ground floor retail will include an outdoor seating area to activate the Ala Moana Boulevard street frontage and create a people-oriented environment. • The AMB Tower will meet the City bike parking requirements.	
Access and Parking	No significant adverse impacts.	No adverse impact. The site will be accessed from Ala Moana Boulevard. Design of this access entry will include a lush, landscaped water feature that will beautify the 'ewa gateway to Waikīkī and enhance the pedestrian environment.	• No mitigation required. • As part of the Traffic Management Plan (TMP) that will be prepared as the Project progresses, HHV will provide guests who elect to self-park with access to the existing Coral Ballroom parking garage and direct them to use Kahanamoku Street or Rainbow Drive to access the garage during their stays. • Design of the Project will include appropriate signage to safely direct motorists and pedestrians. • Design of off-street parking stalls will adhere to the City's electric vehicle charging standards. • The TMP will include Transportation Demand Management (TDM) strategies, and existing TDM programs at the Village will be implemented for staff to encourage the use of public and active forms of transportation.	4.7.3

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Loading and Delivery	No significant adverse impacts.	No significant adverse impacts.	No mitigation required.	4.7.4
Infrastructure and Utilities				4.8
Drainage	Construction may result in potential temporary stormwater runoff.	• Potential impacts on existing drainage patterns, including stormwater runoff towards Ala Moana Boulevard and the HHV campus. • Existing drainage system may need to be rerouted or improved.	• Compliance with the conditions of the City grading permit and applicable provisions of HAR, Sections 11-54 and 11-55. • Stormwater runoff will be treated on site in accordance with City rules. • LID measures, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design.	4.8.1 Appendix K
Water Supply	No significant adverse impact.	The AMB Tower will require potable water; however, the City and County of Honolulu Board of Water Supply (BWS) has preliminarily confirmed that there is sufficient capacity.	• The Applicants will continue to consult with BWS through the design process. Final construction drawings will be reviewed by BWS and necessary charges will be paid prior to the issuance of building permits. • The Hilton "Light Stay" program will be implemented at the AMB Tower to monitor and conserve water. • Water conservation measures will be implemented in design of the AMB Tower as required by BWS and may include, but not be limited to, the utilization of nonpotable water for irrigation and the use of Water Sense-labeled ultra-low flow water fixtures and toilets to reduce water usage. • A Water Conservation and Reuse Plan for the AMB Tower project will be submitted to BWS for review and approval prior to the confirmation of water availability.	4.8.2, Appendix K

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
Wastewater Treatment and Disposal	No adverse impact.	No significant adverse impact. The estimated sewer transmission capacity is within HHV's limits allotted in a 2012 Memorandum of Agreement (MOA) with the City.	No mitigation required.	4.8.3, Appendix K
Solid Waste	No significant adverse impacts.	The AMB Tower will result in an increase in solid waste; however, the increase will not have a significant adverse impact to the City.	• No mitigation required. • Existing conservation practices at the Village will also be implemented at the AMB Tower: ○ Glass, plastic bottles, and cardboard will be recycled. ○ The use of compostable or alternative disposal cutlery, like cups and silverware made from cornstarch or bamboo, will be encouraged. ○ Usable food will be distributed to charities. ○ Food waste will be recycled and sent to pig farms for feed. ○ Frying oil will be used for biodiesel conversion. ○ Soap will be recycled	4.8.4, Appendix K
Power and Telecommunications	No adverse impact.	No adverse impact. The Project will increase the demand and need for electricity; however, HECO confirmed there is existing capacity.	Coordination with HECO, Hawaiian Telcom, and Spectrum during the design phase of the project will be conducted to verify points of connection.	4.8.5
Gas	No adverse impact.	No adverse impact.	Coordination with Hawai'i Gas during the design phase of the Project will be conducted to verify points of connection.	4.8.6
Noise Conditions	Construction activities at the Project Site will present a temporary source of noise above existing ambient levels.	Operation of the Project may minimally increase existing traffic noise levels in the vicinity; however,	• Construction will comply with HAR, Section 11-46. • Mufflers will be used on combustion-powered construction vehicles and machinery, and noise	4.9, Appendix L

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
		noise levels will still be within the acceptable standard.	attenuation equipment maintained in good operating condition. • Construction activities and use of heavy equipment would be scheduled as much as possible during daylight hours to avoid disturbing area residents during the evening. • Design of the AMB Tower will incorporate noise mitigation measures, which may include the following: closure, air conditioning within units, special glazing, and the use of weather seals. • The units within AMB Tower will include efficiently-designed air conditioning to minimize potential noise impacts. • To mitigate for potential traffic noise along the street frontage of Ala Moana Boulevard, the lobby will be enclosed with sliding glass doors and include efficient air conditioning. The porte cochere will include landscaping and a walled water feature, which may also help to mitigate noise.	
Noise Conditions (continued)			• The existing HHV resort units located in the immediate vicinity of the Project along Ala Moana Boulevard and Kālia Road are currently provided with air conditioning, helping to minimize potential noise impacts from the AMB Tower on the Village.	
Socio-Economic Conditions	• The Project is estimated to create a total of 2,441 “worker-years” of employment (the equivalent of 52 work weeks at 40 hours per week) in the trades and supply businesses, averaging about 900 workers annually, with an estimated	• Some jobs at existing retail establishments on the Added Parcels may be adversely impacted; however, the AMB Tower is estimated to create a total of 493 full-time equivalent (FTE) jobs on a stabilized basis.	No mitigation required.	4.10, Appendix M

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
	$190.4 million (M) in wages (averaging about $76M per year). • The total base economic impact of the Project is $499.6M during planning/construction. • The Project is estimated to contribute approximately $13.3M in City gross tax receipts during planning/construction. • The Project is estimated to contribute approximately $49.1M in State gross tax receipts during planning/construction.	• Of the 493 FTE jobs, 370 jobs will be related to hotel and retail operations with cumulative annual wages totaling $28.5M, and 123 off-site/associated secondary jobs with total wages of $7.7M per year. • There is estimated to be an overall benefit/multiplier effect to the State economy from creation of jobs/wages. • The Project supports local businesses that provide goods and services for the Village. • The total base economic impact of the Project is $137.6M annually. • The Project is estimated to contribute approximately $18.4M in City gross tax receipts annually.		
Socio-Economic Conditions (continued)	• Overall, a net positive benefit (or "profit") is anticipated for both the City and State. The City's estimated net benefit is $13.3M during planning/development, while the State is estimated to benefit by $49.1M.	• The Project is estimated to contribute approximately $22.5M in State gross tax receipts annually. • The potential increase of visitor/de facto population may result in new governmental costs, estimated at $3.8M annually for the City and $12.5M annually for the State (per capita basis). • Overall, a net positive benefit (or "profit") is anticipated for both the City and State. The City's		4.10, Appendix M

Table 1.1: Summary of Impacts and Mitigation Measures				
Resources Affected	**Potential Short-term Impacts**	**Potential Long-term Impacts**	**Mitigation and Best Management Practices (BMPs)**	**SEIS Section**
		estimated net benefit is $14.6M annually, while the State is estimated to benefit $10.0M annually. • It is estimated that the unmet lodging demand on O'ahu through 2032 will total approximately 2,670 units, if all known proposed projects are built. The AMB Tower will help satisfy this unmet demand and will do so makai of Ala Moana Boulevard in Waikīkī (which is a preferred resort locale in Waikīkī) and where the State and City have directed O'ahu's resort development.		
Visual Resources	The presence of construction equipment and an active work site may result in temporary visual impacts.	• There are no anticipated adverse impacts to public views articulated in the PUC DP. • Due to its location along Ala Moana Boulevard, the AMB Tower will be most discernable along this road between Hobron Lane and Kalākaua Avenue. • Unavoidable adverse impacts to existing views from some private residential high-rise condominiums in the Project vicinity.	• During construction, fencing will be used. • Construction equipment will be confined to work or staging areas. • All construction-related equipment will be removed following the completion of work. • In the long term, the Project will enhance the visual environment of the Project Site by replacing the existing dated or dilapidated buildings with the AMB Tower. • Landscaping and pedestrian access along Ala Moana Boulevard will be renewed, enhancing the surrounding visual environment.	4.11

1.8 Summary of Public Benefits

As the largest resort complex in Waikīkī, the Hilton Hawaiian Village provides numerous public benefits as a result of its commitment to the community and its contributions to the economy. Under the existing PD-R and Special Management Area (SMA) approvals, the Village Master Plan provides various public benefits. Development of the AMB Tower represents a continuation and extension of these existing programs, all of which are heavily dependent upon the continued success of the overall Village. Over the years, the owners of the Village have made substantial financial investments to celebrate and promote Hawaiʻi's culture to visitors and the local community through educational programs, artwork, public entertainment events, landscaping, and open access to, and maintenance of, the beach. *Table 1.2* highlights the significant investments made by the Village in several public benefit categories, and specific future improvements and programs that will have direct public benefits.

Table 1.2: Existing and Ongoing Public Benefits

HHV Public Benefit	Resort Development Benefit	General Public Benefit
Continuation of the Weekly Rockin' Rainbow Hawaiian Review and Fireworks Show	On-site guests can enjoy the music, gain exposure to Hawaiian culture, and enjoy a close vantage point of the fireworks show.	The fireworks show is visible from the beach and many public and private vantage points within Waikīkī and surrounding communities, and is enjoyed by locals and visitors alike.
Ongoing Maintenance of Duke Kahanamoku Lagoon	A recreational amenity for hotel guests and the public. The water is monitored daily to assure safe water quality.	The lagoon is available to the general public and not exclusively for hotel guests. The public can enjoy a unique ocean recreation feature.
Ongoing Daily Public Beach Cleaning and Public Restroom Cleaning	Hotel guests may utilize the adjacent beach and off-site restroom facilities.	Regularly cleaned beach and public restroom facilities, thereby reducing costs for the public agency responsible for routine maintenance.
Ongoing Maintenance of Kahanamoku Street	Hotel guests may venture off-site and walk along Kahanamoku Street.	A regularly maintained right-of-way (ROW) provides the general public with beach access.
Improved Kālia Road Frontage Walkway, Landscape, Funding for Trolley Pull-out on Ala Moana Boulevard or in the nearby vicinity, Bus Pull-out, and New Bus Shelter	Convenient public transit access point for resort guests and timeshare residents.	Trolleys and buses are taken off the street. And traffic flow is enhanced. Passengers can safely board or exist the vehicles. Improved pedestrian pathways with increased landscaping create a pleasant pedestrian experience.
Improvements along Paoa Place	The use of Paoa Place by HHV guests and residents as a pedestrian route to the beach is minimal.	An improved pathway along Paoa Place from Kālia Road to the beach. Paoa Place is a direct, public route to the beach from Kālia Road without having to pass through the HHV resort.
Improvements to the City Sewer System along Kālia Road	Increased sewer capacity to support new units, including the AMB Tower.	In accordance with the 2012 MOA with the City, the Village paid for a significant increase in the size and capacity of the sewer lines within Kālia Road and Ala Moana Boulevard. Surrounding properties and those along both streets benefit from the improvements. The general public indirectly benefits from less strain on the system and reduced service interruptions.

The existing public benefits described above demonstrate HHV's commitment to maintaining and enhancing Waikīkī's identity as a premier resort destination. The AMB Tower will support these existing public benefits and will provide new public benefits, which will focus on elevating local artists and artisans, supporting local businesses, and revitalizing and reinvigorating the ʻewa gateway to Waikīkī. Although the new public benefits will be refined as the Project moves forward, the following public benefits are currently anticipated:

- **Enhanced public access and landscape improvements.** Development of the AMB Tower will revitalize Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, enhance the immediate pedestrian surroundings and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus. Planned improvements to enhance the street frontage include landscaping with water features, an open, welcoming porte cochere, and a flagship ABC store with outdoor seating area to reinvigorate pedestrian retail offerings. Sidewalks will be maintained along the tower's street frontage to support circulation

- **Public art commitment.** The Applicants intends~~s~~ to commission and install significant public art installations in and around the Project, including in the immediate vicinity of the AMB Tower and in the gardens at the corner of Kālia Road and Ala Moana Boulevard. Local artists will be commissioned for art installations, thus supporting Hawaiʻi's creative community.

- **Monthly Public Festival.** HHV intends to sponsor a public festival once a month within the Hilton Hawaiian Village gardens located on the corner of Kālia Road and Ala Moana Boulevard. The festival will feature local musicians and performers, as well as booths for local artisans and vendors to sell their goods. Educational booths may also be included. The festival will be free of charge to the public and vendors will be provided with complimentary booths. The event will seek to attract local residents and visitors alike, and therefore should be a benefit to the local community and overall economy. The event will further activate and revitalize the ʻewa gateway to Waikīkī and will concentrate pedestrian traffic in this area of the campus.

- **Continued participation and contribution to Waikīkī organizations and initiatives.** HHV will continue to strengthen the community by making strategic monetary contributions to support local charities and initiatives, participating in coordinated efforts to maintain the urban and natural environment of Waikīkī, enhancing public safety, and addressing pressing issues, such as the effects of climate change and SLR in the region.

- **Generation of short-term and full-time employment positions.** It is estimated that construction of the Project will create a total of approximately 2,441 "worker-years" of employment (the equivalent of 52 work weeks at 40 hours per week) in the trades and supply businesses, including 1,831 worker-years of on-site employment and 610 worker-years of associated secondary/off-site employment. In the long-term, hotel and retail operations at the AMB Tower are anticipated to create an estimated 370 FTE jobs on site and an additional 123 associated secondary/off-site jobs, for a total of 493 FTE jobs. The jobs and wages generated will have a multiplier effect, increasing the amount of capital flowing through the island. Additionally, the AMB Tower will utilize goods and services by other local businesses, producing a multiplier effect by encouraging the development of other business sectors and supporting overall economic recovery for the state.

1.9 Unresolved Issues

Below are identified issues that are actively being addressed, which are currently unresolved:

- **Archaeological, Cultural, and Historic Resources:** An AMP and BTP will be prepared by Cultural Surveys Hawai‘i (CSH) for the Project. Consultation is currently being conducted with lineal descendants to determine the appropriate treatment of any historic finds that may be identified during construction.

1.10 Listing of Required Government Permits and Approvals

The following list identifies the major City land use permits and State approvals anticipated to be required for Project implementation (*Table 1.3*).

Table 1.3: List of Permits And Approvals

Land Use Permit or Approval	Reason for Permit or Approval	Approving Authorities
SEIS Acceptance (Chapter 343, HRS compliance)	Located within the WSD and SMA. Supplementing the 2011 HHV - Village Master Plan Improvements EIS	City DPP
Special Management Area (SMA) Use Permit, Major	Located within the SMA	Honolulu City Council
Planned Development-Resort (PD-R) Amendment/Major Modification	Modify existing Project (HHV - Village Master Plan Improvements) and amend PD-R to add new lots	Honolulu City Council
Waikīkī Special District (WSD) Major Permit	Located in the WSD	City DPP
HRS, Chapter 6E-42 Historic Preservation Review	Required by law	DLNR, SHPD
Certified Shoreline Survey (if required)	Support the SMA Use Permit, Major	DLNR
Building Permits, Grading Permit, Trenching Permit, Drain Connection, Sewer Connection, Construction Plan Approvals, Work Within/Use of State ROW, Oversize and/or Overweight Vehicles and Loads, and various operating permits	Construction and Operations of the Project	City and County of Honolulu, DPP/Other Depts., and State of Hawai‘i/Various Agencies

Section 2

Purpose of and Need for the Project

Section 2

Purpose of and Need for the Project

2.1 Statement of Purpose and Need

Situated at the ‘ewa gateway into Waikīkī, one of the world’s most iconic visitor destinations and a significant contributor to the local and state economy, HHV is a self-contained, world-renowned, premier beachside resort that covers approximately 22.24 acres of land. Since its construction over 60 years ago, HHV has remained strongly committed to creating exceptional guest experiences on its campus. As such, services and accommodations at the Village must be continuously improved and refreshed to meet with the evolving expectations of guests from around the world.

In 2011, the Village Master Plan was designed as the next chapter of HHV’s continuing dedication to support Waikīkī as a premier visitor destination. The purpose of expanding the Village to include the AMB Tower in the Village Master Plan is to provide a variety of accommodation needs that meet the expectations and demands of today’s resort guest; revitalize Waikīkī’s ‘ewa gateway; and strengthen the Village as a major and iconic destination in the important Waikīkī region. The Project will also support Waikīkī’s unique social and economic function, redirect visitors away from illegal short-term rentals, and meet the objectives of the Village Master Plan, as discussed in the following sections.

2.2 Regional Context

Waikīkī is a residential and resort community where over 25,000 local residents live full-time and intermingle with over 85,755 average daily visitors (U.S. Census Bureau, 2019 and Hawai‘i Tourism Authority (HTA), 2022). A less defined part-time population adds to this mix, as a number of local island residents that live outside of Waikīkī frequent the area on a regular basis for recreation and employment. For more than 100 years, Waikīkī has been recognized as a world-renowned visitor destination. The region also maintains several critical social and economic functions for O‘ahu’s island residents, specifically those that live and work in the area. These functions include, but are not limited to, serving as a major employment center and primary economic engine for the State; serving as a long-term residential area for locals valuing the Waikīkī lifestyle; and providing recreational and retail opportunities for locals and visitors alike.

Waikīkī is seen by residents and visitors as possessing positive qualities that define its unique sense of place. These qualities include social conveniences with numerous dining, shopping, and entertainment activities, the beauty of the beaches and shorelines, the mountain landscape in the distance, pleasant year-round weather, the interaction of people, the diversity of cultures, and the excitement and liveliness of an active resort city. During the community outreach for the Project ~~SEISPN public comment period~~, a few residents expressed concerns regarding noise, viewplanes, traffic, and a general sentiment that over-tourism may impact this sense of place. Meanwhile, the City continues to direct tourism and resort redevelopment to the region, and has called for the continuous need to upgrade Waikīkī to compete in a global marketplace (PUC DP, 2013). Planning of future development and activities must support efforts to reinvigorate Waikīkī in a manner that maintains the beauty and quality of life of the area and is mutually appealing to both local residents and island visitors.

Since its construction over 60 years ago, HHV has been committed to creating exceptional experiences in Waikīkī that support economic development and maintain the region's unique sense of place, as described above. As a distinctive part of Waikīkī's ʻewa gateway, HHV introduces visitors and residents to a mix of urban and landscaped experiences that blend together and reflect Hawaiʻi's rich heritage and cultural diversity in a contemporary form. As such, services and accommodations at the Village must be continuously improved and refreshed to meet the evolving expectations of guests from around the world. The planned expansion of the Village and construction of the new AMB Tower will refresh the HHV campus, as well as provide economic and social benefits to the overall Waikīkī community.

2.3 Village Master Plan and Project Objectives

To continue the legacy of the Village, Hilton Hawaiian Village Beach Resort & Spa prepared the Village Master Plan EIS in 2011. The 2011 EIS established objectives and evaluation criteria that serve as a common set of standards that define the direction of the Village Master Plan. The improvements outlined in the Village Master Plan are intended to maintain and enrich the Village's relationship to Waikīkī, while fortifying its recognized position in the hospitality industry as a special destination within Waikīkī's resort district. Various components of the Village Master Plan have been constructed and enjoyed by guests and locals alike. Inclusion of the AMB Tower into the Village Master Plan will further advance the objectives outlined in the 2011 EIS, including the following:

Master Plan Objectives Advanced by the Project

1. Fortify Waikīkī as a world-class resort destination and add new vibrancy to the entrance of Waikīkī.
2. Improve the guest experience at the Village.
3. Provide the local construction industry with quality jobs, stimulate local construction spending, and increase revenues to the City's and State's tax base.
4. Create long-term hospitality career opportunities for all levels within service and management.
5. Support other local businesses within Waikīkī.
6. Develop sustainable practices to minimize demand on local infrastructure and resources.
7. Maintain and enhance the quality of the near-shore coastal environment and its resources by prudent management actions.
8. Ensure the quality of the existing open spaces in the Village and connectivity to surrounding areas.
9. Help maintain a Hawaiian sense of place celebrating the history and cultural vibrancy of Waikīkī and Kālia.
10. Enable HHV to continue and expand its community leadership role and make significant social investment in Hawaiʻi.

Evaluation Criteria

Within the context of the Village Master Plan Objectives, HHV established key primary Evaluation Criteria (I-VI) in the 2011 EIS which must be satisfied for the Village Master Plan to be economically viable and socially and environmentally responsible. These evaluation criteria were developed to analyze alternative actions to be included in the Master Plan. Therefore, the Project and the alternatives considered are evaluated using the established criteria as discussed in *Section 6.0*.

Project Fulfillment of Village Master Plan Objectives

A vibrant and successful hotel and lodging industry is critically important to supporting the State's economy. It is anticipated that the Project will provide a healthy and stable product for the tourism sector that will stimulate investment and create both short- and long-term jobs. During the anticipated 30-month construction period, it is estimated that approximately 2,441 worker years of employment, including 1,831 worker-years of on-site employment and 610 worker years of associated secondary/off-site employment, will be created as a result of the Project. In the long-term, hotel and retail operations at the AMB Tower are expected to create an estimated total of 370 FTE jobs on site and an additional 123 FTE associated secondary/off-site jobs, for a total of 493 new FTE jobs. Beyond jobs directly provided at the site, the AMB Tower and its guests are expected to purchase goods and services from other local businesses, creating a multiplier effect by encouraging the development of other business sectors and supporting overall economic recovery for the state.

The AMB Tower will help meet demand for additional guest capacity and expand accommodation choices at HHV by providing approximately 515 hotel lodging accommodations with varying views and unit sizes. New hotel rooms have not been constructed at HHV since 2001, and the last decade of development has focused on timeshare units. As the visitor industry continues to recover from the COVID-19 pandemic, development of the AMB Tower will create a balanced mix of accommodation types at the Village, enable HHV to recapture part of a continuing demand for a variety of hotel accommodations, and provide a rejuvenated product. In addition to hotel rooms, the Project will include ground floor retail accessible to pedestrians along Ala Moana Boulevard and guest amenities including food and beverage offerings, and a pool and recreation area. The AMB Tower will connect to the HHV campus to create a cohesive resort experience. Revenue from the AMB Tower will enable HHV to continue and expand its community leadership role and social investment within Hawaiʻi.

The Project will replace dated structures along Ala Moana Boulevard with a new tower featuring a modern, culturally appropriate design and enhanced landscaping at the important ʻewa gateway to Waikīkī. The AMB Tower will feature a contemporary design and layout and will include the use of modern materials to complement the natural setting. Replacing existing, outdated structures with a new tower will help to reinvigorate and revitalize Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience. It will also help maintain Waikīkī's iconic and historic Hawaiian sense of place. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the Project. This area will provide an open, safe and attractive pedestrian experience that activates this key street frontage and supports connectivity with the HHV campus and the broader Waikīkī neighborhood. The planned ground floor retail will include an outdoor seating area and create a people-oriented and interactive streetscape.

The Project will advance sustainability objectives outlined in the Village Master Plan through the use of practices already implemented at the Village to minimize demand on local infrastructure and resources. Additionally, as SLR is expected to be an inevitable part of Hawaiʻi's future, the Project is being proactively planned and designed to be resilient and to accommodate the impacts of higher ocean levels (*Section 4.4.5*). This proactive planning will ensure the ongoing successful, safe, and sustainable operation of the AMB Tower and Hilton Hawaiian Village for the foreseeable future. Finally, locating the AMB Tower within the existing critical resort area of Waikīkī helps to promote sustainable, responsible tourism. The urbanized district of Waikīkī has been planned as the anchor resort area of the state. Continuing to focus resort development in Waikīkī is consistent with the State's and City's plans to direct urban development away from critical areas reserved for conservation or other uses.

The following *Section 3.0* provides a detailed description of the planned Project, including exhibits depicting the new AMB Tower and associated improvements.

Section 3

Project Description

Section 3

Project Description

3.1 Site History

Development of the Hilton Hawaiian Village, as it is known today, dates back to as early as 1955, with construction of the resort's first guest cottages under the ownership of Henry J. Kaiser and his partner Fritz Burns. Through the 1950s, major improvements continued with the completion of the Hilton Dome, the Duke Kahanamoku Lagoon, and the catamaran pier. In 1957, the 14-story Ocean Tower (now known as the Ali‘i Tower) was constructed, followed by the 13-story Village Tower in 1958 (the site of today's Tapa Tower). In the 1960s, the 17-story Diamond Head Tower, the Lagoon Tower, and the 31-story Rainbow Tower opened. During this time, the “Hilton” brand and relationship with the Village was established.

In 1969, the Mid-Pacific Conference Center and Coral Ballroom were completed. The Rainbow Bazaar was subsequently constructed in 1970, and included over 40 shops and restaurants. Design of the facility pays homage to Asian influences and culture in Hawai‘i. HHV completed its first $100 million (M) master plan renovation of the Village in 1988, which included the unveiling of a new porte cochere and open-air lobby, in addition to new meeting facilities and renovation of the Coral Ballroom, making it the largest meeting and convention facility in the Pacific.

In the late 1990s, the demolition of the Hilton Dome and construction of the $95M 453-room, 25-story Kālia Tower coincided with the revitalization of Waikīkī. When it opened in 2001, Kālia Tower was the first major resort development in Waikīkī in over a decade. In that same year, after extensive renovations, the Village's Lagoon Tower became a part of the Hilton Grand Vacations® Club (HGVC) program, offering timeshare units.

In 2006, the Akalā Chapel (formerly called the Ocean Crystal Chapel) was constructed and HHV paid for significant restoration and improvement of the Duke Kahanamoku Lagoon, including improvements to water circulation as well as a new landscaped public promenade. HHV maintains the lagoon, which is located on State land. The two most recent projects at the Village have been the Grand Waikikian Tower and the Grand Islander timeshare projects, completed in 2008 and 2016, respectively.

Beginning in 2006, in collaboration with the State Department of Transportation (HDOT), HHV funded an extensive off-site roadway improvements project along Ala Moana Boulevard. HHV developed a signalized, full-movement intersection at Ala Moana Boulevard and Kahanamoku Street (formerly Dewey Lane), and a landscaped median along the stretch of Ala Moana Boulevard from Hobron Lane to Kalākaua Avenue. HHV also added a fourth lane of traffic movement between the Ilikai Hotel and Luxury Suites and Kālia Road.

In addition, to accommodate the continued evolution of the Village (as contemplated by the Village Master Plan), HHV funded significant improvements to an expansion of the public wastewater system along Kālia Road, Ala Moana Boulevard, and Kalākaua Avenue, which were completed in 2018. This project included a 3,200-foot replacement and expansion of the 30-inch gravity sewer extending from Fort DeRussy to the Kālia Pump Station.

As it has over the last 60 years or more, the character of the Village campus continues to evolve, while HHV's commitment to Waikīkī remains strong. The resort continues planning new ways to improve the vacation experience in Hawai‘i, contribute to the economic vitality in Waikīkī, support the local community, and imbue a welcoming and neighboring ambiance within its immediate surroundings.

3.2 Existing Conditions and Uses

3.2.1 Hilton Hawaiian Village

Located at the ‘ewa gateway to Waikīkī, the Hilton Hawaiian Village is a self-contained, world-renowned, premier beachside resort that covers approximately 22.24 acres of land. The Village is bounded and accessed by Kahanamoku Street and Ala Moana Boulevard at the ‘ewa (west) side, Kālia Road and Paoa Place on the Diamond Head (southeast) side, and Waikīkī Beach and the Pacific Ocean on the makai (ocean) side (*Figure 3.1*).

The Village was not in operation from mid-April 2020 until December 15, 2020 due to the COVID-19 pandemic. Since re-opening in December 2020, the Village has slowly increased occupancy and has begun to recover from the impacts of the pandemic. HHV is expected to continue its legacy as an iconic resort destination in Hawai‘i. Occupancy and other figures provided in this SEIS reflect pre-COVID-19 operations under the assumption that they will be reflective of operations as the effects of the pandemic abate.

The Village provides a variety of unique accommodations, services, amenities, and experiences for its guests. Accommodations are currently located primarily within eight main towers: Ali‘i Tower, Rainbow Tower, Tapa Tower, Kālia Tower, Diamond Head Tower, Lagoon Tower, the Grand Waikikian, and the Grand Islander (*Figure 3.1*). Currently, 2,860 hotel rooms and 1,088 timeshare units exist on-site[1].

The Village also contains over 150,000 sf of indoor and outdoor meeting space, which supports a variety of functions, ranging from intimate gatherings, such as weddings and private parties, to large corporate meetings or conventions. Combined, these meeting areas can host over 5,000 guests at one time, and are a significant contributor to the local economy.

[1] A total of 2,971 hotel rooms and 1,224 timeshare units are documented in the 2011 PD-R approval as approved on site.

Figure 3.1 **Existing Hilton Hawaiian Village Map**

With over 100 shops, services, restaurants, bars, and eateries, the Village is a major retail and dining destination in Waikīkī for both Village guests and the general public. Existing retail and food and beverage space across the campus totals approximately 138,693 sf, providing a wide variety of shopping and dining experiences. In total, the Village has a restaurant seating capacity of approximately 640 within its two main restaurants, Bali Steak & Seafood and Tropics Bar & Grill. The Village also offers an assortment of smaller cafes, restaurants, and bars located throughout the campus. The outdoor Waikīkī Starlight Lūʻau is hosted five evenings a week at the Great Lawn.

Overall, the Village encompasses approximately 3,737,055 sf of built floor area. See *Table 3.1* for the Existing Approved Buildings and Floor Area at the Village.

Table 3.1: Existing Approved Buildings and Floor Area

Existing Structures	Function/Use	Year Built	Floor Area (sf)
Aliʻi Tower	Hotel Guestrooms	1957	254,488
Diamond Head Tower	Hotel Guestrooms	1960	230,897
Lagoon Tower	Timeshare Units	1965	286,110
Diamond Head Apartments	Employee housing /short-term apartment rentals	1966	33,750
Rainbow Tower	Hotel Guestrooms	1968	370,301
Mid-Pacific Conference Center & Parking Lot, Rainbow Bazaar	Conferences, banquets, parking spaces, retail, restaurants	1969-1970	136,417
Retail Shops (various)	Retail, restaurant		6,910
Tapa Tower	Hotel Guestrooms	1982	947,364
Kālia Tower	Hotel Guestrooms, Timeshare Units	2001	355,488
Main Lobby Building	Main resort entry, registration		26,000
Miscellaneous improvements, including Crystal Chapel	Weddings, receptions	2001-2006	11,237
Grand Waikikian Tower	Timeshare Units	2008	532,385
Hilton Grand Islander	Timeshare Units	2017	545,708
Timeshare Tower 2 (Approved, Not Built)	Timeshare Units		206,280
TOTAL EXISTING (APPROVED)			3,943,335
TOTAL EXISTING (BUILT)			3,737,055

Providing a full-service resort experience, the Village offers a variety of recreational amenities on the property, the most notable being the six swimming pools located throughout the resort. The pools comprise a total of 18,850 sf. The campus also includes the Duke Kahanamoku Lagoon: a man-made body of water that was part of the original resort development in the 1950s.

A substantial portion of the Village acreage is dedicated open space, much of which is comprised of outdoor amenities accented by purposefully designed landscaped gardens. In addition to open space provided on the Village campus, the Duke Kahanamoku Lagoon comprises 4.6 acres alone of open space and is available to the public. HHV continues to maintain the lagoon and the nearby Hilton Pier, all at HHV's cost. HHV also offers various programs available to the public, including Hawaiian arts, crafts, and activities, such as lei making, hula, ʻukulele lessons, and surfing. There are also regularly scheduled shows, performances, torch lighting ceremonies, and island entertainment billed nightly at the Village's restaurants and lounge areas, which include top Hawaiian and local musicians. A well-known and longstanding community benefit provided by HHV is a free beachfront fireworks show that occurs each Friday evening (recently re-started following a two-year pause due to the COVID-19 pandemic). HHV shows its commitment to the community and vibrancy of Waikīkī through its support of various community organizations including the Hawaiʻi Foodbank, Aloha United Way, Waikīkī Community Center, and the University of Hawaiʻi (UH).

As a part of its development process, HHV has incorporated various strategies to support the island's sustainability, including participation in Hilton's "Light Stay" monitoring program. Additionally, as a member of the WBSIDA, HHV supports community stakeholders and makes significant financial contributions in a coordinated effort to address the effects of climate change and SLR in the region.

Surrounding the Village property are other hotel and lodging accommodations, residential buildings, and various dining and shopping establishments. One of the most prevalent land features in proximity to the Village is the large open space and park setting formed by ʻĀinahau Triangle and Fort DeRussy Beach Park to the east, the adjacent Hale Koa Hotel property, and Battery Randolph, all of which are under the control and jurisdiction of the U.S. Army.

3.2.2 AMB Tower Site

The planned Project will expand the HHV campus and develop the AMB Tower across the three Added Parcels (TMK parcels (1) 2-6-9: 4, 5, and 6 located at 1831, 1835, and 1841 Ala Moana Boulevard), together comprising 0.46 acres. Park Ala Moana LLC, a subsidiary of Park Hotels & Resorts Inc. (a publicly-traded hotel ownership company) owns ~~parcel 4~~ the three parcels.~~, and has an option to purchase parcels 5 and 6, which are currently owned by SMK, Inc.~~ The Project will also extend into portions of TMK parcels (1) 2-6-9: 7, 9, 13, which are already a part of the Hilton Hawaiian Village (*Figure 1.2*) and owned by Hilton Hawaiian Village LLC, dba Hilton Hawaiian Village Beach Resort & Spa, also a subsidiary of Park Hotels & Resorts Inc. A summary of land ownership of the Project Site is provided in *Table 3.2*. Inclusion of the Added Parcels within the HHV Master Plan will increase the total area of the Village from 22.24 acres to 22.70 acres.

The Project Site is bounded by Ala Moana Boulevard to the north, and structures related to the Village to the east, west, and south (*Figure 3.1*). Within the Village, the Grand Waikikian abuts the site to the west; the Mid-Pacific Conference Center and Coral Ballroom and parking garage to the southeast; and, the Kālia Tower and landscaping are directly adjacent to the northeast. The southern portion of the property includes an existing service lane and loading area currently utilized by the adjacent HHV buildings. This will be integrated for operational use by the AMB Tower.

Table 3.2: Project Site Parcel Ownership				
Tax Map Key	**Owner**	**Current Use**	**Total Parcel Area (acres/sf)**	**Area used for AMB Tower**
2-6-009: 004[2]	Park Ala Moana LLC	ABC Store, restaurant, retail	0.2250 acre (9,802 sf)	0.2250 acres (9,802 sf)
2-6-009: 005[~~1~~2]	~~SMK Inc.~~ Park Ala Moana LLC	Car rental, parking lot	0.1372 (5,977 sf)	0.1372 acres (5,977 sf)
2-6-009: 006[~~1~~2]	~~SMK Inc.~~ Park Ala Moana LLC	Vacant restaurant space (former site of Kobe Steakhouse)	0.1001 (4,362 sf)	0.1001 acres (4,362 sf)
2-6-009: 007	Hilton Hawaiian Village~~,~~ LLC[1]	HHV landscaping, Kālia Tower	0.3049 acres (13,281 sf)	0.0085 acres (369 sf)[1]
2-6-009: 009	Hilton Hawaiian Village~~,~~ LLC[1]	HHV Mid Pacific Conference Center and Coral Ballroom Parking Garage	3.0222 acres (131,645 sf)	0.2149 acres (9,361 sf)[~~2~~3]
2-6-009: 013	Hilton Hawaiian Village~~,~~ LLC[1]	HHV Kālia Tower	1.7734 acres (77,249 sf)	0.1901 acres (8,280 sf)[~~3~~4]
			TOTAL:	0.46 acres (20,141 sf), excluding portions of parcels 7, 9 and 13

1 d/b/a Hilton Hawaiian Village Beach Resort & Spa.

2 Park Ala Moana LLC owns all three of the Added Parcels (Parcels 4, 5 and 6) after its acquisition of Parcels 5 and 6 from SMK Inc. on March 2, 2023. ~~Park Ala Moana LLC has an option to purchase these parcels and it is expected that Park Ala Moana LLC will own them prior to commencement of construction.~~

~~2~~3 AMB Tower area encroaches onto adjacent parcel and the podium provides a connection to the Coral Ballroom Parking Garage.

~~3~~4 AMB Tower area encroaches onto adjacent parcels, and the podium will provide a connection to the HHV Kālia Tower.

Existing uses on the Added Parcels include retail, food and beverage, and a car rental/parking lot occupying aging one- and two-story wooden structures (*Table 3.2*). The existing structures are outdated or have become dilapidated over time, including the now vacant site of the former Kobe Japanese Steakhouse. All existing structures will be demolished as part of the Project. The existing ABC Store will be replaced with an updated flagship store on the ground floor of the AMB Tower. In addition to the existing structures, the site currently contains limited landscaping consisting of ornamental trees, palms and shrubs, some of which are in poor health. The site is situated approximately 800 feet inland from the shoreline. Topography is generally flat with elevations ranging from 7 to 9 feet above msl.

The Project vicinity directly across Ala Moana Boulevard to the north of the site consists of resort, apartment, retail, and food and beverage uses typical of Waikīkī. Nearby hotels include the Ilikai Hotel and Luxury Suites and The Modern Honolulu to the west and the Aqua Palms directly to the north.

3.3 Project Description

The Applicants propose~~s~~ to expand the 22.24-acre HHV campus by adding the three Added Parcels in order to develop the AMB Tower on the Project Site (*Figure 3.2*). The AMB Tower building will consist of a podium and tower that will add approximately 515 new hotel guestrooms to the HHV campus and strengthen the Village's positioning as a major and iconic destination drawing visitors to Waikīkī and its local businesses.

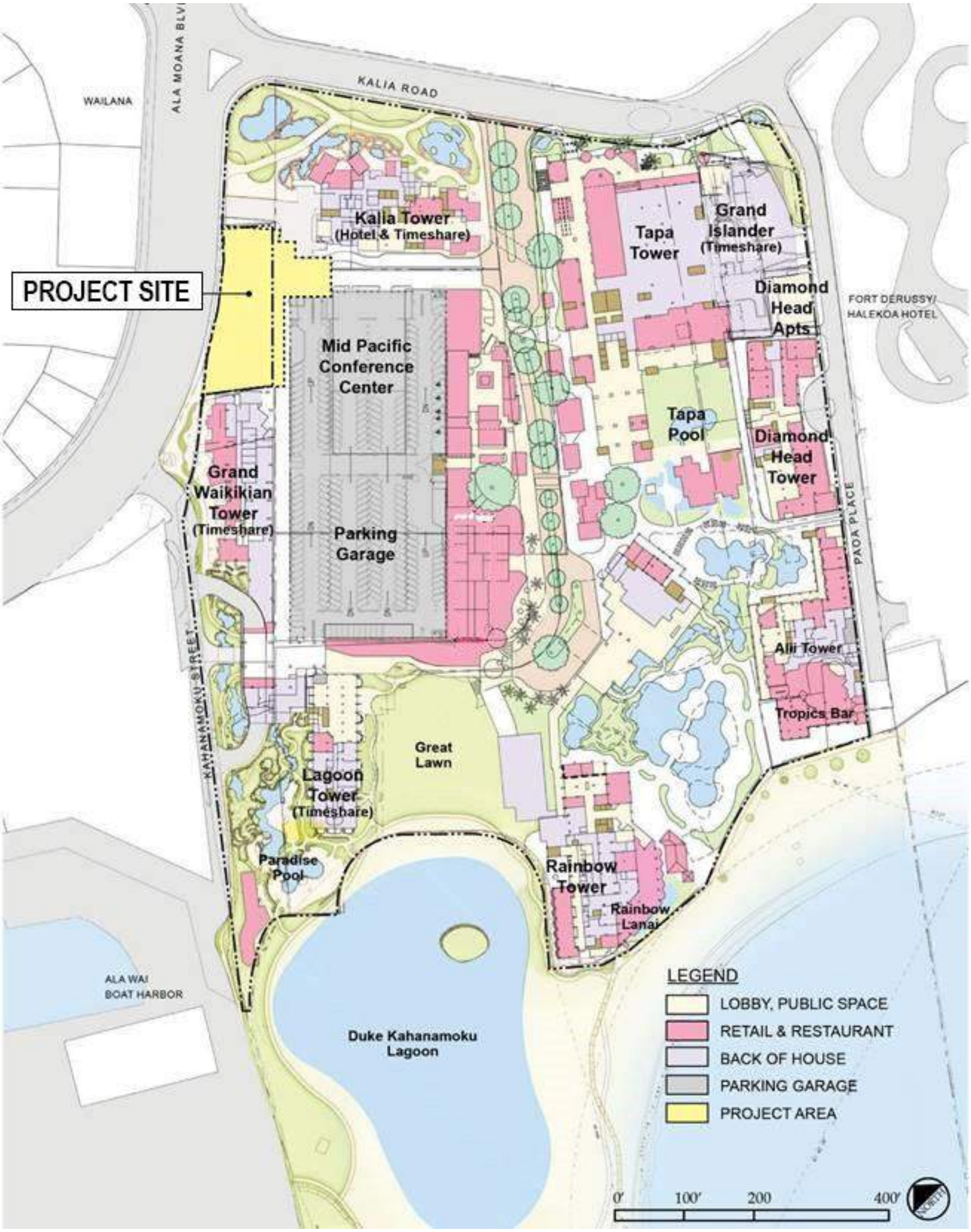

Figure 3.2 **Hilton Hawaiian Village with Planned AMB Tower**

The Project includes ground floor retail accessible to pedestrians along Ala Moana Boulevard, a welcoming porte cochere, an open lobby area, an arrival/departure lounge, and a modest expansion of existing parking facilities available to visitors and guests. Food and beverage offerings, fitness facilities, and an improved pool and recreation area to be shared with Kālia Tower are also included in the Project.

The building will reach a maximum height of 350 feet (exclusive of permitted rooftop equipment and structures) and consist of approximately 395,028 sf of total floor area comprised of a 118,556-sf podium and a 276,472-sf tower containing the majority of the hotel guestrooms. Landscaping, water features, and pedestrian connections will be integrated throughout to enhance integration with the Village campus. Design of the Project will feature architectural elements that reflect Hawaiʻi's rich heritage and cultural diversity in a contemporary form.

The following sections summarize the AMB Tower project components.

3.3.1 Tower Podium

The tower podium will be comprised of eight floors consisting of an open arrival and lobby area, ground floor retail, check-in lobby, pool deck and recreation area, parking, and operations facilities. The total floor area of the podium is 118,556 sf. Refer to *Figures 3.3 through 3.10* following *Section 3.3.4*. Each component is summarized below, in ascending order according to floors.

3.3.1.1 Porte Cochere, Arrival Lobby, and Check-in Lobby

The ground floor porte cochere entry from Ala Moana Boulevard will be the primary point of guest arrival and will provide visitors and guests with a convenient drop off/pick-up area, baggage assistance, and valet service (*Figure 3.3*). The porte cochere area will be approximately 1,886 sf, and leads to the arrival lobby. Consistent with the WSD, the area will offer a welcoming entryway featuring landscaping and a water feature. The arrival lobby will be enclosed with sliding glass doors to create an open feeling, while also mitigating potential traffic noise and dust along Ala Moana Boulevard and to enhance security. Design of this area will provide a close indoor-outdoor relationship at the pedestrian ground level. From the porte cochere, valet and limited self-park[2] vehicles can drive directly into the AMB Tower parking garage, where access will be provided at the northeast of the site. This new connection will allow garage-bound vehicles to avoid the need to return to Ala Moana Boulevard. A detailed description of circulation at the porte cochere is provided in *Section 3.3.7.1.*

This porte cochere and arrival lobby provide a welcoming experience to guests/visitors of the AMB Tower and the Village, and, in conjunction with the new ABC Store, will help reinvigorate and revitalize an underutilized portion of Ala Moana Boulevard. Located at the primary ʻewa gateway to Waikīkī, it will provide visitors with an appealing experience that reflects Hawaiʻi's rich heritage and cultural diversity in a contemporary form.

[2] Use of the porte cochere by self-park vehicles is intended to be limited to check-in/check-out use only. Guests utilizing self-parking during their stay will be directed to enter/exit the Coral Ballroom parking garage via Kahanamoku Street or Rainbow Drive, as discussed in *Section 3.3.7.1*.

A second-floor check-in lobby will be accessed from the ground floor via six elevators and a stairway (*Figure 3.4*). The 5,911-square-foot check-in lobby area will be enclosed to minimize exterior noise and provide a quiet, refreshing space for visitors. A 2,993-sf arrival/departure lounge will be connected to the check-in lobby and offer a relaxing area for visitors.

3.3.1.2 Retail

The existing ABC Store on the Project Site will be demolished. A new, flagship ABC Store will be constructed on the ground floor of the AMB Tower, serving as the key retail space within the building's podium. The new flagship ABC store will service the needs of the AMB Tower guests, patrons of the larger HHV campus, and other visitors and residents in this area of Waikīkī. The ground floor of the store will encompass approximately 5,970 sf, and approximately 1,830 sf of storage will be located on the second floor (*Figures 3.3* and *3.4*). Additionally, outdoor seating at the ground level will be provided. Inclusion of this ground-level retail at the Project will help activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape.

3.3.1.3 Parking

Parking will be provided on a portion of Floors 2 through 4 of the tower podium (*Figures 3.4 through 3.6*). Approximately 50 parking stalls will be provided within the AMB Tower podium. A detailed discussion regarding off-street parking and loading requirements for the Project within the context of the Village campus is provided in *Section 3.3.8*.

3.3.1.4 Back of House (BOH) and Operations Facilities

All floors of the tower podium will include various back of house (BOH) support spaces for hotel operations, including the following:

- Ground Floor: BOH consists of luggage storage, a loading dock, and mechanical, electrical, and communications control areas (*Figure 3.3*)
- Floor 2: BOH spaces complement the check-in lobby and consist of administrative areas and luggage storage areas (*Figure 3.4*).
- Floor 3: BOH areas primarily serving the building's electrical needs (*Figure 3.5*).
- Floor 4: BOH spaces include areas for housekeeping operations, staff locker rooms, and an employee cafeteria (*Figure 3.6*).
- Floor 5: BOH consists of a connection to the Mid-Pacific Center and Coral Ballroom, an event service support area, engineering BOH, and administrative offices (*Figure 3.7*). Direct connection to the Coral Ballroom within the Village will serve to enhance connectivity and create a cohesive resort experience.
- Floor 6: An approximate 6,471-sf space for administrative offices will be provided on this floor, in addition to storage and other ancillary uses (*Figure 3.8*). Notably, this is the first level of the Project to include hotel guestrooms.
- Floor 7: This floor will consist of approximately 7,947 sf of administrative offices, in addition to ancillary uses, and will also include hotel guestrooms (*Figure 3.9*).

Floors 8 through 36 will also include smaller BOH areas as indicated in the preliminary floor plans.

3.3.1.5 Recreation Pool Deck

The final floor (Floor 8) of the tower podium will include a recreation pool deck that will feature an approximately 2,357-sf fitness center and a 4,072-sf deck for visitors (*Figure 3.10*). The recreation deck includes areas for lounging and a pool bar, and will directly connect to the existing 8,581-sf pool deck at the Kālia Tower (*Figure 3.10*). Improvements to the existing pool deck will be made as part of the Project. Water features and landscaping elements will be integrated throughout this area to fit with the surrounding character of the Village campus. Direct connection to the Kālia Tower will serve to enhance connectivity within the Village and create a cohesive and convenient resort experience for guests. Floor 8 will also include hotel guestrooms.

3.3.2 Tower Hotel Lodging Accommodations

The AMB Tower will provide approximately 515 hotel guestrooms with varying views and room sizes (*Figures 3.8 through 3.11*). The 28-story tower will begin on Floor 9; however, guestrooms are also provided on Floors 6, 7, and 8.

Floors 9 through 36 encompass approximately 9,874 sf of floor area each, for a total tower floor area of approximately 276,472 sf. Preliminarily, Floors 6 through 8 of the tower podium will include 13 hotel guestrooms each, while Floors 9 through 36 will include 17 hotel guestrooms each. Final design of the rooms will be finalized as the Project progresses.

The new AMB Tower is expected to offer five room configurations, including traditional hotel guestrooms and one-bedroom suites ranging from approximately 324 sf to 665 sf in area. Each unit will also include a lanai for visitors to enjoy views of the surrounding environment, including the Pacific Ocean, Lēʻahi (Diamond Head), the Koʻolau mountains, Village campus, or Ala Moana Boulevard. Design of the rooms will complement the existing HHV campus, and provide guests with a comfortable and relaxing experience. Rooms will be inspired to reflect Hawaiʻi's heritage in a contemporary form.

3.3.3 AMB Tower Height

The Project vicinity is typical of the dense, urban environment of Waikīkī, with buildings ranging from one to 38 stories tall. Design of the tower will complement the present HHV campus and be at a height consistent with the surrounding area. The Project Site is located within the WSD Resort Mixed Use Precinct and structures are limited by the LUO to a maximum height of 350 feet (exclusive of permitted rooftop equipment and structures). As such, the AMB Tower is planned to be 36 stories tall and will not exceed 350 feet in height (exclusive of permitted rooftop equipment and structures). See *Figures 3.12 through 3.15* for the planned tower elevations. Notably, ROH, Section 9.20-4(g) allows for necessary mechanical appurtenances and utilitarian and architectural features in Special Districts to be exempt from maximum height allowances, provided they are necessary to accomplish the purpose they serve.

Topography of the Project Site is generally flat with elevations ranging from 7 to 9 feet above msl. The finished floor elevation of AMB Tower is planned at 8.0~~7.5~~ feet above msl (*Figures 3.12 through 3.15*). The elevated height will help to address the predicted effects of SLR and potential flooding on the site. See *Section 4.4.5* for further discussion.

Figure 3.3

Preliminary Floor Plan – Ground Floor

Figure 3.4

Preliminary Floor Plan – Floor 2

G70

Figure 3.5 **Preliminary Floor Plan – Floor 3**

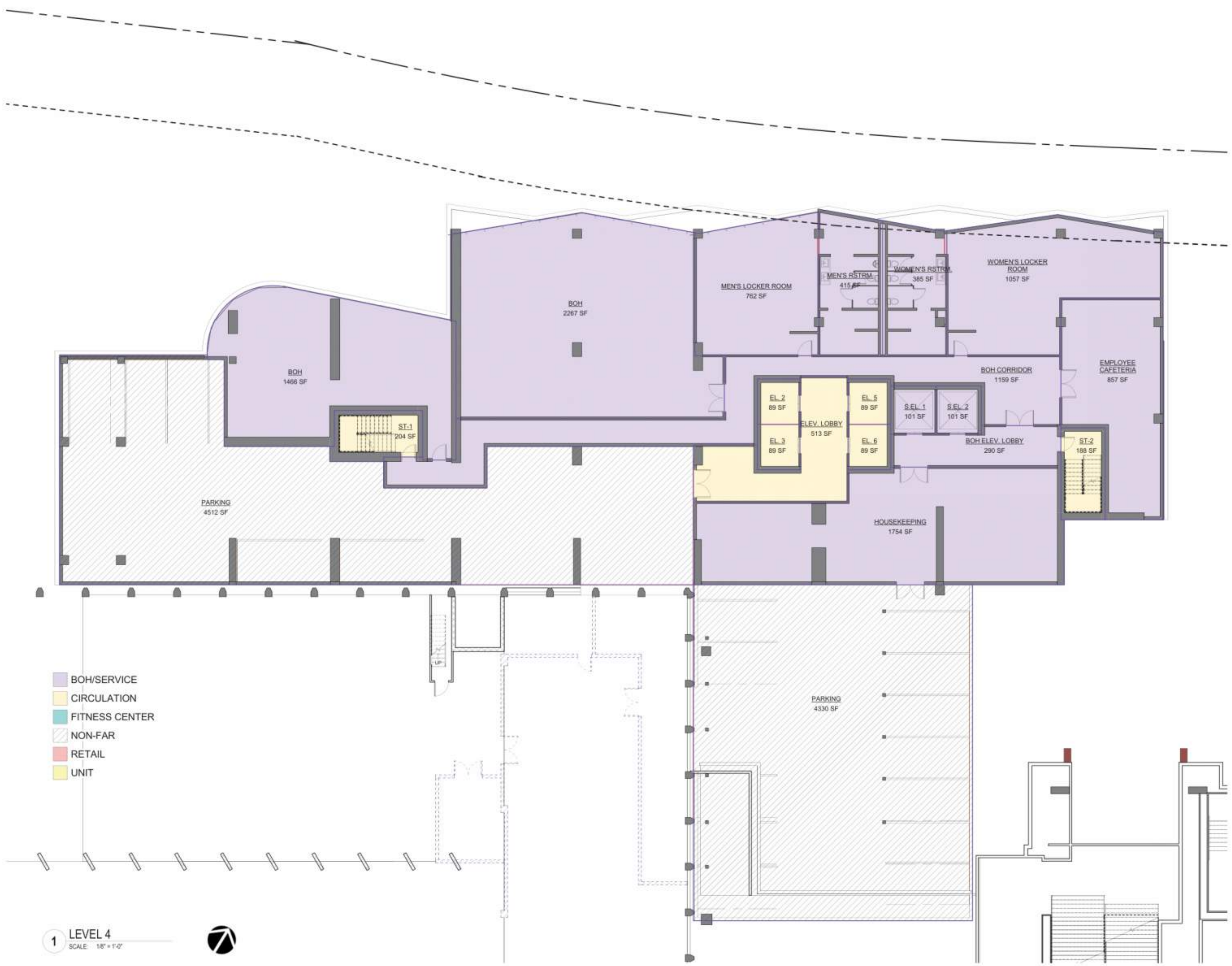

Figure 3.6 **Preliminary Floor Plan – Floor 4**

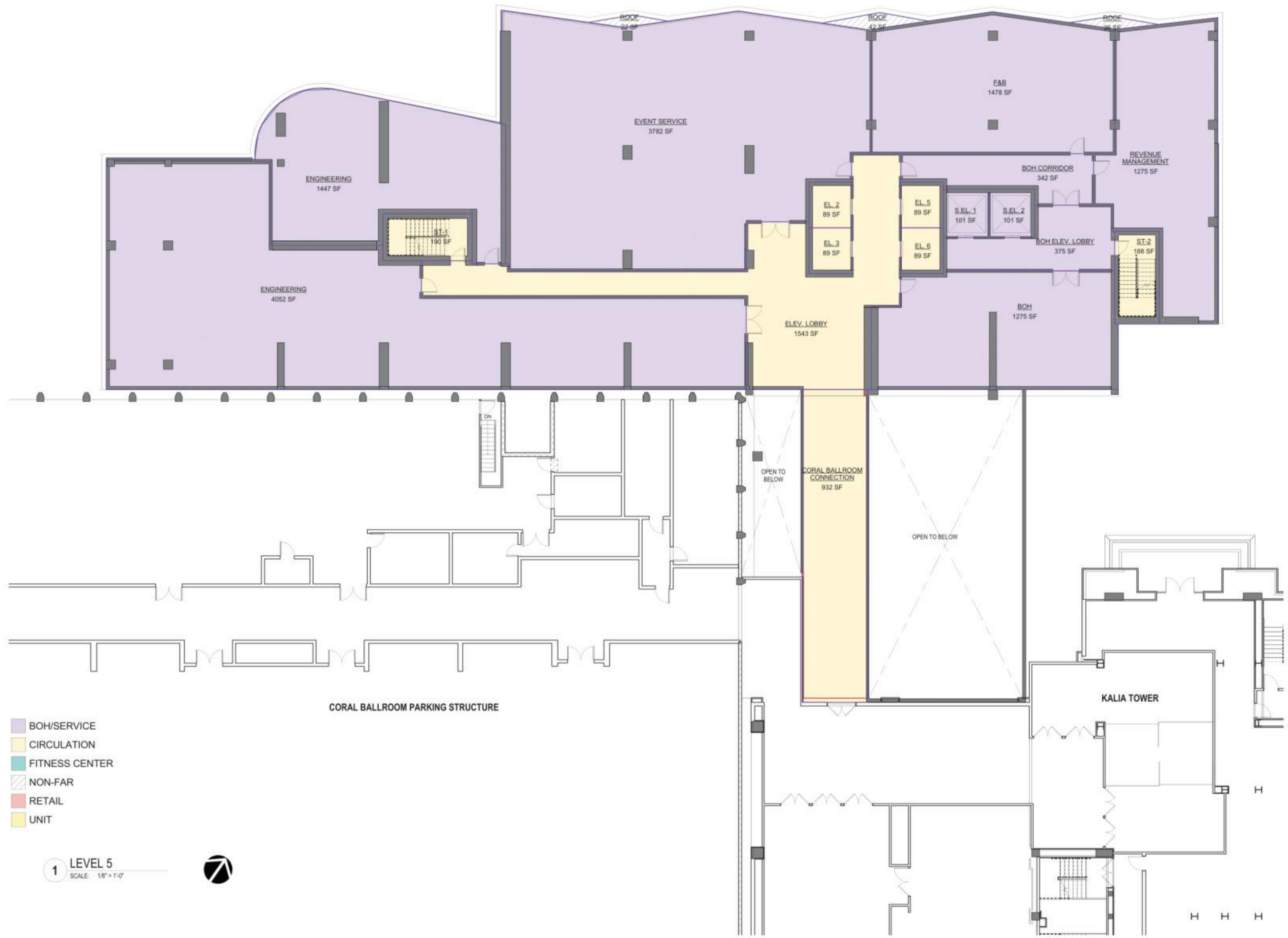

Figure 3.7 **Preliminary Floor Plan – Floor 5**

Figure 3.8

Preliminary Floor Plan – Floor 6

G70

Figure 3.9 **Preliminary Floor Plan – Floor 7**

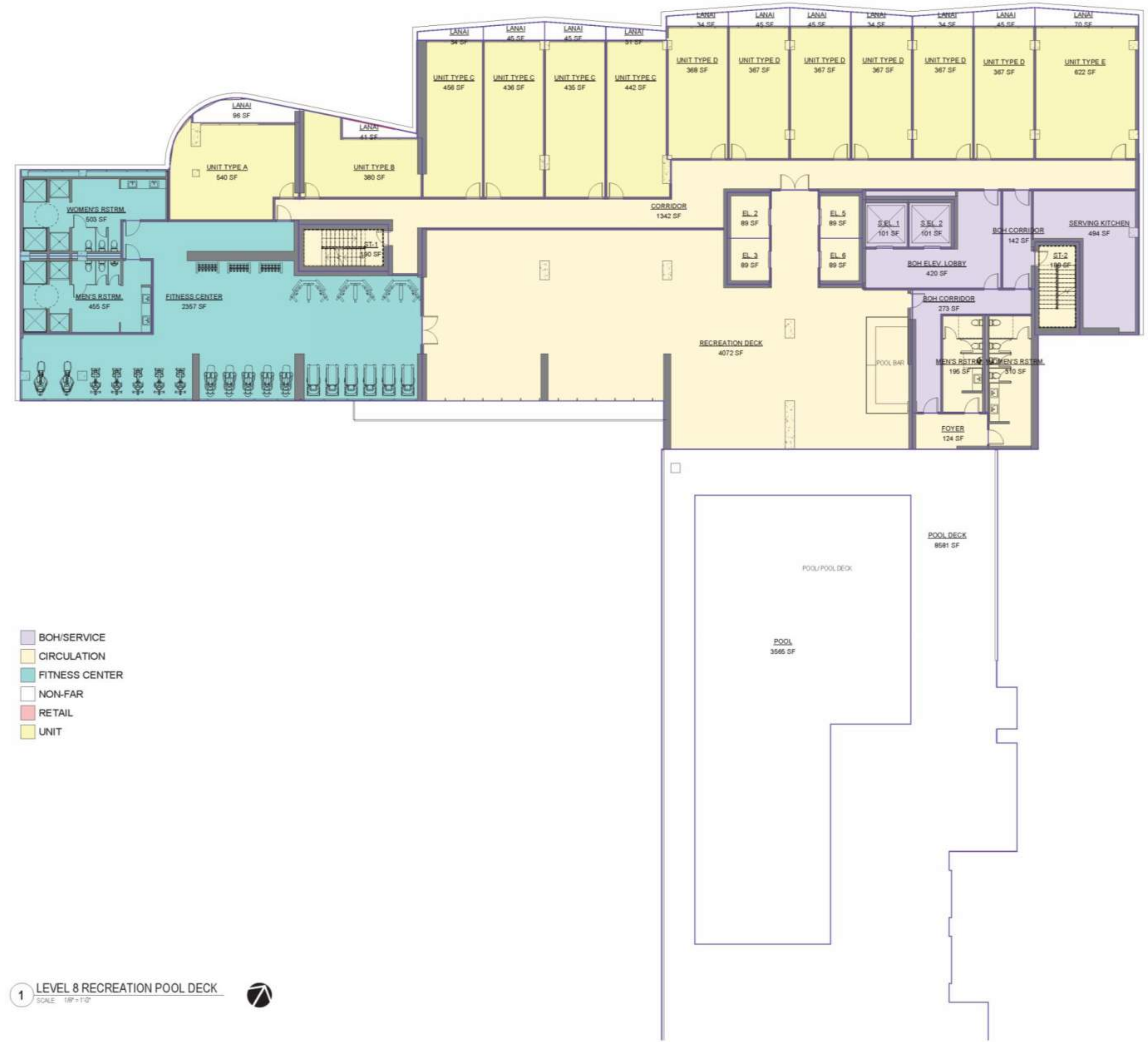

Figure 3.10 **Preliminary Floor Plan – Floor 8**

Figure 3.11 **Preliminary Floor Plan – Typical Tower Floor (Floors 9 through 36)**

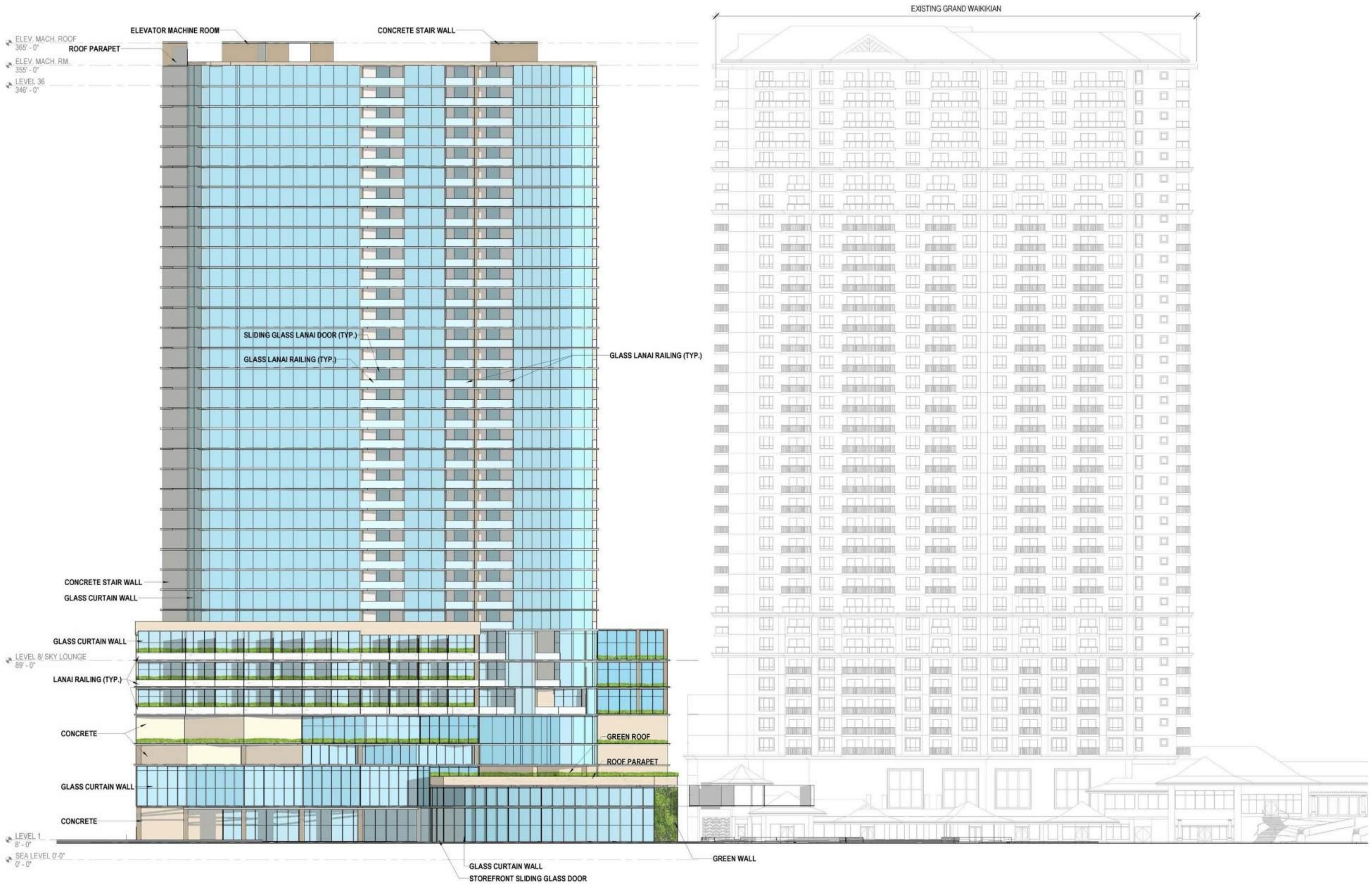

Figure 3.12 **Exterior Elevation – North**

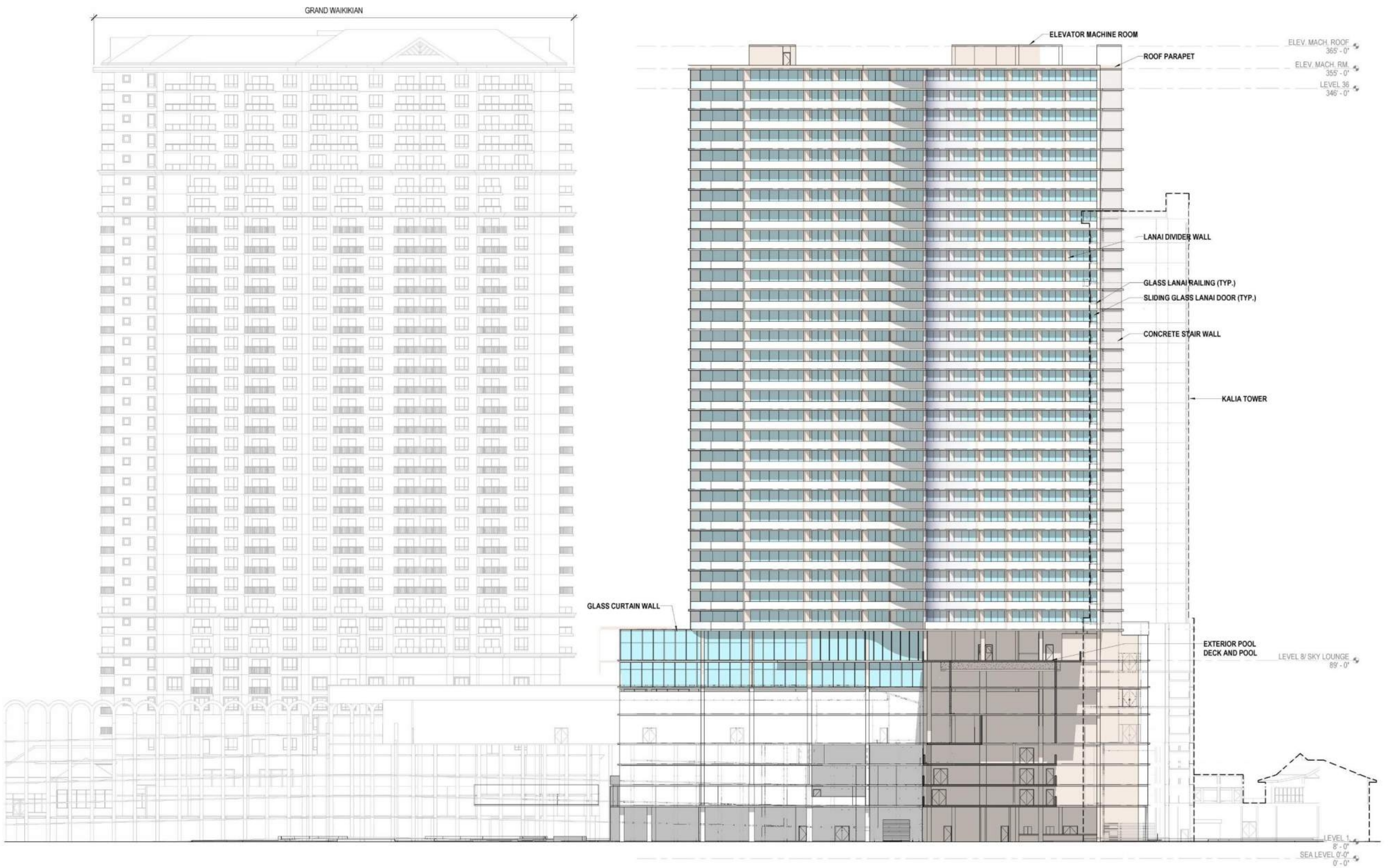

Figure 3.13 **Exterior Elevation – South**

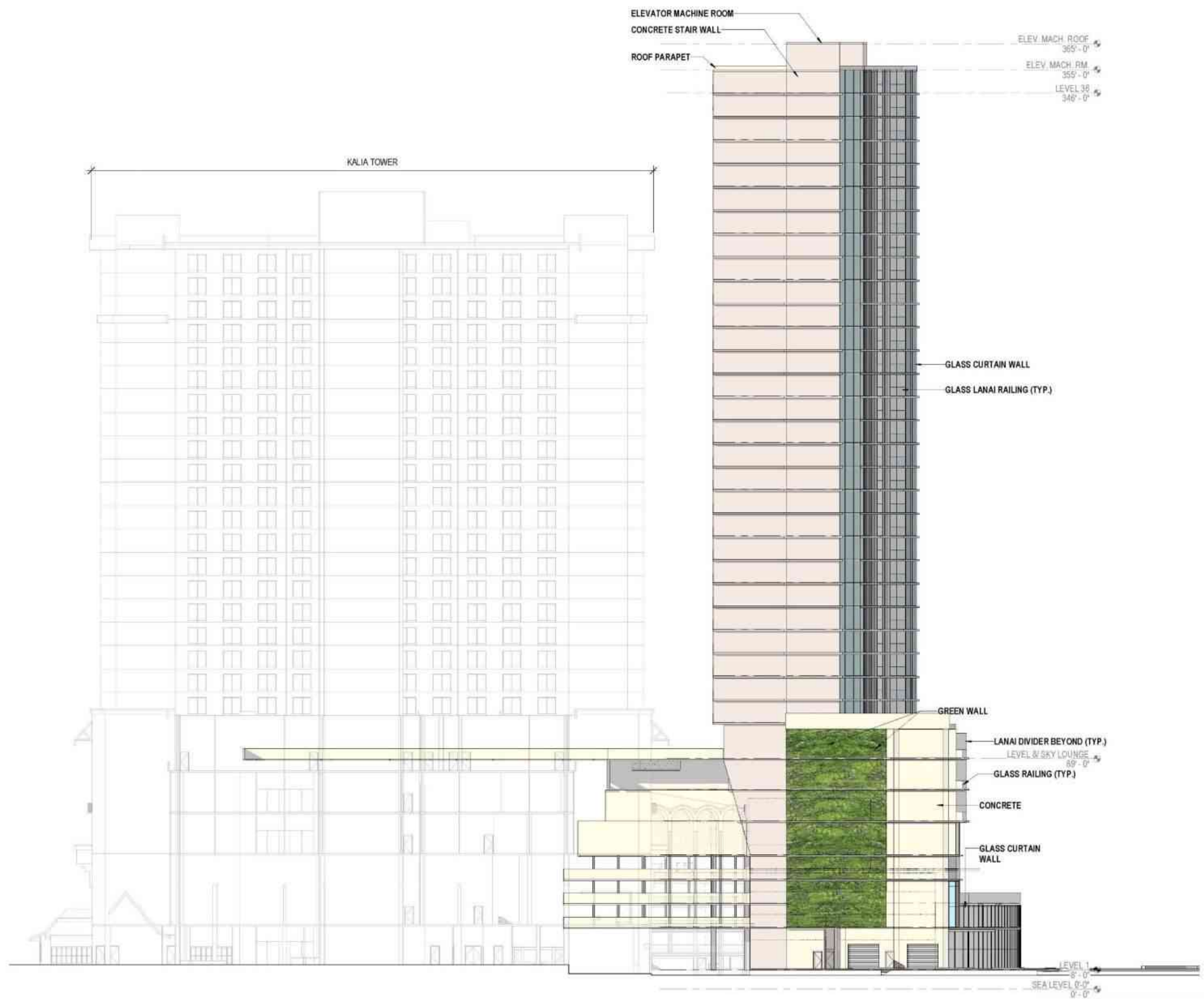

Figure 3.14 **Exterior Elevation – East**

G70

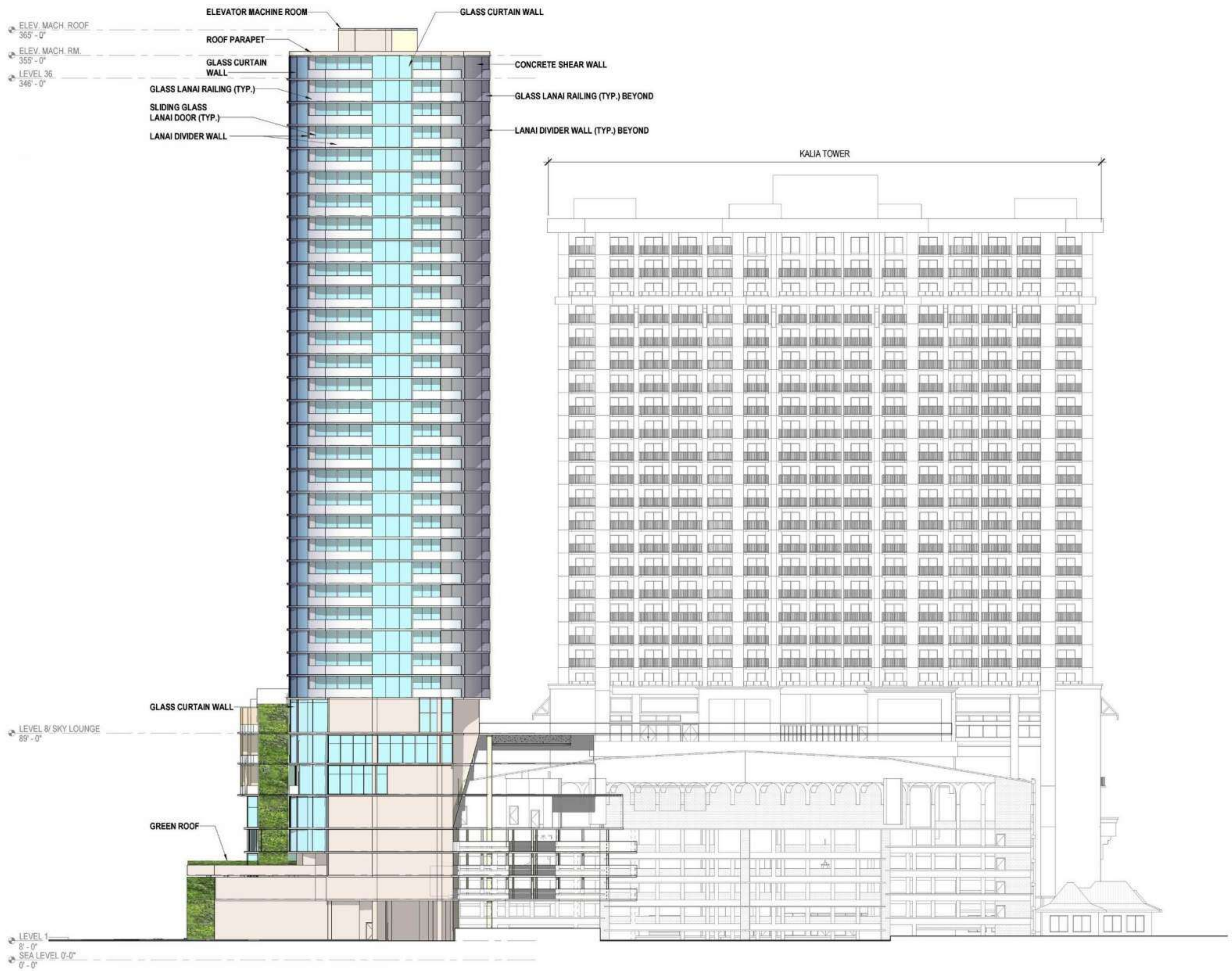

Figure 3.15 **Exterior Elevation – West**

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3.3.4 Summary of Hilton Hawaiian Village Master Plan Program

The HHV is a self-contained, world-renowned, premier beachside resort that covers approximately 22.24 acres of land. Since its construction over 60 years ago, HHV has remained strongly committed to creating exceptional guest experiences, as reflected in its current program. The existing Village Master Plan program includes structures to support various uses, activities, and functions including hotel guestrooms, timeshare units, retail, restaurants, open space, conferences, events, weddings, and parking.

The Project includes the expansion of HHV to include the three Added Parcels and construction of the new AMB Tower. Addition of the AMB Tower will add approximately 395,028 sf of floor area and approximately 515 hotel guestrooms to the Village, for a total of 3,375 hotel guestrooms overall. Ancillary uses within the AMB Tower include retail and food and beverage components. The AMB Tower will not increase the number of timeshare units at the Village. The AMB Tower will reach a maximum height of 350 feet (exclusive of permitted rooftop equipment and structures) and include 36 stories, which is comparable to other buildings in the Village and Waikīkī.

3.3.5 ‘Ewa Gateway to Waikīkī and Pedestrian Improvements

Expanding the HHV campus and replacing existing structures at the Project Site with the AMB Tower will reinvigorate and revitalize Ala Moana Boulevard as the primary ‘ewa gateway to Waikīkī, providing visitors with a more appealing and welcoming experience that reinforces the identity of Waikīkī as a premier global tourist destination. The tower will have a gracefully-curved glass façade following the curve of Ala Moana Boulevard, presenting a softer appearance of the tower along the streetscape. As illustrated in the following preliminary renderings, the new tower will present a timeless yet contemporary design that will complement the existing resort experience at the Village and the surrounding area (*Figures 3.16 through 3.22*). Select building materials will be subdued and have a natural appearance, contributing to a Hawaiian sense of place and complementing the natural setting and heritage of Waikīkī.

Development of the tower along Ala Moana Boulevard will enhance the immediate pedestrian surroundings and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus. Planned improvements to enhance the street frontage include landscaping with water features and an open, welcoming porte cochere. The tower podium will also include ground level retail comprised of the new ABC Store featuring outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape (*Section 3.3.1.2* and *Figures 3.17 through 3.19*).

Figure 3.16 Rendering: View from Ala Moana Boulevard Looking East

Figure 3.17 Rendering: Ground Perspective from Ala Moana Boulevard looking East

Figure 3.18 Rendering: Exterior of ABC Store, Ground Perspective from Ala Moana Boulevard Looking South

Figure 3.19 Rendering: Exterior of ABC Store Ground Perspective from Ala Moana Boulevard Looking East

Figure 3.20 Rendering: Porte Cochere View looking East

Figure 3.21 Rendering: Ground Perspective from Ala Moana Boulevard Looking Southwest (Parking Garage Entry/Exit in View)

Figure 3.22 Rendering: View from Ala Moana Boulevard Looking Southwest

3.3.6 Landscaping and Open Space Summary

The existing site has been previously developed with limited landscaping, primarily consisting of ornamental trees, palms and shrubs (see *Section 4.3.4* for further detail). Existing trees and palms may be preserved, relocated elsewhere on site, or removed based on tree health and structure.

The planned landscape improvements along Ala Moana Boulevard and at the Floor 8 recreation deck will integrate tropical vegetation to invoke a welcoming experience that will accentuate the ʻewa gateway into Waikīkī and fit with the tradition of the Village campus. At the ground-level porte cochere, a landscaping strip with a walled water feature will be integrated to create an appealing visual entryway to the hotel. The water feature would also help mitigate potential traffic noise along Ala Moana Boulevard. Overall, the landscaping palette may consist of native, Polynesian-introduced, or tropical trees, palms, and shrubs of varying sizes that provide shade and screening. As appropriate, the selection and use of native and Polynesian-introduced plants will be encouraged and will include the use of pohinahina (*Vitex rotundifolia*), aʻaliʻi (*Dodonaea viscosa*), kupukupu fern (*Nephrolepis cordifolia*), kalo or taro (*Colocasia esculenta*), naʻu or native gardenia (*Gardenia brighamii*), kokiʻo or native white hibiscus (*H. kokio*), hala (*Pandanus tectorius*), ʻulu or breadfruit (*Artocarpus altilis*), milo (*Thespesia populnea*), coconut trees (*Cocos nucifera*), Queen Emma spider lily (*Crinum augustum*), puakenikeni (*Fagraea berteroana*), and Singapore plumeria (*Plumeria obtusa*). Landscaping will be consistent with the WSD Guidelines and will be finalized as Project design progresses. As appropriate, the selection and use of native plants will be encouraged with specificity to express identified culturally appropriate themes and experiences throughout the HHV campus.

Approximately half of the existing HHV campus is dedicated to at-grade open space. As currently configured, open space provided at the Village is approximately 51.2 percent (*Figure 3.23*). Although the overall percentage of open space in the Village, as expanded, will be reduced to 50.4 percent, the total amount of open space within the Village will be increased[3] and will continue to exceed 50 percent, meeting both the LUO's standards for the WSD Resort Mixed Use Precinct and the open space requirement set forth in the PD-R (*Table 3.3*).

Table 3.3: Open Space Summary			
Summary	**Lot Area (SF)**	**Open Space (SF)**	**Percent (%) Open**
Total HHV Approved in PD-R*	968,979 (22.24 acres)	496,117 sf	51.2%
Proposed AMB Tower	20,141 (0.46 acres)	2,373.9 sf	11.8%
Total HHV Open Space	989,120 (22.7 acres)	498,490.9 sf	50.4%

*HHV PD-R approved on October 4, 2011

3.3.7 Vehicle and Pedestrian Circulation

3.3.7.1 Vehicle Circulation

Vehicular access to the Project Site is currently provided via three existing driveways along Ala Moana Boulevard (*Figure 3.24*). A fourth gated driveway, which is managed by HHV, is designated for off-street loading and access for commercial freight vehicles. This driveway connects to an existing service lane that provides access to adjacent HHV facilities, including the Mid-Pacific Conference Center and Coral Ballroom parking garage.

Primary valet, drop-off, and limited self-park[4] ~~vehicular~~ access to the Project will be provided via a two-lane, one-way driveway serving the new porte cochere along Ala Moana Boulevard, with separate entrance and exit points ~~served by two one-way driveways~~, as illustrated in the Preliminary Circulation Plan (*Figure 3.25*). The new porte cochere and arrival area will create a welcoming feeling for guests arriving at the property, while helping to alleviate congestion and accommodate a safe flow of traffic to and on the site. Vehicles dropping off guests will exit the porte cochere onto Ala Moana Boulevard. Valet and limited self-park vehicles will utilize a new on-site connection that will provide direct access to the Coral Ballroom parking garage, thereby avoiding the need for garage-bound vehicles to return to Ala Moana Boulevard. Valet vehicles will return to the porte cochere from the parking garage via Lagoon Drive and Kahanamoku Street, as shown in *Figure 3.25.*

[3] Expansion of the campus to include the Added Parcels will preserve all of the existing open space in the Village and will add approximately 2,373.9 square feet of additional open space to the campus. Even though additional open space is being added, the overall percentage of open space at the Village will be slightly reduced due to the increase in lot area from 22.24 acres to 22.7 acres.

[4] Use of the porte cochere by self-park vehicles is intended to be limited to check-in/check-out use only. Guests utilizing self-parking during their stay will be directed to enter/exit the Coral Ballroom parking garage via Kahanamoku Street or Rainbow Drive.

Figure 3.23 **Open Space Summary**

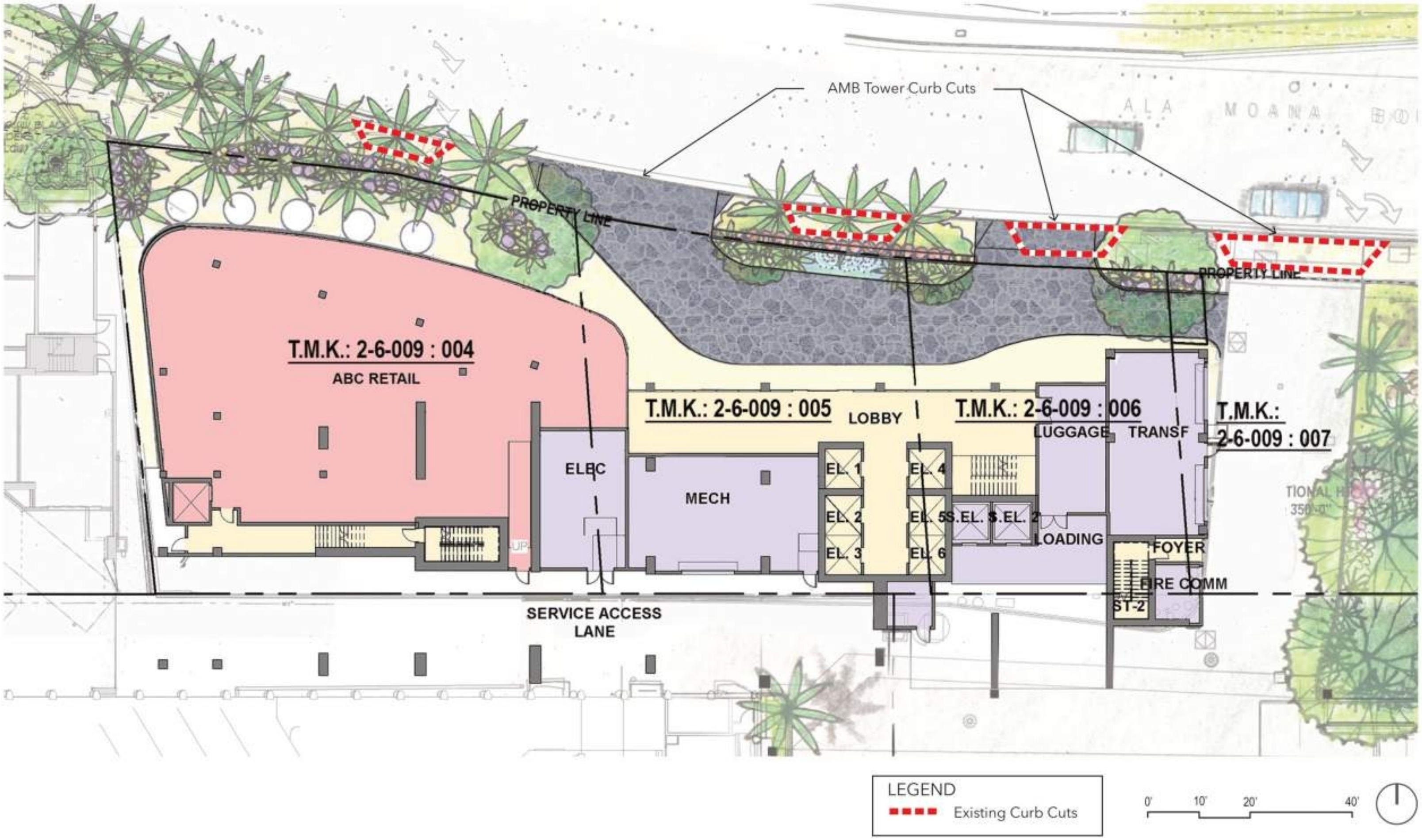

Figure 3.24 **Existing and Proposed Driveways**

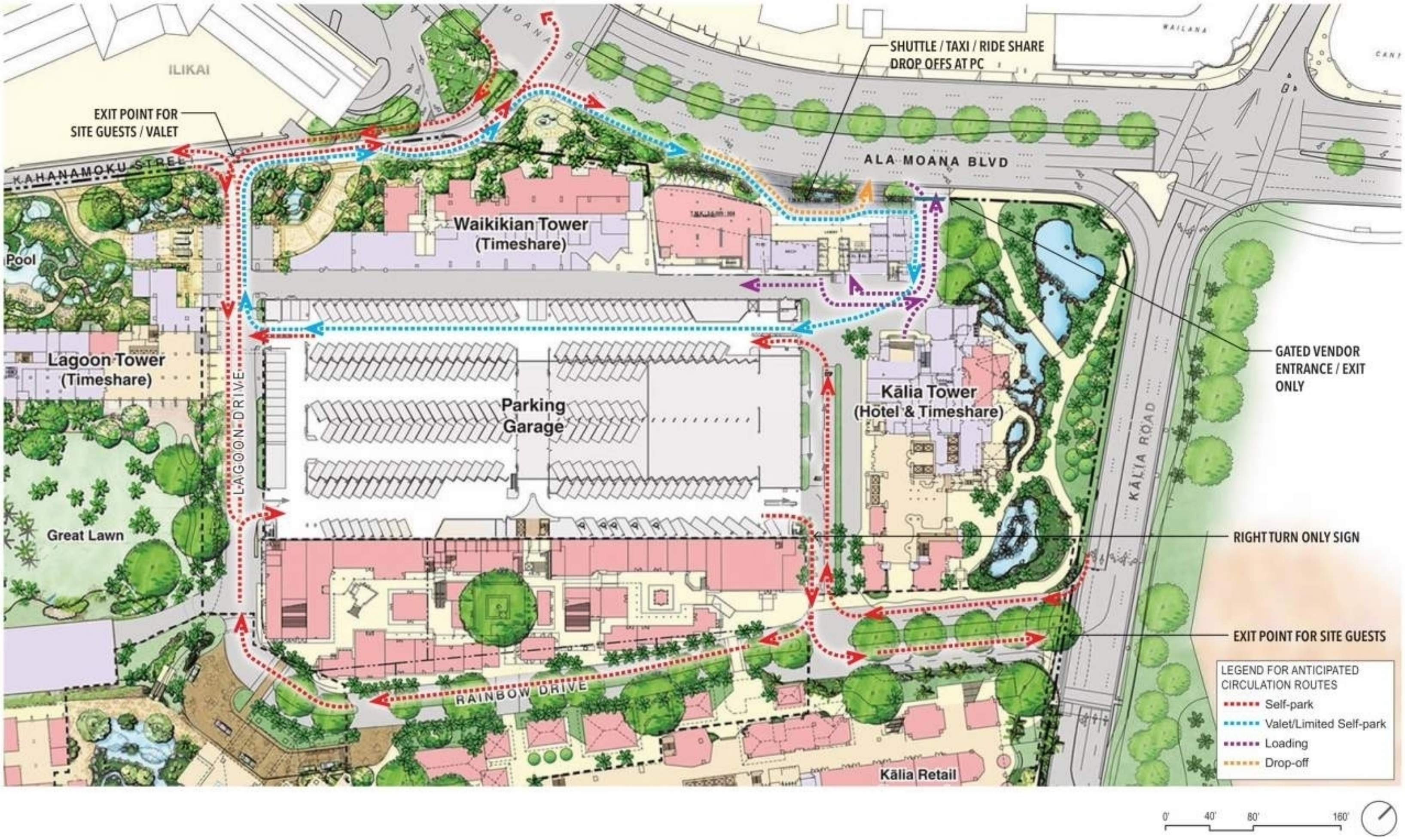

Figure 3.25 **AMB Tower Preliminary Vehicular Circulation Plan**

~~Secondary access~~ Off-street loading access for commercial freight vehicles will continue to be provided via ~~an~~ a separate existing driveway at the east of the Project Site. The driveway will continue to be gated, and access will be managed by HHV (*Section 3.3.8*). ~~, which connects to an existing service lane that provides access to adjacent HHV uses, including the Mid-Pacific Conference Center and Coral Ballroom parking garage. The existing driveway will enhance connection at the Village by allowing vehicles going to the Coral Ballroom parking garage to avoid Ala Moana Boulevard, thereby minimizing traffic impacts on this busy thoroughfare.~~ The existing service lane will provide access to valet operations at the AMB Tower and to service and loading areas located at the rear of the tower on the ground floor. ~~Service vehicle circulation on the site will generally be maintained. An off-street loading dock and existing service lane for on-site deliveries will be provided in the rear of the AMB Tower on the ground floor. Access to the dock will be provided from the existing driveway along Ala Moana Boulevard.~~ The existing service access lane provides sufficient room on-site for vehicles to enter and exit the new loading area.

Guests may elect to self-park at the Coral Ballroom parking garage or within the AMB Tower podium. As part of the Traffic Management Plan (TMP) that will be prepared for the Project, HHV will provide guests with access to the existing Coral Ballroom parking garage and will direct guests who elect to self-park during their stays to access the parking garage via Kahanamoku Street or Rainbow Drive, as shown in the Preliminary Circulation Plan (*Figure 3.25*). Vehicular access to the parking stalls within the AMB Tower podium will be provided via a connection to the Coral Ballroom parking garage.

3.3.7.2 Pedestrian Circulation

As the island's primary resort destination, Waikīkī is characterized by a high density of attractive destinations in close proximity to one another, high pedestrian traffic, and limited parking. A continuous sidewalk fronts the site along Ala Moana Boulevard, which periodically experiences heavy pedestrian activity typical of Waikīkī. In the vicinity of the site, existing landscaping and open space associated with the Grand Waikikian and Kālia Towers create a comfortable street-level environment for pedestrians. While trees and other landscaping features are provided, the overall pedestrian environment is adjacent to high volumes of vehicular traffic along Ala Moana Boulevard. Additionally, connectivity and convenient access along this segment of Ala Moana Boulevard is limited by long distances between the intersections with Hobron Lane and ʻEna Road/Kālia Road. This curving segment of Ala Moana Boulevard has a landscaped and fenced median, allowing no pedestrian mid-block crossing over a distance of 1,100 feet.

The Project will include sidewalk modifications along the AMB Tower frontage on Ala Moana Boulevard to provide continued access and a connection for pedestrians to the new tower and the wider HHV campus. *Figure 3.26* illustrates the planned at-grade pedestrian circulation throughout the HHV campus and connections to surrounding public pedestrian facilities including sidewalks and crosswalks. Improvements at the site will include landscaping to provide a pedestrian-friendly experience along this portion of Ala Moana Boulevard, thereby enhancing the resort environment at the ʻewa gateway of Waikīkī and within the Village. The majority of pedestrians will access the AMB Tower from the porte cochere and open lobby area along Ala Moana Boulevard. Direct street access to the ground floor retail (ABC Store) will also be provided and include outdoor seating to activate the street and enhance the ground-level experience. Additionally, the tower will include various connections to the Village campus on different levels. A pedestrian bridge will be constructed to connect Floor 5 of the AMB Tower podium with the Coral Ballroom, while Floor 8 will share a pool and amenities deck with the Kālia Tower.

Figure 3.26 **HHV Campus At-Grade Pedestrian Circulation Plan**

The Project will maintain the 8-foot sidewalk width to provide comfortable conditions for pedestrians. Additional improvements may also include the planting of trees to provide intermittent shade, water features, the incorporation of pavement markings/striping, wayfinding signs, and lighting to increase pedestrian safety and comfort along the ground level pedestrian routes. These improvements will also integrate the AMB Tower with the Village to facilitate access to various commercial destinations and recreational uses within the resort, further enhancing a cohesive resort environment.

3.3.8 Off-street Parking and Loading Summary

3.3.8.1 Off-street Parking

The planned AMB Tower will be a part of the existing Hilton Hawaiian Village. Therefore, off-street parking to support the Project is included in the overall HHV Master Plan and the existing PD-R approved in 2011. Under the 2011 PD-R, the Village was required to include 1,777 parking stalls, and provided 1,844 for an excess of 67 parking stalls.

Since approval of the Village Master Plan PD-R in 2011, parking requirements as articulated in the LUO have been modified and are no longer required in the PUC DP area where the Project is located. However, to meet anticipated demand of the hotel and retail uses, approximately 50 parking stalls will be provided on Floors 2 through 4 of the tower podium (*Figures 3.4 through 3.6*). Additionally, the adjacent Coral Ballroom parking garage will be reconfigured to recapture 36 stalls. Therefore, following construction of the Project, a total of 1,930 parking stalls will be provided at the Village (*Table 3.4*). Parking stalls for EVs will be provided, as required by City regulations.

Table 3.4: Off-street Parking Summary

Location	Parking Required	Parking Provided
Existing HHV Campus	1,777[1]	1,844
AMB Tower Podium (Floors 2 through 4)	0[2]	50
Coral Ballroom Parking Basement (recaptured stalls)	-	36
TOTAL:	1,777	1,930

1 Source: Village Master Plan PD-R Approval, 2011

2 Per Bill 2 (2020), off-street parking is no longer required in the Primary Urban Center Development Plan Area (ROH, Section 21-6.20(a)).

3.3.8.2 Off-street Loading

ROH, Section 21-6 establishes off-street loading requirements and design standards. Similar to the off-street parking requirements, loading requirements for the Project are set forth in the existing PD-R approved in 2011 for the Village. Under the 2011 PD-R, the total required number of off-street loading stalls for the HHV campus is 43. At present, 44 off-street loading stalls are provided throughout the Village, for an excess of one stall.

ROH, Section 21-6.30 allows for on-site joint use of loading stalls on lots with more than one use. Since the Project includes both hotel lodging and retail/commercial uses, a 20 percent reduction in off-street loading stalls is permitted. As such, the AMB Tower will require six additional loading stalls, increasing the required total off-street loading stalls at the HHV campus to 49.

Five off-street loading stalls will be provided within the AMB Tower podium and the HHV campus currently contains one excess stall. Therefore, the required total of 49 off-street loading stalls will be provided with the Project. See *Table 3.5* for a summary.

Off-street loading will be provided on the ground floor of the AMB Tower (*Figure 3.3*). Access to the stalls will be provided from an existing service lane that is connected to a driveway along Ala Moana Boulevard.

When more than one loading area is required, specific dimension provisions must be met. Therefore, at least one third of these spaces must be built to meet the dimension requirements of 12 feet long by 35 feet wide, with a minimum vertical clearance of 14 feet. The remaining stalls may have horizontal dimensions of 8.5 feet long by 19 feet wide and a vertical clearance of at least 10 feet. The AMB Tower and HHV will meet this requirement.

Table 3.5: Off-street Loading Summary

Existing or Proposed	Use	Floor Area (sf)	Required	Provided
Existing	Total Existing Hotel	3,007,516	32	33
	Existing Grand Islander Tower	545,708	5	5
	Total Existing Retail	183,831	6	6
Planned	AMB Tower Hotel	389,949	6	4
	AMB Tower Retail	6,051	1	1
	Allowed Reduction [1] (20%)	-	-1	-
	TOTAL	-	49	49

1 ROH, Section 21-6.30 allows for on-site joint use of parking and loading on lots with more than one use. Table 21-6.2 indicates a 20% reduction for lots both hotel/lodging and retail/commercial uses.

3.3.9 Comparison of LUO WSD and PD-R Development and Design Standards

The Village is located within the WSD Resort Mixed Used Precinct. Project compliance and fulfillment of the goals and objectives of the WSD are discussed in further detail in *Section 5.3.3*. According to Section 21-9.80-4(d) of the LUO, projects may obtain a PD-R approval to allow for creative redevelopment that would not be possible under strict adherence to development standards within the WSD. PD-R projects are only permitted in the designated Resort Mixed Used Precinct. The Village Master Plan was conceived as a PD-R project, as the entire property is located in the Resort Mixed-Use Precinct (*Figure 1.4*). Development of the AMB Tower will require an amendment (as permitted by the LUO) to the Village Master Plan's existing 2011 PD-R approval in order to include the Added Parcels and accommodate development of the AMB Tower.

Under a PD-R, design flexibility may be provided for project density and floor area, ground level open space, front yards, building height, transitional height setbacks, and landscaping when timely, demonstrable contributions benefitting the community and the stability, function, and overall ambiance and appearance of Waikīkī are produced. The Project's proposed compliance with the standards articulated in the LUO for the WSD Resort Mixed Use Precinct and with flexibility provided under the PD-R are described in the following sections.

3.3.9.1 Building Density and Floor Area

The LUO bases the maximum allowable density, or FAR, at a project site on the total land area of a zoning lot. Additionally, WSD provisions related to the calculation of maximum project floor area (Section 21-9.80-4(d)(3)(A) and Table 21-9.6(B)) specify that "in computing Project floor area, the FAR may be applied to the zoning lot area, plus one-half the abutting ROW area of any public street or alley." Various bonuses for providing additional area for public open space, pedestrian use, landscaped area, and arcade area, may also be allowed.

The 2011 Village Master Plan PD-R was approved based on a zoning lot area consisting of 968,979 sf. The AMB Tower site would add approximately 20,141 sf of land area to the lot, for a total land area of 989,120 sf. Additionally, a calculated street bonus of 118,517 sf is included. Therefore, the total land area available for purposes of calculating the maximum allowable floor area for the expansion of the HHV campus and amendment to the PD-R is 1,107,637 sf. See *Table 3.6* for a summary.

Table 3.6: Land Area for FAR Calculation

	Area (sf)
Total Land Area of HHV TMK parcels	968,979 sf
Total Land Area of AMB Tower parcels	20,141 sf
Street Bonus Total	118,517 sf
Total Area for FAR Calculation	**1,107,637 sf**

*Note: Calculations are based on the current design, which is subject to further refinement throughout the design process.

ROH, Section 21-9.80-4(d)(3)(A) allows modifications of the general density standard for PD-R projects. The 2011 PD-R permitted a FAR of 3.70 or a floor area of 3,943,335 sf, whichever is more. Today, the HHV campus consists of 3,737,055 sf of built floor area, which is less than the floor area allowed under the existing PD-R permit. Improvements covered under the existing PD-R, but which have not yet been constructed, total approximately 206,280 sf. The planned AMB Tower will add an additional 395,028 sf of floor area to the HHV campus. Additionally, a contingency of 92,185 sf is planned for the AMB Tower. With the addition of the AMB Tower and future construction of approved master plan improvements, the new total floor area within the Village is estimated at approximately 4,430,548 sf. Refer to *Table 3.7* below:

Table 3.7: Existing and Proposed Floor Area – HHV Master Plan with AMB Tower

	Area (sf)
Total HHV Built Floor Area (Existing)	3,737,055 sf
Approved Area Under HHV Master Plan – To-be-built	206,280 sf
AMB Tower Floor Area (Proposed)	395,028 sf
AMB Tower Building Contingency (Proposed)	92,185 sf
Total Area	**4,430,548 sf**

*Note: Calculations are based on the current design, which is subject to further refinement throughout the design process.

In order to accommodate the AMB Tower, the Project seeks to increase the FAR at the Village from 3.70 to 4.00, as permitted under the PD-R standards set forth in the LUO. This would allow up to 4,430,548 sf of total floor area at the Village campus (*Table 3.8*). Therefore, the Project seeks to maximize the allowable floor area available to the Village under the PD-R process.

Table 3.8: Maximum Allowable Floor Area Under WSD PD-R

	Floor Area Ratio (FAR)	Floor Area (sf)
Existing Development (PD-R Approved 2011)	3.7	3,943,335 sf
Maximum Allowable Density Under WSD PD-R[1]	4.0	4,430,548 sf
Total Proposed Area of HHV (Including AMB Tower)	4.0	4,430,548 sf

[1] Based on the Land Area for FAR Calculation shown in *Table 3.6*.

*Note: Calculations are based on the current design, which is subject to further refinement throughout the design process.

3.3.9.2 Ground Level Open Space

The LUO requires that a minimum of 50 percent of a zoning lot be devoted to open space where the project FAR is greater than 1.5. The PD-R also requires that open space must be at least 50 percent of the zoning lot area; however, this may be modified when beneficial public open spaces and related amenities are provided.

As discussed in *Section 3.3.6*, approximately half of the existing HHV campus is dedicated to at-grade open space. Existing open space at the Village is 51.2 percent (*Figure 3.23*). The amount of at-grade open space to be added on the Added Parcels is approximately 2,373.9 sf. After expansion of the Village campus and development of the AMB Tower, the resulting overall open space for HHV will be increased. However, because less than 51.2 percent of the Added Parcels will be dedicated to open space, the percentage of the Village that is open space will be slightly reduced to approximately 50.4 percent (*Table 3.3*), but will continue to meet both the LUO's standards for the WSD Resort Mixed Use Precinct and applicable open-space requirements under the PD-R.

3.3.9.3 Building Height

A maximum building height of 350 feet (exclusive of permitted rooftop equipment and structures) is permitted under both the LUO's general development standards for the WSD Resort Mixed Use Precinct and a PD-R.

During the PD-R approval process, the Project will request a 350-foot maximum allowable height (exclusive of permitted rooftop equipment and structures) for the AMB Tower. See *Section 3.3.3* for further discussion and *Figures 3.12 through 3.15* for the planned tower elevations. Final height of the Project will be determined as the design progresses.

3.3.9.4 Front Yard

The LUO requires a minimum front yard width of 15 to 20 feet in the WSD Resort Mixed Use Precinct; however, front yards along Ala Moana Boulevard must be 20 feet. Additionally, front yard averaging is permitted, and may vary between the front property line and twice the minimum front yard, so long as the yard area street-side of the required yard is equal to the yard area behind the required yard. Under the PD-R, a 15-foot minimum yard is required, but may be modified. Side or rear yards are required only where a property in this precinct adjoins an Apartment Precinct, which neither the Project Site nor the Village does.

Approximately 337 sf of the tower podium encroaches approximately one to four feet into the 20-foot front yard setback along Ala Moana Boulevard (*Figure 3.27~~4~~*). However, the AMB Tower provides an approximately 1,063.2-sf area behind the required front yard. The lobby area of the tower podium will be set back approximately 6.5 to 15 feet from the 20-foot front yard setback. Therefore, with yard averaging, the AMB Tower will provide an average 20-foot front yard width along Ala Moana Boulevard, and therefore will comply with the standards set forth for the WSD and allowed under the PD- R (*Figure 3.24*).

3.3.9.5 Transitional Height Setbacks

In the WSD Resort Mixed Use Precinct, for any portion of a structure above 40 feet in height, additional front, side, and rear height setbacks equal to one foot for each 10 feet (1:10) in height or fraction thereof must be provided. This standard may be modified for PD-R projects.

Three existing structures at HHV encroach within the transitional height setback. Two of these buildings (Ali‘i Tower and Diamond Head Apartments) were built prior to the current LUO standards. The Grand Waikikian transitional height setback encroachment was approved under its own PD-R.

The AMB Tower will be in conformance with the transitional height setback as required under Section 21-9.80-4 of the LUO (*Figure 3.28~~5~~*).

3.3.9.6 Summary of Comparison

Table 3.9 provides a summary comparison of WSD Resort Mixed Use and PD-R development standards provided in the LUO, and identifies the AMB Tower and Village Master Plan design controls intended to meet these standards.

3.4 Anticipated Project Schedule

The campus expansion and addition of the AMB Tower is expected to commence upon issuance of the required City and County of Honolulu permits and approvals, subject to market conditions at such time. Subject to such market conditions and receipt of necessary approvals, construction of improvements is currently anticipated to begin as early as late 2024 or 2025. Construction is anticipated to last 30 months, and the AMB Tower is currently estimated to be completed by early to mid-2027. Construction activities will occur in the following general phases: demolition, site preparation, excavation, foundation installation, structure construction, grading, installation of interior finishes and fittings, architectural coatings, and landscaping.

3.5 Estimated Construction Cost

The estimated construction cost for the development of the AMB Tower is currently projected at approximately $461.5M.

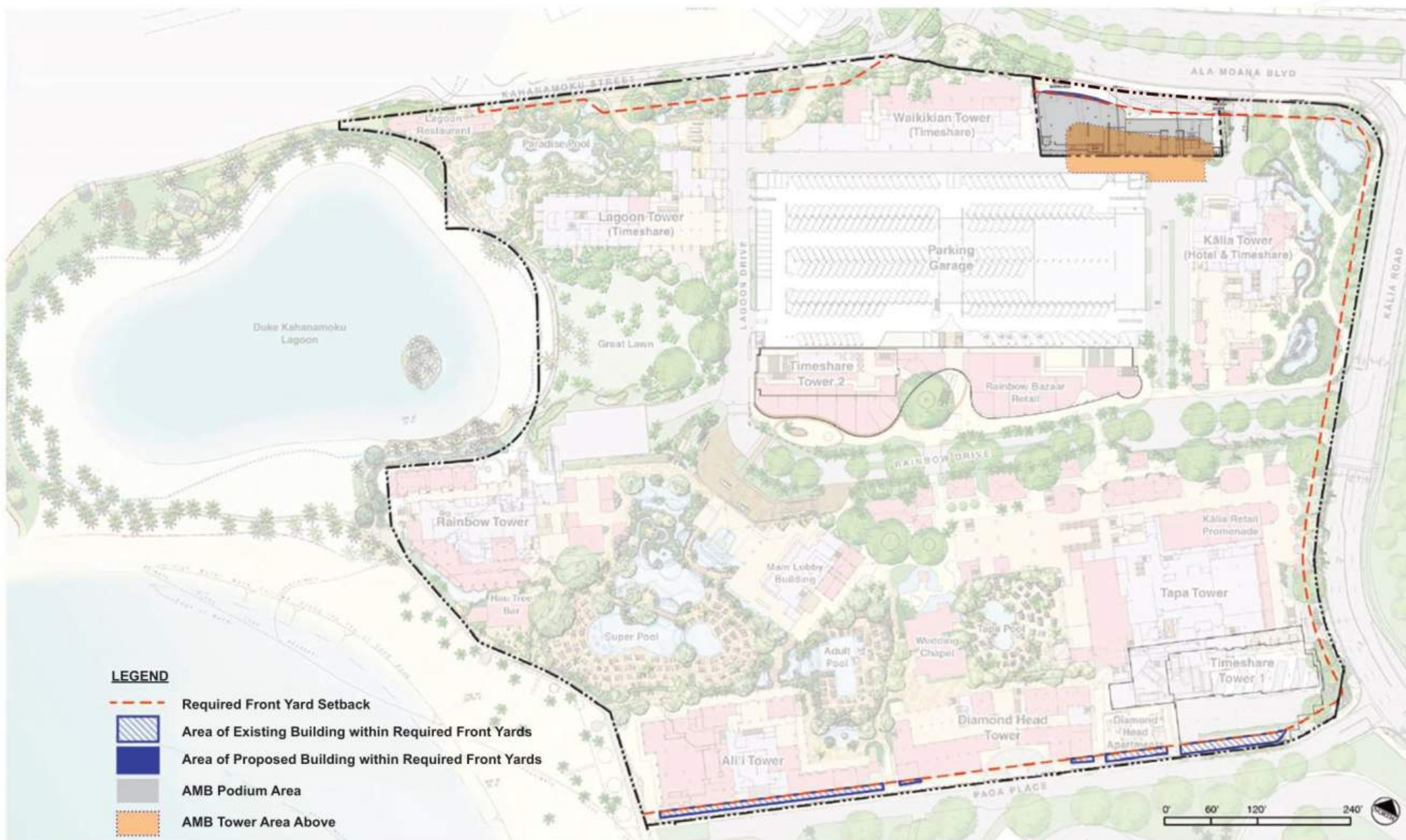

Figure 3.2~~7~~4 **Existing and Proposed Front Yards**

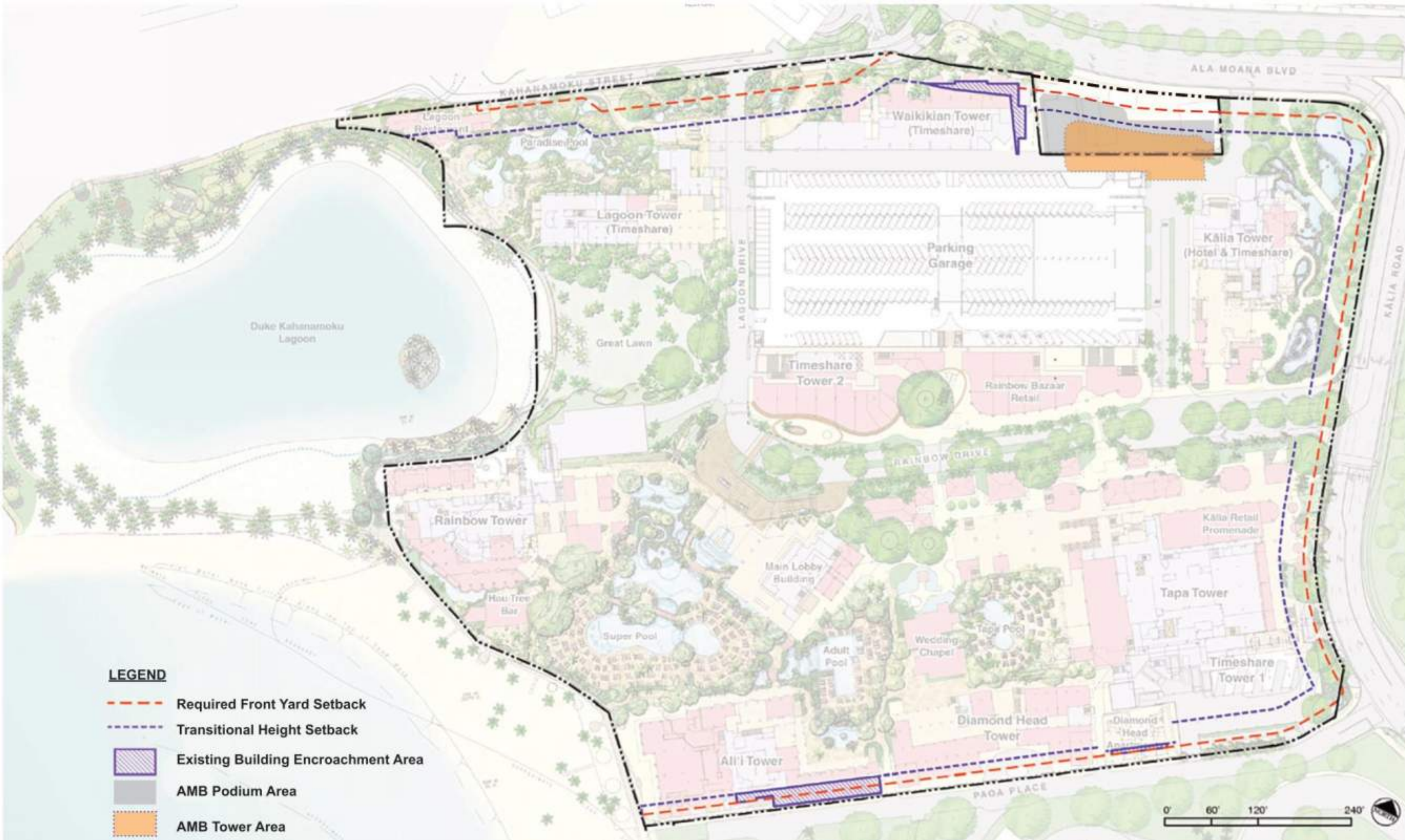

Figure 3.28~~5~~ **Existing and Proposed Transitional Height Setbacks and Building Encroachment**

Table 3.9: Comparison of Waikīkī Special District General and Planned Development Resort (PD-R) Design Standards

	Waikīkī Special District LUO General Requirements LUO Section 21-9.80-6	LUO Planned-Development Resort (PD-R) Requirements LUO Section 21.9.80-4	Proposed Hilton Master Plan Compliance with AMB Tower Amendment with PD-R
PD-R Applicability		• Permitted in Resort Mixed Use Precinct • Project Size at least 1 acre • Multiple lots may be part of a single PD-R project if the owners, lessees, developers or other designated representatives consent ~~under single owner and/or lessee holding leases with minimum 30 years remaining~~. • Multiple lots must be contiguous (with exceptions)	• HHV encompasses 22.24 acres in the Resort Mixed Use Precinct. The ~~AMB Tower project~~ Added Parcels will add 0.46 acres, for a total of 22.7 acres, • The Added Parcels are comprised of three lots~~: one lot is~~ owned by Park Ala Moana LLC ~~and two lots are owned by SMK, Inc. Park Ala Moana LLC has the option to buy the two SMK, Inc. lots~~. • Improvements to connect the AMB Tower with the HHV campus are proposed at three adjacent parcels within the existing Hilton Hawaiian Village. The adjacent parcels are owned by Hilton Hawaiian Village LLC.
Maximum Floor Area • **LUO Section 21-9.80-6(b) & Table 21-9.6(B)** • **LUO Section 21-9.80-4(d)(3)(A)**	• Maximum FAR is 1.0 for the Resort Mixed Use Precinct; however, floor area bonuses may be provided. • Maximum FAR of 3.5 if open space bonuses are provided.	Maximum FAR not to exceed 4.0 unless existing FAR is greater than 3.3, then an increase in maximum density by up to 20 percent may be allowed, up to but not exceeding a maximum FAR of 5.0; or if the existing FAR is greater than 5.0, then the existing FAR may be the maximum density.	• Existing Permitted FAR under the PD-R is 3.70. • Addition of the AMB Tower will increase FAR at HHV to 4.00.
Maximum Building Height • **LUO Section 21-9.80-6(b) and Table 21-9.6(B)** • **LUO Section 21-9.80-4(d)(3)(C), and LUO Exhibit 21-9.15**	• Maximum building height on the Project Site is 350 ft (exclusive of permitted rooftop equipment and structures). • LUO Section 21.9.80-4(g) allows for a rooftop height exemption of up to 18 feet above the maximum height for necessary mechanical appurtenances and architectural features.	Maximum building height on the Project Site is 350 ft.	• Tallest existing structure at HHV is 350 ft. • AMB Tower is requesting a maximum height of 350 ft.
Precinct Transitional Height • **LUO Section 21-9.80-6(c)(2) and LUO Figure 21-9.2** • **LUO Section 21-9.80-4(d)(3)(D)**	In the Resort Mixed Use Precinct, for any portion of a structure above 40 ft in height, additional front, side, and rear height setbacks equal to one foot for each 10 ft (1:10) in height or fraction thereof needs to be provided	PD-R allows the WSD LUO general standard to be modified	The AMB Tower will be in conformance with the transitional height setback as required under Section 21-9.80-4 of the LUO (*Figure 3.28~~5~~).*
Minimum Yards • **LUO Section 21-9.80-6(c) and LUO Table 21-9.6(B)** • **LUO Section 21-9.80-4(c)(2) and Section 21-9.80-4(d)(3)(E)**	• Minimum 15 ft-20 ft. Required front yard of 20 ft along Ala Moana Boulevard. • The average yard may vary between the front property line and twice the minimum front yard so long as the yard area street-side of the required yard is equal to the yard area behind the required yard.	Minimum yards of 15 ft, but allows for the modification of this standard for PD-R projects	The AMB Tower will be in conformance with front yard setback requirements with front yard averaging *(Figure 3.27~~4~~*).
Minimum Open Space • **LUO Table 21-9.6(B) and Section 21-9.80-6(c)(1)** • **LUO Section 21-9.80-4(d)(3)(F)**	Minimum 50% of a zoning lot must be devoted to open space where the project FAR is greater than 1.5	Minimum open space must be at least 50% of the zoning lot area, but may be modified when beneficial public open spaces and related amenities are provided	• Existing open space provided at the Village is 51.2 percent. (*Figure 3.23*). • Expansion of the Village to include the Added Parcels and development of the Project Site will add approximately 2,373.9 sf of new open space to the Village. The total area of open space in the Village will be approximately 50.4 percent.
Landscaping Requirements • **LUO Section 21.9.80-4(f)**	• Tree size>6 inches in diameter shall not be removed or destroyed (with exceptions) • Any tree removed which is visible from any street, park, or other public viewing area shall be replaced by an approved tree of minimum 2-inch caliper (with exceptions) • Where possible, trees proposed for removal shall be relocated to another area on project site • Parking structures shall be landscaped • Landscaped screening shall be required to prevent undesirable vistas • Whenever landscaping is required, use of fragrant, tropical vegetation, and native plants is encouraged • All fences/walls exceeding 36 inches in height (except moss rock wall) shall be landscaped • Landscaped areas to have adequate irrigation system	Landscaping requirements shall be as set forth in subsection (f), but these standards may be modified	• The SEIS includes a Tree Assessment. Where feasible, identified trees within the AMB building footprint will be relocated on property (*Section 4.3.4*). • Further, where practical, new landscaping areas from street and public views may include new planting of trees of a minimum 2-inch caliper. • Design plans include the use of landscaping for screening areas. • Selection of plant palette for future landscaping will complement the existing HHV campus and may include native species and those typical of tropical vegetation. • There are no plans for fence or walls exceeding 36 inches. • Landscaped areas will have an adequate irrigation system.

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Section 4

Environmental Setting, Potential Impacts, and Recommended Mitigation Measures

Section 4

Environmental Setting, Potential Impacts, and Recommended Mitigation Measures

This section describes the existing environmental conditions and discusses potential impacts of the proposed action. Strategies to minimize impacts and to mitigate any significant impacts are identified.

4.1 Archaeological, Cultural, and Historic Resources

4.1.1 Archaeological Resources

As a privately funded project on private land, the planned Project is subject to historic preservation review by the Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) pursuant to HRS, Section 6E-42 and HAR, Section 13-284. To facilitate consultation with SHPD, an archaeological Literature Review and Field Inspection Report (LRFI) for the Project was prepared by Cultural Surveys Hawaiʻi (CSH) in 2017 (McDermott, 2017). Following submittal of the LRFI, SHPD determined that an Archaeological Inventory Survey (AIS) was necessary. In consultation with SHPD and Native Hawaiian cultural descendants of Waikīkī, CSH prepared a draft AIS (*Appendix B*) for the Project. The following section summarizes the findings of the AIS. The AIS is currently awaiting review and concurrence by SHPD (File No. 2017PR24629).

Existing Conditions

<u>*Background Summary*</u>

Located near the mouth of Piʻinaio Stream, the traditional Hawaiian fishpond complexes of Paweo and Kaipuni were approximately 150 meters (m) northeast and east of the Project area, respectively. Likely constructed in the pre-Contact period, these fishponds were utilized into the later 1800s prior to being filled in with the development of the U.S. Army's Fort DeRussy in the early 1900s. The Project area was adjacent to what was likely the shifting seaward-most portions of Piʻinaio Stream as it met the prograding shoreline at Kālia. Piʻinaio Stream was filled in with the construction of the Ala Wai Canal between 1921 and 1927. By the early 1900s, there were western-style dwellings (likely bungalows) in the Project area, one of which was owned by famed Native Hawaiian Olympian and surfer Duke Kahanamoku. Into the 1950s, the buildings within the Project area were one- and two-story dwellings, some labeled as apartments. The later 1950s through the 1980s saw the development of the HHV campus. During this period, land use within the Project area changed from residential to commercial.

Today, the Project area and vicinity are developed with high- and low-rise buildings and concrete- and asphalt-paved roads, walkways, and parking areas. Within the Project area, there are existing one- and two-story restaurant and commercial buildings. Landscaped trees and shrubs are also present.

No archaeological studies had been conducted within Parcels 4, 5, and 6 prior to the 2017 field inspection conducted by CSH as part of the LRFI for the Project. Several additional inspections were conducted in 2021 and 2022. During the investigations, no surface historic sites were identified.

The results of prior archaeological investigations within and adjacent to the Project area show abundant remnants of past historical land use, including artifacts and features from the mid-1800s through the mid-1900s. Two previously identified historic properties are partially within parcels 9 and 13 of the current Project area, and are described below (*Figure 4.1*):

1. **State Inventory of Historic Places (SIHP) #s -2870.** SIHP # -2870 comprises historical cultural layers with associated features and human remains; its interpolated boundaries extend into the southeastern portion of the current Project area.

2. **SIHP # -6399.** This property comprises five features, three of which are within the southern portion of the current Project area; these comprise a pit of indeterminate function, a post-Contact refuse pit, and a latrine or refuse pit.

Notably, these prior studies have not documented evidence of traditional Hawaiian land use. The potentially dynamic hydrological environment along Piʻinaio Stream, where the drainage shifted periodically based on flow rates and changing shoreline conditions, may at least partially explain the lack of evidence for traditional Hawaiian land use. The results of prior archaeological investigations also show the Project area and its immediate vicinity have been subject to prior ground disturbance related to twentieth century development. Accordingly, the current AIS provided an opportunity to better assess the presence of archaeological deposits and evidence of traditional Hawaiian and/or historical land use preserved within this fully developed, and potentially heavily disturbed, Project area.

Archaeological Testing

As part of the AIS, CSH conducted subsurface testing across nine locations within the Project Site. The testing strategy was conducted in consultation with SHPD and Native Hawaiian cultural descendants of Waikīkī.

Three archaeological historic properties were documented during this AIS: SIHP #s -2870, -9156, and -9157. SIHP # -2870 is a previously identified historic property that was further documented during the current study. SIHP #s -9156 and -9157 are newly identified. The three historic properties are summarized in *Table 4.1*, and shown in *Figure 4.2*.

Table 4.1: Archaeological Historic Properties Identified in the AIS (2022)

State Inventory of Historic Places (SIHP) # 50-80-14-	Formal Type	Function/Description
1. 2870	Historical cultural layers with associated features and human remains	Habitation, activity area, refuse disposal, human burial
2. 9156	Human skeletal remains	Disarticulated remains in fill
3. 9157	Infrastructure remnants	Commercial and residential infrastructure

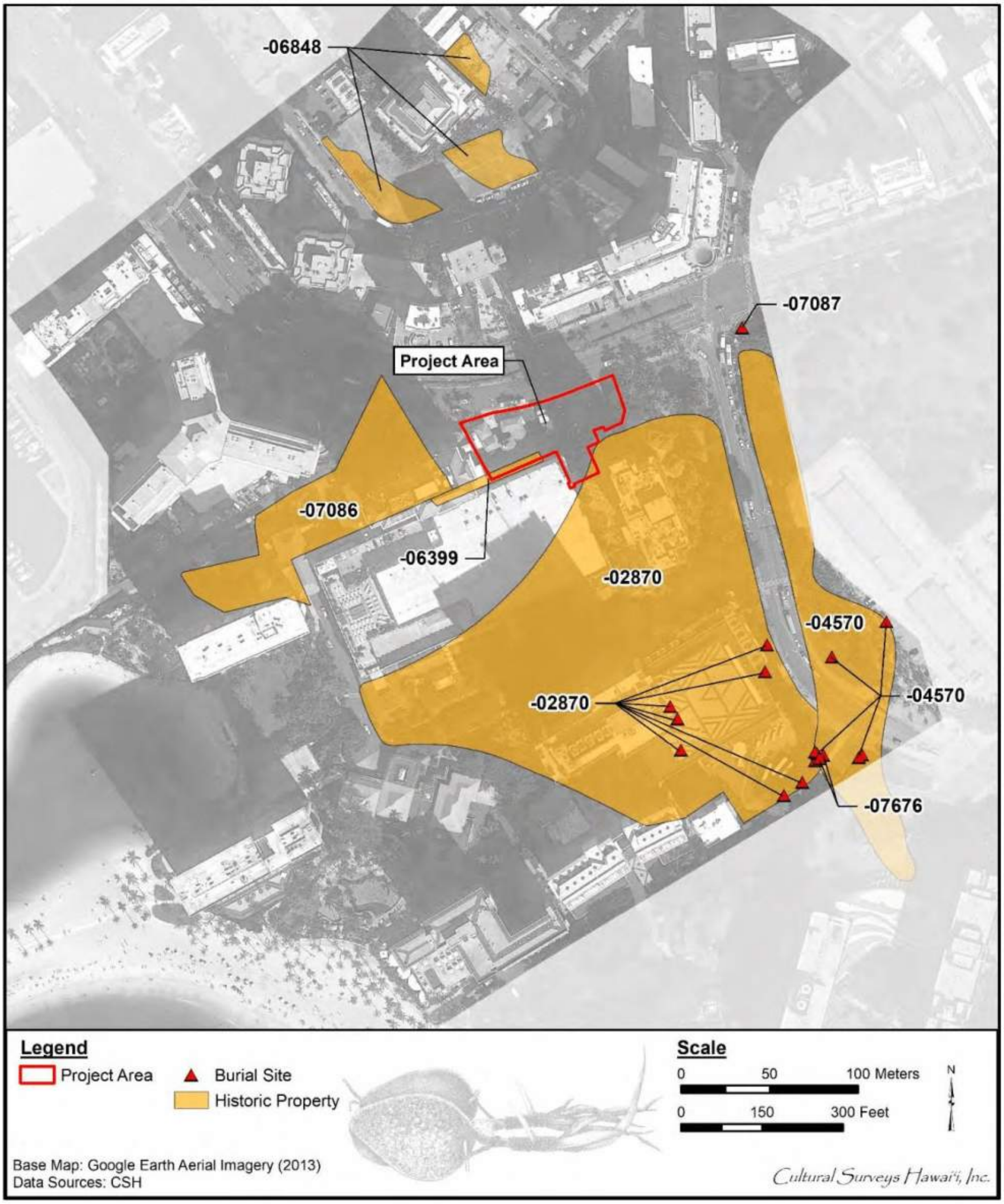

Figure 4.1 **Previously Identified Historic Properties Within and In the Vicinity of the AIS Study Area**

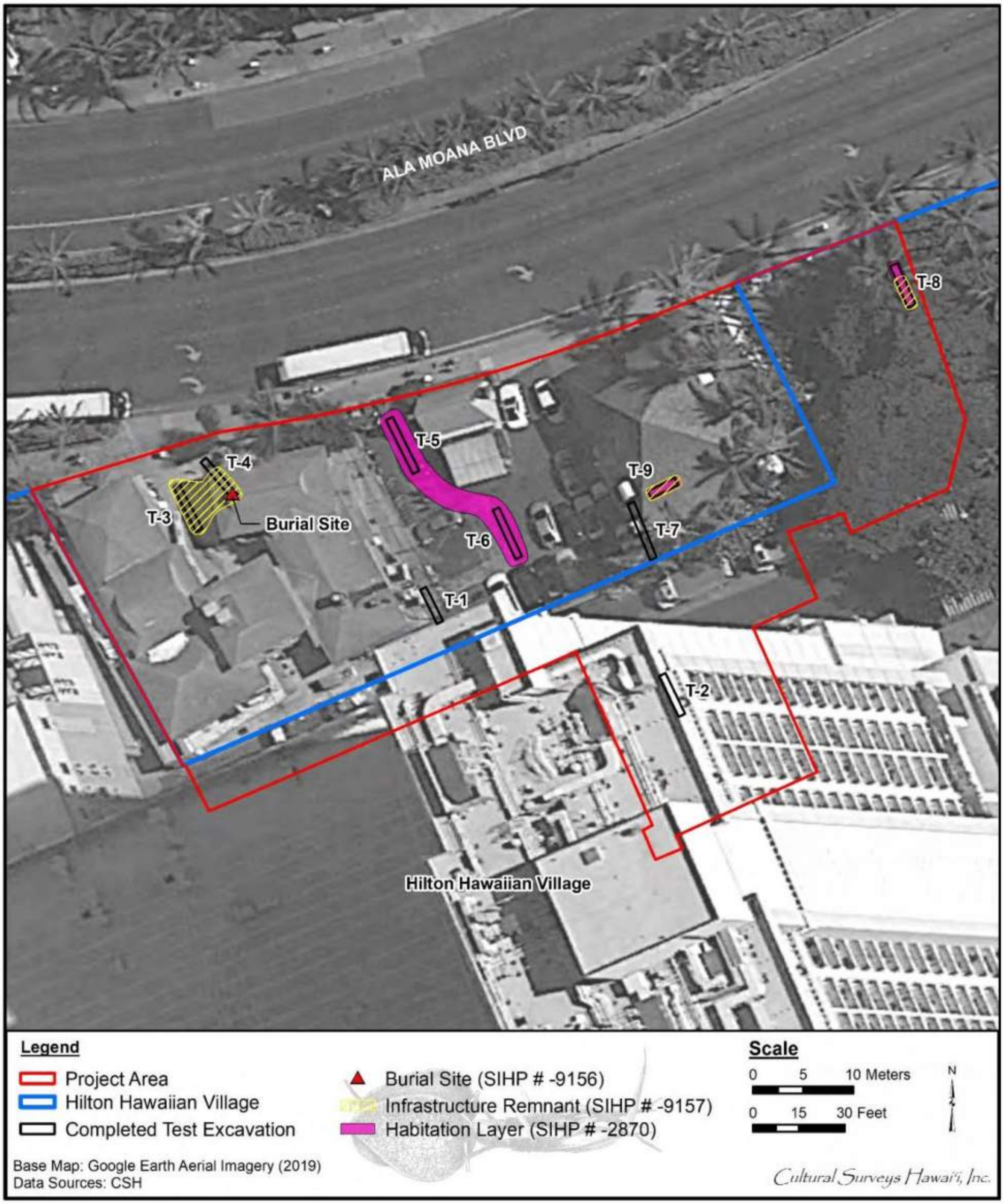

Figure 4.2 **Completed Test Excavations and Historic Properties Newly Identified Within the Study Area (2022)**

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

a. Be associated with events that have made an important contribution to the broad patterns of our history;
b. Be associated with the lives of persons important in our past;
c. Embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value;
d. Have yielded, or is likely to yield, information important for research on prehistory or history; or
e. Have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity.

The following summarizes archaeological historic properties identified within the Project Site, as well as their significance and eligibility assessments pursuant to HAR, Section 13-284-6:

1. **SIHP # -2870, Historical Cultural Layers with Associated Features and Human Remains:** SIHP # -2870 consists of historical cultural layers with a total of 62 associated features and human burials, 19 of which were newly identified as part of the Project AIS. Previous studies documented SIHP # -2870 features comprising human skeletal remains, trash pits/concentrations, pits/trenches of indeterminate function, a possible filled drainage ditch, a possible fire pit, basalt boulder structural remnants, buried road surfaces, and abandoned residential utility lines with associated trenches. During the current study, SIHP # -2870 was documented as a "buried A horizon" and a culturally enriched fill deposit with associated features. Nineteen features were documented, comprising pits of indeterminate function, charcoal lenses, a bird burial, and post molds. The current study expanded the horizontal extent of SIHP # -2870 by 0.15 acres, giving it a total extent of approximately 8.2 acres.

   SIHP # -2870 was previously assessed by Hurlbett et al. (1992) as significant under State historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history), pursuant to HAR §13-284-6. All subsequent studies that documented SIHP # -2870 concurred with this prior assessment. Sroat et al. (2019) additionally assessed SIHP # -2870 as significant under State historic property significance Criterion e (have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity), pursuant to HAR, Section 13-284-6. SIHP # -2870 has yielded and has the potential to yield additional information regarding post-Contact land use, including burial practices, along the Kālia shoreline. It retains integrity of location, design, materials, workmanship, and feeling.

2. **SIHP # -2870, Human Skeletal Remains:** SIHP # -9156 comprises four small bone fragments originating within a near-surface fill deposit.

   SIHP # -9156 retains integrity of materials and is assessed as significant under State historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history) and Criterion e (have an important value to the Native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts — these associations being important to the group's history and cultural identity), pursuant to HAR §13-284-6. SIHP # -9156 has yielded important information on the distribution of burial sites along the Kālia shoreline and has important value to the Native Hawaiian people.

3. **SIHP # -9157, Infrastructure Remnants:** SIHP # -9157, buried historical infrastructure remnants, were identified in four test excavations. A review of historical maps and aerial photographs, as well as analysis of artifacts from underlying deposits, indicate these buried infrastructure remnants are associated with mid- twentieth century urban development of the Project area.

   SIHP # -9157 retains integrity of location and materials and is assessed as significant under State historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history), per HAR §13-284-6. It has yielded and has the potential to yield additional important information regarding twentieth century urban development along the Kālia shoreline.

Consultation

Consultation with SHPD for the Project was initiated in April 2017. Subsequently, three consultation meetings were conducted in 2021 with CSH, the Applicants, and previously recognized cultural descendants of Waikīkī. Meetings were held first to provide an overview of the Project and followed up with an update on the proposed AIS testing strategy. The Project was then presented at the January 2022 meeting of the Oʻahu Island Burial Council (OIBC). Preliminary results of the AIS testing were provided to the OIBC in April 2022. During testing conducted for the AIS, human skeletal remains (SIHP # -9156) were identified during excavation of Test Trench 4. The SHPD was informed the same day via phone call and email. CSH has also requested comments from the Office of Hawaiian Affairs (OHA) on two occasions and has not received a response.

Potential Impacts and Mitigation Measures

Under State historic preservation review legislation, one of two project effect determinations must be established: 1) "No historic properties affected," where a project will have no effect on significant historic properties; or 2) "Effect, with agreed upon mitigation commitments," where a project will affect one or more significant historic properties, and the effects will potentially be harmful. However, the agreed upon mitigation commitments involving one or more forms of mitigation will reasonably and acceptably mitigate any harmful effects (HAR, Section 13-284-7).

Three significant historic properties (SIHP #s -2870, -9156, and -9157) were identified during the AIS, and the Project has the potential to affect these historic properties. The results of this AIS support a project effect determination of "Effect, with agreed upon mitigation commitments."

If a project will have an "effect" (impact) on significant historic properties, then a mitigation commitment proposing the form of mitigation to be undertaken for each significant historic property shall be submitted for SHPD review and acceptance. Mitigation may occur in the following five forms: A) Preservation, B) Architectural Recordation, C) Archaeological Data Recovery (which includes archaeological monitoring), D) Historical Data Recovery, and E) Ethnographic Documentation (HAR, Section 13-284-8).

Based on the AIS results and in consultation with the SHPD, the agreed upon mitigation commitments are archaeological data recovery in the form of archaeological monitoring for SIHP #s -2870 and -9157 and burial treatment for SIHP # -9156. Archaeological monitoring will be conducted in accordance with an Archaeological Monitoring Plan (AMP) meeting the requirements of HAR, Section 13-279-4. Burial treatment will be conducted in accordance with a Burial Treatment Plan (BTP) meeting the requirements of HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD.

4.1.2 Cultural Impact Assessment

A Cultural Impact Assessment (CIA) was prepared by CSH to analyze the impact of the Project on cultural practices and features associated with the Project Site and the greater Waikīkī Ahupuaʻa. Background research and consultation were conducted to support the CIA, which is included as *Appendix C*. The following section summarizes the findings of the CIA.

Existing Conditions

CIA Consultation

CSH contacted Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the Project area and vicinity. Community outreach letters were sent to 118 individuals or groups, and six responded. Of the six respondents, in-person, phone, or written consultation was conducted with the following three participants: Robert Clarke Paoa (Kamaʻāina of Kālia), Carolyn Keala Norman (Cultural Descendant), and Winifred "Niniaulani" Barr (Kamaʻāina of Kālia; Harbottle Descendant).

Based on the results of community consultation and background research conducted as part of this CIA, marine resources were identified as a resource where cultural practices (including traditional and customary Native Hawaiian rights) are being exercised in Waikīkī Ahupuaʻa. Additionally, the CIA identifies the following cultural practices within Waikīkī Ahupuaʻa:

1. Farming (kalo, banana, rice)
2. Fishing
3. Limu (seaweed) gathering
4. Salt Production
5. Recreational activities (swimming, surfing, paddling)
6. Laʻau Lapaʻau (medicine)
7. Moʻolelo (stories) and Wahi Pana (storied places)
8. Burial practices

Traditional Cultural Practices: Background and Consultation Results

The ahupuaʻa of Waikīkī was traditionally a center of chiefly residence, in addition to being a center of agricultural and aquacultural activities. A vast system of irrigated taro fields was constructed across the littoral plain from Waikīkī to the lower valleys of Mānoa and Pālolo in approximately AD 1400. This field system took advantage of streams descending from the valleys of Makiki, Mānoa, and Pālolo. The loʻi kalo, in combination with coconut groves and numerous fishponds along the Waikīkī shoreline, enabled the growth of a sizeable population.

The ʻili (traditional land division smaller than an ahupuaʻa) of Kālia was one of eight important fisheries along the Waikīkī coast. The fishing grounds from the reef to the shore were rich and were kapu, or prohibited, to anyone but the king and his representatives during certain seasons. Kālia was also known for a fishing technique used to catch schools of mullet. Interviewees also discussed the abundance of marine resources of Waikīkī and Kālia, however, no impacts to marine resources within the Project area and Waikīkī Ahupuaʻa were identified during the consultation process. The offshore waters of Kālia were also used for sport of heʻe nalu or surfing. Many of these areas no longer exist, as dredging and land filling have destroyed the ancient breaks. Reverence for the sport is evidenced by the construction and dedication of Papaʻenaʻena Heiau (a poʻokanaka class heiau). Interviewees also recalled swimming, surfing, and paddling in the ocean off Waikīkī and Kālia; however, no impacts to recreational activities were identified during the consultation process.

Several heiau stood in Waikīkī Ahupuaʻa, however, these heiau were not within or in close proximity to the current Project area. The Waikīkī Ahupuaʻa was also a location for healing. The healing pond of Kawehewehe was located in the vicinity of the current Saratoga Road. The healing beach also known as Kawehewehe was located nearby, in the area fronting the current Halekulani Hotel. Another site associated with healing is Nā Pōhaku ʻOla Kapaemāhū a Kapuni or the Wizard Stones of Kapaemāhū. According to moʻolelo, four soothsayers from the court of a Tahitian king came to Hawaiʻi and helped heal many people. These pōhaku remain visible to this day, and are located at Kūhiō Beach Park.

Potential Impacts and Mitigation Measures

No impacts to ongoing traditional cultural practices and natural resources or cultural sites and wahi pana within the Project area and Waikīkī Ahupuaʻa were identified during the consultation process.

At this time, CSH has determined that no ongoing cultural practices were identified within the Project area during community consultation. The Project area is also located in the general vicinity of ongoing cultural practices such as recreational activities and traditional burial practices.

The results of community consultation, underscored by background research conducted for this CIA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups:

1. Based on available information there is potential for subsurface archaeological deposits within the Project area. As project-related ground disturbance is likely to be widespread throughout much, if not all of the Project area, there is potential for project effect on archaeological historic properties.
2. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and SHPD will be notified pursuant to

HAR, Section 13-280-3. In the event that iwi kūpuna (ancestral remains) are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and the City and County of Honolulu Police Department (HPD) will be notified pursuant to HAR, Section 13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR, Section 13-300 and HRS, Section 6E-43, is recommended.

3. In the event that iwi kūpuna and/or cultural finds are encountered during construction, Project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

4.1.3 Historic Architectural Resources

Existing Conditions

According to the City Department of Budget and Fiscal Services Real Property Assessment Division website, the buildings within Parcel 004 (Waikīkī Mini Shops, 1831 Ala Moana Boulevard) were built in 1941, with an "effective year built" of 2000, indicating they have been significantly altered. The building within Parcel 005 (Budget Rent-a-Car, 1835 Ala Moana Boulevard) was built in 1968, with an "effective year built" of 1968. The building within Parcel 006 (Kobe Steakhouse, 1841 Ala Moana Boulevard) was built in 1964, with an "effective year built" of 1977. Similar to the buildings within Parcel 004, this effective year built indicates the Kobe Steakhouse building has been significantly altered since its initial construction. The SHPD Architecture Branch requested Reconnaissance Level Survey (RLS) architectural studies for the buildings on Parcels 004–006. The RLS studies were accepted in an SHPD review dated January 29, 2018 (Log Nos. 2017.02584, 2017.02585, and 2017.02586; Doc. No. 1801TGM16). The buildings in Parcels 004–006 were designated as SIHP #s 50-80-14-8190, 50-80-14-8189, and 50-80-14-8198, respectively. However, the review concluded "that all of the buildings are not eligible for listing on the Hawai'i and National Registers of Historic Places. The buildings are not significant under any National Register criteria, and they do not contain historic integrity due to numerous changes to character defining features."

Potential Impacts and Mitigation Measures

Existing structures on the Added Parcels will be demolished to construct the Project. As concluded by the RLS, the buildings do not contain historic integrity and are neither eligible for listing on the Hawai'i and National Registers of Historic Places nor significant under any National Register criteria. With the results of the RLS, no significant adverse impacts to historic architectural resources are anticipated.

4.2 Atmospheric and Meteorological Environment

4.2.1 Climate and Rainfall

Existing Conditions

Hawai'i is comprised of several islands with diverse topography, but is generally classified as mountainous. These factors contribute to a mixture of climate regimes that exist within the island chain. Diverse climates can exist within relatively short distances on the same island due to topographical effects on wind direction and speed and rainfall patterns. O'ahu is the third-largest of the Hawaiian Islands. The Koʻolau Range, at an average elevation of 2,000 feet, parallels the northeastern coast. The Waiʻanae Mountains, somewhat higher in elevation, parallel the west coast.

Waikīkī lies along the southern coastal plain. The climate of the Waikīkī area is primarily affected by its leeward and coastal location. The predominant winds that affect the island are the trade winds that generally flow from the northeast, although its average frequency varies from 80 to 90 percent during the summer to only 50 percent in January. Lighter southeasterly winds prevail in the cooler winter months, with occasional strong wind events from winter storms. Wind speeds typically vary between about 5 and 15 miles per hour (mph) providing relatively good ventilation.

The Hawaiian Islands experience small diurnal and seasonal variations in ambient temperature. Average temperatures in the Project area are generally moderate, ranging from about 70°F to 80°F (Giambelluca et. al, 2014). Rainfall is often variable from one year to the next. Average annual rainfall amounts to about 26 inches (Giambelluca et. al, 2011), with summer months being the driest. Intense rains in the October to April winter season sometimes cause flash flooding. Thunderstorms are infrequent and usually mild.

Potential Impacts and Mitigation Measures

In Hawaiʻi, the annual and daily variation of temperature depends to a large degree on the elevation above sea level, the distance inland, and exposure to the trade winds. The Project would not affect climatic conditions; therefore, no mitigation measures are required. Activities related to the AMB Tower may result in minimal greenhouse gas emissions (GHGs), which are known to warm global climate. An inevitable outcome of global warming that may impact Hawaiʻi, including the AMB Tower, is SLR. As such, the Applicants ~~is~~are committed to proactively planning and designing the AMB Tower to be resilient and consider the anticipated impacts of higher ocean levels. The AMB Tower will be designed with a finished floor elevation of 8.0~~7.5~~ feet above msl to mitigate potential impacts related to flooding. Utilities will be relocated at higher elevations, where feasible. Design of the tower will also, where feasible, include features to reduce potential impacts to the surrounding environment, including the use of LID measures, such as seepage wells, drywells, or permeable pavement to protect water quality. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible. Landscaping will be integrated at the ground floor and throughout common amenities spaces. As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV's longtime sustainability practices, including the implementation of various recycling programs, the use of low flow water fixtures, incorporation of electric vehicle (EV) charging, and bicycle storage. Hilton's "Light Stay" monitoring program will be used at the AMB Tower to manage its energy consumption. See *Sections 4.4.5 and 4.12* for further discussion.

4.2.2 Wind Conditions

A Pedestrian Wind Study was conducted by RWDI in March 2022 (*Appendix D*) to assess the effect of the AMB Tower on local wind conditions in pedestrian areas on and around the Project Site (both at grade and at higher levels of the tower), and to provide recommendations for minimizing adverse effects, if needed. The assessment utilized meteorological data and a site-specific wind tunnel model to analyze existing and anticipated wind conditions in the Project vicinity after the AMB Tower is constructed. The results of the study focused on critical pedestrian areas in the vicinity of the project, including building entrances, public sidewalks, and outdoor amenity areas of the adjacent Village buildings. A summary of the report is provided below.

Existing Conditions

Throughout the year, at-grade wind conditions at the Project Site are generally comfortable or better for pedestrian activities, such as walking. However, uncomfortable wind conditions may occur along the passageway between Kālia Tower and the Mid-Pacific Conference Center and Coral Ballroom parking garage due to two generalized windflows of northeasterly winds, including downwashing. Downwashing occurs when tall buildings intercept stronger winds at higher elevations and redirect them to the ground level, which can create a channeling effect where wind flow accelerates through the narrow space between two buildings.

On the existing pool deck on Floor 8 of the Kālia Tower, wind conditions that are comfortable and suitable for sitting or standing are present throughout the year. Existing wind conditions on the rooftop amenity terrace of the Mid-Pacific Conference Center and Coral Ballroom are also suitable for standing and strolling. Under existing conditions, wind speeds that meet safety criterion were identified at all of the locations analyzed.

Potential Impacts and Mitigation Measures

Construction of the AMB Tower will improve overall wind conditions across the site compared to existing conditions. A summary of the findings is provided below:

- After construction of the project, pedestrian-level wind speeds in the surrounding areas are expected to remain suitable for intended pedestrian use throughout the year. The existing uncomfortable locations through the Kālia Tower and Mid-Pacific Conference Center and Coral Ballroom parking garage passageway are predicted to be alleviated after completion of the project.
- Calm wind conditions throughout the year are expected at most at-grade areas around the AMB Tower perimeter, including the entrance locations. However, uncomfortable conditions may occur near the northeast corner of the tower due to downwashing and corner acceleration of prevailing winds from the northeast. Lower wind speeds at this area could be achieved by installing a canopy along the east façade of the tower to deflect winds accelerating down the façade away from the ground. In addition, the existing landscaping at the intersection of Ala Moana Boulevard and Kālia Road, which was not included in the wind tunnel model, is expected to help reduce the wind speeds in this area.
- Wind conditions at most above-grade locations of the AMB Tower are predicted to be comfortable for passive use year-round. On the Floor 8 shared pool deck, wind conditions are predicted to remain suitable for sitting or standing throughout the year, which are conducive to the intended passive use of this area. Slightly higher wind speeds with conditions comfortable for strolling are identified at the northwest corner of the Floor 8 pool deck during the summer. Design of the Project may consider wind mitigation options such as partition walls along sitting areas, as well as hard, and/ or soft landscaping features to achieve lower wind speeds.
- Wind speeds at grade level and most above-grade locations are anticipated to meet the pedestrian wind safety criterion, with exceptions of two locations near the northeast end of the Floor 8 podium roof (above-grade). However, higher wind speeds at this level may be acceptable as the roof is not accessible to the general public. If pedestrian access cannot be restricted for this area, design options to mitigate potential high wind speeds may be integrated into the Project and may include, but not be limited to raised railings with a minimum height of six feet, large canopy, and hard or soft landscaping features.

4.2.3 Air Quality

An Air Quality Technical Report to assess emissions associated with construction and operation of the project was prepared by Arcadis U.S., Inc. in March 2022 (*Appendix E*).

Existing Conditions

The ambient air quality in an area can be characterized in terms of whether it complies with National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards (SAAQS), where applicable. The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set national standards for emissions that are considered harmful to public health and the environment (criteria pollutants). The seven criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), ozone (O_3) and particulate matter (PM_{10} and $PM_{2.5}$).

GHGs are compounds in the Earth's atmosphere which play a critical role in determining temperature near the Earth's surface. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and several chlorofluorocarbons. GHGs are commonly quantified in the equivalent mass of CO_2, denoted CO_2e, which considers the global warming potential of each individual GHG compound.

The State Department of Health's (HDOH), Clean Air Branch (CAB) has been monitoring ambient air quality in the State of Hawai'i since 1957. The network is comprised of 14 monitoring stations on the islands of O'ahu, Kaua'i, Maui, and Hawai'i. The purpose of the network is to measure ambient air concentrations of the criteria pollutants previously described. The HDOH Air Monitoring Station nearest Waikīkī is located on the roof top of the HDOH main building at 1250 Punchbowl Street. Based on air monitoring data, Hawai'i is currently classified as in "attainment" for all Federal and State standards.

Present air quality in the Project area is primarily affected by air pollutants from motor vehicles, typical of urbanized environments. Natural sources of air pollution emissions that could affect the Project area at times but cannot be quantified very accurately include the ocean (sea spray), plants (aero-allergens), wind-blown dust, or distant volcanoes on Hawai'i Island.

Potential Impacts and Mitigation Measures

Short-term, intermittent air quality impacts of the Project are related to construction activities, including demolition of existing structures, site preparation, grading, structure construction, paving, and architectural coatings. Construction would generate emissions of the criteria pollutants as well as GHGs. Emissions were calculated by Arcadis using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. Emissions from Project construction are anticipated to be minimal due to the relatively small scale and low intensity of construction activities. Maximum annual emissions of criteria pollutants from construction activities are projected at less than one ton per year, and these impacts will be temporary and localized.

Construction of the Project will comply with provisions of HAR, Title 11, Chapter 60.1-33, Fugitive Dust. To mitigate potential impacts to air quality during construction, a dust control management plan will be prepared and BMPs will be implemented. Construction BMPs will include, but not be limited to, replacing ground cover of the disturbed area, providing adequate water sources at the site, and reducing speed on unpaved roads. The Project will comply with construction BMPs recommended by HDOH CAB, including phasing of construction, locating potential dust-generating equipment in areas of the least impact, minimizing airborne and visible fugitive dust from shoulders and access roads, and controlling airborne and visible fugitive dust from debris being hauled away from the Project Site (*Appendix A*).

The primary air quality considerations related to operation of the AMB Tower include on-site area and stationary sources of emissions and mobile sources of emissions. The CalEEMod was used to estimate emissions from on-site area and stationary sources, as well as mobile sources, which would occur during long-term Project operations. Results of the model indicate that criteria pollutants and GHG emissions will increase with operational activities. Maximum operational emissions of criteria pollutants are projected to range from 0.028 tons per year for SO_2 to 14 tons per year for CO. However, the quantity is not large enough to result in significant adverse impacts to surrounding air quality and no mitigation measures are proposed. Since Waikīkī is a densely populated urban area with landmarks in close proximity, it is anticipated that most visitors to the AMB Tower and HHV campus will utilize different modes of active and public transportation, which will help to reduce mobile sources of emissions on site.

4.2.4 Urban Heat Island Effect

Existing Conditions

"Urban heat islands" occur when cities replace natural land cover with dense concentrations of pavement, buildings, and other surfaces that absorb and retain heat, and therefore experience much warmer temperatures than surrounding areas (EPA, n.d.). This effect may result in increased energy demand and consumption, elevated levels of air pollutants and GHGs, compromised human health and comfort, and impaired water quality. Climate change will likely lead to more frequent, severe, and longer heat waves during summer months, exacerbating the urban heat island effect.

Waikīkī is a densely populated urban area susceptible to urban heat island effect. According to the Oʻahu Community Heat Map, the Project area experiences average afternoon temperatures between 97.5 to 98.3 degrees Fahrenheit (*Figure 4.3*). In contrast, morning temperatures range between 83.6 to 85 degrees Fahrenheit and evening temperatures range between 88.5 to 89.5 degrees Fahrenheit.

Potential Impacts and Mitigation Measures

Construction of the AMB Tower will lead to a denser concentration of buildings at the HHV. However, the site is already developed, and existing vegetation consists of a few trees and shrubs (*Section 4.3.3*). The Project design includes substantially more vegetation than currently exists on the Project Site. Therefore, the Project is not anticipated to exacerbate the urban heat island effect in the Project vicinity.

Typical mitigation to reduce urban heat island effects aim to shade building surfaces, deflect radiation from the sun, and release moisture into the atmosphere. With the addition of the AMB Tower, at least 50 percent of the Village will remain as open space, helping to control the overall urban heat island effect. Design of the AMB Tower will include, but not be limited to, installation of landscaping and LID measures, where feasible. Green infrastructure features, such as a green wall on portions of the podium, may also be installed where feasible. The Project design will be finalized as the Project progresses.

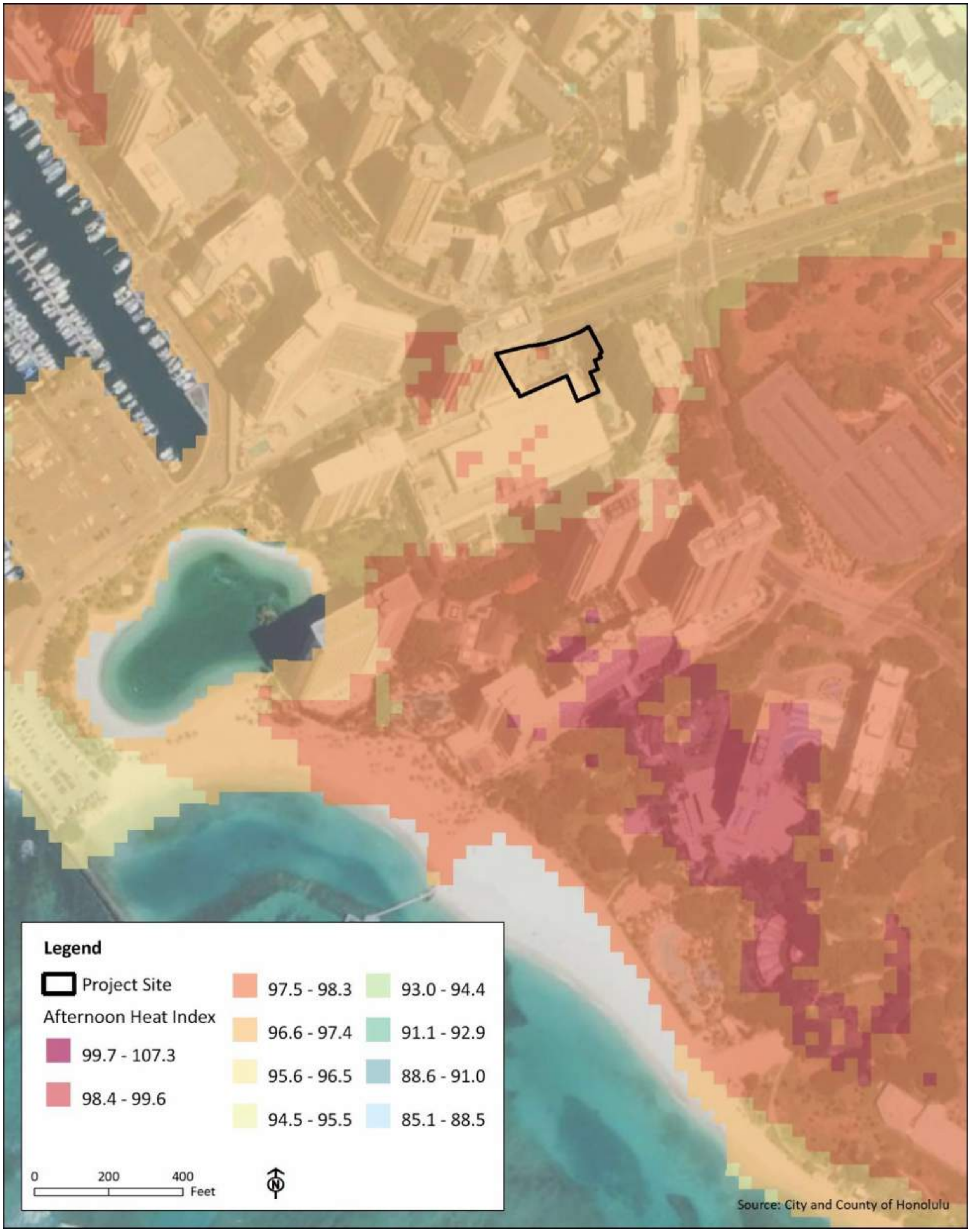

Figure 4.3 **Community Heat Map (Average Afternoon Temperatures)**

4.3 Terrestrial Environment

4.3.1 Topography, Geology and Soil Conditions

Existing Conditions

The geological formation of the Hawaiian archipelago is the result of volcanism. Each island protrusion from the ocean is the summit of a volcanic mountain rising from the ocean floor. The geologic creation of Oʻahu is a result of the Earth's crust, comprised of irregular rigid segments, known as plates, moving over a hot spot of upwelling lava, which has remained relatively stationary for many millions of years. The plate under which Oʻahu lies is known as the Pacific plate, which has slowly moved over this span of time towards the northwest. Oʻahu was created through several stages of activity emanating from two volcanic domes. Through various stages of eruptions, erosion and land movement, the volcanic forms became what are known today as the Waiʻanae and Koʻolau mountain ranges (Macdonald, 1983).

The Village is situated on relatively flat land adjacent to the Pacific Ocean in Waikīkī. Waikīkī is situated upon a reef formation that extends from Kaka'ako to the base of Lē'ahi (Diamond Head) crater. Topography of the AMB Tower site is generally flat with elevations ranging from 7 to 9 feet above msl.

The Project area consists entirely of Jaucas sand, 0 to 15 percent slopes (JaC) (*Figure 4.4*). According to the U.S Department of Agriculture, Natural Resources Conservation Service (formerly the Soil Conservation Service) publication, *Soil Survey of the Islands of Kauai, Oʻahu, Maui, Molokai, and Lanai, State of Hawaiʻi, 1972*, JaC soils consist of excessively drained calcareous soils that occur as narrow strips on coastal plains adjacent to the ocean. This soil type developed in wind- and water- deposited sand from coral and seashells and is generally nearly level to strongly sloping. JaC soils are characterized by rapid permeability, very slow to slow runoff, slight water erosion, and severe wind erosion where areas of vegetation have been removed. The soil is described as having a low corrosivity for uncoated steel and concrete, and is typically used for urban development in addition to pasture, sugarcane, and truck crops.

Potential Impacts and Mitigation Measures

Construction of the AMB Tower will involve land disturbing activities that may result in soil erosion, such as clearing and grubbing, grading, excavation, and infilling of soil. During construction, soil erosion will be minimized through compliance with the City's grading ordinance, and the applicable provisions of the HDOH Water Quality Standards (HAR, Section 11-54) and Water Pollution Control requirements (HAR, Section 11-55). Standard BMPs will be employed to minimize impacts and will be detailed in subsequent construction plans. BMPs may include, but not be limited to, phasing of construction activities, replacing ground cover of the disturbed area, providing adequate water sources at the site, and the use of temporary silt fencing and screens. Following construction, all areas of ground disturbance will be stabilized with appropriate materials including the use of vegetative ground cover. With the implementation of BMPs, potential impacts will be mitigated.

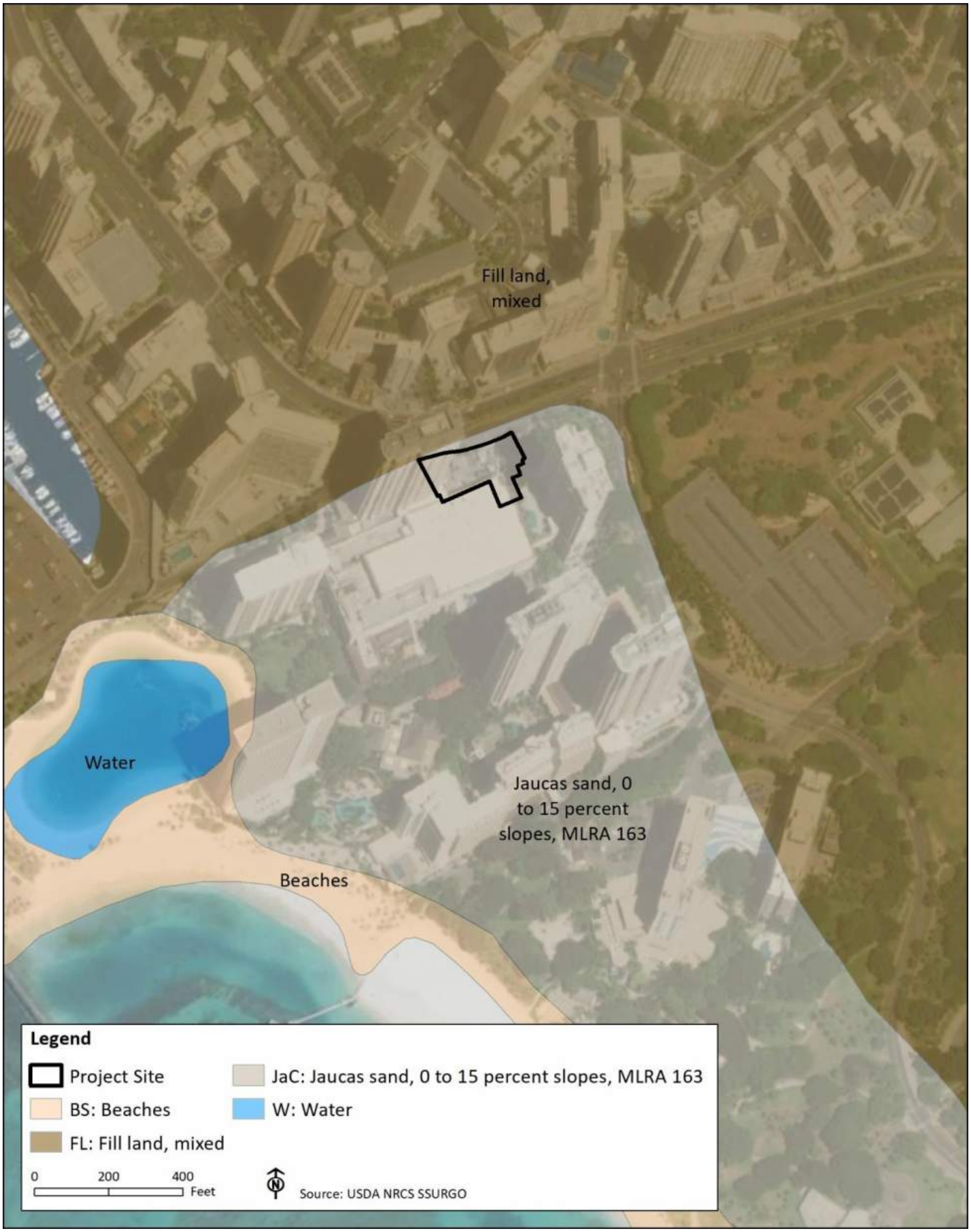

Figure 4.4 **Soils**

4.3.2 Surface Waters and Groundwater

Existing Conditions

Surface Waters

There are no naturally occurring sources of surface water present near or within the Project Site. The Project Site is developed with buildings and paved with asphalt or concrete surfaces. The nearest surface waters include the following: Duke Kahanamoku Lagoon (within HHV), approximately 850 feet to the southwest; Ala Wai Boat Harbor, approximately 800 feet to the west; the Pacific Ocean, approximately 1,170 feet to the south; and, the Ala Wai Canal, approximately 1,380 feet to the north.

Stormwater from much of the existing site is discharged into the Ala Wai Boat Harbor, as further discussed in *Section 4.8.1*. An existing 5-foot by 3-foot box drain within Ala Moana Boulevard on the opposite side of the roadway, or north, of the Project Site, collects stormwater from much of the existing site and smaller side streets in the vicinity, including Kālia Road, and conveys stormwater to the west, eventually discharging into the Ala Wai Boat Harbor.

Additionally, existing storm drainage infrastructure located behind the AMB Tower site collects runoff from the existing Kālia Tower loading dock and uncovered portions of the service roadways. Due to the low elevations in this area, a pump within the parking garage helps convey water to the drain lines through the parking garage and drain lines in the Great Lawn. Drain lines from other parts of the HHV campus also get routed to a sump area in the Great Lawn, where a pump is used to convey the water toward the Ala Wai Boat Harbor to discharge into the ocean. Ala Wai Harbor is classified as a Class A marine embayment by HDOH. According to HAR, Section 11-54, Class A waters are to be protected for recreational purposes and aesthetic enjoyment. Waste discharged into these waters shall not receive a high degree of treatment or control.

The harbor exchanges water with near-shore waters through its entrance channel. These waters are listed as “Honolulu Harbor and Shore Areas” under the Clean Water Act (CWA) Section 303(d) List of Impaired Waters (HDOH, 2022). Honolulu Harbor in the vicinity of the Project is listed as not meeting water quality standards for enterococci, total nitrogen (TN), nitrate + nitrite (NO_3+NO_2), total phosphorus (TP), turbidity, pathogens, metals, and total suspended solids (TSS).

Groundwater

O‘ahu is divided into seven major groundwater areas, primarily on the basis of geologic or hydrologic differences, which are further subdivided by shallower internal barriers to ground water flow. The entire Project area is located within the designated Southern O‘ahu freshwater lens groundwater area, which is bounded by ground water and topographic divides along the Wai‘anae crest to the west, the Waialua- Wahiawā district boundary to the north, the Ko‘olau crest to the northeast, and the Ka’au rift zone to the southeast.

Southern O‘ahu is further divided into six smaller groundwater subareas. Groundwater resources beneath the Project Site emanate from two distinct aquifers within the Pālolo aquifer system. The shallow aquifer is classified as a basal, unconfined, sedimentary aquifer, occurring in non-volcanic lithology. The groundwater protection status is reported as potentially usable; however, it is not considered ecologically important, nor would it be recommended for use as drinking water. The groundwater within this aquifer is described as moderate salinity, replaceable, with a high vulnerability to contamination. The deeper aquifer is classified as a basal, confined, flank aquifer, occurring in horizontally extensive lavas. The groundwater protection status is reported as being currently used for drinking water purposes. The groundwater within this aquifer is described as fresh, irreplaceable, with a low vulnerability to contamination.

The closest potable water wells operated by the Honolulu Board of Water Supply (BWS) are located far inland of Waikīkī. Potable water sources closest to Waikīkī are within the Pālolo aquifer unit (5 million gallons per day (mgd), 30101 basal aquifer system) and Nuʻuanu aquifer unit (14 mgd, 30102 basal aquifer system) (Commission on Water Resources Management (CWRM), 2008). The hydrogeologic gradient in the vicinity of the Project Site is anticipated to be slight, with a general trend to the south. Groundwater levels may be influenced by leaking infrastructure, tidal fluctuations, and human activity. The direction and rate of groundwater flow across the Project Site is expected to be to the south and relatively slow. Shallow groundwater levels are anticipated to rise with future SLR, as discussed in *Section 4.4.5*.

Excavation during construction may require dewatering, which would be managed following the conditions of approval for a National Pollutant Discharge Elimination System (NPDES) Construction Dewatering permit from the HDOH, Clean Water Branch (CWB). The NPDES permit conditions will be administered in association with City permits for excavation and grading.

Potential Impacts and Mitigation Measures

The planned resort and commercial uses within the AMB Tower are similar to existing uses in the Village. Accordingly, the Project is not expected to significantly impact groundwater quantity or quality within, or down-gradient from, the site. Significant impacts to the coastal environment due to groundwater inputs are not expected from the project.

Potential short-term impacts to surface waters are related to construction activities, which are temporary in nature. Stormwater runoff will be minimized through compliance with HDOH and City regulations. Additionally, standard BMPs as discussed in *Section 4.8.1* will be employed to minimize impacts and will be detailed in subsequent construction plans. BMPs may include, but not be limited to, phasing of construction activities, use of temporary silt fencing and screens, the use of a stabilized construction ingress/egress, inlet protection, and temporary filter sock perimeter controls. With the implementation of BMPs, potential short-term impacts will be mitigated.

To mitigate potential stormwater runoff in the long-term, the use of LID measures and infiltration, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design, where feasible, and the Project will comply with applicable City Rules Relating to Water Quality, which are in place to protect water quality. Final treatment controls and BMPs will be assessed as the design phase continues. Additionally, source control BMPs, such as covering trash areas and loading docks and routing stormwater from paved areas to landscaped areas, will be included where necessary to prevent pollution of stormwater.

4.3.3 Botanical Resources

Existing Conditions

A Tree Assessment of the site was conducted by Tree Solutions and Environmental Consulting Services, Inc. which provides an inventory of existing botanical resources at the site, and recommendations regarding tree preservation, relocation, removal, and replacement. The report is included as *Appendix F*. The AMB Tower site currently consists of six trees, including plumeria and autograph trees, and 12 palms consisting of coconut and Traveler's palm (*Table 4.2*).

Table 4.2: Existing Tree and Palm Species	
Species	**Common Name**
Plumeria sp	Plumeria tree
Clusia rosea	Autograph Tree
Cocos nucifera	Coconut Palm
Ravenala madagascariensis	Traveler's palm

Figure 4.5 identifies the locations of the 18 total existing trees and palms. None of the trees and palms were assessed as exceptional, historic, or native.

Potential Impacts and Mitigation Measures

Landscaping and water features at the AMB Tower will complement and enhance the existing lush, garden-like setting of the Village and evoke a Hawaiian sense of place. The addition of lush landscaping along the tower's Ala Moana Boulevard street frontage will encourage a comfortable and relaxing pedestrian environment. The landscaping palette at the AMB Tower may consist of native, Polynesian-introduced, or tropical trees, palms, and shrubs of varying sizes that provide shade and screening. Landscaping will be consistent with the WSD Guidelines and will be finalized as Project design progresses.

As shown in *Figure 4.5,* seven trees and palms are located outside the AMB Tower building footprint, and are therefore candidates for preservation. If these trees and palms hinder construction, they may be transplanted or removed. Two autograph trees (Nos. 14 and 16) have good health and structure and are candidates for transplant, but may be considered for removal due to low species value. The coconut palms inventoried on site were all in good health. While coconut palms No. 9, 10 and 15 had minor trunk wounds/scars, all were considered to be candidates for transplant based on health and size. The two traveler's palms (Nos. 8 and 13) are not transplant candidates and are recommended for removal. Four plumeria trees (Nos. 6, 7, 11, and 12) are in fair to poor condition and are recommended for removal.

During tree removal, the general contractor will minimize the movement of plant or soil material to the extent possible in order to reduce the potential for spread of invasive species, including the Coconut Rhinoceros Beetle. In accordance with mitigation measures recommend by the DLNR DOFAW, all equipment, materials, and personnel will be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

As appropriate, the selection and use of native and Polynesian-introduced plants will be incorporated and will include the use of pohinahina (*Vitex rotundifolia*), aʻaliʻi (*Dodonaea viscosa*), kupukupu fern (*Nephrolepis cordifolia*), kalo or taro (*Colocasia esculenta*), naʻu or native gardenia (*Gardenia brighamii*), kokiʻo or native white hibiscus (*H. kokio*), hala (*Pandanus tectorius*), ʻulu or breadfruit (*Artocarpus altilis*), milo (*Thespesia populnea*), coconut trees (*Cocos nucifera*), Queen Emma spider lily (*Crinum augustum*), puakenikeni (*Fagraea berteroana*), and Singapore plumeria (*Plumeria obtusa*). The selection and use of native plants will be encouraged to express a Hawaiian sense of place and enhance the pedestrian experience throughout the HHV campus.

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Tree #	Species	Diameter (in)	Height (ft)	Crown Spread (ft)	Health	Structure	Mitigation	Comments
1	Coconut	-	25	15	Good	Good	Transplant	
2	Coconut	-	40	15	Good	Good	Transplant	
3	Coconut	-	40	15	Good	Good	Transplant	
4	Coconut	-	35	15	Good	Good	Transplant	
5	Coconut	-	35	15	Good	Good	Transplant	
6	Plumeria	16	20	15	Fair	Fair	Remove	2 trunks
7	Plumeria	8	10	5	Poor	Fair	Remove	
8	Traveler's Palm	-	10	15	Good	Fair	Remove	clump of 4 palms
9	Coconut	-	40	15	Good	Fair	Transplant	trunk wounds
10	Coconut	-	40	15	Good	Fair	Transplant	trunk wounds
11	Plumeria	-	10	10	Fair	Fair	Remove	
12	Plumeria	-	10	10	Fair	Fair	Remove	
13	Traveler's Palm	-	20	15	Good	Good	Remove	clump of 3 palms
14	Autograph	9	20	15	Good	Fair	Transplant/Remove	
15	Coconut	-	30	15	Good	Good	Transplant	minor trunk wound
16	Autograph	10	25	15	Good	Good	Transplant/Remove	
17	Coconut	-	30	15	Good	Fair	Transplant	minor trunk bend
18	Coconut	-	30	15	Good	Good	Transplant	

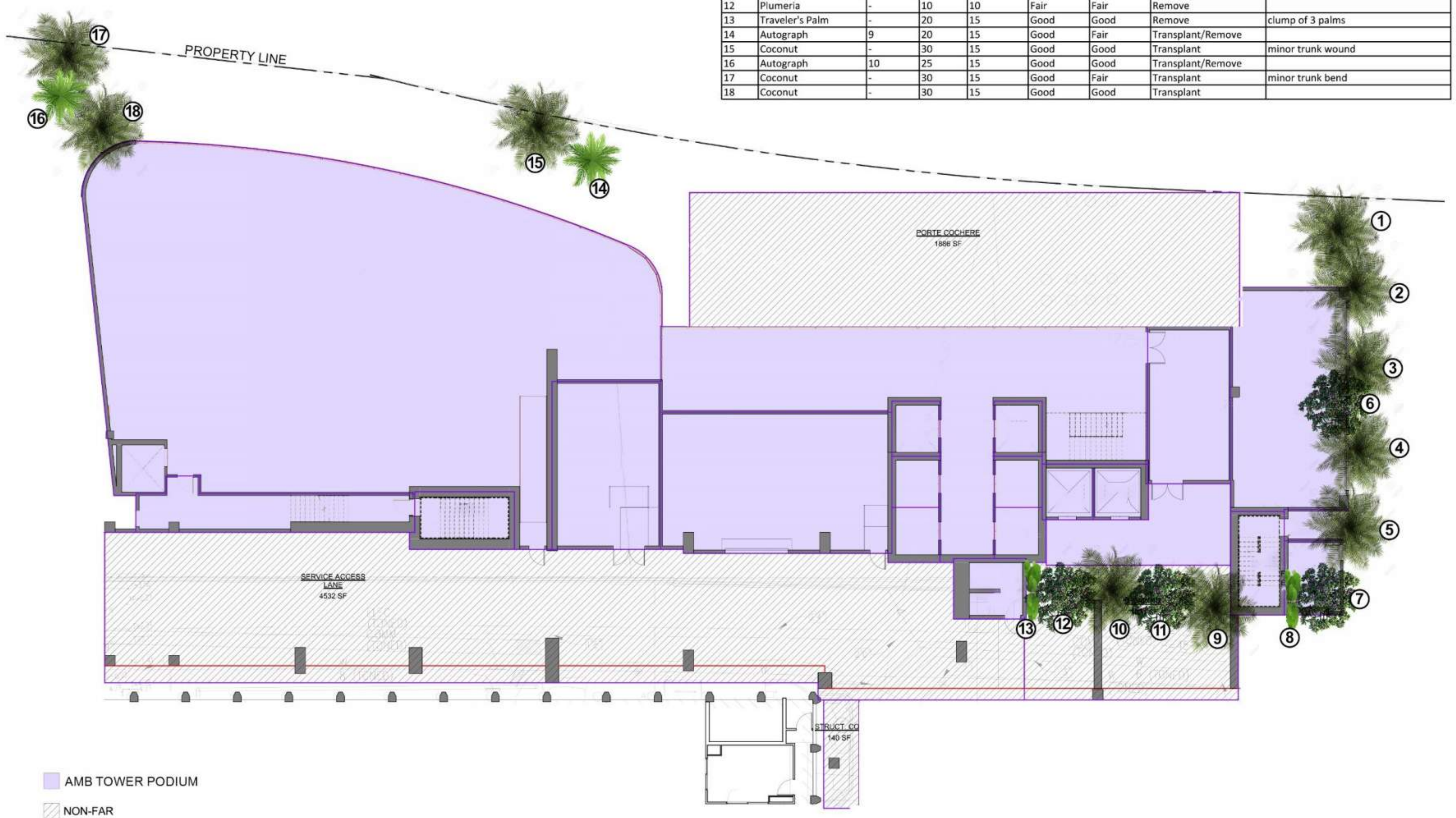

Figure 4.5 **Location of Existing Trees and Palms**

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The current landscape within the Village also includes valuable cultural and Polynesian-introduced plant material, including coconut (*Cocos nucifera*), ti (*Cordyline fruticosa*), taro/kalo (*Colocasia esculenta*), kukui (*Aleurites moluccana*), hau (*Hibiscus tiliaceus*), and milo (*Thespesia populnea*). These and other related plant materials that help tell of the rich, cultural importance of the original Polynesian plant introduction are important components of the Village landscape and would be enhanced, where appropriate, at the AMB Tower site.

In addition to appropriate native plants noted above, plants that will be considered for use at the AMB Tower include drought-tolerant plants that require less irrigation than traditional tropical landscape plantings. Plants that may be used include the oyster Plant (*Tradescantia spathacea*), natal plum (*Carissa macrocarpa and cultivars*), autograph tree (*Clusia rosea*), stephanotis (*Marsdenia floribunda*) and lignum vitae (*Guaiacum officinale*). In all, vegetation at the completed Project Site is anticipated to be significantly greater than currently exists.

4.3.4 Terrestrial Fauna and Avifauna

Existing Conditions

Terrestrial Fauna

Existing terrestrial fauna in the Project vicinity primarily consists of introduced, alien species common to urban environments including domestic dogs (*Canis familaris*), domestic cats (*Felis catus*), mongoose (*Herpestes auropunctatus*), rats (*Rattus spp.*) and mice (*Mus domesticus*).

The U.S. Fish and Wildlife Service (USFWS) advised that the Federal- and State-listed Endangered ′ōpe′ape′a, or Hawaiian hoary bat, (*Lasiurus semotus*) may occur in the Project vicinity (*Appendix A*). However, given the urbanized, developed character of the site, it is unlikely that the ′ōpe′ape′a occurs on the property.

Avifauna

In general, bird life in the Project area is modest in diversity and consists of introduced species such common mynah (*Acridotheres tristis*), cardinals (*Cardinalis cardinalis*), common pigeons (*Columba livia*), zebra doves (*Geopelia striata*), house finches (*Carpodacus mexicanus*), and rice birds (*Padda oryzivora).* These common birds are found throughout the urban areas of Honolulu.

The manu-o-kū or white tern (*Gygis alba rothschildi*) are also known to occur within the HHV campus and regularly fly above the Project area in small numbers. The manu-o-kū is a State-recognized indigenous seabird that is found on many Pacific islands and atolls. Prior to 1959, white terns were not known to breed in the main Hawaiian Islands and were found to be rare on O‘ahu. In the last two decades, they have been increasing in numbers and spreading across O‘ahu. They can now be seen regularly in greater Honolulu, and have successfully adapted to an urban environment. Manu-o-kū carry no special federal Protected, Endangered or Threatened status; however, they are listed by the State as Threatened. Additionally, the manu-o-kū is listed as protected species under the 50 Code of Federal Regulations, 10.13, Migratory Bird Treaty Act (MBTA).

USFWS advised that the following Federally-listed Endangered or Threatened species may occur in the Project vicinity: ‘akē‘akē or band-rumped storm-petrel (*Oceanodroma castro*), ‘ua‘u or Hawaiian petrel (*Pterodroma sandwichensis*), ‘a‘o (*Newell’s shearwater*) (*Appendix A*). Additionally, the MBTA-protected ‘ua‘u kani or wedge-tailed shearwater (*Ardenna pacificus*) may occur in the vicinity.

No Hawaiian waterbirds, such as the ae'o or Hawaiian stilt (*Himantopus mexicanus knudseni*), 'alae ke'oke'o or Hawaiian coot (*Fulica alai*), 'alae 'ula or common moorhen (*Gallinula chloropus sandvicensis*) or Hawaiian duck (*Anas wyvlliana*) are known to occur at or in the vicinity of the site. Additionally, no suitable wetland habitat exists on the property.

Critical Habitat

No federally delineated Critical Habitat exists on or close to the Project Site. Thus, modifications on the site will not result in impacts to federally designated Critical Habitat. No equivalent statute exists under State law.

Potential Impacts and Mitigation Measures

Terrestrial Fauna

Generally, impacts to the Hawaiian hoary bat may occur during the clearing and grubbing phase of construction. In the unlikely event that the Hawaiian hoary bat is present, trimming or removal of foliage and/or trees on the Project Site may temporarily displace individual bats using trees for roosting. During the pupping season, females carrying pups may be less able to rapidly vacate a roost site while vegetation is being cleared. Additionally, adult female bats sometimes leave their pups in the roost tree while they forage, and small pups may be unable to flee a tree that is being felled. However, as discussed in *Section 4.3.3*, the site has been highly developed and vegetation on the site consists of 18 trees or palms, minimizing the likelihood that the Hawaiian hoary bat will utilize the properties for roosting. Mitigation measures to minimize the potential for short- and long-term impacts to the Hawaiian hoary bat include the following:

- Clearing and grubbing of woody vegetation taller than 15 feet would be planned to occur outside of the bat pupping season between June 1 and September 15.
- Barbed wire will not be utilized for fencing.

Avifauna

The indigenous manu-o-kū are known to occur in urbanized areas of Honolulu such as the Project Site. Manu-o-kū carry no special federal Protected, Endangered or Threatened status; however, they are listed by the State as Threatened and are protected by the MBTA. Additionally, Hawaiian seabirds may transit over the Project area when flying during their breeding season (March through November).

The principal potential impact that construction poses to protected avifauna is an increased threat of being downed after becoming disoriented by lights during the nesting season. The following avoidance measures and construction BMPs may be implemented, as needed, in order to mitigate potential short-term impacts to avifaunal resources:

- Trees will be examined prior to cutting to determine if there are white terns nesting in them, especially during the white tern breeding season (January thru June);
- Trees with nesting white terns will not be trimmed or removed;
- If a white tern nest is discovered, the DLNR DOFAW may be contacted for assistance;

- If night-time construction activity or equipment maintenance is required, all associated lights shall be shielded downward. When large flood/work lights are used, they shall be placed on poles that are high enough to allow the lights to be pointed directly at the ground;
- If nighttime construction is required during the seabird fledgling season (September 15 to December 15), a qualified biologist may be present at the site to monitor and assess the risk of seabirds being attracted or grounded due to lighting. If seabirds are seen circling around the area, lights may then be turned off. If a downed seabird is detected, the general contractor shall follow the response protocol recommended by the DLNR DOFAW;
- In the long-term, exterior facility lighting shall be shielded downward to reduce the potential for interactions of nocturnally flying seabirds with external lights and manmade structures;
- If a nest of an avifaunal species described above is discovered during construction, 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. These standard guidelines are intended to protect chicks, and may be shortened if monitoring is conducted often enough to note when chicks have fledged (usually five to nine weeks after hatching);
- If a previously undiscovered nest is found after work begins or a downed seabird is found during the duration of construction, work will cease within a minimum radius of 100 feet of the nest, and USFWS will be contacted within 24 hours; and,
- Information about seabird fallout will be provided to staff working on the site prior to the initiation of work.

No long-term adverse impacts to avifauna are expected from operation of the AMB Tower. HHV will coordinate with the DLNR ~~Division of Forestry and Wildlife (~~DOFAW~~)~~ and USFWS as needed.

4.4 Natural Hazards

4.4.1 Hurricane and Tropical Storm

Existing Conditions

In Hawaiʻi, northeast tradewinds predominate throughout most of the year and generally range in velocity between 10 and 20 mph with tradewinds of 40-60 mph periodically occurring. When wind speeds exceed 70 mph, the storms are characterized as hurricanes. Hurricanes are also characterized by widespread heavy rains in excess of six inches, which may result in destructive flooding.

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 a 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 National Oceanic and Atmospheric Administration (NOAA) depicts storm surge flooding vulnerability for hurricane-prone coastal areas in the U.S., including Hawaiʻi, through its National Storm Surge Hazard maps. Data shows that the site could be vulnerable in Category 3 or 4 hurricane events (NOAA, 2018). The State of Hawaiʻi is located in the Central Pacific basin where hurricane season runs from June 1 to November 30 (HI-EMA, 2018).

Hurricanes occasionally approach the Hawaiian Islands, but rarely reach the islands with hurricane force wind speeds. Records show that strong windstorms have struck all major Hawaiian Islands. The first recognized hurricane in Hawaiian waters was Hurricane Hiki, a Category 4 storm that hit 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 not 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 Emergency Operations Center 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. The most recent storm to activate the EOC was Hurricane Douglas in 2020, which was the closest passing Pacific hurricane to the island of Oʻahu on record.

Potential Impacts and Mitigation Measures

It is difficult to predict when these events may arise, 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 is vulnerable to the damaging impacts of hurricanes. The coastal areas are more susceptible to damage caused by a combination of high winds and tidal surge. Inland areas, especially those in the 1 percent and 0.2 percent annual chance flood areas designated by Federal Emergency Management Agency (FEMA), are at risk due to heavy rains and flooding caused by storms. The Project Site is, however, no more or less vulnerable than the rest of Oʻahu to the destructive winds and torrential rains associated with hurricanes.

The AMB Tower will be designed to meet safety standards required for wind loads associated with hurricane force wind conditions. The National Weather Service provides guidance and issues a hurricane watch or warning when a storm is expected to make landfall. In the event of a hurricane or tropical storm, the Village will implement its emergency response plan at the AMB Tower to help protect the safety of guests and staff. Resort management and staff are trained in these special operational procedures. Guests would be directed by assigned resort staff to take appropriate action, which may include vertical relocation to higher floors to address the possibility of accompanying storm surge with high winds or relocation to an assigned shelter space on the property, depending on the conditions. The resort is also equipped with backup generators to maintain critical operational functions in the event of a power failure.

It is the resort’s policy to take care of its own guests in the event of an emergency. However, in the event that the AMB Tower requires a complete evacuation of guests and personnel, they will be taken to an off-site shelter. The closest assigned emergency public shelter is the Hawaiʻi Convention Center. Public shelters are selectively opened based on the severity of the storm and the land area that may be most heavily affected.

4.4.2 Earthquake

Existing Conditions

The majority of earthquakes in Hawai‘i are related to volcanic activity, particularly to the movement of magma beneath Kīlauea and Mauna Loa, on the island of Hawai‘i. Other earthquakes are the result of exerted pressures released by magma that never reaches the surface. The U.S. Geological Survey (USGS) conducted a probabilistic seismic hazards assessment for the State of Hawai‘i in 1997.

From this assessment, seismic zones were re-assigned for each county. The entire City and County of Honolulu lies in a seismic zone designated as Zone 2A.

Under the International Building Code (IBC) seismic provisions, a Zone 2A area could experience seismic activity between .075 and .10 of the earth’s gravitational acceleration (g-force). In comparison, Hawai‘i Island is classified as the highest seismic rating of Zone 4 due to its ongoing volcanic activity. This indicates that the island could experience severe seismic activity between .30 and .40 g-forces.

The last significant earthquake to hit Hawai‘i occurred in 2006, when a magnitude 6.7 earthquake struck Hawai‘i Island in the morning. The earthquake was felt and affected by neighboring islands, including O‘ahu, leaving many regions of the island without running water and power for the day.

Potential Impacts and Mitigation Measures

Seismic hazards are usually associated with causing damage including landslides, ground cracks, rock falls, and tsunamis. With a seismic zone rating of Zone 2A per the USGS, an earthquake is expected to cause only minor damage in the Project area. New development will be in compliance with the IBC and City standards, including earthquake design provisions. Further mitigative measures will include training resort staff in emergency response and evacuation procedures to assist employees and guests.

4.4.3 Flood Hazards

Existing Conditions

Based on the 2011 FEMA Flood Insurance Rate Maps (FIRM), the Project Site is located within Zone AE, indicating areas subject to inundation by the 1 percent annual chance flood event where the BFE has been determined (*Figure 1.7*). Zone AE is also considered a SFHA. For City regulatory purposes, the SFHA is considered a floodway area and is therefore subject to development standards articulated in ROH, Chapter 21A, Flood Hazard Areas (*Section 5.3.7*).

Discussion regarding passive flooding as a result of SLR is provided in *Section 4.4.5.*

Potential Impacts and Mitigation Measures

Design of the Project will comply with standards set forth in ROH, Chapter 21A (*Section 5.3.7*). As discussed in this Section and in *Section 4.8.1*, the site spans two BFE areas, and the highest 7-foot BFE will therefore be used. The finished floor elevation of AMB Tower is planned at 8.0~~7.5~~ feet above msl.

It is the resort's policy to implement its emergency response plan and take care of its own guests in the event of an emergency situation resulting from flood inundation. In the event that evacuation from the site is required, guests and personnel will be taken to the nearest assigned emergency public shelter, the Hawaiʻi Convention Center.

4.4.4 Tsunami Inundation

Existing Conditions

The sudden displacement of the ocean floor (earthquakes), landslides, or volcanism can generate tsunamis, which are a series of waves that can reach speeds of up to 600 mph. Upon reaching a coastline, a tsunami can become a wall of water reaching heights of 30 feet or more and capable of moving inland several hundred feet. Known major tsunami events in Hawaiʻi include the areas of East Hawaiʻi (1946, 1960, 1975) and North Shore Oʻahu (1952, 1957).

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; and, safe areas that are anticipated to be outside of the inundated areas. According to the City Department of Emergency Management Tsunami Evacuation Zone maps, the subject property is located within Tsunami Evacuation Zone (*Figure 4.6*). Therefore, there is potential for the Project Site to become affected by a major tsunami, if such an event were to occur.

Potential Impacts and Mitigation Measures

The actual impacts of tsunamis upon a particular area cannot be estimated beyond the possibility of the area sustaining heavy damage. The capacity of a structure to withstand the effects of a tsunami is dependent upon several factors including: the size and speed of the wave as it is transformed while approaching the shore, the type of structure, the site design and orientation of the structure and its surroundings, and the amount of debris that is swept in the movement of the wave.

The City has an emergency operations plan for evacuating areas potentially affected by a tsunami. Inland shelters have been identified, with the closest shelter to the AMB Tower being located at the Hawaiʻi Convention Center. Tsunami Warning signals from the State Civil Defense sirens will be audible during a tsunami alert event, which will serve to alert guests to safety instructions at AMB Tower. In the event of a Tsunami Warning, the Village will implement its emergency response plan at the AMB Tower, which outlines procedures for natural disaster events.

Guests would be directed by assigned resort staff to take appropriate action, which may include vertical relocation to higher floors to address the possibility of accompanying storm surge with high winds or relocation to an assigned shelter space on the property, depending on the conditions. The resort is also equipped with backup generators to maintain critical functions of operation in the event of a power failure.

It is the resort's policy to take care of its own guests in the event of an emergency. However, in the event that an emergency situation resulting from a tsunami requires evacuation from the site, guests and personnel will be taken to an off-site shelter. The closest assigned emergency public shelter is the Hawaiʻi Convention Center.

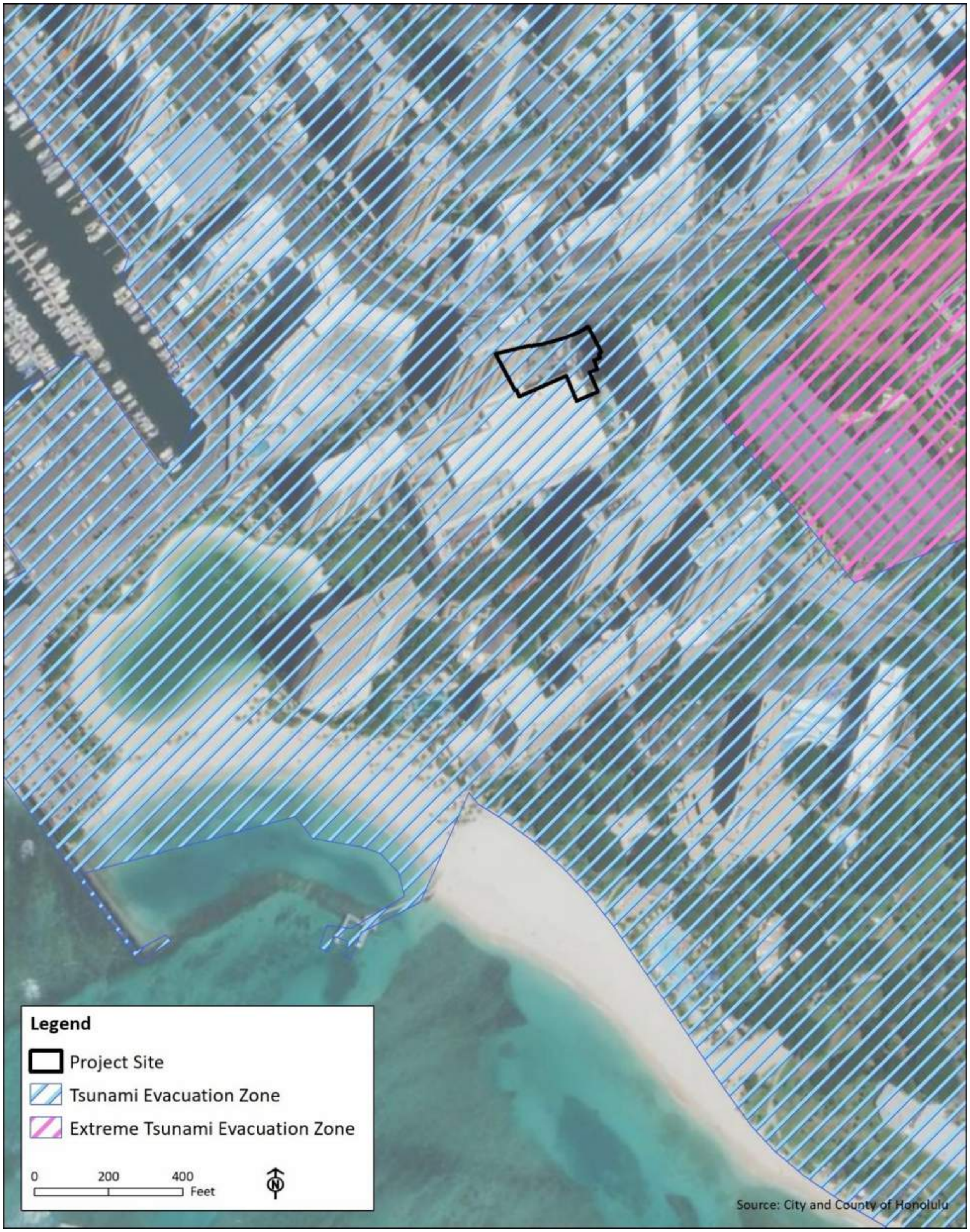

Figure 4.6 **Tsunami Evacuation Zone**

4.4.5 Climate Change and Sea Level Rise

Existing Conditions

The ocean is the largest solar energy collector on Earth. Not only does water cover more than 70 percent of our planet's surface, but it can also absorb large amounts of heat without large increases in temperature. The ability to store and release heat over long periods of time gives the ocean a central role in stabilizing the Earth's climate system.

GHG emissions are a driving factor behind the increase in global temperature and SLR. Increased amounts of GHG are preventing heat radiated from the Earth's surface from escaping into space as easily as it has in the past. Most of the excess atmospheric heat is passed back to the ocean, resulting in significantly increasing upper ocean temperatures over the past two decades.

Presently, the warming of ocean water is raising global sea level due to the expansion of ocean water as it warms. Land-based ice, such as glaciers and ice sheets, are also greatly affected by global warming. These reserves of ice are located in places like Greenland and Antarctica. Typically, they experience melting during the warmer months of the year and the ice is replenished in colder months. However, with the average year-round global temperatures rising, ice caps and glaciers are experiencing a disproportionate amount of melting at an accelerated rate.

SLR is an inevitable outcome of global warming that will continue through many centuries even if human-generated GHG emissions were eliminated today. Rising ocean levels will increasingly threaten natural ecosystems and human structures near coastlines around the world.

The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) provides projections of global mean SLR for four cases representing the climate response to GHG emission levels from different socioeconomic scenarios, referred to as Representative Concentration Pathways (RCPs). The RCPs describe possible climate futures based on how much GHGs are emitted. The "business as usual" (RCP8.5) scenario predicts a rise of 0.5 feet in 2030, 1.1 feet in 2050, 2.0 feet in 2075, and 3.2 feet in 2100. The RCP8.5 scenario is regarded as the most likely scenario and is used as the basis for modeling coastal hazards in the 2017 *Hawai'i Sea Level Rise Vulnerability and Adaptation Report*. This report was published by the Hawai'i Climate Commission and provides the first state-wide assessment for documenting Hawai'i's vulnerability to SLR. The report recommends planning for up to 3.2 feet of SLR by the year 2100 with potential increased adjustments based on new data and improved modeling.

Following this guidance issued by the State, under the Mayor's Directive 18-2 (2018), it is recommended that the City utilize the 3.2-foot Sea Level Rise Exposure Area (SLR-XA) model in the design of projects to minimize risks from climate change and SLR. The Hawai'i Sea Level Rise Viewer SLR-XA model developed by the Pacific Islands Ocean Observing System (PacIOOS) at the UH of Ocean and Earth Science and Technology (SOEST) models the potential impacts of SLR on future passive flooding, annual high wave flooding, and coastal erosion. The model indicates that the site is located within the 3.2-foot SLR-XA and therefore potentially subject to the combined effects of SLR (*Figure 4.7*).

Notably, the City Climate Change Commission is proposing to adopt a scenario that indicates 5.8 feet of SLR by 2100 for planning and design for government investment in public facilities and infrastructure. As of publication of this Draft SEIS, the guidance is pending formal policy review by the Honolulu City Council and Mayor.

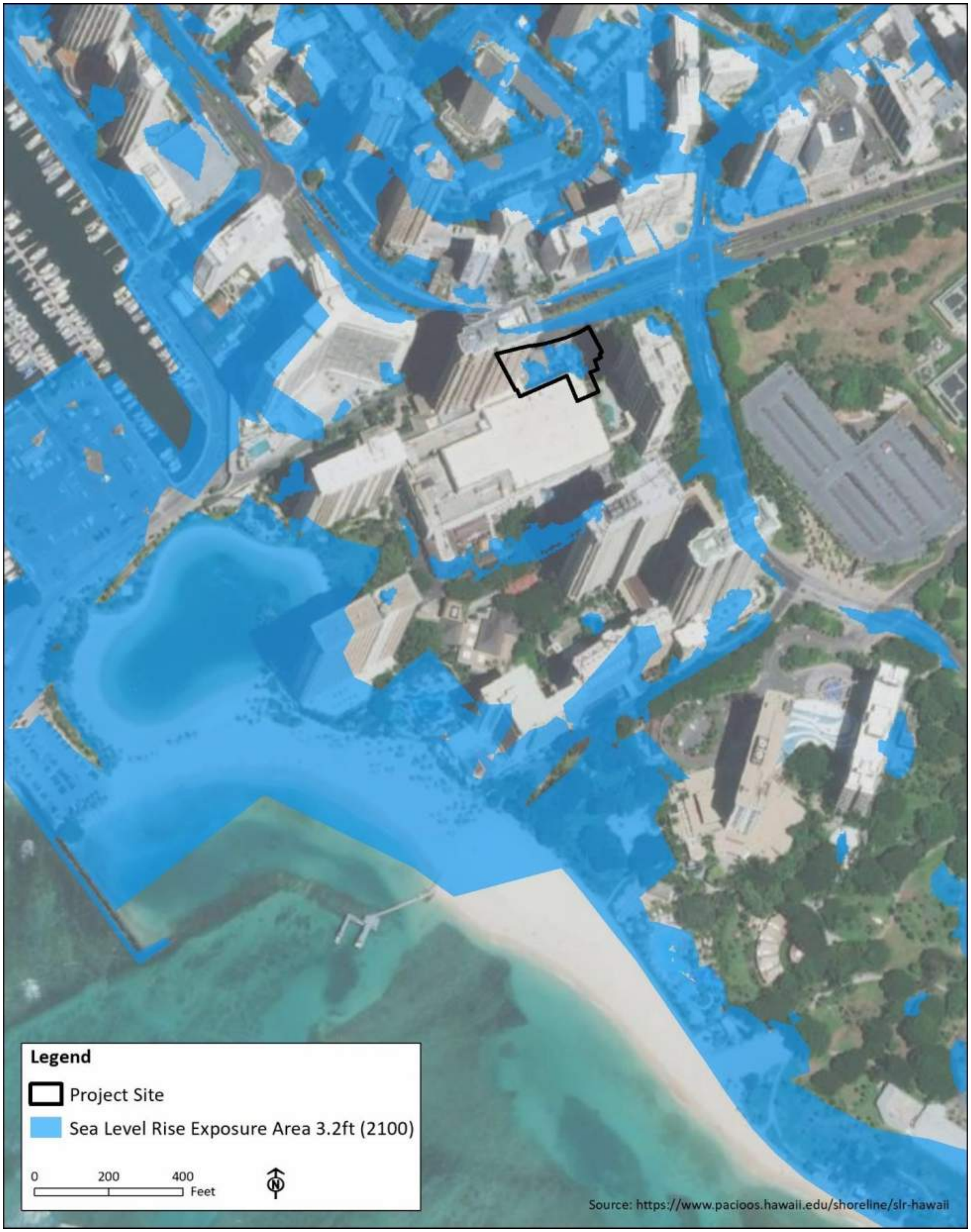

Figure 4.7 **3.2-foot Sea Level Rise Exposure Area (2100)**

Passive Flooding

As sea level rises, it exerts upward pressure on the lens of freshwater beneath the land surface, which causes the groundwater table to rise. Passive flooding occurs when groundwater percolates out of the ground in low-lying areas or ocean water overflows through storm drains. Passive flooding is exacerbated by rainfall as it prevents drainage and, as such, runoff and marine waters combine to produce larger impacts.

According to the PacIOOS SLR-XA model, the Project Site will experience an undetermined level of passive flooding due to the projected 3.2-foot rise in sea level by 2100, and the associated rise in shallow groundwater levels (*Figure 4.8*).

Annual High Wave Flooding and Coastal Erosion

In addition to passive flooding, SLR allows more wave energy to reach the shoreline. This results in higher wave runup and overtopping of the beach berm that may cause flooding along the shoreline edge of the HHV campus.

Coastal erosion is the process by which local SLR, strong wave action, and coastal flooding wear down or carry away rocks, soils, and sands along the coast. Erosion threatens the integrity of structures and infrastructure located along the coast. Moreover, beach loss results in a variety of negative economic, social, cultural, and environmental impacts.

A preliminary shoreline survey[1] of ~~T~~the ~~AMB Tower site~~ HHV campus was conducted in 2023 (*Figure 4.9*). The Project is located approximately 800 feet ~~from the nearest~~ inland of the shoreline. As such, the SLR-XA model does not anticipate the site to be affected by annual high wave flooding and coastal erosion as a result of 3.2 feet of SLR by 2100 (*Figures 4.~~9~~10 and 4.~~10~~11*).

Potential Impacts and Mitigation Measures

SLR is an inevitable part of the Hawai‘i's future. As such, the Project developer is committed to proactively planning and designing the AMB Tower to be resilient and address the impacts of higher ocean levels. This will ensure the ongoing successful, safe, and sustainable operation of the tower and entire Village for the foreseeable future. Additionally, as a member of the WBSIDA, HHV continues to support community stakeholders on a coordinated effort to address the effects of climate change and SLR in the region.

The site is situated approximately 800 feet inland from the shoreline and within the 3.2-foot SLR-XA. The PacIOOS model predicts that the site and surrounding roads will particularly be affected by future occasional passive flooding as a result of 3.2 feet of SLR. As such, the AMB Tower is designed with a finished floor elevation of 8.0~~7.5~~ feet above msl to prevent passive flooding into the building. Additionally, access to the tower will be provided on multiple levels to locate exits away from potentially flooded areas.

[1] The shoreline survey will be submitted to the DLNR for certification, as and when required by applicable law.

Figure 4.8 **Passive Flooding (3.2 feet of Sea Level Rise by 2100)**

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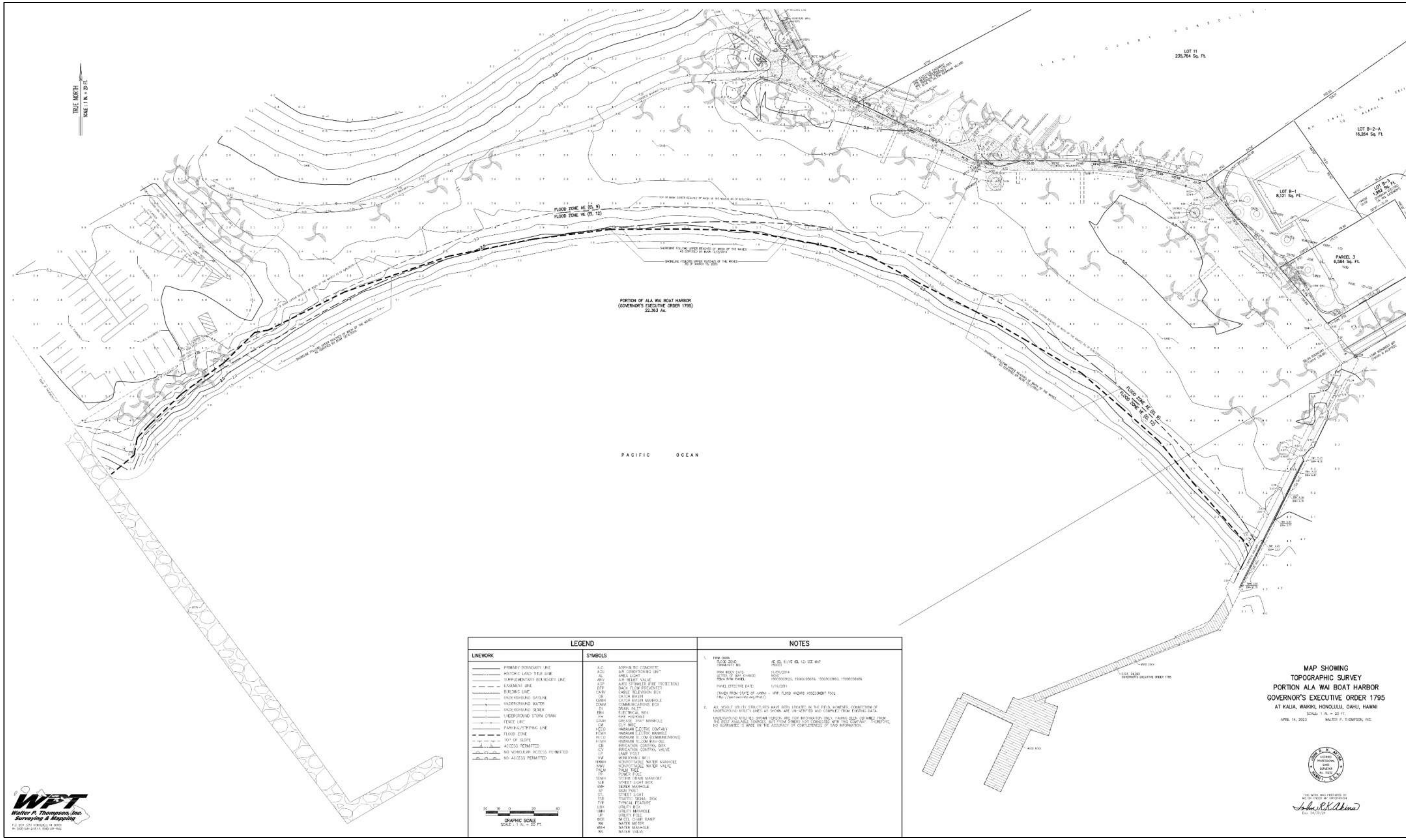

Figure 4.9 **Preliminary Shoreline Survey (2023)**

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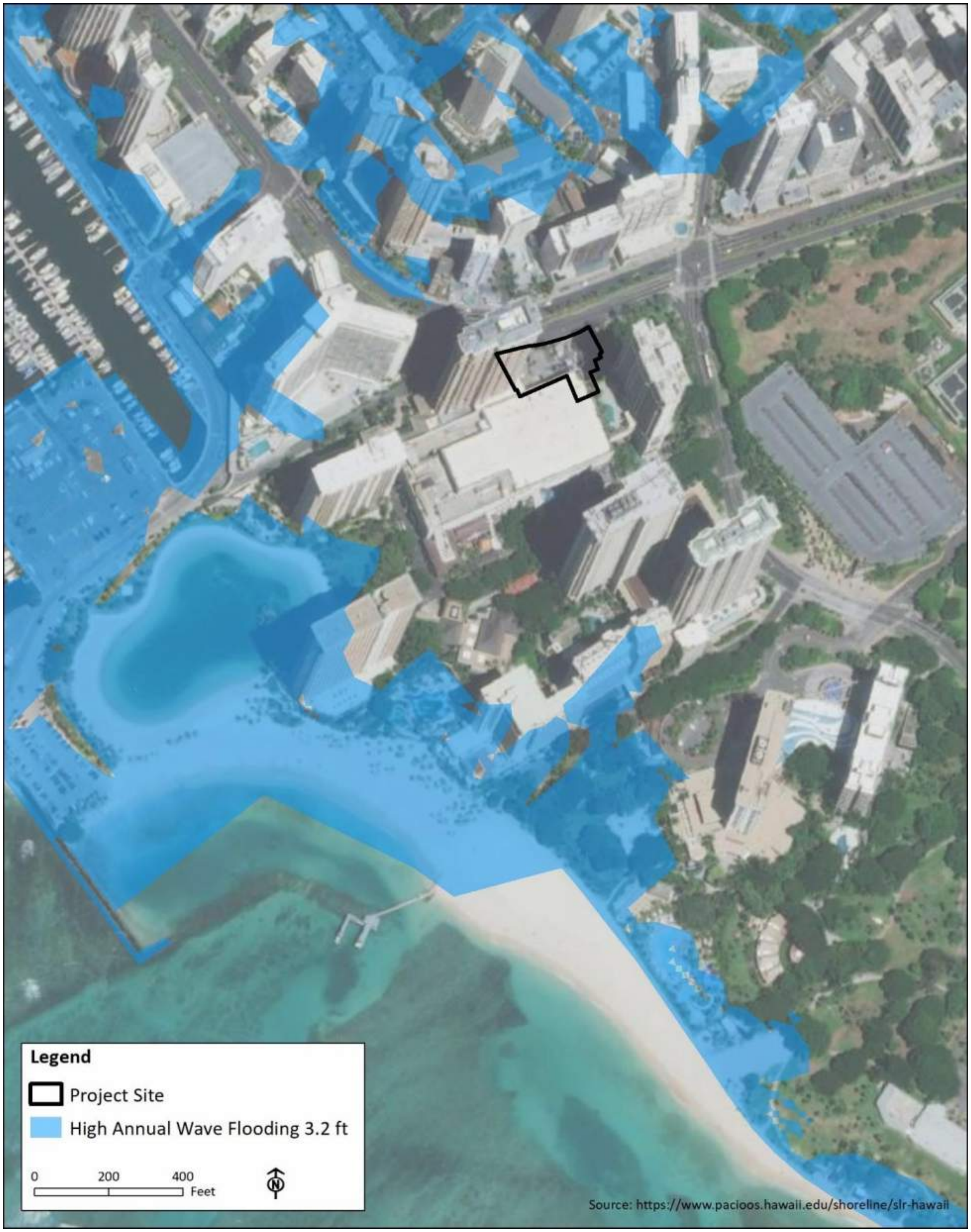

Figure 4.~~9~~10 Annual High Wave Flooding (3.2 feet of Sea Level Rise by 2100)

Figure 4.~~10~~11 **Coastal Erosion (3.2 feet of Sea Level Rise by 2100)**

Additional adaptation strategies will be integrated into the design to mitigate the effects of climate change and SLR, including the addition of landscaping and installation of LID, where feasible. The use of green infrastructure features may also be incorporated where feasible. In general, utility connections in new buildings are also vulnerable to the effects of SLR. As such, water meters, backflow preventers, electrical boxes, handholes, transformers, and equipment that could be damaged from flooding at the AMB Tower will be located at higher elevations, where feasible. Design will be finalized as the Project progresses.

As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV's longtime sustainability practices, including the implementation of various recycling programs for food, solid, and soap waste, the use of low flow water fixtures, and participation in Hilton's "Light Stay" program to manage energy and water consumption.

With the addition of the AMB Tower, at least 50 percent of the Village will remain as open space, and additional vegetation will be added to the Project Site, helping to control the overall urban heat island effect. The Project also supports non-motorized transportation, such as walking or biking, which should help mitigate additional GHG emissions. Guests of the AMB Tower will be able to take advantage of the area's high density of public transit services as an alternative to utilizing private vehicles. Parking facilities will include EV charging, and bicycle storage in compliance with the LUO will be provided.

4.5 Hazardous Materials

Existing Conditions

Since 2017, ENPRO Environmental has conducted several surveys and assessments of the three parcels that comprise the Project Site as part of the Applicant~~'s~~s' due diligence. The surveys are summarized in *Appendix G*. Environmental work and surveys took place in 2017 and 2022. Based on the surveys, no additional environmental work is anticipated to be required. This section details the findings of each assessment.

First, a survey of materials including asbestos-containing material (ACM), lead paint, arsenic-containing canec board, and fluorescent light ballasts and mercury-containing light tubes was conducted in April 2017. All samples collected and analyzed for suspect ACM did not contain asbestos. Additionally, lead-containing paint and canec were not present. Approximately 180 fluorescent light ballasts and 260 light tubes were inventoried, and it was determined that future evaluation would be needed to confirm whether the ballasts have polychlorinated biphenyls (PCB) capacitors and if fluorescent light tubes were mercury-containing. All such light ballasts and light tubes will be handled in compliance with applicable laws.

The Phase I Environmental Site Assessment (ESA) was subsequently prepared in May 2017 (*Appendix H*). The Phase 1 ESA consists of a review of environmental records and past land uses, interviews, and a site reconnaissance. Recognized environmental conditions (RECs) at the properties were identified. RECs refer to the presence or likely presence of any hazardous substance or petroleum product in, on, or at the property 1) due to any release to the environment, 2) under conditions indicative of a release to the environment, or 3) under conditions that pose a material threat of a future release to the environment. According to the Phase I ESA, evidence of RECs in connection with the Project Site included the following:

- Former underground storage tanks (UST): Evidence indicating historical existence of USTs was observed on the southern and southwestern portions of parcel 5 at 1835 Ala Moana Boulevard. One 1,000-gallon gasoline UST on the southeastern portion of the property and one 3,000-gallon gasoline UST on the southwestern portion were installed in 1966 and 1976, respectively. Both the 1,000-gallon and 3,000-gallon tanks were removed in November 1990 and replaced with a single 10,000-gallon gasoline UST on the southeastern portion of the property, partially overlapping the previous UST footprints. A fuel pump was installed on the eastern border of the property.
- The 10,000-gallon UST was removed on March 2, 2004 by M. Nakai Repair Service, Ltd. The soil and groundwater samples did not contain detectable levels of petroleum hydrocarbon constituents; therefore, DOH issued a “No Further Action” letter for the site on May 10, 2004. The 1,000-gallon and 3,000 gallon USTs represented a REC that may have impacted the Project Site because insufficient documentation existed for the UST removals and an undetected leak may have occurred.
- In-ground hydraulic lift equipment: Parcel 4 at 1831 Ala Moana Boulevard contains the existing ABC Store and other retail and restaurant uses. The property includes an elevator using in-ground hydraulic lift equipment. Hydraulic oil on the property is not known to have been sampled for PCBs. This was considered a REC as an undetected leak may have occurred.

Additionally, the following environmental conditions, which are not considered RECs, were observed during the Phase I ESA:

- Suspect pesticide application beneath slab foundations due to the age of buildings.
- Suspect asbestos containing building materials
- Suspect lead containing paint
- Ecologically sensitive areas

Based on the findings of the Phase I ESA, ENPRO concluded that additional investigation was warranted. The following was recommended:

- Due to the age of the buildings, there is potential that pesticides may have been applied for termite control beneath the slab foundations. This is not considered to be a REC, but it may be a concern at the time the building slab is removed. ENPRO recommended sampling sub-slab soils for pesticide content.
- Site assessment documentation was weak for the removal of the 1,000-gallon and 3,000-gallon gasoline USTs at parcel 5/1835 Ala Moana Boulevard. This is considered to be a REC because an undetected leak may have occurred. ENPRO recommended soil and groundwater sampling be conducted around the former UST and piping locations at 1835 Ala Moana Boulevard.
- An elevator with in-ground hydraulic lift equipment is present on parcel 4 located at 1831 Ala Moana Boulevard. Interviews with people knowledgeable of the property indicate that the hydraulic oil has never been sampled for PCBs. This is considered to be a REC because an undetected leak may have occurred. ENPRO recommended sampling the hydraulic oil for PCBs and sampling the surrounding soil for oil following the removal of the in-ground hydraulic lift equipment.

Recommendations of the Phase I ESA were subsequently undertaken in August 2017, and results were as follows:

- Phase II Elevator Hydraulic Fluid Sampling: Sampled hydraulic fluid from the elevator located at parcel 4 (1831 Ala Moana Boulevard). The results of the laboratory analyses indicated no PCBs. ENPRO concluded that when the elevator is removed from service, the oil can be managed as non-PCB containing.
- Phase II Geotechnical Boring Sampling: A Phase II investigation of subsurface soils at the Paradise Rent-A-Car location. ENPRO collected groundwater and soil samples from two borings. Soil samples were at two depths: 2 ½ - 3 feet below ground surface (bgs), and 5 - 5 ½ feet bgs. The laboratory analysis of soil and groundwater did not detect contaminants of potential concern at levels above HDOH Environmental Action Levels.
- Phase II Subsurface Soil and Groundwater Sampling: A Phase II investigation included three borings developed into temporary monitoring wells at parcel 5/1835 Ala Moana Boulevard. Two soil samples and one groundwater sample were collected from each boring. Laboratory analysis indicated that none of the contaminants of potential concern were detected in either the soil or groundwater samples. Based on the results of the laboratory analyses, ENPRO concluded that no further investigation was warranted.

Based on the above work, the following was determined:

- Structures at the site did not have asbestos.
- Paint on structures did not have detectable levels of lead.
- Light fixtures will need further evaluation.
- Groundwater and soil sampling did not detect contaminants of potential concern above regulatory levels.

In anticipation of archaeological investigation within the interior of the Kobe Steakhouse on parcel 6 (1841 Ala Moana Boulevard), in 2022, ENPRO collected soil samples from eight trenches and analyzed for petroleum hydrocarbons, organochlorine pesticides, arsenic and lead. Analytical results determined none of the soil sampled exceeded regulatory limits for commercial use. Based on this work, the following was determined:

- Structures at the site did not have asbestos
- Paint on structures did not have detectable levels of lead
- Light fixtures will need further evaluation
- All groundwater and soil sampling has not detected contaminants of potential concern above regulatory levels.
- Soils from shallow trenches from the interior of the Kobe Steakhouse did not exceed regulatory limits for commercial use.

Potential Impacts and Mitigation Measures

Overall, the results of several surveys conducted at the site found no evidence of asbestos or lead paint, and groundwater and soil samples did not detect contaminants of potential concern above regulatory levels. All conducted assessments described above have confirmed that the Project will not result in adverse impacts.

However, light features that will be removed on site may need to be further evaluated. Any existing hazardous materials may be disturbed during demolition and excavation. Potential hazardous materials will be handled in accordance with Federal, State, and City regulations, including those not evaluated as part of the assessments. Lamps containing mercury in fluorescent light tubes which are no longer used will be removed and transported to a permitted facility prior to demolition. During removal, PCB ballasts will be identified per label identification. In the event that leaking ballasts are encountered, special handling and disposal will be implemented. Other hazardous chemicals and petroleum products used on site will be handled in accordance with applicable Federal, State, and City regulations and stored in appropriate locations within the site.

In the long-term, development of the Project will remove potential hazardous materials from the site, resulting in a safer environment. No mitigation measures are proposed.

4.6 Public Services

4.6.1 Police Protection

Existing Conditions

The Waikīkī region is under the protection of the HPD District 6, which extends from the Ala Wai Canal to Diamond Head and consists of twelve beats (650 to 662). The Village is within District 6, Sector 1, Beat 653, which includes the area makai of Ala Moana Boulevard and Kalākaua Avenue to Saratoga Avenue. The HPD Waikīkī substation is located on Kalākaua Avenue at Prince Kūhiō Beach. In 2021, there were 2,219 reported offenses in District 6, a reduction from 3,499 in 2020 (HPD, 2021). The majority of the offenses were related to larceny (1,633 offenses).

Waikīkī is host to numerous events per year. District officers work with community partners including the WBSIDA, Waikīkī Business Improvement District, Visitor Aloha Society of Hawai‘i, Business Watch, Hawai‘i Hotel Security Association, and others, to create a safe environment for Waikīkī residents and visitors. The District’s Crime Reduction Unit offers classes to hotel personnel (management, security, and housekeeping) on crime trends that could affect their guests.

Potential Impacts and Mitigation Measures

During construction, the Applicants will implement BMPs to mitigate for potential impacts to the public safety of the surrounding environment. BMPs may include, but not be limited to, the following, as recommended by HPD:

- Necessary signs, lights, barricades, and other safety equipment must be installed and maintained by the contractor during construction.

- Adequate notification be made to business and residents in the area prior to deliveries or possible road closures, as any impacts to pedestrian and/or vehicular traffic may lead to complaints.
- Coordination between Village security and HPD will be ongoing to ensure adequate police coverage is provided during construction activities that require police-assisted traffic guidance.

During operation of the AMB Tower, the on-site population and surrounding HHV will increase with the additional hotel lodging accommodations and retail and gathering opportunities for residents and visitors. Completion of the Project may require additional private resort security for future operations. The Project will also ensure guests continue to be informed of proper safety recommendations to minimize opportunities for theft on-property. Where possible, the AMB tower will participate in State and City public safety programs, such as the newly launched Safe and Sound Waikīkī initiative.

4.6.2 Fire Protection

Existing Conditions

The Waikīkī region is in the Second Battalion area designated by the HFD. The region is served by three fire stations, which include the following stations:

- Station 2: The Pāwaʻa Fire Station is located at Makaloa Street approximately 0.5 miles north of the Project Site. The station includes a ladder company, an engine company, and a rescue company.
- Station 7: The Waikīkī Fire Station is located at the corner of Kapahulu Avenue and Paki Street approximately 1.5 miles southeast of the Project Site. The station includes a ladder and engine company.
- Station 29: The Mōʻiliʻili Fire Station is located on Date Street approximately 0.8 miles northeast of the Project Site, and includes a ladder and engine company.

First response for medical and fire emergencies at the Project Site and the surrounding area is provided by HFD Station 2. The other stations would respond in the event that additional support is needed for first response or alarm fire. Additionally, HFD works with the City Emergency Medical Services (EMS) to provide first response to emergencies.

Potential Impacts and Mitigation Measures

HFD confirmed that significant impacts to fire protection services related to the Project are not anticipated (*Appendix A*). Construction of 515 hotel units within the AMB Tower will increase the de facto service population at the site, which may impact the need for fire protection services. Coordination with BWS and HFD will be ongoing to ensure that the water supply provided on-site is capable of meeting required fire flow for fire protection needs. Additionally, fire water protection service would connect to the existing HHV lines located in the service roadway in the rear of the tower podium. See *Section 4.8.1* for further discussion regarding fire water service. To ensure the provision of fire apparatus access per the requirements of the National Fire Protection Association (NFPA) One fire code, construction drawings will be submitted to HFD for review.

4.6.3 Emergency Medical Services & Hospital Services

Existing Conditions

EMS provides pre-hospital emergency medical care and emergency ambulance service on O‘ahu. The City has 21 ambulance units under three districts. Waikīkī is under District 2 and is covered by an EMS unit at the Waikīkī Fire Station. All EMS ambulance units are designated as advanced life support units, guaranteeing staffing by at least one paramedic.

Paramedics work closely with other emergency first responders, including the U.S. Coast Guard, HFD, and the City Ocean Safety and Lifeguard Services Division (OS). OS is the primary first responder to emergencies arising on the beach and in nearshore waters, and is divided into five operational districts. Waikīkī is within the OS' South Shore operational district; however, the portion of Kahanamoku Beach fronting the Village is not currently monitored by OS lifeguards.

A Straub Doctors on Call (SDOC) clinic is located on the second floor of the Rainbow Bazaar. SDOC offers a range of non-emergency medical care services, including urgent care, diagnosis and treatment of illness, pharmacy, laboratory, and x-ray for visitors and employees. Additionally, the Waikīkī Health Clinic (WHC) is a private non-profit community health center that provides non-emergency comprehensive services. WHC is located approximately one mile from the Village in Waikīkī on O‘ahu Avenue.

Kapi‘olani Medical Center for Women and Children (KMC), and the Queen's Medical Center (QMC) are the two primary main healthcare and emergency facilities that would service guests or visitors at the Village. KMC is located approximately 1.2 miles north of the site on Punahou Street, while QMC is approximately three miles northwest from the site on Punchbowl Avenue.

Designated resort staff and security are trained in first aid and cardiopulmonary resuscitation (CPR) as a preliminary response to emergencies at HHV while awaiting first responders.

Potential Impacts and Mitigation Measures

Short-term impacts to emergency medical and hospital services are not anticipated and no mitigation measures are required. Long-term operation of the AMB Tower will increase the de facto service population through the addition of hotel units and the provision of amenities. Resort staff and security will continue to be trained in first aid and CPR as a response for addressing emergencies on site while awaiting first responders. Resort guests will also be advised on available health care services, as necessary.

4.6.4 Educational Facilities

Existing Conditions

The Waikīkī community is part of the State Department of Education's (DOE) Kaimukī-McKinley-Roosevelt Complex Area. The State DOE public schools closest to AMB Tower include Ala Wai Elementary; Jefferson Elementary; Washington Middle School; Kaimukī High School; and McKinley High School.

Potential Impacts and Mitigation Measures

The Project does not involve construction of residential units, and is therefore not expected to affect existing educational facilities near the Project Site. No mitigation measures are proposed.

4.6.5 Libraries

Existing Conditions

The State public libraries closest to the Village include the McCully-Mōʻiliʻili Library, Waikīkī-Kapahulu Library, and Main State Library in downtown Honolulu.

Potential Impacts and Mitigation Measures

The AMB Tower project is not expected to affect existing library facilities near the Project Site; therefore, no mitigation measures are proposed.

4.6.6 Public Parks

Existing Conditions

Public parks provide open space and a natural outdoor environment for both residents of Hawaiʻi and tourists to enjoy. The following State and City public parks are within Waikīkī and walking distance to the AMB Tower: Duke Kahanamoku Beach Park; Fort DeRussy Beach Park; Ala Moana Regional Park; Ala Wai Community Park; Ala Wai Neighborhood Park; Ala Wai Promenade, Don Ho Memorial Park (formerly known as Beach Walk Triangle); King Kalākaua Park; Kūhiō Avenue Mini Park; Kūhiō Beach Park; Honolulu Zoo, Kapiʻolani Park, and Princess Kaʻiulani Triangle.

While not publicly-owned, the Village campus includes various recreational opportunities for HHV guests and the public, including the 4.6-acre Duke Kahanamoku Lagoon. Under the existing PD-R, over 50 percent of the current 22.24-acre HHV campus is dedicated to open space.

Potential Impacts and Mitigation Measures

Construction of the AMB Tower site will not affect surrounding existing public park facilities; therefore, no mitigation is recommended. Redevelopment of the site for the AMB Tower will support and enhance existing connections to public parks and recreational resources in the Project vicinity. Additionally, open space at the Village campus will remain relatively unchanged at over 50 percent (*Section 3.3.6*).

4.7 Roadways and Circulation

A Traffic Impact Report (TIR) was prepared in April 2022 by Wilson Okamoto Corporation to identify and assess potential traffic impacts resulting from the construction and operation of the AMB Tower (*Appendix I*). Additionally, Wilson Okamoto Corporation conducted a Sidewalk Assessment to analyze the existing pedestrian environment and provide recommendations on the design of sidewalks in the vicinity of the AMB Tower (*Appendix J*). A summary of the studies is provided below.

4.7.1 Traffic

Existing Conditions

The Project Site is located in a densely developed area with a high volume of pedestrian and vehicular traffic. A majority of patrons to the existing site utilize non-motorized methods such as walking or biking. Existing vehicular access to the properties is along Ala Moana Boulevard, a State-owned road managed by the State Department of Transportation (HDOT), Highways Division. In the vicinity of the Project Site, Ala Moana Boulevard is a predominantly six-lane, two-way divided roadway generally oriented in the east-west direction. Northwest of the Project Site, Ala Moana Boulevard intersects Hobron Lane, a predominantly two-lane, two-way City roadway that is generally oriented in the north-south direction. East of the intersection with Hobron Lane, Ala Moana Boulevard intersects Kahanamoku Street, a predominantly two-lane, two-way private roadway generally oriented in the north-south direction providing access to adjacent hotel uses. Further east, Ala Moana Boulevard intersects with ‘Ena Road at the southbound approach and Kālia Road at the northbound approach. ‘Ena Road is a predominantly two-lane, two-way City roadway between Kalākaua Avenue and Ala Moana Boulevard. In the vicinity of the Village, Kālia Road is a predominantly five-lane, two-way City roadway generally oriented in the north-south direction.

The TIR studied the following three intersections, and based its analysis on the Project Site’s general morning (AM) and afternoon (PM) peak traffic hours of 7:15 to 8:15 AM and 4:00 to 5:00 PM:

1. Ala Moana Boulevard and Hobron Lane
2. Ala Moana Boulevard and Kahanamoku Street
3. Ala Moana Boulevard and Kālia Road/‘Ena Road

Figure 4.~~11~~12 shows baseline lane configurations at the three study intersections.

Level of Service (LOS) is a qualitative measure describing the condition of traffic flow, ranging from ideal or free-flow traffic operating conditions at LOS A to unacceptable or potentially congested traffic operating conditions at LOS F. The City recognizes LOS D as the minimum acceptable LOS for its intersections in most urban areas. In the vicinity of the Project area, study intersections operate at LOS E or above. Intersections that operate at LOS E, which is considered unacceptable by the City and County of Honolulu, include the following: Hobron Lane northbound and southbound approaches to Ala Moana Boulevard in the PM peak hour; Kahanamoku Street northbound approach to Ala Moana Boulevard during both the AM and PM peak hour; Kālia Road northbound approach to Ala Moana Boulevard during both the AM and PM peak hour; and, the ‘Ena Road southbound approach to Ala Moana Boulevard during both the AM and PM peak hour. No intersections currently operate at LOS F.

Table 4.3 summarizes existing LOS and vehicle counts for each study intersection during the AM and PM peak hours. Existing (Year 2021) LOS and vehicle count estimates are based on HDOT’s Year 2017 counts provided prior to the COVID-19 pandemic and resulting reduction in traffic. A growth rate of 1.04 was applied to the Year 2017 traffic data to develop the baseline traffic counts that represent Year 2021 conditions. Refer to the TIR for more details on the study methodology.

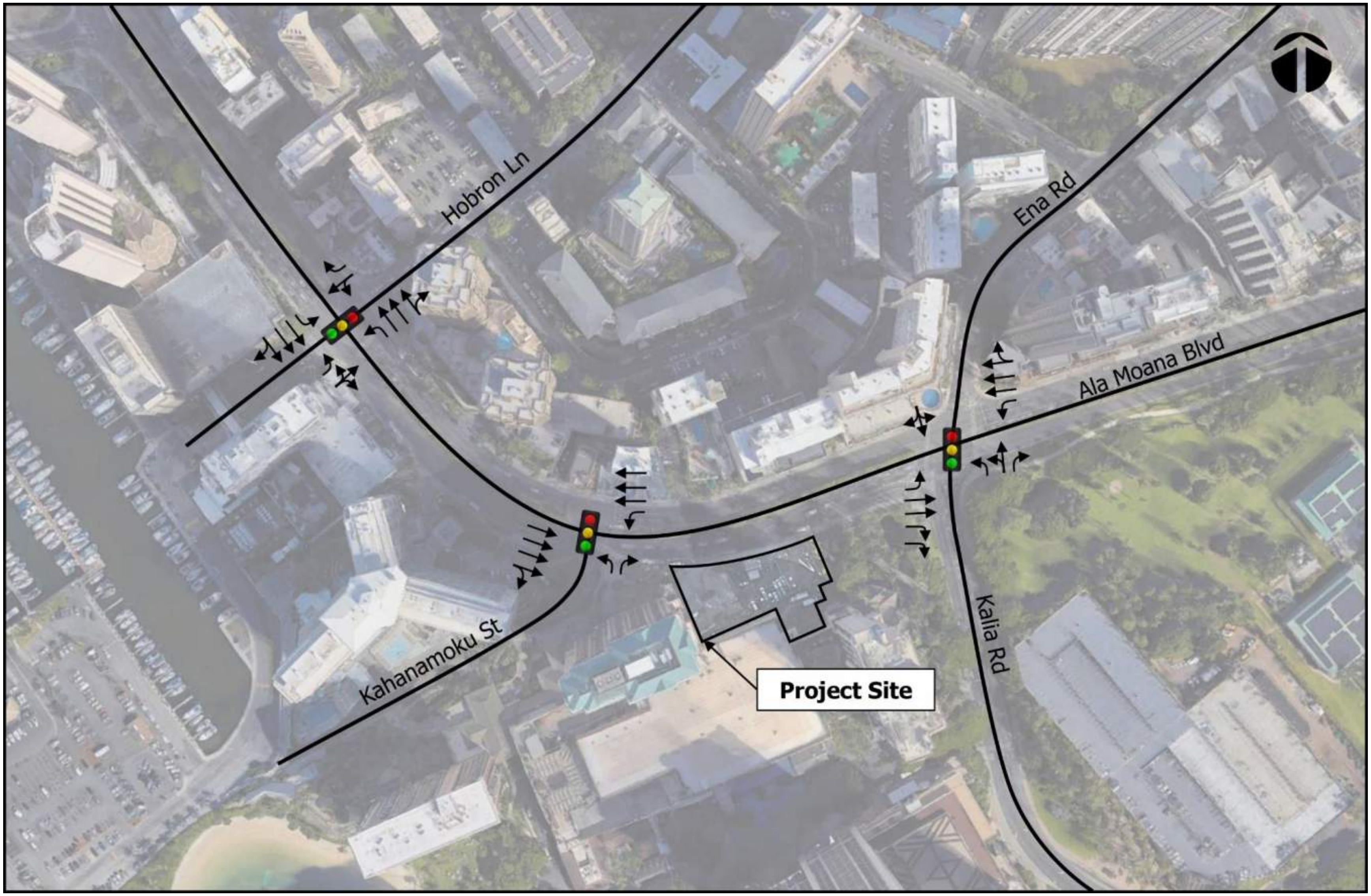

Figure 4.1~~1~~2 **Baseline Peak Hour Traffic Volumes and Lane Configurations**

Table 4.3: Existing Levels of Service and Vehicle Count During AM and PM Peak Hours					
Study Intersection		Existing LOS		Peak Period Traffic Volume	
		AM	PM	AM	PM
1. Ala Moana Boulevard and Hobron Lane	Ala Moana Boulevard & Hobron Lane Intersection	EB: D WB: D	EB: D WB: D	EB: 1,103 WB: 906	EB: 1,741 WB: 1,202
	Hobron Lane Approach	NB: C SB: D	NB: E SB: E	NB: 224 SB: 453	NB: 263 SB: 394
2. Ala Moana Boulevard & Kahanamoku Street	Ala Moana Boulevard & Kahanamoku Intersection	EB: A WB: A	EB: A WB: A	EB: 1,024 WB: 929	EB: 1,473 WB: 1,151
	Kahanamoku Street Approach	NB: E	NB: E	NB: 141	NB: 235
3. Ala Moana Boulevard and Kālia Road/ʻEna Road	Ala Moana Boulevard & Kālia Road/ʻEna Road Intersection	EB: D WB: C	EB: D WB: D	EB: 924 WB: 781	EB: 1,473 WB: 841
	Kālia Road Approach	NB: E	NB: E	NB: 392	NB: 635
	ʻEna Road Approach	SB: E	SB: E	SB: 111	SB: 145

Abbreviations:

NB: Northbound SB: Southbound EB: Eastbound WB: Westbound

At the intersection with Hobron Lane, Ala Moana Boulevard carries 1,103 vehicles eastbound and 906 vehicles westbound during the AM peak period. During the PM peak period, the traffic volumes are higher with 1,741 vehicles traveling eastbound and 1,202 vehicles traveling westbound. The eastbound and westbound approaches operate at LOS D during both peak periods. Vehicular queues periodically form on the Ala Moana Boulevard approaches of the intersection with the most significant queuing occurring during the PM peak period. Most of these queues cleared the intersection after each traffic signal cycle change. Hobron Lane carries 224 vehicles northbound and 453 vehicles southbound during the AM peak period. During the PM peak period, the overall traffic volume on Hobron Lane is 263 vehicles traveling northbound and 394 vehicles traveling southbound. The northbound approach of Hobron Lane operates at LOS C and LOS E during the AM and PM peak periods, respectively, while the southbound approach operates at LOS D during the AM peak period and LOS E during the PM peak period.

At the intersection with Kahanamoku Street, Ala Moana Boulevard carries 1,024 vehicles eastbound and 929 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 1,473 vehicles traveling eastbound and 1,151 vehicles traveling westbound. The eastbound and westbound approaches of Ala Moana Boulevard operate at LOS A during both peak periods. Vehicular queues periodically form on the Ala Moana Boulevard approaches with the most significant queuing occurring during the PM peak period. Most of these queues cleared the intersection after each traffic signal cycle change.

Kahanamoku Street carries 141 vehicles and 235 vehicles northbound during the AM and PM peak periods, respectively. The northbound approach operates at LOS E during both peak periods. Vehicular queues periodically form on the Kahanamoku Street approach of the intersection with the most significant queuing observed during the PM peak period. Most of these queues cleared the intersection after each traffic signal cycle change.

At the intersection with Kālia Road/ʻEna Road, Ala Moana Boulevard carries 924 vehicles eastbound and 781 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 1,473 vehicles traveling eastbound and 841 vehicles traveling westbound. The eastbound approach of Ala Moana Boulevard operates at LOS D during both peak periods, while the westbound approach operates at LOS C and LOS D during the AM and PM peak periods, respectively. Vehicular queues periodically form on the Ala Moana Boulevard approaches of the intersection with the most significant queuing observed on the eastbound approach during the PM peak period. Most of these queues cleared the intersection after each traffic signal cycle change, but occasionally vehicles had to wait for more than one traffic signal cycle length.

The Kālia Road approach of the intersection carries 392 vehicles and 635 vehicles northbound during the AM and PM peak periods, respectively. The northbound approach operates at LOS E during both peak periods. ʻEna Road carries 111 vehicles southbound during the AM peak period and 145 vehicles during the PM peak period. The southbound approach also operates at LOS E during both peak periods. The low levels of service on the side street approaches of Kālia Road and ʻEna Road are influenced by the split phasing of this intersection. Vehicular queues periodically form on the Kālia Road approach of the intersection with the most significant queuing occurring during the PM peak period, sometimes extending to the intersection with Rainbow Drive. Most of these queues cleared the intersection after each traffic signal cycle change.

Potential Impacts and Mitigation Measures

Construction

Subject to market conditions and receipt of necessary entitlements and permits, construction for the Project is anticipated to start in late 2024 or 2025, and should be completed in approximately 30 months by 2027. Short-term traffic impacts from construction activities are anticipated during this duration as the result of the following: increases in truck traffic associated with removal and redistribution of excavation spoil or with imported fill materials and delivery of construction materials; increases in automobile traffic associated with construction workers travelling to and from the site; and, reductions in existing street capacity from temporary lane closures necessary for the construction of Project facilities.

Given the high volume of pedestrian and vehicular traffic in the Project area and in anticipation of short-term, construction-related impacts, a preliminary CMP has been prepared and included in the TIR. A more detailed CMP may be considered once specific details regarding construction activities are available. BMPs to minimize conflicts with traffic during construction will be implemented wherever feasible and may include, but are not limited to, the following:

- Designate parking areas for construction-related vehicles and construction workers, and ensure no parking, queueing, or staging of construction-related vehicles occur outside of the designated construction area.
- Monitor ingress and egress of Project areas to allow safe passage of pedestrians and ensure effectiveness of management strategies along construction areas.
- Construction materials and equipment should be transferred to/from the Project Site during off-peak traffic hours to minimize any potential disruption to traffic on adjacent streets.
- Maintain existing pedestrian, bicycle, and vehicle access/crossings with the highest safety measures during construction.
- Implement BMP controls at the construction site to prevent dirt and debris from being carried off-site onto the surrounding roadways.

- Document existing roadway conditions prior to the start of construction and repair any damages as result of the construction of the proposed project. Ensure repairs meet American with Disabilities Act (ADA) requirements.
- Obtain the necessary street usage permits from the appropriate State or City agency for any construction-related work that may require ~~the~~ temporary lane closures along the adjacent roadways, including, but not limited to, a permit to perform work within the State ROW and permit to operate oversize vehicles and loads.
- Coordinate construction activities with and submit Project plans to the Department of Transportation Services (DTS), Public Transit Division (PTD) to ensure the Project development does not affect public transit services.

The majority of the construction work for Project is expected to take place between 8:30 AM and 3:00 PM. Occasionally, it may be necessary for construction work to occur during the evening hours, as well as on weekends to minimize impacts to surrounding uses. Should this occur, appropriate clearances and approvals will be obtained to ensure noise disruptions are within acceptable limits. In addition to on-site work, lane closures along Ala Moana Boulevard may be required to facilitate work within the public ROW. Since some of the construction activities will affect the surrounding roadways, traffic control plans (TCPs) will be prepared and submitted to the reviewing agencies for approval. The following general guidelines are provided for potential road closures associated with the project.

- All closures will generally be planned within the standard working hours for work along State roadways of 8:30 AM to 3:00 PM. Should closures outside of these hours be required, the necessary approvals from the appropriate reviewing agencies will be obtained. In addition, appropriate traffic control devices for more long-term closures may be implemented to ensure visibility and safety.
- The TCPs should be phased when possible to avoid overlapping closures and simultaneous detours.
- If work is occurring on the same block, the closures should be concurrent with each other instead of staggered to minimize the weaving of traffic. In addition, any required closures may be coordinated to ensure that simultaneous detours are not required. HPD Special Duty Officers may be utilized during working hours to facilitate vehicular traffic flow while temporary traffic control measures are implemented.
- Should 24-hour closures requiring pedestrian detours be necessary to facilitate work, safe and accessible alternate accommodations that are located on the same side of the roadway and in conformance with the ADA will be provided. In addition, BMPs to ensure pedestrian safety will be considered, including, but not limited to, covered walkways and temporary lighting.
- Where possible, the contractor may consider phasing or minimizing pedestrian closures to maintain access to the maximum feasible during construction.

Operation

The methodology used to generate anticipated trips from Project operation is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 10th Edition," 2017. ITE trip generation rates are developed empirically by correlating vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per hotel room. Notably, the planned retail space within the AMB Tower is expected to be comparable in size to the total square footage of the existing commercial uses on the west portion of the Project Site. In addition, similar to existing conditions, the majority of patrons are expected to originate from adjacent uses using non-motorized methods (walking, biking, etc.). As such, the retail space within the hotel is not expected to generate new trips within the Project vicinity.

The trip generation methodology also accounts for multi-modal trips made utilizing non-motorized modes such as walking and biking, as well as trips made using transit. Given that the proposed development will be located in an area with limited parking, high volumes of pedestrian traffic, and a high density of attractive destinations, guests associated with the Project may elect to use alternative modes of transportation rather than drive. As such, the trips generated by the Project were adjusted to account for the use of alternate modes of transportation.

Cumulative AM and PM peak hour traffic conditions in Year 2027 (the project's estimated completion year) both with and without the AMB Tower are summarized in *Table 4.4*. Under Year 2027 Without Project conditions, traffic operations along Ala Moana Boulevard are anticipated to remain the same. At the intersection with Hobron Lane, the eastbound and westbound approaches of the intersection are expected to continue operating at LOS D during both peak periods, whereas the northbound and southbound approaches are expected to continue operating at LOS E or better during both peak periods. Similarly, at the intersection with Kālia Road/ʻEna Road, traffic operations on the eastbound and westbound approaches of the intersection are anticipated to continue operating at LOS D or better while the side street approaches are expected to continue operating at LOS E during both peak periods. As with existing conditions, low LOS on the side street approaches are influenced by high volume of through traffic along Ala Moana Boulevard and the split phasing of the northbound and southbound approaches of the intersection. The remaining study intersection at Kahanamoku Street is also anticipated to continue operating similar to baseline conditions.

Under Year 2027 With Project conditions, traffic operations in the vicinity of the AMB Tower are generally expected to remain similar to Without Project conditions. As previously discussed, the high volume of through traffic along Ala Moana Boulevard and the split phasing at the study intersections contribute to the lower levels of service on the side streets approaches of the intersection. At the intersection with Kahanamoku Street, the Ala Moana Boulevard approaches of the intersection are expected to continue operating at LOS A during both peak periods whereas the northbound approach is expected to continue operating at LOS E during both peak periods. Traffic operations at the intersections with Hobron Lane and Kālia Road/ʻEna Road are also anticipated to continue operating at levels of service similar to Without Project conditions. See *Table 4.4*.

HHV will continue to work with HDOT regarding impacts to Ala Moana Boulevard or other surrounding intersections and access points, as needed.

Table 4.4: Baseline and Projected Year 2027 (Without and With Project) LOS Traffic Operating Conditions							
Study Intersection	Approach/ Critical Movement	AM			PM		
		Baseline	Year 2027		Baseline	Year 2027	
			W/o Project	W/ Project		W/o Project	W/ Project
1. Ala Moana Boulevard and Hobron Lane	Eastbound	D	D	D	D	D	D
	Westbound	D	D	D	D	D	D
	Northbound	C	C	D	D	D	D
	Southbound	E	E	E	E	E	E
2. Ala Moana Boulevard and Kahanamoku Street	Eastbound	A	A	A	A	A	A
	Westbound	A	A	A	A	A	A
	Northbound	E	E	E	E	E	E
3. Ala Moana Boulevard and Kālia Road/ʻEna Road	Eastbound	D	D	D	D	D	D
	Westbound	C	C	C	D	D	D
	Northbound	E	E	E	E	E	E
	Southbound	E	E	E	E	E	E

4.7.2 Multi-Modal Facilities

Existing Conditions

Pedestrian Facilities

The Project Site is located in Waikīkī, which is characterized by a high density of inviting destinations, high pedestrian traffic, and limited parking. Along Ala Moana Boulevard, continuous sidewalks are provided on both sides of the roadway with pedestrian crossings facilitated by curb ramps and protected pedestrian signal phases at the signalized intersections with Hobron Lane and Kālia Road/ʻEna Road. Although trees and other landscaping features are provided along the sidewalks to increase the attractiveness of these facilities, the overall pedestrian environment is influenced by the presence of high volumes of vehicular traffic along this regional roadway. In addition, pedestrian connectivity and convenient access along this segment of Ala Moana Boulevard is impacted by the long distance between the intersections with Hobron Lane and ʻEna Road/Kālia Road with no opportunities for midblock crossing within 1,100 feet.

The pedestrian environment improves south of the Project Site. The planned Project will be integrated into the HHV campus, which includes a network of internal pedestrian connections to facilitate access to the various commercial and recreational destinations within the resort. The provision of open space, trees that provide intermittent shade, other landscaping treatments, and wayfinding signs further enhance the resort environment. Further south of the HHV along Kālia Road, there are open green spaces such as the Fort DeRussy Beach Park with pedestrian walkways that lead to other destinations within Waikīkī.

In addition to the TIR, a Sidewalk Assessment was conducted by Wilson Okamoto Corporation to analyze the existing pedestrian environment and provide recommendations on the design of sidewalks in the vicinity of the AMB Tower (*Appendix J*). Pedestrian survey counts during the AM peak hours of 6:00 AM to 9:00 AM and PM peak hours of 3:00 PM to 6:00 PM were conducted at the following two intersections as part of the Sidewalk Assessment:

1. Ala Moana Boulevard and Kahanmoku Street
2. Ala Moana Boulevard and Kālia Road/ʻEna Road

Pedestrian volumes and specific environmental conditions related to the effective walkway widths were used to determine Pedestrian Levels of Service (PLOS) ratings. The PLOS rating, generally similar to vehicular operating LOS designations, identifies the operational characteristics of a pedestrian facility as PLOS A through PLOS F, where PLOS A representing ideal operating conditions and PLOS F representing undesirable pedestrian conditions.

The existing pedestrian sidewalk along the Project Site frontage on Ala Moana Boulevard includes an 8-feet wide pedestrian sidewalk. Taking into account the existing shy distances from the roadway, adjacent buildings, and walkway obstructions such as traffic signs, the maximum effective sidewalk width along this segment of Ala Moana Boulevard is between 3.5 feet and 4 feet. The most constricted width is located adjacent to the traffic signs near the west end of the Project Site. During the PM peak hour, there are approximately 702 pedestrians utilizing this segment of sidewalk along Ala Moana Boulevard between Kahanamoku Street and Kālia Road. The PLOS for this sidewalk segment is PLOS A under baseline conditions which indicates that there is more than sufficient room for pedestrians to freely move in their desired path without needing to adjust their movements in response to other pedestrians along the walkway.

Bicycle Facilities

Bicycle facilities in the vicinity of the Project are currently limited. The nearest dedicated bike facility is located northeast of the Project along Kalākaua Avenue approximately 0.25 miles away from the Project Site (*Figure 4.13~~2~~*). In addition, although there are several bike share stations located within the Waikīkī area, the nearest bike share station is located about 0.25 miles away from the project. Lack of convenient access to these facilities could dissuade the use of this mode in the vicinity of the project.

Public Transit Facilities

There are several existing transit resources located in the vicinity of the Project (*Figure 4.14~~3~~*). These facilities are provided by TheBus, which is operated by Oʻahu Transit Services (OTS) for the City. Within a 0.25-mile-radius of the Project Site, there are total of five bus stop locations serving seven unique routes. The nearest bus stops picking up east-bound passengers are located approximately 630 feet west of the Project frontage in front of the Ilikai Hotel and Luxury Suites (Bus ID 884, Ala Moana Boulevard + Hobron Lane) and approximately 757 feet southeast of the site at the Grand Islander Bus Terminal (Bus ID 886, Kalia Road + Paoa Place). The nearest bus stops picking up westbound travelers are located directly across the street (Bus ID 879, Ala Moana Boulevard + Opp Kalia Road) and at approximately 650 feet west of the Project Site (Bus ID 880, Ala Moana Boulevard + Hobron Lane). Access to the nearby bus stops is via pedestrian facilities along Ala Moana Boulevard and Kālia Road.

The provision of transit amenities, such as shelters and/or seating areas, are provided at bus stops, providing a more comfortable experience for transit passengers.

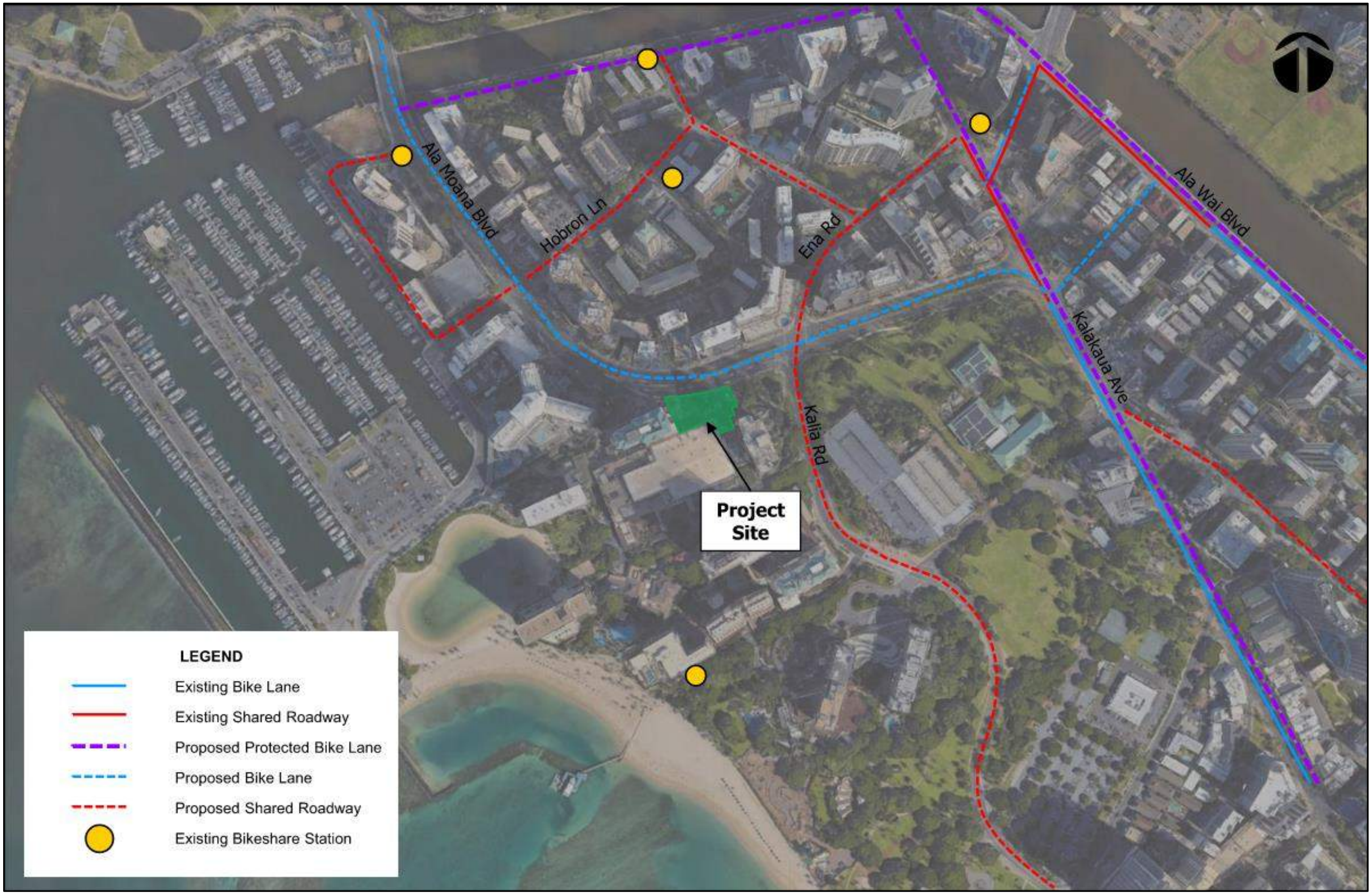

Figure 4.13~~2~~ **Existing and Proposed Bicycle Facilities**

Bus Stop (Stop ID)	Bus Route
Ala Moana Blvd + Hobron Ln (880)	20, 23, 42, E
Ala Moana Blvd + Hobron Ln (884)	20, 23, 42, E, W1, W2, W3
Ala Moana Blvd + Opp Kalia Rd (879)	20, 23, 42
Kalia Rd + Maluhia St (878)	20, 23, 42, E
Kalia Rd + Paoa Pl (886)	20, 23, 42, E, W1, W2, W3

Figure 4.14~~3~~ **Existing Transit Facilities**

In addition to services provided by TheBus, there are several trolley routes that serve the vicinity of the project. These services are provided by Waikīkī Trolley, Oli (JTB), Lealea (H.I.S.), and JALPAK. The nearest trolley stops to the Project are located at the adjacent Ilikai Hotel and near the Aqua Palms Waikīkī Hotel, both along Ala Moana Boulevard. The primary route for trolleys near the Project Site utilizes Ala Moana Boulevard to travel between Waikīkī and outside attractions in Honolulu. In addition, there is a trolley bus terminal located on the ground floor of the Grand Islander tower within the HHV that is served by trolleys, shuttles, and commercial buses.

Potential Impacts and Mitigation Measures

Pedestrian Facilities

Figure 3.26 illustrates the planned at-grade pedestrian circulation throughout the HHV campus and connections to surrounding public pedestrian facilities including sidewalks and crosswalks. The majority of visitors to the AMB Tower are expected to access the site from the front of the building along Ala Moana Boulevard, although multiple points of access from adjacent HHV buildings will be provided at different levels of the tower podium. The Project is expected to add 371 additional pedestrians to the study intersections during the PM peak hour, for a cumulative total of 1,073 pedestrians. Sidewalk modifications are planned along the Project Site frontage on Ala Moana Boulevard to provide access between on-and off-site uses, as well as a pedestrian connection separate from the sidewalk along roadway.

Previous design of the AMB Tower proposed narrowing the sidewalk in this segment from 8 feet to 6 feet to accommodate the AMB Tower’s new porte cochere, as well as landscaping features. As a result, the Sidewalk Assessment found that this portion of Ala Moana Boulevard would operate at a lower PLOS C, indicating that there would be sufficient space for normal walking speeds, but pedestrians would frequently need to adjust their paths to avoid conflicts. As such, design of the AMB Tower was refined to maintain the 8-foot-wide sidewalk width to continue to provide comfortable operating conditions for pedestrians.

Development of the tower along Ala Moana Boulevard will enhance the immediate pedestrian surroundings and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus. Planned improvements to enhance the street frontage include landscaping with water features and an opening, welcoming porte cochere. The tower podium will also include ground level retail comprised of the ABC Store and outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape.

Bicycle Facilities

There are plans by the City to increase the availability of bicycle facilities along the roadways in the Project vicinity (*Figure 4.13~~2~~*). These improvements are included in the *O‘ahu Bike Plan* published by the City DTS, most recently updated in 2019. These improvements provide for the installation of buffered bike lanes along Ala Moana Boulevard to connect to improved bicycle facilities from Kalākaua Avenue to Fort Street Mall in Downtown Honolulu (Project I.D. 1-62). In addition, Hobron Lane, ‘Ena Road, and Kālia Road are expected to be designated as shared roadways with street signage and sharrows installed to alert motorists to share the roadway with bicyclists. Although the addition of these facilities is expected to increase the availability of bicycle facilities in the vicinity of the project, the timeline for these improvements is unknown.

Existing pedestrian, bicycle, and vehicle access/crossings will be maintained with the highest safety measures during construction to the extent practicable. In the long-term, guests of the AMB Tower will be able to take advantage of the area's high density of attractions in close proximity, which encourages non-motorized transportation modes, including walking and biking. Additionally, secured bicycle parking storage areas will be designated, consistent with the LUO. The Project developer may coordinate with the City DTS and the HDOT in the development of bicycle facilities proposed by the City and State bike plans in the vicinity of the Project and may consider incorporating bicycle facilities within the Project or coordinating with Bikeshare Hawaiʻi or similar entities to explore implementing a bikeshare dock station on-site or in the vicinity .

Public Transit Facilities

Project plans will be coordinated with and submitted to the DTS-PTD to minimize impacts to public transit services. The surrounding community and industry groups will be kept informed of potential impacts to surrounding multi-modal facilities, as needed.

No long-term impact to public transit facilities is anticipated. Guests of the AMB Tower will be able to take advantage of the area's high density of public transit services as an alternative to utilizing private vehicles.

4.7.3 Access and Parking

Existing Conditions

Primary vehicular access to the Project site is currently ~~will be~~ provided via ~~a new porte cochere along~~ three existing driveways along Ala Moana Boulevard (*Figure 3.24*). ~~served by two one-way driveways. Secondary a~~ Access for commercial freight vehicles ~~will be~~ is provided via an existing fourth driveway at the east of the Project Site, which connects to an existing service lane that provides access to adjacent HHV uses, including the Mid-Pacific Conference Center and Coral Ballroom parking garage. ~~This service lane will provide valet operations at the AMB Tower a connection to the parking garage, as well as access to service and loading areas.~~

Potential Impacts and Mitigation Measures

As discussed in *Section 3.3.7.1*, valet, drop-off, and limited self-park access to the Project will be provided via a two-lane, one-way driveway serving the new porte cochere along Ala Moana Boulevard, with separate entrance and exit points (*Figure 3.25*). Vehicles dropping off guests will exit the porte cochere onto Ala Moana Boulevard. Valet and self-park vehicles will utilize a new on-site connection that will provide direct access to the Coral Ballroom parking garage, thereby avoiding the need for garage-bound vehicles to return to Ala Moana Boulevard. Valet vehicles will return to the porte cochere from the parking garage via Lagoon Drive and Kahanamoku Street, as shown in *Figure 3.25.*

Guests may elect to self-park at the Coral Ballroom parking garage or within the AMB Tower podium. As part of the TMP that will be prepared ~~as the Project~~ for the Project ~~progresses~~, HHV will provide guests with access to the existing Coral Ballroom parking garage and will direct guests who elect to self-park during their stays to access the parking garage via Kahanamoku Street or Rainbow Drive, as shown in the Preliminary Circulation Plan (*Figure 3.25*). Vehicular access to the parking stalls within the AMB Tower podium will be provided via a connection to the Coral Ballroom parking garage.

Both valet and self-parking for the Project is expected to be accommodated within the AMB Tower podium and adjacent Coral Ballroom parking garage~~, as well as elsewhere within the campus~~. As discussed in *Section 3.3.8*, the LUO does not promulgate off-street parking requirements for the Project as it is located within the PUC DP area. Additionally, the site is located within a dense area that is accessible by various modes of transportation. To meet anticipated demand, the AMB Tower podium will add approximately 50 parking stalls to the HHV campus. Additionally, the adjacent Coral Ballroom parking garage will be reconfigured to recapture 36 stalls. Overall, the total parking provided at the HHV campus will increase from 1,844 to 1,930 off-street parking stalls. Parking may be adjusted as design progresses.

To ensure safe access and circulation at the site, mitigation measures as proposed in the TIR will be implemented, as appropriate:

- Appropriate signage to direct motorists to the parking garage for self-parking or to utilize valet services at the porte cochere will be provided.
- Provide sufficient turning radii at all Project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.
- Clearly delineate the pedestrian route between the Project Site and the Coral Ballroom parking garage on Floor 5 of the AMB Tower podium, including provision of adequate signage to direct those who self-park within the parking garage. Ensure these routes are in conformance to the ADA.
- If pedestrian access between Coral Ballroom parking garage and the Project is intended to be provided on the ground level, adequate pedestrian connections to/from the parking garage that are in conformance with the ADA will be provided. Access would be clearly delineated with pavement markings/striping and wayfinding signs posted at key decision points to direct visitors to their intended destinations on-site, and adequately lit to increase pedestrian safety at all hours.

Parking for employees of the AMB Tower may be accommodated throughout the HHV, as needed. The TMP prepared for the Project will include TDM strategies, while existing TDM programs ~~Additionally, transportation demand strategies~~ already implemented for HHV employees, such as bus passes, will apply to employees of the AMB Tower.

4.7.4 Loading and Delivery

Existing Conditions

ROH, Section 21-6 establishes off-street loading requirements and standards. When more than one loading area is required, specific dimension provisions must be met. At least one third of the loading spaces must be built to meet the dimension requirements of 12 feet long by 35 feet wide, with a minimum vertical clearance of 14 feet. The remaining stalls may have horizontal dimensions of 8.5 feet long by 19 feet wide and a vertical clearance of at least 10 feet.

Off-street loading requirements for the Project are set forth in the existing PD-R approved in 2011 for the Village. Under the 2011 PD-R, the total required number of off-street loading stalls for the HHV campus is 43. At present, 44 off-street loading stalls are provided throughout the Village, for an excess of one stall.

Potential Impacts and Mitigation Measures

ROH, Section 21-6.30 allows for on-site joint use of loading stalls on lots with more than one use. Since the Project includes both hotel lodging and retail/commercial uses, a 20 percent reduction in off-street loading stalls is permitted. As such, the AMB Tower will require six additional loading stalls to the overall Village campus, increasing the total required number of off-street loading stalls from 43 to 49.

Five additional loading stalls will be provided within the AMB Tower podium and the HHV campus currently contains one excess stall, therefore the required total of 49 off-street loading stalls will be provided with the Project. See *Table 3.5* for a summary. The stalls will comply with required dimensions articulated in the LUO.

A loading dock will be constructed in the rear of the building on the ground floor. Access to the dock will be provided from the existing service lane that is connected to a driveway along Ala Moana Boulevard.

Delivery management strategies, including enforcement of parking restrictions and management of loading/unloading times, use of additional attendants or security, and the development of a delivery schedule program will be employed to alleviate congestion in specific loading areas.

4.8 Infrastructure and Utilities

A Preliminary Engineering Report (PER) was prepared by BCH, a Bowers + Kubota Consulting Inc. Company, for the Project (*Appendix K*). The report verifies existing utilities, including drainage, water supply, wastewater treatment and disposal, solid waste, electricity and telecommunications, and gas. The PER discusses potential impacts of the project, and proposes mitigation measures. A summary of the report is provided below.

4.8.1 Drainage

Existing Conditions

Based on the 2011 Federal Emergency Management Flood Insurance Rate Maps (FIRM), the Project Site is located within Zone AE, indicating areas subject to inundation by the 1 percent annual chance flood event and where the base flood elevation (BFE) has been determined (*Figure 1.7*). The AMB Tower site spans two BFEs. The BFE at the west portion of the site closest to the Grand Waikikian is 7 feet above msl, while the middle of the site straddles both the 7-foot and 6-foot elevation boundary. The eastern portion of the site is entirely within the BFE of 6 feet msl (*Figure 4.154*).

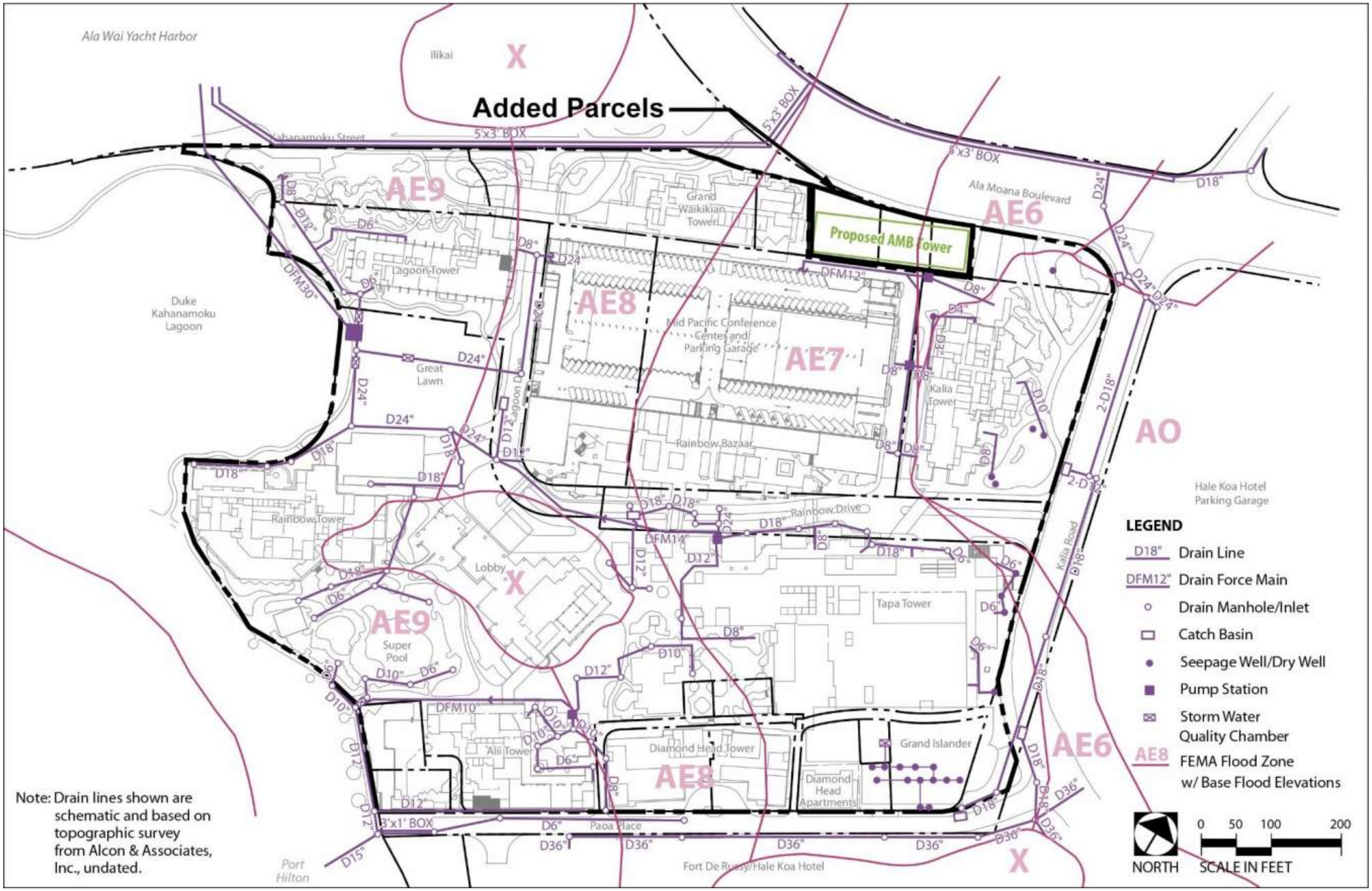

Figure 4.1~~5~~4 **Existing Drainage System**

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Potential Impacts and Mitigation Measures

The anticipated stormwater runoff flows (Q) for the Project are provided in *Table 4.5*. See *Figure 4.16~~5~~* for the drainage basins referenced in the table. *Table 4.5* indicates that construction of the AMB Tower is estimated to increase runoff towards Ala Moana Boulevard by 0.35 cubic feet per second (cfs) due to alterations of the drainage patterns towards a different drainage area. Additionally, ~~it~~ the Project may increase runoff within the HHV campus by 0.85 cfs due to the proposed drainage connection.

Table 4.5: Stormwater Runoff Summary						
Drainage Basin	**Drainage Direction**	**Existing Runoff Q (cfs)**	**Developed Runoff Q (cfs)**	**Net Change Q (cfs)**	**Mitigation with BMPs**	**Net Change Q (cfs)**
1	Ala Moana Boulevard	1.17	1.52	0.35	-0.35	0~~.35~~
2	Behind AMB Tower/onsite	1.38	0	-1.38	0	-1.38
3	HHV Campus	1.36	2.21	0.85	0	0.85
Total		3.91	3.73	-0.18	-0.35	-0.~~18~~53

Source: BWS Water System Standards, 2002, Table 100-18.

To mitigate potential impacts to drainage patterns, the use of LID measures and infiltration recommended in the PER, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design. As illustrated in *Table 4.5*, the implementation of BMPs that reroute stormwater runoff to another location on the HHV campus are anticipated to mitigate the potential increase in stormwater runoff onto Ala Moana Boulevard. Drainage improvements will comply with all applicable regulations and code requirements, including the City's Rules Relating to Water Quality. As part of the requirements, geotechnical drilling and testing of the site may be conducted to determine infiltration rates and water surface elevations, and to help in determining other strategies to mitigate stormwater runoff and minimize adverse impacts to the drainage system. Design of the mitigation measures will be finalized as the Project progresses.

At the south of the Project site, improvements needed to connect the AMB Tower to the existing parking garage and to utilize the existing service lane for loading dock access will require connections to the existing HHV drainage system. ~~As previously stated, p~~ Portions of the existing drainage system may also require rerouting based upon tower footings, columns, and walls used to connect the tower to the existing parking garage. Improvements made to the pump to accommodate both the existing condition and proposed increase in runoff will be evaluated as the design is further refined. Additional infiltration methods may also be considered where feasible to mitigate the anticipated net increase. Adverse impacts to the surrounding drainage systems are not anticipated with implementation of adequate mitigation measures installed on the property.

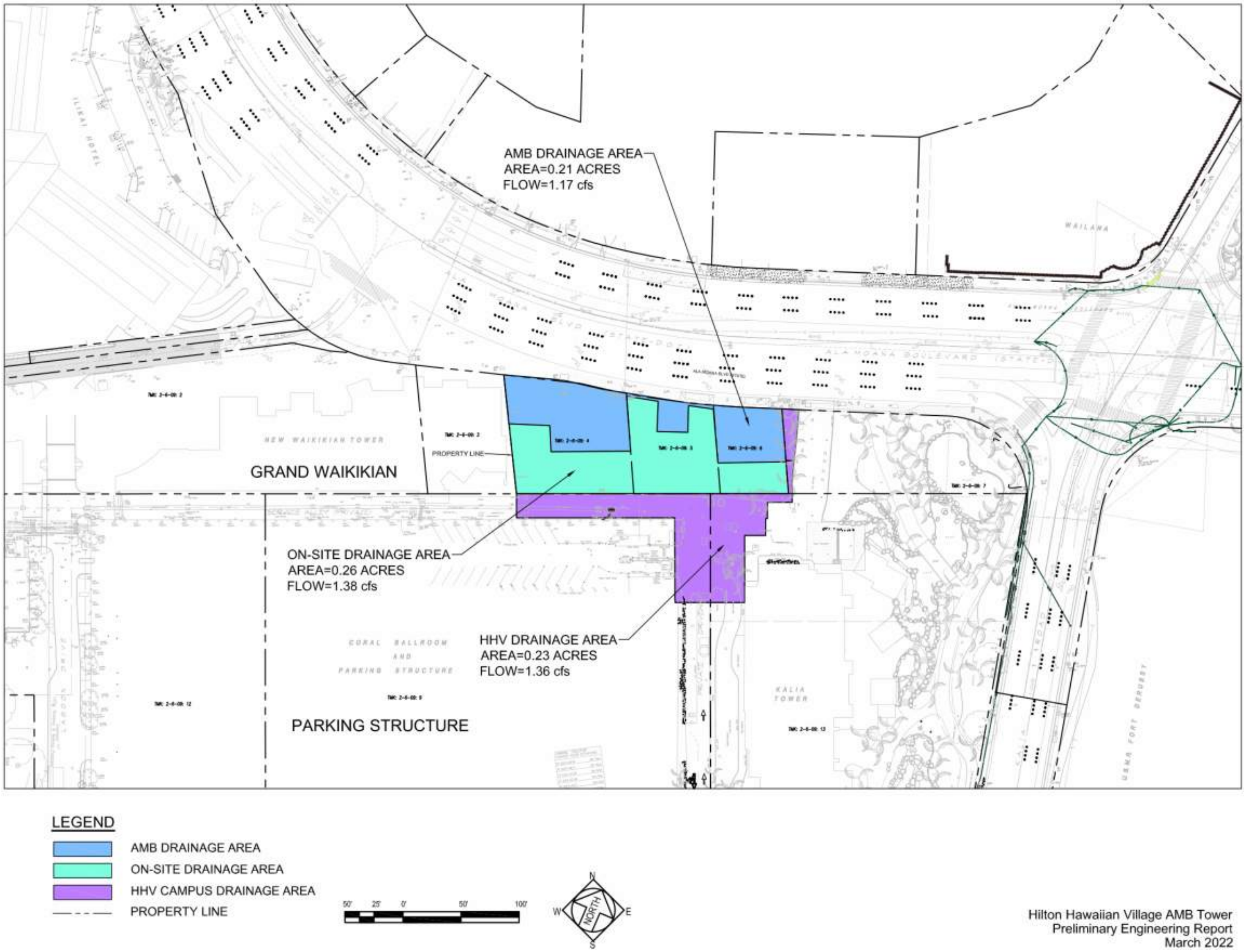

Figure 4.16~~5~~ **Drainage Areas**

The City's Rules Relating to Water Quality requirements protect pollutants from entering the storm drainage systems and help to reduce the quantity of runoff directly entering the system. Based on the regulations, the AMB Tower is designated as a Category 4, Priority B1 project as it is a building taller than 100 feet and has the potential to have significant impacts to water quality based on its land activities. In order to protect downstream water quality, various treatment controls and BMPs will be assessed as the design phase continues. LID BMPs to be integrated into the Project design may include, but not be limited to, green roofs, bioretention basins, vegetated bioswales, infiltration basins and trenches, seepage wells, drywells, detention basins, rainwater harvesting and reuse, permeable pavements, and manufactured treatment devices designed to remove trash and sediment in stormwater. Additionally, source control BMPs such as covering trash areas and loading docks and routing stormwater from paved areas to landscaped areas, will be included as necessary to prevent pollution of stormwater.

4.8.2 Water Supply

Existing Conditions

BWS supplies all of the water to the HHV campus through pipelines installed within the main roads surrounding the campus. There are 12-inch diameter water lines within Ala Moana Boulevard and Kahanamoku Street, and 8-inch water lines within Kālia Road and Paola Place (*Figure 4.~~16~~17*).

Multiple water meters service the campus, with the main potable water service connection coming from the 12-inch diameter main within Ala Moana Boulevard. The secondary connection is located within Kālia Road fronting Kālia Tower. Other meters have been added to service the Grand Waikikian and the Grand Islander. These meters provide potable and fire water service to the campus, where a network of pipes in Lagoon Drive, various service roads, and behind buildings interconnect to create a looped system. The main potable water line through the campus is an 8-inch diameter line. Fire hydrants within the HHV campus connect from this looped domestic water line.

The largest fire service line is from the 12-inch diameter water main in Ala Moana Boulevard with a secondary connection from Kālia Road. Similar to the main potable water line, the 6-inch diameter fire line loops around the campus. Within the State and City roadways, fire hydrants are spaced approximately every 300 feet. There is adequate pipeline infrastructure around the area to support the AMB Tower.

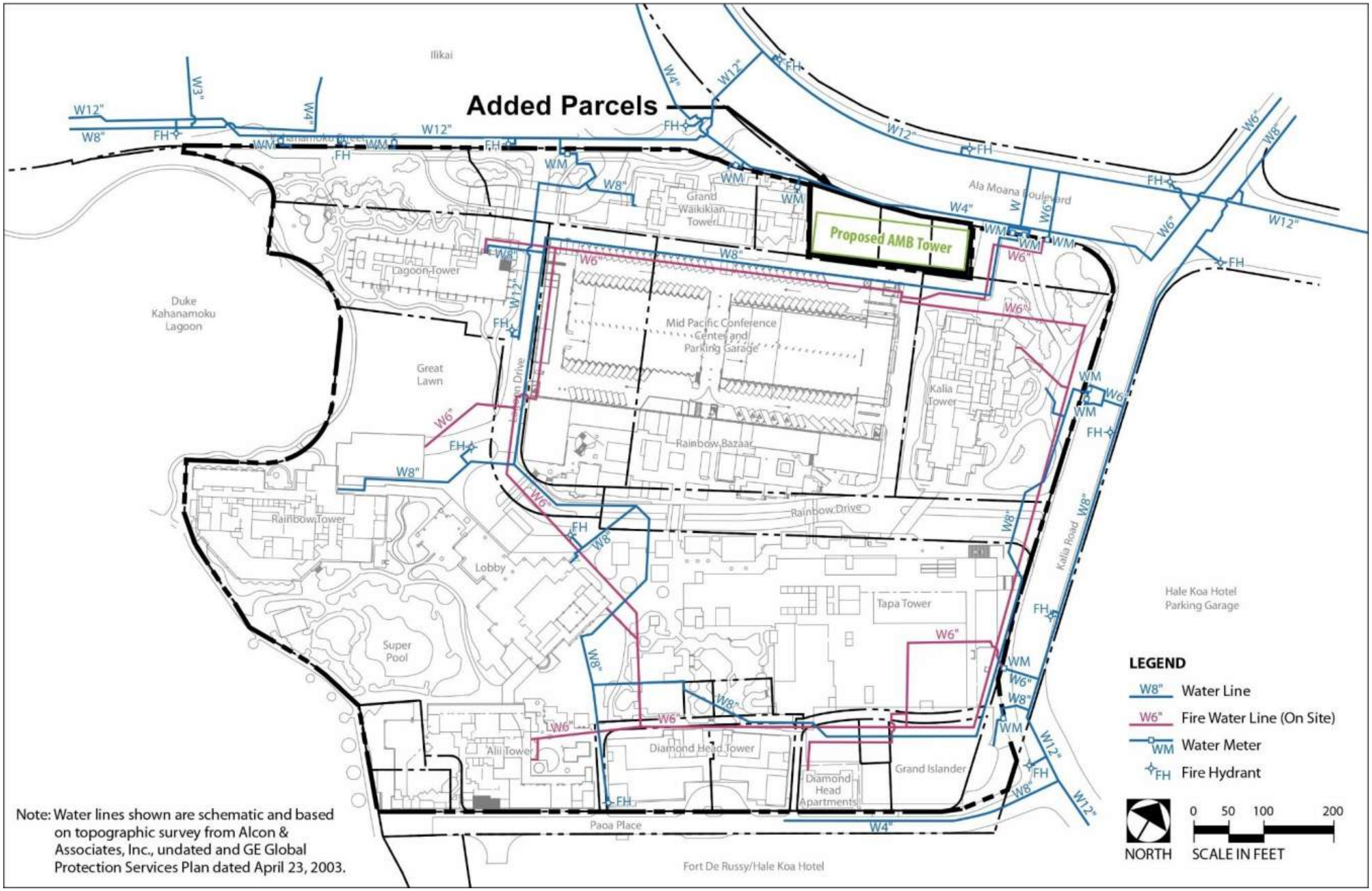

Figure 4.1~~6~~7 **Water System**

Potential Impacts and Mitigation Measures

Water usage is anticipated to increase by 0.181 mgd (180,976 gallons per day (gpd)) with the planned improvements (*Table 4.6*). BWS noted in a letter (~~November 30, 2021~~December 28, 2022) that the existing system currently has adequate capacity to accommodate the domestic water and off-site fire protection for the proposed development (*Appendix A*). The final approval of water availability will be determined when the building permit application is submitted for approvals. Domestic service would likely be provided from the 12-inch water main within Ala Moana Boulevard, while fire service would connect to the existing HHV campus fire lines located within the service roadway between the AMB Tower and the parking garage.

Table 4.6: Water Usage			
Phase	**No. of Units**	**Use Rate**	**Expected Usage**
Hotel Rooms	515 rooms	350 gallons/unit-day	180,250
Retail & Offices	6,051 sf	0.120 gallons/sf-day	725
TOTAL:			180,976 gpd (0.181 mgd)

Source: BWS Water System Standards, 2002, Table 100-18.

AMB Tower will also participate in Hilton's "Light Stay" program, which has been in place at HHV since 2014. Water conservation measures will be implemented in design of the AMB Tower as required by BWS and may include, but not be limited to, the use of Water Sense-labeled ultra-low flow water fixtures and toilets, and utilization of nonpotable water for irrigation. A Water Conservation and Reuse Plan for the AMB Tower project will be submitted to BWS for review and approval.

The AMB Tower will be a high-rise building and may include booster pumps. As such, water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in the BWS system may be required for installation. As required by BWS, the Project will meet the necessary design requirements, including Cross-Connection Control and Backflow Prevention requirements, and will ensure the required fees are paid prior to the issuance of building permits. BWS will continue to be consulted as Project design progresses. Final construction drawings will be reviewed and approved by BWS and HFD.

4.8.3 Wastewater Treatment and Disposal

Existing Conditions

To accommodate the Village Master Plan, HHV committed to improvements to the City wastewater collection system (Kālia Road/Ala Moana Boulevard/Kalākaua Avenue Sewer Improvements Memorandum of Agreement (MOA) dated December 31, 2012 between HHV and the City). In 2018, HHV completed these significant improvements to the City wastewater system, which included a 3,200-foot replacement and expansion of the 30-inch gravity sewer extending from Fort DeRussy to the Kālia Pump Station.

There are existing sewer lines within the surrounding roadways of the HHV campus. These sewers connect to the existing Fort DeRussy Wastewater Pump Station (FD WWPS), which can handle a peak design flow of 8.68 mgd. Wastewater from this pump station is eventually treated at the Sand Island Wastewater Treatment Plant (SI WWTP). A 12-inch diameter gravity sewer is located within the southern side Ala Moana Boulevard fronting the AMB Tower site, and provides a wastewater connection for the Grand Waikikian. Additionally, an 18-inch diameter sewer on the northern side of Ala Moana Boulevard provides sewer coverage to properties northwest of HHV (*Figure 4.~~17~~18*).

Based on the Kālia Road/Ala Moana Boulevard/Kalākaua Ave Sewer Improvements MOA, a sewer transmission capacity of 638 Equivalent Single-Family Dwelling Units (ESDUs) was provided to HHV. Of this, 300 ESDUs of sewer transmission capacity was subsequently provided for the Grand Islander. Therefore, pursuant to the MOA, the City is required to approve up to 338 ESDUs for future improvements, including the AMB Tower.

The existing sewer allocation available to the three Added P~~p~~arcels ~~comprising the Project Site~~ is equivalent to 10 multi-family units. Assuming each multi-family unit equals 2.8 persons per unit, there is a total allocation of 28 people or seven ESDUs. Should the existing structures remain occupied until construction begins, the seven ESDUs may be made available for HHV's credit from the MOA. This is in addition to the ESDUs already allocated to the property.

Potential Impacts and Mitigation Measures

The wastewater generated by the AMB Tower will be accommodated by the existing City sewer collection system without additional improvements. Based on AMB Tower's addition of 515 hotel units, the equivalent ESDUs for the Project would total 258 ESDUs. The remaining ESDUs for any future development at HHV would be 80 ESDUs (*Table 4.7*).

Table 4.7: Memorandum of Agreement (MOA) Equivalent Single-Family Dwelling Unit (ESDU) Allocation Summary

Phase	Units	Population[1]	Retail	ESDU[2]
Grand Islander	428 timeshare	1,199	N/A	300
AMB Tower	515 hotel	1,030	6,051 sf	258
Total ESDUs				558
			MOA ESDUs	638
			REMAINING EDSUs	80

[1] 1 timeshare unit = 2.8 people, 1 hotel unit = 2 people

[2] 1 ESDU = 4 people

The total wastewater generated from the Project is estimated in *Table 4.8* below, and would connect to the existing 12-inch diameter sewer line in Ala Moana Boulevard.

Table 4.8: Wastewater Generation

Phase	No. of Units	Use Rate	Expected Usage
Hotel Rooms	515 rooms	140 gallons/unit-day	72,100
Retail & Offices	6,051 sf	0.064 gallons/sf-day	389
TOTAL:			72,489 gpd (0.072 mgd)

Source: City and County of Honolulu, Wastewater System Design Standards, July 2017.

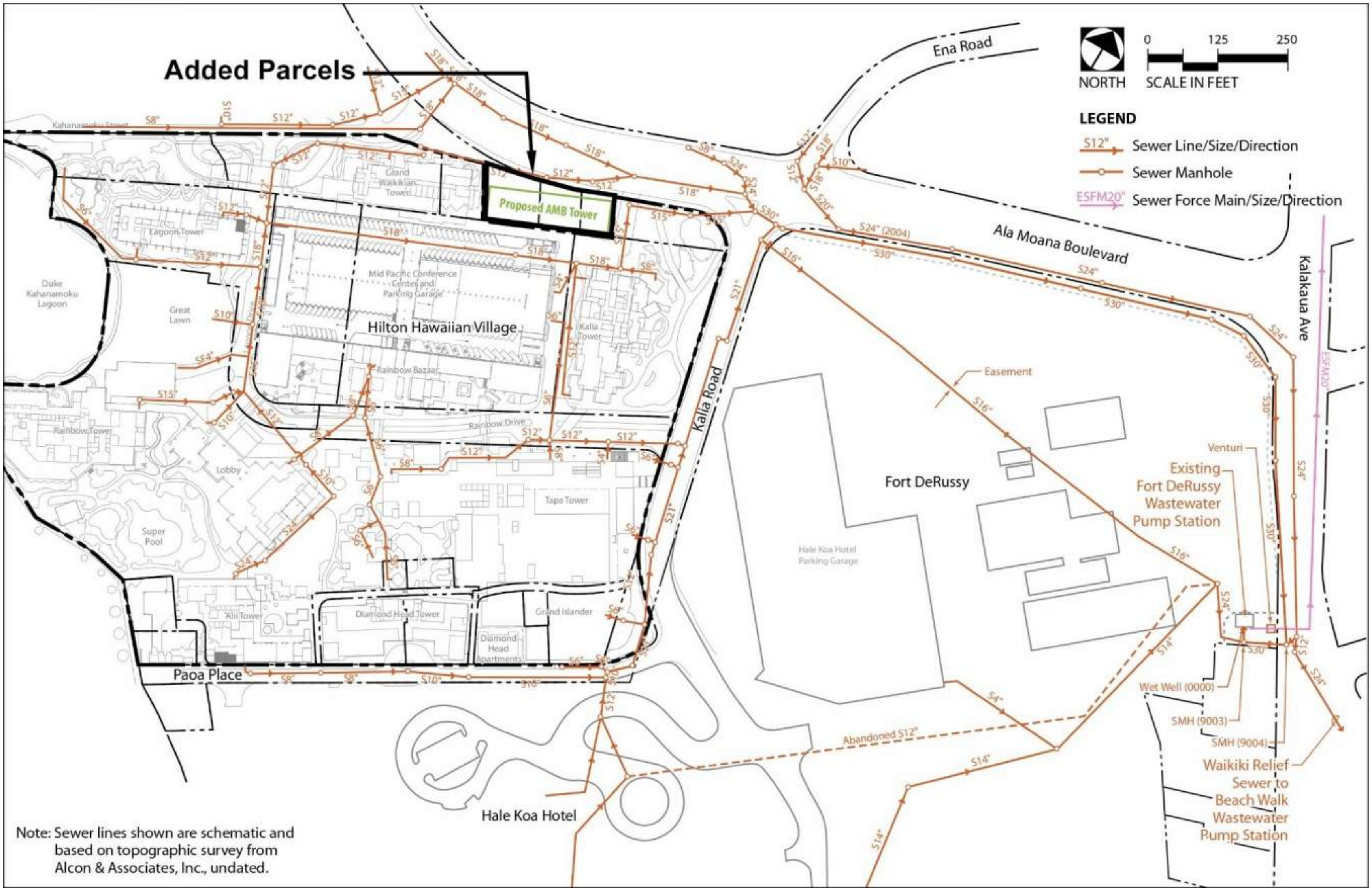

Figure 4.1~~7~~8 **Sewer System**

4.8.4 Solid Waste

Existing Conditions

HHV utilizes on-site compactors for solid waste management, with the compacted material hauled away by Oʻahu Waste Services, a private contractor. The solid waste is taken to either the City's H-POWER waste-to-energy facility, which processes up to 3,000 tons of the island's refuse per day; the City's Waimānalo Gulch landfill; or, various recycling services around Oʻahu. Food waste is collected and hauled away by a private food waste recycling contractor, Eco-Feed Incorporated. Approximately 32 tons a month of food waste is collected by the hotel and sent to the pig farms as feed.

Recycling of cardboard materials is also done through a private contractor and keeps almost 19,000 tons per month out of the landfill.

Potential Impacts and Mitigation Measures

In the short-term, solid waste will be generated from demolition and construction activities. The construction contractor will be responsible for the disposal of construction debris and solid waste generated, including any hazardous materials, to an acceptable waste disposal facility in accordance with Federal, State, and City and County of Honolulu regulations.

Solid waste from the AMB Tower is anticipated to generate 0.72 tons a day, as shown in *Table 4.9*. The increase in waste generated from the AMB Tower will not have a significant impact on the City's waste stream and disposal to the H-POWER Plant, which has the capacity to handle 3,000 tons per day.

Table 4.9: Solid Waste Generation			
Phase	**No. of Units**	**Use Rate**	**Expected Usage**
Hotel Rooms	515 rooms	2.5 lbs./room-day	1,288 lbs./day
Retail & Offices	6,051 sf	0.026 lbs./sf-day	157 lbs./day
TOTAL:			1,445 lbs./day 0.72 tons/day 264 tons/year

Ongoing recycling and solid-waste reduction efforts at HHV will be implemented at the AMB Tower to minimize the amount of municipal solid waste generated by the project, and may include, but not be limited to, the following:

- Recycling glass, plastic bottles, cardboard, aluminum, and paper.
- The use of compostable or alternative disposal cutlery, like cups and silverware made from cornstarch or bamboo, will be encouraged.
- Sending usable food to Aloha Harvest or similar organizations for distribution to charities.
- Recycling food waste by sending it to pig farms for feed.
- Recycling frying oil for conversion to biodiesel.
- Recycling soap through organizations that collect and recycle discarded soap and plastic amenity bottles from hospitality partners and distribute hygiene kits to countries in need.

4.8.5 Power and Telecommunications

Existing Conditions

The Village is presently served by the Hawaiian Electric Company's (HECO), which has three service connection points to the campus. The nearest to the Project Site is located at the intersection of Kahanamoku Street and Ala Moana Boulevard. The Kahanamoku Street service connection presently serves the Grand Waikikian Tower and the Lagoon Pump Station.

Communications services to the site are provided by both Hawaiian Telcom and Spectrum, who both maintain various connection points to the Village, including a connection point at the intersection of Kahanamoku Street and Ala Moana Boulevard.

Potential Impacts and Mitigation Measures

HECO has indicated that the Project will be served from a 25-kilovolt circuit which is presently used for the Grand Waikikian. This point of connection will not require work within the City ROW, avoiding potential short-term, construction-related impacts.

It is anticipated that communication services will be provided by Hawaiian Telcom and Spectrum. Existing duct lines at the east of the site will be relocated to accommodate the services. Additionally, the new AMB Tower will connect to the existing HHV campus fiber for interconnection to the campus data systems. The Project will also connect to the Village campus fire alarm fiber loop for monitoring by HHV security.

Coordination with HECO, Hawaiian Telcom, and Spectrum during the design phase of the Project will be conducted to verify points of connection. No adverse impacts to electrical or communications infrastructure are anticipated, and no mitigation measures are proposed.

4.8.6 Gas

Existing Conditions

Natural gas is used for much of the cooking, hot water heating, and outdoor lighting of the tiki torches throughout the HHV campus. Hawai'i Gas supplies the natural gas through a 4-inch diameter gas line in Kālia Road and Ala Moana Boulevard. The 4-inch gas line that comes from Kālia Road enters the HHV campus on the north side of Kālia Tower and then follows the existing service lane on the south side of the site. A smaller 1 ¼-inch gas line extends across Ala Moana Boulevard to service the existing three parcels fronting Ala Moana Boulevard.

Potential Impacts and Mitigation Measures

There is adequate pipeline infrastructure for Hawai'i Gas to continue to service the HHV campus as well as the AMB Tower. Coordination with Hawai'i Gas during the design phase of the Project will be conducted to verify points of connection. Design of the AMB Tower will prioritize and maintain efficient on-site equipment to minimize the use of natural gas and combustion emissions, as practicable. No major impacts or infrastructure improvements are anticipated to the gas network.

4.9 Noise

An Acoustic Study was conducted for the Project in April 2022 by Y. Ebisu & Associates (*Appendix L)* to assess the existing and future (Construction Year 2027) traffic noise environment in the vicinity of the AMB Tower. Additionally, the study provides recommendations for minimizing identified noise impacts. A summary of the report's findings is provided below.

Existing Conditions

The noise descriptor currently used by public agencies to assess environmental noise is the Day-Night Average Sound Level (DNL). As a general rule, in urbanized areas which are shielded from high volume streets, DNL levels range from 55 to 65 DNL and are usually controlled by motor vehicle traffic noise. Residences which front major roadways are generally exposed to levels of 65 DNL, and as high as 75 DNL when the roadway is a high-speed freeway. Noise acceptability standards are generally set by the U.S. Department of Housing and Urban Development, Federal Housing Administration (FHA).

A DNL of 65 or less is considered acceptable for residences. For commercial, industrial, and other non-noise sensitive land uses, exterior noise levels as high as 75 DNL are generally acceptable.

On the island of Oʻahu, HDOH regulates noise, including allowable day and nighttime noise standards for sensitive receptors, in accordance HAR, Title 11, Chapter 46, Community Noise Control. Notably, HDOH noise regulations are expressed in maximum allowable noise limits rather than DNL. Although they are not directly comparable to noise criteria expressed in DNL, HDOH noise limits for multifamily residential, commercial, and resort lands equate to approximately 60 DNL. This means that sound levels generated by the Project should not exceed those approximate DNL levels at or beyond the property line. The maximum permissible sound level can be exceeded for short periods but not for more than ten percent of the time within any twenty-minute period.

In the Project vicinity, the dominant noise source is traffic noise from Ala Moana Boulevard. Additional primary contributors to the existing background ambient noise levels include the following: traffic along Kālia Road; military jet aircraft flybys; tour bus idling along Ala Moana Boulevard; and, grounds maintenance activities. Traffic noise at the AMB Tower site currently ranges from 66 to 71 DNL, exceeding the FHA standard of 65 DNL.

Potential Impacts and Mitigation Measures

The Acoustic Study found that the dominant traffic noise source in the Project vicinity will continue to be from Ala Moana Boulevard. Increases in traffic noise levels along Ala Moana Boulevard by 2027 are expected to be 0.1 to 0.2 decibels (dB) without the Project and 0.3 dB with the project; therefore, significant increases in traffic noise levels are not expected to result from the AMB Tower. Similarly, future traffic noise increases along ʻEna Road, Kālia Road, and Hobron Lane associated with the AMB Tower are not anticipated. Along Kahanamoku Street at Ala Moana Boulevard, Project traffic will increase existing traffic noise levels by 2.3 DNL above current traffic noise levels; however, the noise levels beyond the ROW are anticipated to remain below the acceptable standard of 65 DNL.

Unavoidable, but temporary, noise impacts to the surrounding environment may occur during construction of the project. Because construction activities are anticipated to be audible within the Project Site and at adjoining properties, the quality of the acoustic environment may be degraded to unacceptable levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases, but the use of properly muffled and quieted equipment will be encouraged. The use of drilling and cast-in-place piles for foundation may also minimize risks of potential noise and vibration impacts on the surrounding area during the construction phase. The highest levels of construction-related noise are anticipated at the east end of the Grand Waikikian and at the north and west faces of the Kālia Tower, which are the closest structures to the Project Site. The availability of closure and air conditioning at these adjacent buildings will provide additional mitigation. Adverse construction-related noise impacts are not expected to occur inside air-conditioned structures which are beyond 70 to 450 feet of the Project Site. Inside naturally ventilated structures, however, mitigation by closure of all doors and windows facing the construction site is recommended to further reduce interior noise levels.

In addition to the above-mentioned BMPs, the Project will comply with HDOH construction noise limits and curfew times in accordance with HAR, Title 11, Chapter 46. Under current permit procedures, noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, from Monday through Friday, and exclude certain holidays. Construction activities are typically restricted to the hours of 9:00 AM to 6:00 PM on Saturdays, with construction not permitted on Sundays. The use of heavy equipment would be scheduled as much as possible during daylight hours to avoid disturbing area residents during the evening.

In the long term, noise impacts from project-related traffic are not anticipated. Design of the AMB Tower will incorporate noise mitigation measures, which may include, but not be limited to, the following: closure, glass sliding doors at the lobby, air conditioning within common areas and units, special glazing, the use of weather seals, and a landscaping and water feature at the porte cochere. The existing resort units located in the immediate vicinity of the Project along Ala Moana Boulevard and Kālia Road currently provide air conditioning, helping to minimize potential noise impacts from the AMB Tower on the Village.

4.10 Socio-Economic Conditions

Existing Conditions

Population and Demographics

In 2020, the residential population of Waikīkī was estimated at approximately 25,940 persons (U.S. Census Bureau, 2020). The average daily population of the region fluctuates based on a transient visitor population. According to the State Department of Business, Economic Development, and Tourism (DBEDT) April 2022, the average daily visitor population of Waikīkī consisted of approximately 99,023 visitors (DBEDT, 2022).

As shown in *Table 4.10*, Waikīkī's residential population is generally older and has a racial mix with proportionately more Caucasians and fewer Native Hawaiian or Pacific Islanders as compared to the rest of O'ahu. The proportion of owner-occupied units is lower compared to the rest of the island, with many of the vacant units held for occasional use as short-term vacation rentals. The median household income of Waikīkī residents was $64,977, lower than the O'ahu average of $87,722.

Table 4.10: Waikīkī and Oʻahu Population and Demographics		
	Waikīkī[1]	Honolulu County (Oʻahu)[2]
Total Population	25,940	1,000,890
Age (% of Total Population)		
Under 5 Years	3.1%	6.1%
5-17 Years	9.1%	21.0%
18-64 Years	65.7%	54.7%
65 Years and Older	22.1%	18.2%
Race (% of Total Population)		
White (alone)	36.4%	21.6%
Asian (Alone)	43.2%	42.9%
Native Hawaiian and other Pacific Islander (alone)	3.8%	9.6%
Other Races (alone)	4.2%	3.1%
Two or More Races	12.4%	22.8%
Income		
Median Household Income (in 2020 dollars), 2016-2020	$64,977	$87,722
Housing Occupancy and Tenure		
Total Housing Units	22,805	372,626
By Owner (% of all occupied units), 2016-2020	45.7%	57.5%

[1] Source: U.S. Census Bureau, 2016-2020 American Community Survey, Zip Code 96815

[2] Source: U.S. Census Bureau, 2021 Population Estimates

Over the last 40 years, Waikīkī's residential population showed sharp growth rate increases in the 1960's through the 1980's, then leveling off in the 1990's (*Table 4.11*). Following the 1990's, the residential population growth rate in Waikīkī decreased by 0.23 percent. However, population in the area has increased 14.3 percent in the last 20 years. Projections by the DBEDT estimate that the resident population on Oʻahu overall is projected to grow at an annual rate of 0.3 percent during the 2016 to 2024 period (DBEDT, 2018).

Table 4.11: Population Trends (1960-2021)						
Total Population	**1960**	**1970**	**1980**	**1990**	**2000**	**2021**
Waikīkī	11,075	13,124	17,384	19,768	19,723	25,940
Percent Growth	*N/A*	*18.5%*	*32.45%*	*13.71%*	*-0.23%*	*31.5%*
Oʻahu	500,409	629,176	762,565	836,231	875,670	1,000,890
Percent Growth	*N/A*	*25.73%*	*21.2%*	*9.66%*	*4.72%*	*14.3%*

Source: John M. Knox & Associates Inc., 2011; U.S. Census Bureau, 2021.

Supporting Local Business

HHV is undoubtedly one of the largest hotel purchasers of local goods and services in the state. One of HHV's missions is to offer as many local products as possible in its restaurants, including local produce, meats, seafood, coffee, and other products. HHV sources these goods from hundreds of local businesses across the island chain, including, but not limited to, Hāmākua Mushrooms, Mari's Garden, Surfing Goat Dairy, Fresh Island Seafood Co. and more. The Village's Waikīkī Starlight Lūʻau operates five nights a week and is run by a local production company, which employs dozens of singers, musicians and dancers. Additionally, HHV's nightly live music shows support local entertainers. The AMB Tower will continue this support of local businesses through the purchase of local goods and services.

Current Economic Overview

An Economic Impact Analysis and Public Cost Benefit Assessment was conducted by CBRE, Inc. to assess the project's impact on the Oʻahu economy and State and City over time (*Appendix M*). The analysis provides a current economic overview of the Waikīkī district, and is summarized below.

The AMB Tower is located in the Waikīkī area on the Island of Oʻahu. An iconic resort destination, Waikīkī serves a significant role in the State's economy as the anchor of the visitor industry, and, by extension, a major employment center. Prior to the onset of the COVID-19 pandemic, Oʻahu/Waikīkī was experiencing an extended visitor industry upcycle and a healthy general economy. The island had shown strong growth in the three most critical industry data points (Total Visitor Arrivals, Total Visitor Days and Total Visitor Expenditures), with continuous double-digit percentage gains between 2010 and 2019. All-time records were again set in each category in 2019, for the fifth consecutive year, and visitor statistics in January/February of 2020 were the strongest in four decades.

Following the onset of the COVID-19 pandemic, the trans-pacific quarantine for Hawaiʻi was instituted in late March 2020 and continued until October 15, 2020 when the State's Safe Travel plan, which included a quarantine bypass, commenced. During several months of closure, the Oʻahu tourism and hotel industries were virtually shuttered, and visitor arrivals, spending, and employment plunged by approximately 90 percent. Most sectors of Hawaiʻi's economy were heavily impacted, with unemployment surging above 30 percent and per capita personal income dropping.

With the commencement of a quarantine bypass, the tourism industry, and Waikīkī by extension, began recovering quickly despite logistical issues impacting hotels, restaurants/bars, and rental cars, and difficulty filling staffing needs. By mid- to late-2021, the number of westbound travelers from the Mainland U.S. reached pre-pandemic numbers. With the on-going re-opening of Japan/Asian and Pacific countries to Hawaiʻi for travel, Oʻahu visitor counts, spending, occupancy, and economic activity is expected to return to stabilized trends by 2023-24, barring a variant surge or recession. Among the favorable economic indicators and trends on Oʻahu, the unemployment rate has dropped to a current level (May 2022) of about 6.7 percent, down nearly two-thirds from the 19.4 percent in 2020 during pandemic-era quarantine.

Demand for hotel properties has surged to record levels since early 2021. The barrier to entry into the Waikīkī lodging market is high because of several factors, including the limited number of development sites. While many hotels in Waikīkī have been recently renovated or repositioned, there has not been an entirely new hotel built in the district in decades due to economic conditions, with lodging additions being limited to condotels, timeshare, and resort condominiums.

It is estimated that the unmet lodging demand on Oʻahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for illegal short-term rentals being closed by the City (CBRE, 2022). As a result, more visitors are staying in illegal short-term vacation rentals and beds and breakfasts located in residential communities that were not designed to accommodate tourists. New City regulations intended to limit illegal short-term rentals are expected to further exacerbate the shortage of lodging accommodations. The demand for additional lodging inventory on Oʻahu, widely considered to be in a period of "tight supply", will continue to rise over the near to mid-term.

Overall, the UH Economic Research Organization *Forecast Project – County Forecast* (May 2022) shows strong recovery and growth for Honolulu County in 2022, followed by slowing but continuing annual percentile growth over the subsequent two years. The overall near to mid-term outlook is favorable.

Potential Impacts and Mitigation Measures

Economic and Fiscal Impacts

The following section summarizes the findings of the Economic Impact Analysis (*Appendix M*) as it relates to the following indicators: population and demographics, employment and wage income, guest population and spending, and capital investment and construction costs. Two models used in the analysis were based on two time periods: first, from entitlements through construction completion (estimated from 2022 to 2027), and, second, from stabilized annual operation (estimated to be 2028) thereafter. The first model (micro-model) was designed by CBRE to reflect Direct and upper-level Indirect impacts only. This model is subject-specific. Anticipated impacts of the Project are primarily based on this model. The second model (State Inter-County Input-Output Model) quantifies the total Direct, Indirect and Induced "effects" of various forms of business and spending activity as it flows through the economy of the islands. Application of this model results in significantly higher economic out-flow indicators than those form the direct, subject-specific micro-model.

Population and Demographics

The AMB Tower will not add permanent residents to the Project Site. However, guests at the AMB Tower represent additions to the Oʻahu de facto population count, and, as such, create proportionate additional operating costs for the City and State from a per capita perspective. However, the actual additional costs and impact on services from visitors will be minimal, as they will place no to limited demands on public schools and most governmental services or facilities, and are unlikely to require expansion of emergency services and regional infrastructure.

As a direct result of the project, new jobs will be created. It is possible that some neighbor island or U.S. continent residents may move to Oʻahu, resulting in in-migration. However, employees are expected to be comprised of local residents already living in the State or on the island. Therefore, the current population and demographics of Waikīkī and Oʻahu are not expected to be significantly impacted.

Employment and Wage Income

The development of the AMB Tower will result in significant expenditures that will favorably impact the Oʻahu economy on both a direct and indirect basis, increasing the level of capital investment and capital flow in the region, which will in turn create employment and widen the tax base.

Numerous short-term jobs will be created both on- and off-site by the project, including employment related to planning and design, construction and equipment operation, and other specialty trades, both on- and off-site. The estimated 30-month construction period of the AMB Tower is anticipated to create a total of approximately 2,441 "worker-years" of employment (the equivalent of 52 work weeks at 40 hours per week) in the trades and supply businesses, averaging about 900 workers annually, with an estimated $190.4M in wages (averaging about $76M per year). Of the estimated total of 2,441 worker-years, 1,831 worker years of on-site employment and 610 worker years of off-site/secondary employment are anticipated.

After completion of construction, permanent employment positions will be created by the lodging operation, ground floor retail, and maintenance of the AMB Tower grounds. Approximately 370 new worker-years of FTE jobs related to hotel and retail operations will be created on a stabilized basis, with cumulative annual wages totaling $28.5M. Additionally, associated secondary/off-site employment is anticipated to create 123 stabilized FTE jobs with total wages of $7.7M per year. It is estimated that the Project will create a total of 493 FTE jobs on a stabilized basis.

The construction, maintenance, and indirect/off-site employment opportunities created by the Project will not all be "new" jobs requiring new Oʻahu residents and workers, but will be vitally needed new opportunities for in-place resident construction trade workers and existing local businesses. The jobs associated with the hotel and commercial operations are "new" positions and represent an expansion of the Oʻahu employment pool; although, the ABC Stores tenant will be re-locating and expanding, and will not generate all "new" positions.

It is estimated that the off-site/indirect work created will be steered towards existing Oʻahu suppliers, equipment providers, and other service companies, which will help to mitigate the impacts of economic cycles on their business activities. In this regard, the combination of employment types generated by the Project will beneficially support existing businesses, while also providing a substantial number of new employment opportunities and contributing to the sustainable health of the Oʻahu economic community for the next generation of residents.

The general island economy also will benefit from the Project, as its guests, employees, and businesses will spend discretionary income in off-site shops, restaurants, and service establishments throughout Oʻahu. Guests are projected to have daily expenditures comparable with the average Oʻahu visitor.

Indirectly, as these wages, profits, and expenditures move through the regional economy, they will have a ripple, or "multiplier," effect which increases the amount of capital flowing to the entire island from the development of the subject. Construction, operational and other workers earning wages via the Project and associated off-site/supporting efforts will spend most of their income on living and entertainment expenses while supporting and patronizing other island businesses. Hotel guests will spend on restaurants, shopping, entertainment and activities throughout Oʻahu. Much of this spending would be re-directed by these businesses to other island industries, and significant portions of these secondary profits would in turn be put back through the region's economic and tax structure.

Guest Population and Spending

Discretionary spending by AMB Tower guests will be a significant addition to the Waikīkī region and the general Oʻahu economy. At stabilized occupancy, the average daily de facto guest population of the hotel is estimated at 1,020 persons assuming a 90 percent occupancy rate. The Economic Impact Analysis estimates that the total AMB Tower guest spending off site will be approximately $33.9M annually.

Capital Investment and Construction Costs

Substantial direct and indirect economic impacts associated with the Project are the result of the capital investment and entrepreneurship necessary to convert an under-developed property into a valuable revenue, employment and tax-producing asset. The Oʻahu economy will be meaningfully stimulated by the capital investments, guest spending and business operations of the development.

The development of AMB Tower will bring in an estimated $461.5M of direct development capital (i.e., total construction impact comprised of wages, contractor/supplier profit, and other construction costs) into Oʻahu during the construction period.

The Total Base Economic Impact of the AMB Tower project including all capital investment and on- and off-site economic activity during construction is estimated at $499.6M and at $137.6M annually on a stabilized basis (*Table 4.12*).

Table 4.12: Summary of Economic Impacts/Activity Associated with the Project

Analysis Item	Totals During Build-Out	Stabilized Annually Thereafter
	June 2022 to June 2027	2028 and Beyond
Total Construction Wages	$152,339,200	
Contractor Profits	$46,151,693	
Supplier Profits	$18,460,677	
Other Construction Costs	$244,565,359	
Total Construction Impact:	**$461,516,929**	
Hotel and Retail Operating Gross Revenue	$38,084,800	$82,212,425
Off-Site Wages		$7,697,456
Total Hotel Guest Population Spending[1]		$33,869,336
Hotel Maintenance and Repairs[2]		$13,845,508
TOTAL BASE ECONOMIC IMPACT	**$499,601,729**	**$137,624,725**

[1] Off-site, excluding hotel and rental car.
[2] Estimated at 3% of direct construction costs annually.
Source: CBRE, 2022

State Input/Output Macro Model

The Economic Impact Analysis (*Appendix M*) also analyzes the impacts of the Project for O‘ahu and statewide using the Hawai‘i Inter-County Input-Output Economic Model (2017 data approved by DBEDT in 2021) Type II multipliers. A Type II multiplier accounts for the direct effect, the indirect effect, plus the economic activity produced by the consumption spending related to the earnings induced by the direct and indirect effects of the final demand change (called the induced effect).

In every instance, application of the macro Input-Output multipliers resulted in higher dollar, employment, and tax revenue indicators than the subject-focused micro model results described previously, which was designed to reflect Direct and upper-level Indirect impacts only.

Under the State Input/Output model, the total State economic impact from construction of the Project would reach $969.2M, there would be 4,870 total construction worker-years of jobs created and a total of 5,270 worker-year jobs in all sectors, and the total increase in direct-effect earnings statewide would be $102.1M.

The State model also estimates the total annual economic output from ongoing hotel and retail business activity within the AMB Tower would be $302.6M annually on a stabilized basis. The total number of worker-years island-wide attributable to the subject dollars flowing through the economy would be 1,377 direct-effect positions upon stabilization and 1,575 positions throughout the State.

Public Fiscal Impacts (Cost/Benefit Assessment)

The purpose of the Public Cost Benefit Assessment (*Appendix M*) is to delineate the direct areas in which the construction and long-term operation of the AMB Tower will potentially impact the public. Specifically, the goal is to quantify and compare the costs of providing expanded City and State services to the Project and its guest population versus the economic benefits that accrue to governmental coffers via an increase in local and state tax and fee payments arising from the new economic activity associated with the development. The following section summarizes the findings of the analysis as it relates to the following indicators: City Real Property Taxes (RPT), various State taxes, and per capita expenditures for the City and State.

City and County of Honolulu Real Property Taxes

For the City, the primary tax revenue source will be from RPT paid by the owners of the Project. RPT comprised 39 percent of the total general fund revenues. The City will realize Real Property Taxes and other secondary receipts and development fees totaling $13.3M during the entitlement/building period and $18.4M annually on a stabilized basis thereafter. This does not include City impact fees that may be charged to the Project.

Taxes to the State of Hawai‘i (Income, Gross Excise, and Transient Accommodation Taxes)

The State will receive an estimated $10.0M in primary receipts from State Income Taxes during the build-out period and $2.0M annually on a stabilized bases from worker wages and profits from businesses.

The State will also collect Gross Excise Taxes (GET) of 4.712 percent on the gross amount of construction contracts, construction supplies, spending by workers and hotel guests, and from the on-going business activity (lodging, commercial, and renovations). During the construction period these receipts will total $25.3M and a stabilized amount of $6.3M annually.

Hotel rooms are subject to a Transient Accommodations Tax (TAT) which is currently set at a total of 13.25 percent of gross room revenues. On a stabilized basis, AMB Tower will pay some $7.8M annually to the State and County.

In recent fiscal years, Income Tax, GET and TAT have generated about 72 percent of total State general fund revenues, and secondary taxes and fees the remainder. The Economic Impact Analysis anticipates the AMB Tower activity will result in similar ratios of secondary taxes flowing from the project relative to the primary sources quantified.

The secondary State receipts are equal to 0.39 times the Income Tax and GET totals (28 percent divided by 72 percent plus 1.0).

Application of the total tax ratio of 1.39 to the AMB Tower income tax, GET and TAT sums results in a cumulative total estimated State tax collection from the subject of $49.1M during the build-out period, and $22.5M annually on a stabilized basis. State impact fees which may be charged to the AMB Tower project are not included in this estimation.

See *Table 4.13* for a summary of gross public revenues.

Table 4.13: Total Gross Public Revenues

Analysis Item	Cumulative During Build-out Period	Stabilized Annually Thereafter
	June 2022 to June 2027	2028 and Beyond
City and County of Honolulu Receipts	$13,288,105	$18,382,179
State of Hawai'i Receipts	$49,111,074	$22,471,692
Total Gross Public Revenues	**$62,399,178**	**$40,853,871**

City and State Per Capita Costs

The Project will increase the de facto population on O'ahu by adding guests to the site, which may result in new governmental costs per capita after the Project is operationally stabilized. There are no costs during the build-out period as there is no increase in the island population during this time. Per capita costs begin once the hotel opens and occupancy ramps-up.

The estimated stabilized proportionate annual per capita costs to the City and State will total approximately $3.8M for O'ahu and approximately $12.5M for the State. See *Table 4.14* for a summary of the estimated City and State per capita cost. The estimation is based on a conservative assumption that each new person added to the O'ahu community is "responsible for" a similar tax cost/obligation as every other person on the island, regardless of status as a resident or visitor.

The AMB Tower guests represent additions to the O'ahu de facto population count and, as such, create proportionate additional operating costs for the State and City when viewed from a per capita perspective. However, the actual additional costs and impact on services from the AMB Tower guests will be minimal as they are not anticipated to place demands on public schools, prisons, social/welfare support, and most governmental services or facilities, and are unlikely to increase emergency services and regional infrastructure beyond the existing threshold. The Project represents an expansion of the Village, and guests will be well-served by the new AMB Tower and existing campus infrastructure and services.

Table 4.14: Total City and State Per Capita Cost		
Analysis Item	**Cumulative During Build-out Period**	**Stabilized Annually Thereafter**
	June 2022 to June 2027	**2028 and Beyond**
City and County of Honolulu (per capita basis)	$0	$3,821,447
State Costs of Services (per capita basis)	$0	$12,491,325
Total Public Costs	**$0**	**$16,312,772**

Total Net Public Benefits to City and State

The public fiscal impacts of the Project are summarized in *Table 4.15*. As shown in the table, both the City and the State will be provided with a net positive benefit (or "profit") from the AMB during both the build-out period of the Project and on an annual stabilized basis of operation. After accounting for the per capita costs of servicing the “new” AMB Tower guests following construction - completion, the City is estimated to gain a net benefit ("profit") of $13.3M during the development period and $14.6M annually on a stabilized basis following completion of the hotel. The State is estimated to have net fiscal benefits of $49.1M during development and $10.0M stabilized per year thereafter. Overall, the Project is estimated to net both the City and State over $62.4M during the build-out phase and $24.5M stabilized per year thereafter in public fiscal benefits.

Table 4.15: Total Net Public Benefits		
Analysis Item	**Cumulative During Build-out Period**	**Stabilized Annually Thereafter**
	June 2022 to June 2027	**2028 and Beyond**
City and County of Honolulu Net Benefit[1]	$13,288,105	$14,560,732
State of Hawai‘i Receipts Net Benefit[1]	$49,111,074	$9,980,367
TOTAL NET PUBLIC BENEFITS	**$62,399,178**	**$24,541,098**

[1] Totals are derived by subtracting the Total County and State Per Capita Costs (*Table 4.14*) from the Total Gross Public Revenues (*Table 4.13*).

4.11 Visual Resources

Existing Conditions

Within the objectives of the LUO, the City emphasizes the maintenance of views from public viewing areas and streets in Waikīkī. The PUC DP further identifies specific significant public views of Waikīkī landmarks, the ocean, and the mountains from public vantage points that should be maintained and preserved. Prominent view corridors identified in the PUC DP include the following:

- Preserve a visual relationship with the ocean from Kalākaua Avenue, Kālia Road, and Ala Moana Boulevard.
- Views of Diamond Head from the Punchbowl Lookout.
- Intermittent ocean views from Kālia Road across Fort DeRussy Park from the Ala Wai Bridge on Ala Moana Boulevard.
- Continuous ocean views along Kalākaua Avenue, from Kūhiō Beach to Kapahulu Avenue.
- Ocean views from Ala Wai Yacht Harbor.
- Ocean views from Kūhiō Beach Park.
- Views of the Ala Wai Yacht Harbor from Ala Moana Park (Magic Island Park).
- Mauka views from the portions of the following streets mauka of Kūhiō Avenue: Nohonani Street, Nāhua Street, Kānekapōlei Street, Kaiʻolu Street, Lewers Street, Walina Street, and Seaside Avenue.
- View of Diamond Head from Ala Wai Boulevard between McCully Street and Kapahulu Avenue.

The visual environment within the Project Site is typical of the dense, urban environment of Waikīkī. Existing one- and two-story structures on the site are surrounded by the 38-story Grand Waikikian Tower to the west, 25-story Kālia Tower to the east, and the 5-story Coral Ballroom parking garage.

Directly across the Project Site along Ala Moana Boulevard, the surrounding environment is characterized by a mix of resort and residential buildings ranging from one to 38 stories tall. In the Project vicinity, pedestrian-level views toward the ocean along Ala Moana Boulevard are restricted due to the presence of existing surrounding structures. Intermittent views of the Ala Wai Harbor and ocean are accessible along Ala Moana Boulevard and Hobron Lane, and continue to open further west. Similarly, pedestrian-level mauka views of the Koʻolau Mountains from Ala Moana Boulevard are intermittent and open further east; however, these views are still obstructed by existing structures. Pedestrian-level views of Diamond Head are not available from the Project Site or from nearby open space areas, such as Fort DeRussy Park. Views of Diamond Head and the ocean within the Project Site and immediate surrounding area are accessible in buildings at higher floor levels.

Within the Village, buildings range from one to 38 stories tall. This existing built landscape is complemented by pockets of open space throughout the property that enhance various view corridors.

Potential Impacts and Mitigation Measures

During construction, the presence of construction equipment may impact the view from the surrounding environment. The use of construction fencing will mitigate these potential impacts to the extent possible, and equipment will be confined to work areas. All construction-related equipment will be removed following the completion of work.

The Project vicinity is typical of the dense, urban environment of Waikīkī, with buildings ranging from one to 38 stories tall. The existing one- and two-structures at the site will be demolished and replaced by the 36-story AMB Tower. The finished floor elevation of the tower is 8.0~~7.5~~ feet above msl and the maximum height of the tower will be 350 feet (exclusive of permitted rooftop equipment and structures), which complies with development standards set forth in the LUO (*Section 3.3.9*).

A View Analysis was conducted by G70 to assess potential impacts of the Project on the surrounding area (*Figures 4.19~~8~~ through 4.~~29~~30*). The following viewpoints summarized in *Figure 4.19~~8~~* were analyzed:

1. View from Fort DeRussy on the corner of Kālia Road and Paoa Place from Fort DeRussy (*Figure 4.~~19~~20*)
2. View of Village area from the corner of Kalākaua Avenue and Ala Moana Boulevard (*Figure 4.21~~0~~*)
3. View from Magic Island and Ala Moana Beach Park (*Figure 4.22~~1~~*)
4. View from Ala Wai Yacht Harbor (*Figure 4.23~~2~~*)
5. View from Punchbowl Lookout (*Figure 4.24~~3~~*)
6. View from Waikīkī Beach fronting Kahanamoku Lagoon (*Figure 4.25~~4~~*)
7. View from Ala Moana Boulevard, Kālia Road, and ‘Ena Road (*Figure 4.26~~5~~*)
8. View from Waikīkī Aquarium (*Figure 4.27~~6~~*)
9. View of Duke Kahanamoku Lagoon and Parking Lot at Holomoana (*Figure 4.28~~7~~*)
10. View from Ala Moana Boulevard and Hobron Lane Intersection (*Figure 4.29~~8~~*)
11. View from Fort DeRussy at end of Saratoga Road (*Figure 4.~~29~~30*)

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Figure 4.198 **View Study Photo Map Key**

BEFORE

AFTER

Figure 4.20~~19~~ **View No. 1: View from Fort DeRussy on the corner of Kālia Road and Paoa Place**

BEFORE

AFTER

Figure 4.21~~0~~ **View No. 2: View of Village area from the corner of Kalākaua Avenue and Ala Moana Boulevard**

BEFORE

AFTER

Figure 4.22~~1~~ **View No. 3: View from Magic Island and Ala Moana Beach Park**

BEFORE

AFTER

Figure 4.23~~2~~ **View No. 4: View from Ala Wai Yacht Harbor**

BEFORE

AFTER

Figure 4.24~~3~~ **View No. 5: View from Punchbowl Lookout**

BEFORE

AFTER

Figure 4.254 **View No. 6: View from Waikīkī Beach fronting Kahanamoku Lagoon**

BEFORE

AFTER

Figure 4.26~~5~~ **View No. 7: View from Ala Moana Boulevard, Kālia Road, and ‘Ena Road**

BEFORE

AFTER

Figure 4.276 **View No. 8: View from Waikīkī Aquarium**

BEFORE

AFTER

Figure 4.28~~7~~ **View No. 9: View of Duke Kahanamoku Lagoon and Parking Lot at Holomoana**

BEFORE

AFTER

Figure 4.298 **View No. 10: View from Ala Moana Boulevard and Hobron Lane Intersection (Looking East)**

BEFORE

AFTER

Figure 4.30~~29~~ **View No. 11: Road View from Fort DeRussy at the Kālia Road and Saratoga Road**

As shown in the study, public views as articulated in the PUC DP will be minimally affected. A majority of public views in the area already consist of buildings that define the urban form of Waikīkī. The AMB Tower is located inland (approximately 800 feet from the shoreline) and will blend with the surrounding urban environment in terms of its orientation, scale, height, form, and design. The Project will not be discernable from the Ala Wai Yacht Harbor, Punchbowl Lookout, Ala Moana Beach Park, or Kūhiō Beach Park. It will be visible from Fort DeRussy Park; however, the addition of the AMB Tower will have minimal impact on views from this location as it will be located between two existing buildings, as shown in *Figure 4.~~19~~20*. Makai views from Fort DeRussy Park at Kālia Road and from Kalākaua Avenue are currently partially blocked by existing buildings.

As is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site near ʻEna Road have views that may be partially blocked by the new tower. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected.

The Project will enhance the visual environment of the site at street level by replacing the existing dated or dilapidated buildings with the AMB Tower, a timeless, contemporary structure featuring modern, culturally appropriate design using materials that complement the surrounding environment. The AMB Tower will reinvigorate Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the project. This area will also provide an open, safe and inviting pedestrian experience that supports connectivity with the HHV campus and the broader Waikīkī neighborhood.

4.12 Sustainability Practices

Existing Conditions

Green Practices

As the largest resort in Waikīkī, HHV has remained committed to environmental responsibility and engaged in community-wide discussions on pertinent issues such as climate change and SLR (*Section 4.4.5*). Launched at the Village in 2014, Hilton's "Light Stay" is a technology program that measures and manages the environmental and social impact of the Village. In addition to tracking water and energy consumption, the platform monitors waste generation, social impact (e.g., volunteering, donations), risk mitigation, and best practice sharing.

Sustainable practices that are currently in place at the Village include the following:

- In a proactive effort to address water conservation, HHV asks guests to help conserve water by providing simple tips on how to do so via the in-room newsletter and stickers placed on all guest room mirrors.
- Glass, plastic bottles, cardboard, aluminum, and paper are recycled.
- The use of compostable or alternative disposal cutlery, like cups and silverware made from cornstarch or bamboo, is encouraged.
- Usable food is sent to Aloha Harvest or similar organizations for distribution to charities.

- Food waste is recycled and sent to pig farms for feed.
- Frying oil is used for biodiesel conversion.
- Soap is recycled (currently through the Clean the World program, which is a national social enterprise that collects and recycles discarded soap and plastic amenity bottles from hospitality partners and distributes the hygiene kits to countries in need).

Responsible Tourism and Hospitality

The Project will support HHV's overall efforts in responsible tourism. HHV offers unique amenities like the Duke Kahanamoku Lagoon, world-class shopping and dining, on-campus programming like the Waikīkī Starlight Lūʻau and other activities for guests to enjoy on the property, thereby reducing the impact on busy roads and visitor hotspots. Further, the AMB Tower will add additional amenities on site that will be available for all HHV guests.

In partnership with the HTA and the Hawaiʻi Visitors and Convention Bureau (HVCB), HHV informs guests on the environment and culture of Oʻahu in an effort to encourage more responsible, thoughtful tourism. HHV also participates in the HTA Mālama Hawaiʻi program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort partners with the Kualoa Ranch to teach mālama ʻāina, giving visitors the opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the laʻau lapaʻau (medicinal plants).

HHV participates in Hilton's "Travel with Purpose" initiative, through which Hilton has committed to increasing its investment in social impact and substantially reducing its environmental footprint through responsible hospitality across its value chain – including in Hawaiʻi – by 2030. HHV's goals align with the United Nation's (UN) Sustainable Development Goals (SDGs), and Hilton's "Light Stay" program is used to monitor its progress.

Additionally, opportunities to implement the HTA's Destination Management Action Plan (DMAP) for Oʻahu, including educational and community service programming for visitors, will be evaluated.

Potential Impacts and Mitigation Measures

The Project is being proactively planned and designed to be sustainable and resilient and to address the impacts of climate change and SLR. Sustainability efforts are in alignment with goals articulated for the State and City, as described throughout *Section 5.0*. The AMB Tower plans to incorporate existing sustainability practices of the Village, described above, into its design and operations. Planned design and operational measures include, but are not limited to, the following:

- The AMB Tower will be designed with a finished floor elevation of 8.0~~7.5~~ feet above msl, exceeding the FEMA-designated base flood elevation of 7 feet.
- Utilities will be relocated at higher elevations, where feasible.
- LID measures, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design, as feasible.
- Green infrastructure features, such as a green wall along portions of the podium, may be installed where feasible.

- Non-motorized transportation modes, such as walking and biking, will be encouraged through enhanced connectivity to the Village campus, installation of landscaping features along Ala Moana Boulevard, activation of the street frontage through ground floor retail and outdoor seating, maintenance of the 8-foot-wide sidewalk, and provision of bicycle storage.
- Design of off-street parking stalls will adhere to the City's EV charging standards.
- The Project will maintain over 50 percent of open space at the Village, which helps to mitigate the overall heat island effect.
- Hilton's "Light Stay" and HHV's recycling programs as described above will be adopted and modified in accordance with new technology over time.
- During construction, materials resulting from demolition activity such as asphalt, concrete, and steel, will be re-used or recycled, to the extent possible.
- The Project will incorporate low-flow plumbing fixtures to encourage water efficiency.
- Recycled water may be used for the new landscaping at the AMB Tower site and at proximate areas, including the existing landscaped area along Kālia Road and Ala Moana Boulevard, pending further detailed design and analysis.
- The Project will use low-emittance window glazing, air-conditioning controls, and use of compact fluorescent lamps and light-emitting diodes light fixtures will help with energy efficiency of the project.
- The Project will use low-emitting materials for applications of adhesives, sealants, paints, carpets and flooring systems to promote a healthy indoor environment.

4.13 Summary of Probable Impacts

4.13.1 Interrelationships and Cumulative Environmental Impacts

AMB Tower is part of HHV's continuing reinvestment into one of Waikīkī's primary resort destinations at the ʻewa gateway to the region. The Project also represents a continuing trend of reinvestment into Waikīkī. Some notable and completed redevelopment projects within the past 15 years that have transformed the Waikīkī corridor include the Grand Waikikian and Grand Islander projects, the Duke Kahanamoku Lagoon restoration, International Marketplace, Ritz-Carlton Residences Waikīkī Beach, Waikīkī Beach Walk by Outrigger Reef Waikīkī Beach Resort, Sheraton Waikīkī Beach Hotel, and the Royal Hawaiian Center. Currently, there are several ongoing public and private redevelopment efforts in Waikīkī, which include the following:

- The U.S. Army has proposed a long-range plan for redevelopment of the Fort DeRussy Complex, including renovations to the Battery Randolph U.S. Army Museum and landscape enhancements. In addition to the museum, the complex includes the Daniel K. Inouye Asia-Pacific Center for Security Studies, the Waikīkī U.S. Post Office, Fort DeRussy Beach and the Hale Koa hotel. Construction would require the closure of Kālia Road, which would impact the HHV campus and surrounding area. This project would undergo the environmental review process, and its timeline is currently unknown.
- The DLNR is currently undertaking various beach improvement and maintenance projects in the Fort DeRussy, Halekūlani, Royal Hawaiian, and Kūhiō beach sectors of Waikīkī. Projects include the construction of new beach stabilization structures, and the recovery of offshore sand and its placement on the shoreline. While select projects have started construction, the

scope covers beach maintenance actions that are intended to be conducted on a periodic basis and may be adapted as sea levels continue to rise. WBSIDA is a stakeholder in the project, and HHV is a contributing member of the WBSIDA.

- Lilia Waikīkī is a 28-story residential tower along Kūhiō Avenue providing 400 rental units and 40,000 sf of retail. The project is currently leasing and is planned to open in 2022.
- Kyo-ya renovation and redevelopment of the Princess Ka'iulani Hotel, including the demolition of existing hotel buildings located at the corner of Kalākaua Avenue and Ka'iulani Avenue and the construction of a 33-story tower with 1,009 hotel rooms and a six-story commercial podium, parking structure, and amenities.
- The City Department of Design and Construction (DDC) has proposed improvements to the Waikīkī War Memorial Complex Natatorium, including reestablishing public access to this portion of Kapi'olani Regional Park. The memorial is located approximately 1.6 miles southeast of the Project Site.

4.13.2 Potential Secondary Effects

Secondary impacts are indirectly caused by the action and may occur later in time, but are still reasonably foreseeable in the future. The Project will expand the Village and replace aging retail and restaurant spaces with the contemporary AMB Tower. The Project will provide approximately 515 hotel guestrooms, helping to meet existing and future demands of the visitor industry and complementing the variety of accommodations at HHV in order to meet the evolving expectations of today's resort guest. Associated improvements at the site will enhance the identity of HHV and Waikīkī as a premier, global tourism destination and help to reinvigorate Ala Moana Boulevard as the primary 'ewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the project. This area will provide an open, safe and inviting pedestrian experience that supports connectivity with the HHV campus and the broader Waikīkī neighborhood.

In the long term, the AMB Tower and associated retail and amenities will require additional goods and services from other businesses in Waikīkī and across the state. This demand may create additional jobs outside of HHV.

4.13.3 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

The relationship between the short-term uses of the environment and the long-term productivity of the Project primarily involves the short-term impacts during construction and the long-term land use change of the property from a limited and partially-abandoned commercial use to a mixed-use property consisting primarily of hotel lodging accommodations and accessory uses.

Short-term impacts during construction include temporary noise, air, and soil erosion impacts from the demolition of the existing buildings, excavation, and construction of the new tower. Construction activities are required to adhere to State and City regulations and to ensure the use of proper equipment and regular vehicle maintenance. BMPs as discussed throughout this EIS and summarized in *Table 1.1* will be employed during construction to mitigate potential short-term impacts.

Traffic, including pedestrian, bicycle, bus, and vehicle circulation, may also be impacted temporarily during construction when materials and equipment are transported to the site and if any lane or road closures are required (*Section 4.7*). An AMP will be implemented during construction to ensure protection of archaeological resources. Construction will cease if any inadvertent archaeological finds are discovered. Construction will be limited to daylight hours to minimize impacts to neighboring residents during construction.

Short-term impacts during construction will also include the temporary displacement of the ABC Store. The existing ABC Store located within the Project Site will be reconstructed, expanded and relocated on the ground floor of the AMB Tower, serving as a key retail space within the tower podium that will be available to the general public.

The Project will maintain and enhance the long-term productivity of the site, which is currently underutilized. Expansion of the HHV campus and development of the AMB Tower will fortify Waikīkī as a resort destination and add new vibrancy to the ‘ewa gateway of Waikīkī. As the visitor industry continues to recover from the COVID-19 pandemic, development of the AMB Tower will provide a modern and high-quality hotel product that meets the expectations of today’s resort guest. In addition to hotel rooms, the Project will include ground floor retail accessible to pedestrians along Ala Moana Boulevard and guest amenities including food and beverage offerings, a fitness center, and a pool and recreation area. The AMB Tower will connect to the HHV campus to create a cohesive resort experience. Development of new hotel accommodations is critical for maintaining the success and long-term viability of HHV and of Waikīkī, as O‘ahu’s primary resort area and a world-class visitor destination.

Trade-offs among short-term and long-term gains and losses

The short-term inconveniences caused by construction activity include the possible closure of businesses and amenity areas in the Village, increased noise and dust, and increased traffic due to construction vehicles. Once construction is completed, the HHV campus will be expanded for a cohesive resort experience, AMB Tower will have new hotel accommodations and upgraded retail and amenity offerings, and the street frontage along Ala Moana Boulevard will be revitalized. These long-term benefits are believed to significantly outweigh the relatively short-term losses anticipated during construction

Foreclosure of future options

Expansion of the Village campus and development of the AMB Tower on an underutilized site along Ala Moana Boulevard maintains reasonable uses of the property, but will foreclose other potential uses of the property.

Narrowing of the range of beneficial uses of the environment

Located at the ‘ewa gateway of Waikīkī, the Village has been developed as a tourist destination since its inception. The Project does not propose a change in land use or a narrowing of the range of beneficial uses of the environment. In contrast, the Project will add hotel lodging accommodations to the site. Expanding the HHV to include the AMB Tower will complement existing surrounding resort uses. The planned improvements will optimally revitalize and enhance the resort experience within the Village and the surrounding area, and strengthen HHV as a major and iconic destination in the important Waikīkī region.

Long-term risks to health and safety

The Project will not create long term risk to health and safety. As discussed throughout, climate change and SLR are an inevitable part of Hawai'i's future. As such, the Applicants ~~is~~ are committed to proactively planning and designing the AMB Tower to be adaptive and resilient to ensure the ongoing successful, safe, and sustainable operation of the tower and entire Village for the foreseeable future. Design of the tower will incorporate mitigation measures such as elevation, LID, and strategic placement of utilities. See *Section 4.4.5* for further discussion. Additionally, the severity and frequency of storms may increase due to climate change. As such, standard operating procedures at the Village will also be in place at the AMB Tower (*Section 4.4*).

Existing structures on the site that are outdated or dilapidated are planned to be removed. Accordingly, hazardous materials will be disposed of properly prior to demolition.

4.13.4 Irreversible and Irretrievable Commitments of Resources

Construction of the AMB Tower will require the irreversible and irretrievable commitments of fiscal resources, labor, energy, construction materials and the various resources used to demolish existing dated or dilapidated structures. There will be a permanent commitment of funds and resources to plan, design, construct and operate the facilities. Redevelopment of the site should be weighed against the consequence of taking no action, which would result in the site's continuation as an underutilized property.

Expansion of the Village to include the three subject parcels and development of the AMB Tower represents a permanent commitment of land to the HHV campus. The Project will support HHV's position as a world-renowned, premier beachside resort and optimally revitalize Waikīkī's 'ewa gateway. It will allow the Village to continue to provide a variety of accommodation needs that meet the expectations and demands of today's resort guest and to continue to provide the public benefits it has contributed to the community for decades. The Project will support Waikīkī's unique social and economic function, continues to focus resort development in Waikīkī consistent with State and City policies, and will meet the objectives of the Village Master Plan, as discussed in *Section 2.0*.

4.13.5 Adverse Environmental Effects that Cannot Be Avoided

Implementation of the Project will produce unavoidable impacts in the short and long term. Short-term effects are generally associated with construction and are therefore temporary. Long-term effects generally follow completion of the improvements and relate to net changes to either programs or operations, and are permanent. Effects that are considered both adverse and unavoidable are discussed below.

Short-term Effects

- Construction activities are expected to generate short-term impacts to air quality, primarily from fugitive dust emissions (*Section 4.2.3*).
- Temporary increases in soil erosion will result from construction operations, there will be a modest increase in GHGs due to the commuting of laborers and operation of equipment during construction, and small amounts of soil and dust may be carried beyond the construction site in surface runoff water (*Sections 4.3.1, 4.3.2, and 4.8.1*).

- Traffic impacts from construction activities would be expected to occur as the result of the following: increases in truck traffic associated with removal and redistribution of excavation spoil or with delivery of imported fill and construction materials; modest increases in automobile traffic associated with construction workers travelling to and from the site; and, reductions in existing street capacity from temporary lane closures necessary for the construction of the Project (*Section 4.7.1*).
- Unavoidable, but temporary, noise impacts may occur during the demolition and construction activities within the Project Site (*Section 4.9*).

Long-term Effects

- Three significant historic properties (SIHP #s -2870, -9156, and -9157) were identified during the AIS, and the Project has the potential to affect these historic properties. The results of this AIS support a project effect determination of "Effect, with agreed upon mitigation commitments." Based on the AIS results and in consultation with the SHPD, the agreed upon mitigation commitments are archaeological data recovery in the form of archaeological monitoring for SIHP #s -2870 and -9157 and burial treatment for SIHP # -9156. Archaeological monitoring will be conducted in accordance with an AMP meeting the requirements of HAR, Section 13-279-4, and burial treatment will be conducted in accordance with a BTP meeting the requirements of HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD (*Section 4.1.1)*.
- The Project Site is expected to experience occasional passive flooding as a result of 3.2 feet of global SLR predicted by 2100, as discussed in *Section 4.4.5,* although measures will be taken to mitigate the impacts of flooding. The Applicants ~~is~~ are committed to proactively planning and designing the AMB Tower to be resilient and to ensure the ongoing successful, safe, and sustainable operation of the tower. The AMB Tower is designed with a finished floor elevation of 8.0~~7.5~~ feet above msl to protect the building from flooding. Additionally, access to the tower will be provided on multiple levels to locate exits away from potentially flooded areas. Additional mitigation measures that may be integrated into the design are discussed in *Section 4.4.5*.
- There will be some increase in vehicular and pedestrian traffic in the immediate Project area. In the long-term, traffic conditions in the immediate area are expected to remain similar to conditions in the absence of the Project (*Section 4.7.1*).
- An increase in hotel accommodations will result in an increase in water consumption, wastewater disposal, and solid waste generation. Therefore, there will be increased demand on existing utilities and infrastructure. Where practical and feasible, sustainable design practices, technology, and recycling will be utilized to minimize demand requirements (*Section 4.8*).
- The addition of people at the Project Site and within the overall Village may result increase in noise as more people will frequent the area (*Section 4.9*).
- As is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site, near ʻEna Road, have views that may be partially blocked by the new tower. Public views articulated in the PUC DP will be minimally impacted. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS,

and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected (*Section 4.11*).

- Existing dilapidated or aging structures at the site will be replaced by the new AMB Tower, which will present a timeless yet contemporary design that will complement the existing resort experience at the Village and the surrounding area (*Section 4.11*).
- The AMB Tower will provide ground-floor retail space for the existing ABC Store at the site; however, the other existing businesses would not be relocated in the HHV expansion.
- Will facilitate the City's goal of preserving Waikīkī as a resort district.

4.14 Unresolved Issues

Below are identified issues that are actively being addressed, but that are currently unresolved:

- **Archaeological, Cultural, and Historic Resources:** An AMP and BTP will be prepared by CSH for the project. Consultation is currently being conducted with cultural descendants to determine the appropriate handling of iwi kūpuna or other culturally or historically significant properties that may be found in the course of excavation or construction.

Section 5

Relationship of the Proposed Project to Land Use Plans, Policies and Controls for the Affected Area

Section 5

Relationship of the Proposed Project to Land Use Plans, Policies and Controls for the Affected Area

The relationship of the AMB Tower project to the following Federal, State, and City land use plans, policies and regulatory controls is assessed below:

Federal

- Coastal Zone Management Act
- Title III of the Americans with Disabilities Act

State of Hawai'i

- Environmental Impact Statements (HRS, Chapter 343)
- Land Use Commission (HRS, Chapter 205)
- Hawai'i State Plan (HRS, Chapter 226)
- Hawai'i 2050 Sustainability Plan (HRS, Section 226-65)
- Hawai'i State Functional Plans
- Hawai'i Tourism Authority- Hawai'i Tourism Strategic Plan: 2020-2025
- Coastal Zone Management (HRS, Chapter 205A)

City and County of Honolulu

- General Plan
- Primary Urban Center Development Plan
- Land Use Ordinance and Waikīkī Special District (ROH, Section 21-9.80)
- Planned Development-Resort Permit (ROH, Section 21-9.80-6)
- Special Management Area (ROH, Chapter 25)
- Shoreline Setback (ROH, Chapter 26~~3~~)
- Flood Hazard Areas (ROH, Chapter 21A)
- Waikīkī Livable Community Project
- Climate Action Plan 2020-2025

5.1 Federal

5.1.1 Coastal Zone Management Act

In 1972, the Federal government enacted the Coastal Zone Management Act (CZMA) CZMA to effectively manage, use, protect, and develop coastal areas in the U.S. The CZMA was a government response to increasing and competing demands upon habitats and resources of coastal lands and waters. Such demands often resulted in a loss of living marine resources and wildlife; depleted nutrient-rich areas; shoreline erosion; diminished open space for public use; and permanent and adverse changes to ecological systems. Under the CZMA, states are authorized to work in a unified manner with Federal and local governments to develop programs, policies, evaluation criteria, and development standards that lend to the effective protection and prudent use of coastal lands and waters.

The enforcement authority for the Federal Coastal Management Program (Public Law 104-150, as amended in 1996) has been delegated to the State under HRS, Chapter 205A, Coastal Zone Management (CZM) Program. The State defines the coastal zone management area as the following:

> "All lands of the State and the area extending seaward from the shoreline limit of the State's police power and management authority, including the United States territorial sea."

Discussion: *The Project is not located within the coastal zone management area, as defined by the State. The Project improvements are designed to conform to the goals, policies, and objectives of Hawai'i's CZM Program. A full discussion of the plan's compatibility with HRS, 205A is provided in Section 5.2.7.*

5.1.2 Title III of the Americans with Disabilities Act

In 1991, the Federal government enacted the ADA to provide equal accessibility for persons with disabilities. The ADA Title III covers businesses that are considered public accommodations. Public accommodations include private entities that own, lease, or operate facilities such as restaurants, retail stores, and hotels. Public accommodations must comply with basic nondiscrimination requirements that prohibit exclusion, segregation, and unequal treatment of persons with disabilities, as addressed in the ADA. They also must comply with specific requirements related to architectural standards for new and altered buildings: reasonable modifications to policies, practices, and procedures; effective and accessible communication; and other access requirements.

Discussion: *Design of the AMB Tower and associated improvements will adhere to applicable architectural standards to ensure facilities are ADA-accessible. Additionally, improvements to pedestrian facilities associated with the Project will meet ADA requirements.*

5.2 State of Hawai'i

5.2.1 Environmental Impact Statements, Hawai'i Revised Statutes Chapter 343

Under HRS, Chapter 343, the State legislature found that the quality of humanity's environment is critical to its well-being, and that human activities have broad and profound effects upon the interrelations of all components of the environment. Accordingly, the environmental review process is necessary to integrate the review of environmental concerns with existing planning processes of the State and counties. This process alerts decision makers to significant environmental effects that may result from the implementation of certain actions, and discloses proposed mitigation measures to address potential impacts. HRS, Chapter 343 states that a process of reviewing environmental effects is important to enhance environmental consciousness, encourage cooperation and coordination, and invite community participation during the public comment period. As such, the State has established a system of environmental review to ensure that concerns are given appropriate consideration in decision-making, in addition to economic and technical considerations. This process alerts decision makers to significant environmental effects which may result from the implementation of certain actions, and discloses proposed mitigation measures to address potential impacts.

Discussion: *This Draft SEIS has been prepared in compliance with environmental requirements outlined in HRS, Chapter 343 and HAR, Chapter 11-200.1. The 2011 Village Master Plan EIS was required due to the proposed land use within the WSD. Because the Project includes expansion of HHV and construction of the AMB Tower within the WSD, this SEIS is required in order to supplement the 2011 EIS.*

An SEISPN for the Project was published by the ERP in the November 8, 2021 edition of The Environmental Notice. Subsequently, a SEIS Public Scoping Meeting was held virtually on November 15, 2021 at 5:30 p.m. Comment letters received during the SEISPN 30-day review period are attached as Appendix A. See responses to comments and further discussion in Section 7.0.

5.2.2 State Land Use Commission, Hawai‘i Revised Statutes Chapter 205

Under HRS, Chapter 205, all lands of the State are to be classified in one of four categories: Urban, Rural, Agricultural, and Conservation. The State Land Use Commission (LUC), an agency of DBEDT, is responsible for each district’s standards and for determining the boundaries of each district. The LUC is also responsible for administering all requests for district reclassifications and/or amendments to district boundaries, pursuant to HRS, Chapter 205-4, and HAR, Title 15, Chapter 15 as amended.

Discussion: *The Project is located in the State Land Use Urban District. The Urban District generally includes lands characterized by “city-like” concentrations of people, structures and services. Regulation of land located within the State Land Use Urban District lies with the respective counties, not with the State, and permitted uses are established by respective county ordinances or rules (in this case, the City & County of Honolulu’s Land Use Ordinance).*

Use of the Project Site for the AMB Tower is allowable within the Urban District and is consistent with the surrounding area. Development of the Project must meet standards articulated in the LUO, and is subject to approval by the City’s DPP, and by the City Council. See Section 5.3 for further discussion.

5.2.3 Hawai‘i State Plan, Hawai‘i Revised Statutes Chapter 226

In 1978, the State Legislature found a need to improve the planning process in the State, to increase the effectiveness of government and private actions, to improve the coordination among different agencies and levels of government, and to provide for the wise use of Hawai‘i’s resources to guide the future development of the State. Under HRS, Chapter 226 (Hawai‘i State Planning Act), the Hawai‘i State Plan serves as a guide for the future long-range development of the State. The Hawai‘i State Plan identifies the goals, objectives, policies, and priorities for the State; provides a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improves coordination of Federal, State, and County plans, policies, programs, projects, and regulatory activities; and establishes a system for plan formulation and program coordination to provide for an integration of all major State and County activities.

Table 5.1 assesses and evaluates how the AMB Tower supports the Hawaiʻi State Plan, as promulgated under HRS, Chapter 226. Where appropriate, if the State Plan goals are not applicable, it is so noted.

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Section 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 Hawaiʻi'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 Hawaiʻi, that nourishes a sense of community responsibility, of caring, and of participation in community life.	X		
Discussion: *The Project will add new hotel lodging accommodations to the HHV campus and strengthen the Village as an iconic destination drawing visitors to Waikīkī and thereby supporting local businesses. Replacing existing dated structures with a new hotel tower will reinvigorate and revitalize Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, providing visitors with a more appealing and welcoming experience. Improvements along the Project's street frontage will enhance connectivity and the overall pedestrian experience in the area. The Project will also support Waikīkī's critical social and economic function, and will provide short-term jobs related to construction, as well as long-term quality jobs in the hospitality industry.*			
Section 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 Hawaiʻi'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 Hawaiʻi's people to pursue their socioeconomic aspirations throughout the islands.	X		
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaiʻi's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaiʻi'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: *The expansion of the Village to include AMB Tower will create short-term construction-related jobs and long-term hospitality career opportunities for all levels within service and management. As described in Section 4.10, the Project is estimated to add approximately 370 new FTE jobs on site, and 123 FTE jobs off-site on a stabilized basis (2028 and beyond).*			

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Section 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, while at the same time stimulating 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		
(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
(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, particularly with respect to emerging industries in science and technology.	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 or innovative potential growth industries in particular.			X

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(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		
<u>Discussion:</u> *The increase in hotel operations and amenities will add to renewed economic activity. As discussed in Section 4.10, the Project is expected to generate 1,831 worker years on site and 610 worker years off-site during the construction period. To support operation of the Project, approximately 370 FTE jobs on site are anticipated to be created, and 123 FTE off-site jobs are expected to be generated in the long term. There are also expected to be significant indirect contributions to the economy through associated visitor spending and off-site servicing and support operations for the AMB Tower.*			
Section 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 food producers and consumers in the State, nation, and world.	X		
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			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) In addition to the State's priority on food, 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, including the increased purchase and use of Hawai‘i-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.	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

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *The State's policies for the economy in regard to agriculture are supported by HHV's use of locally produced agricultural products.*			
Section 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 Hawaiʻi'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 Hawaiʻi'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 Hawaiʻi's people.	X		
(3) Improve the quality of existing visitor destination areas by utilizing Hawaiʻi's strengths in science and technology.			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 Hawaiʻi's people.	X		
(6) Provide opportunities for Hawaiʻi'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 Hawaiʻi'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 Hawaiʻi's cultures and values.	X		
Discussion: *The expansion of the Village to include to AMB Tower will provide a variety of hotel guestroom accommodations that meet the expectations and demands of today's resort guest, enhance Waikīkī as a premier, global tourism destination, maintain the unique and sensitive character and aloha spirit of the islands. As discussed in Section 4.10, the Project is estimated to add 1,831 worker years on site and 610 worker years off-site during the construction period. In the long term, 370 FTE jobs on site and 123 FTE jobs off site are anticipated to be created. Other sectors of the local economy will be supported through increased demand for goods and services needed at the AMB Tower. There is anticipated to be an overall benefit to the State's economy from the creation of jobs and wages. Overall, there will be a positive net economic benefit to both the State and City.*			
Section 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 Hawaiʻi'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 Hawaiʻi that generates long-term government civilian employment;			X
(2) Promote Hawaiʻi's supportive role in national defense, in a manner consistent with Hawaiʻi's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaiʻi's economy;			X
(3) Promote the development of federally supported activities in Hawaiʻi that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaiʻi's environment;			X
(4) Increase opportunities for entry and advancement of Hawaiʻi's people into federal government service.			X
(5) Promote federal use of local commodities, services, and facilities available in Hawaiʻi.			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaiʻi.			X
(7) Pursue the return of federally controlled lands in Hawaiʻi 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
Discussion: *The State's policies for the economy in regard to federal expenditures are not directly applicable to the Project.*			

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Section 226-10 Objective and Policies for the Economy - Potential Growth Activities. (A) Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawaiʻi's economic base. (B) To achieve the potential growth 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 Hawaiʻi'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 Hawaiʻi 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 Hawaiʻi's capacity to attract and service international programs and activities that generate employment for Hawaiʻi's people;	X		
(7) Enhance and promote Hawaiʻi'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 Hawaiʻi'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 Hawaiʻi'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 Hawaiʻi's ability to attract and develop economic activities of benefit to Hawaiʻi			X
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaiʻi;			X
(14) Encourage the development and implementation of joint federal and State initiatives to attract federal programs and projects that will support Hawaiʻi's social, economic, physical, and environmental objectives			X
(15) Increase research and development of businesses and services in the telecommunications and information industries.			X
(16) Foster the research and development of non-fossil fuel and energy efficient modes of transportation;			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Discussion: *The Project will enhance HHV as a destination in Waikīkī and support the Village's existing use as a major venue for local, national, and international programs.*			
Section 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 Hawaiʻi 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:			

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(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
<u>Discussion:</u> *While the Project supports the State's policies for the economy in regard to the information industry, they are not directly applicable to the Project.*			
Section 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 uses without generating costly or irreparable environmental damage.	X		
(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		
<u>Discussion:</u> *The Project is compatible with existing surrounding uses and relationships between the urban and nearby shoreline environment. The construction of the AMB Tower demonstrates a prudent use of an urban landscape by redeveloping and improving an existing underutilized property. The Project will not impact rare or endangered plant or animal species. Potential construction-related impacts to water quality will be mitigated through BMPs and no significant adverse long-term impacts are anticipated (Sections 4.3.2 and 4.3.3). The Project will complement and support existing programs at the HHV that protect the natural environment.*			

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	S	N/S	N/A
Section 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 Hawaiʻi's scenic assets, natural beauty, and multi-cultural/historical resources. (B) To achieve the scenic, natural beauty, and historic resources objective, 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 Hawaiʻi's ethnic and cultural heritage.	X		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	X		
Discussion: *As discussed in Section 4.1.1, an AIS was prepared for the Project, and proposes mitigation of potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP under HAR, Section 13-279-4, and burial treatment in accordance with a BTP under HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds during construction will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.* *As is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site near ʻEna Road have views that may be partially blocked by the new tower. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected.*			
Section 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 Hawaiʻi's land, air, and water resources.	X		
(2) Greater public awareness and appreciation of Hawaiʻi'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 Hawaiʻi's limited environmental resources.	X		
(2) Promote the proper management of Hawaiʻi's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawaiʻi'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 Hawaiʻi'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		
(6) Encourage design and construction practices that enhance the physical qualities of Hawaiʻi'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 Hawaiʻi's people, their cultures and visitors.	X		
Discussion: *Planned improvements are designed to complement the natural beauty of Hawaiʻi. The removal of vacant/dilapidated or aging buildings will enhance the visual environment with a new tower featuring a modern, culturally appropriate design and materials. The AMB Tower will be inspired to reflect Hawaiʻi's rich heritage in a modern, contemporary form.* *Construction-related impacts to air and water will be mitigated through BMPs and are anticipated to last only through the duration of the construction period (Sections 4.2.3, 4.3.2, and 4.3.3). Design of the tower will consider protection from potential natural hazards and be built in accordance with Federal, State, and City requirements (Section 4.4).*			

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Section 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: *Off-site and on-site improvements to surrounding facility systems (water, wastewater, roadways, solid waste, power, and telecommunications) will be coordinated with the appropriate State and City agencies or private utility providers, as discussed in Sections 4.3.3 and 4.8 (see also Appendix K). Existing facility systems are expected to have the capacity to meet the needs of the Project without adding new public facility infrastructure.*			
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: *The Project is expected to generate 0.72 tons of solid waste per day, which will not have a significant impact on the City's waste stream and disposal to the H-POWER Plant, which has the capacity to handle 3,000 tons per day. As discussed in Section 4.8.4, the AMB Tower will implement existing recycling efforts practiced at the HHV campus to minimize solid waste. Measures include, but may not be limited to, the following:* • *Glass, plastic bottles, cardboard, aluminum, and paper will be recycled.* • *The use of compostable or alternative disposal cutlery, like cups and silverware made from cornstarch or bamboo, will be encouraged.* • *Usable food will be sent to Aloha Harvest or similar organizations for distribution to charities.* • *Food waste will be recycled and sent to pig farms for feed.* • *Frying oil will be used for biodiesel conversion.* • *Soap will be recycled (currently through the Clean the World program, which is a national social enterprise that collects and recycles discarded soap and plastic amenity bottles from hospitality partners and distributes the hygiene kits to countries in need).* • *The AMB Tower will utilize sewer capacity previously created and paid for in connection with prior projects at the campus (i.e., the Grand Islander).*			
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:			

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(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: *The existing water system has adequate capacity to accommodate the domestic water and off-site fire protection for the Project. The Project will implement Hilton's "Light Stay" program to monitor water usage. Water conservation measures, such as drip systems, moisture sensors, nonpotable water for irrigation, etc., will be implemented where feasible (Section 4.8.2).*			
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
(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		

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	S	N/S	N/A
Discussion: *The Project supports alternative modes of transportation. The site is located in Waikīkī, an area characterized by a high density of attractive destinations, high pedestrian traffic, and limited parking. Development of the tower along Ala Moana Boulevard will enhance the immediate pedestrian surroundings and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus. Planned improvements to enhance the street frontage include landscaping with water features and an open, welcoming porte cochere. The 8-foot-wide sidewalk will be preserved to maintain comfortable conditions for pedestrians. The tower podium will also include ground level retail comprised of the ABC Store and outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape. Provided parking will include EV charging stalls, and adequate bicycle storage will be provided.*			
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 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
(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

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *Planning for the State's facility systems with regard to energy does not directly apply to the Project. However, the Project will integrate energy-conserving measures as part of the Village's wider efforts to support sustainability and resiliency. As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV's longtime sustainability practices, including the implementation of various recycling programs and the use of low flow water fixtures (Section 4.8.2). Hilton's "Light Stay" monitoring program will be used at the AMB Tower to manage its water and energy consumption (Section 4.12).* *Landscaping, preservation of open space, and LID measures, such as seepage wells, drywells, or permeable pavement, where feasible, will be integrated into the Project design to protect water quality and to help mitigate potential urban heat island effects. The Project's location in Waikīkī, an area characterized by a high density of attractive destinations, high pedestrian traffic, and public transit option, will support the option to travel without a car. Off-street parking constructed as part of the Project will include EV charging, and the podium will include adequate bicycle storage.*			
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 State's policies for facility systems in regard to telecommunications are not directly applicable to the Project.*			
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 affordable housing is made available to very low-, low- and 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 housing choices for low-income, moderate-income, and gap-group households.			X
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing 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

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *The Project plans to provide hotel lodging accommodations; therefore, the State's policies for the socio-cultural advancement in regard to housing are not directly applicable to the 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 Hawaiʻi'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 Project is not anticipated to have an adverse impact on health services. Wastewater disposal and solid waste services will meet regulatory requirements to mantain public health standards (Section 4.8.3 and 4.8.4).*			
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
(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 Hawaiʻi's cultural heritage.	X		
(5) Provide higher educational opportunities that enable Hawaiʻi'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 Hawaiʻi's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *The AMB Tower will join in and support existing cultural, art, and educational programming on the HHV campus. HHV participates in the HTA's Mālama Hawaiʻi program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort also partners with the Kualoa Ranch to teach mālama ʻāina, giving visitors the opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the laʻau lapaʻau (medicinal plants).*			
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 Hawaiʻi'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: *While the Project supports the State's policies for the socio-cultural advancement in regard to social services, they are not directly applicable to 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:			
(1) Foster and preserve Hawaiʻi'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 Hawaiʻi'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 Hawaiʻi'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 Hawaiʻi'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 AMB Tower will support continued cultural and artistic educational programs and performances at the Village. The Project will facilitate improved connectivity to the Village and enhance the enjoyment of recreational activities at the HHV campus.*			

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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: *Through the provision of quality jobs and extension of business to local companies, the Project supports the individual rights and personal well-being of HHV staff and local residents.*			
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 Hawaiʻi's people. (B) To achieve the culture objective, it shall be the policy of this State to:			
(1) Foster increased knowledge and understanding of Hawaiʻi's ethnic and cultural heritages and the history of Hawaiʻi.	X		
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaiʻi'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 Hawaiʻi.	X		
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaiʻi's people and visitors.	X		
Discussion: *The Village's commitment to offering cultural and artistic educational programs, artistic demonstrations, events, and performances at the Village will continue under the Project.* *As discussed in Section 4.1.1, an AIS was prepared for the Project, and proposes mitigation of potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP under HAR, Section 13-279-4, and burial treatment in accordance with a BTP under HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.*			
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 Hawaiʻi'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

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(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: *As with the entire Village campus, hotel security and staff at AMB Tower will be trained to address a range of situations that require immediate response to emergencies or unlawful activity on-site. Response plans are in place in the event of natural disasters (Section 4.4).*			
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 Hawaiʻi.			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: *While the Project supports the objectives and policies for socio-cultural advancement in regard to government, they are not directly applicable to the Project.*			
Hawaiʻi State Plan - HRS Ch. 226 - Part III. Priority Guideline			
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 Hawaiʻi'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.			
226-103 Economic Priority Guidelines. (A) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaiʻi'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; (ii) Rely on economic linkages within the local economy; (iii) Diversify the economy;	X		

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
	(iv) Reinvest in the local economy; (v) Are sensitive to community needs and priorities; and (vi) Demonstrate a commitment to provide management opportunities to Hawaiʻi residents.			
	(B) Encourage investments in innovative activities that have a nexus to the State, such as:			
	(i) Present or former residents acting as entrepreneurs or principals;			X
	(ii) Academic support from an institution of higher education in Hawaiʻi;			X
	(iii) Investment interest from Hawaiʻi residents;			X
	(iv) Resources unique to Hawaiʻi 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, 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 Hawaiʻi's small-scale producers, manufacturers, and distributors.	X		
(7)	Continue to seek legislation to protect Hawaiʻi from transportation interruptions between Hawaiʻi and the continental United States.			X
(8)	Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potential and which have the following characteristics:			
	(a) An industry that can take advantage of Hawaiʻi's unique location and available physical and human resources.	X		
	(b) A clean industry that would have minimal adverse effects on Hawaiʻi's environment.	X		
	(c) An industry that is willing to hire and train Hawaiʻi'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 Hawaiʻi business.			X
(10)	Enhance the quality of Hawaiʻi's labor force and develop and maintain career opportunities for Hawaiʻi's people through the following actions:			
	(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
	(D) Promote career opportunities in all industries for Hawaiʻi'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:			

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawaiʻi'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 Hawaiʻi's significant natural, scenic, historic, and cultural resources.	X		
(5) Develop and maintain career opportunities in the visitor industry for Hawaiʻi's people, with emphasis on managerial positions.	X		
(6) Support and coordinate tourism promotion abroad to enhance Hawaiʻi'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 Hawaiʻi.			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 Hawaiʻi's agricultural community.			X
(6) Seek favorable freight rates for Hawaiʻi's agricultural products from inter-island 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 Hawaiʻi's farmers by purchasing locally grown food and food products.			X
(E) Priority guidelines for water use and development:			

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(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 non-potable 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 Hawaiʻi.			X
(2) Encourage the development of services such as financial data processing, 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 Hawaiʻi'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

Discussion: *The AMB Tower will enhance the quality of the visitor experience at HHV by rejuvinating Ala Moana Boulevard as the ʻewa gateway to Waikīkī. The proposed action will have a positive effect on the State's economy through the addition of 515 hotel rooms and increased visitor spending and short-term and long-term employment.*

The Project will support HHV's overall efforts in responsible tourism, as discussed in Section 4.12. HHV offers unique amenities like the Duke Kahanamoku Lagoon, world-class shopping and dining, on-campus programming like the Waikīkī Starlight Lūʻau and other activities for guests to enjoy on the property, thereby reducing the impact on busy roads and visitor hotspots. Further, the AMB Tower will add additional amenities on site that will be available for all HHV guests, and, in part, to the general public.

Hilton's "Light Stay" monitoring program will be implemented at the AMB Tower to measure and manage the environmental impact of the Project, including tracking water and energy consumption and waste generation. Additional measures to increase energy efficiency of the Project include, but are not limited to, the incorporation of low-flow plumbing fixtures to encourage water efficiency; the use of low-emittance window glazing, air-conditioning controls, and use of compact fluorescent lamps and light-emitting diodes light fixtures; and, the use of low-emitting materials for applications of adhesives, sealants, paints, carpets and flooring systems to promote a healthy indoor environment. See Section 4.12.

Existing utilities at the site will accommodate the Project, and water conservation measures will be implemented in accordance with State and City requirements (Section 4.8).

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
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 Hawaiʻi's people.			X
(2)	Manage a growth rate for Hawaiʻi's economy that will parallel future employment needs for Hawaiʻi'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 Hawaiʻi 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
(12)	Utilize Hawaiʻi'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 Hawaiʻi's shoreline, open spaces, and scenic resources.	X		

Table 5.1: Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *The Project will replace existing outdated structures at the Project Site with the new AMB Tower, which will revitalize the ʻewa gateway to Waikīkī. The urbanized district of Waikīkī has been planned as the anchor resort area of the State. Continuing to focus resort development in Waikīkī is consistent with the State's plan to direct urban development away from critical areas reserved for conservation or other uses.* *HHV remains committed to reducing its carbon footprint through its participation in Hilton's "Light Stay" program, which will be implemented at the AMB Tower. Design of the tower will, where feasible, also include features to reduce potential impacts to the surrounding environment, including the use of LID measures and water conservation strategies. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible. The AMB Tower will add new public benefits, to be confirmed during the PD-R permit process. HHV will also continue providing its numerous benefits to the public, including maintenance of open space and entertainment offerings (such as the weekly fireworks show on Duke Kahanamoku Beach).*			
226-105 Crime and Criminal Justice Priority Guidelines. (A) 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 HHV ensures the safety of its guests with the provision of hotel security and maintenance of emergency response plans and procedures.*			
226-106 Affordable Housing Priority Guidelines. (A) Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.			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 Hawaiʻi's low- and moderate-income households, gap-group households, and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaiʻi'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 Hawaiʻi's residents and less priority to development of housing intended primarily for individuals outside of Hawaiʻi.			X
Discussion: *While the Project supports the objectives and policies for affordable housing, they are not directly applicable to the Project.*			

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
226-107 Quality Education Priority Guidelines. (A) 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
(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 work force.			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. (b) Statewide electronic mail. (c) Access to the Internet.			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 objectives and policies for education are not directly applicable to the Project; however, increased State revenues (e.g., from Transient Accommodations Taxes and General Excise Taxes) will help support the State's educational objectives.*			
226-107 Sustainability Priority Guidelines. (A) Priority guidelines to promote sustainability:			
(1) Encourage balanced economic, social, community, and environmental priorities	X		
(2) Encourage planning that respects and promotes living within the natural resources and limits of the State.	X		
(3) Promote a diversified and dynamic economy.	X		
(4) Encourage respect for the host culture.	X		
(5) Promote decisions based on meeting the needs of the present without compromising the needs of future generations.	X		
(6) Consider the principles of the ahupua‘a system.			X
(7) Emphasize that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai‘i.	X		
Discussion: *The Project Site has been previously developed, and infrastructure is adequate to serve the AMB Tower. HHV is committed to reducing its water consumption and carbon footprint through its participation in Hilton's "Light Stay" program, which will be implemented at the AMB Tower. The Project will help contribute to a dynamic economy through the provision of short-term and long-term jobs, induced support of other local businesses and industries, retail and hotel accommodations that increase choice at the Village, and increased visitor spending, while maintaining the aloha spirit fundamental to the hospitality industry.*			
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:			

Table 5.1: Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(1) Ensure that Hawai‘i’s people are educated, informed, and aware of the impacts climate change may have on their communities			X
(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, which 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.			X
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.	X		
Discussion: *SLR is an inevitable part of Hawai‘i’s future, and the Project developer is committed to proactively planning and designing the AMB Tower to be resilient and take into account the impacts of higher ocean levels. As discussed in Section 4.4.5, 3.2 feet of SLR by the year 2100 may result in passive flooding on the site. The AMB Tower will be designed with a finished floor elevation of 8.0~~7.5~~ feet above msl to prevent passive flooding into the building. Utilities will be located at higher elevations where feasible. LID measures, where feasible, will be incorporated and will be determined as design progresses. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible. HHV will continue to contribute and participate with local stakeholders regarding a regional coordinated effort to address the effects of climate change and SLR.* *As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV’s longtime sustainability practices, including the implementation of various recycling programs, the use of low flow water fixtures, incorporation of EV charging, and bicycle storage. Hilton’s “Light Stay” monitoring program will also be used at the AMB Tower to manage its water and energy consumption. See Section 4.12 for further discussion on sustainable practices.*			

5.2.4 Hawai‘i 2050 Sustainability Plan

Updated in June 2021, the Hawai‘i 2050 Sustainability Plan serves as the State’s sustainability and climate strategic action plan; aligns the State’s goals, policies, and actions with the United Nations (UN) Sustainable Development Goals (SDGs); and recommends sustainability and climate change actions for 2020–2030. The revised plan guides the coordination and implementation of Hawai‘i’s sustainability and climate adaptation goals, principles, and policies, pursuant to HRS, Section 226-65. It also provides recommendations for a sustainable and resilient economic recovery for Hawai‘i.

The Hawai‘i 2050 Sustainability Plan identifies eight focus areas with 38 strategies and more than 250 recommended actions toward a sustainable Hawai‘i. The focus areas align with priorities identified through public and stakeholder engagement, as well as ongoing commitments the State has made. The Project’s consistency with the focus areas and strategies outlined in the Hawai‘i 2050 Sustainability Plan are discussed in *Table 5.2*.

Table 5.2: Hawai'i 2050 Sustainability Plan HRS, Section 226-65 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
1. Promote a Sustainable Economic Recovery			
Strategy 1: Support farmer livelihoods			X
Strategy 2: Support local markets for locally grown food	X		
Strategy 3: Promote sustainable & resilient farmland, practices, and infrastructure			X
Strategy 4: Invest in green workforce development beginning with youth.			X
Strategy 5: Foster the development of jobs that can sustain families financially.	X		
Strategy 6: Support diversification of the economy.			X
Strategy 7: Reduce the environmental footprint of the tourism industry.	X		
Strategy 8: Support native Hawaiian culture and reduce impacts of the tourism industry to local communities.	X		
<u>Discussion:</u> *As discussed in Section 4.10, the Project will result in direct and indirect benefits that will support the economic recovery of the tourism industry and wider Waikīkī region. Benefits will include both short- and long-term jobs, increased spending, State and City revenue, and support of local businesses and other sectors through the purchase of goods and services needed to operate the AMB Tower. To support its sustainability and reduce its carbon footprint, the AMB Tower will participate in Hilton's "Light Stay" program to monitor and conserve energy and water. Additionally, the Project will, where feasible, incorporate water-saving measures as required by BWS and LID measures to protect water quality. Design of the tower will nurture a Hawaiian sense of place and enhance the visitor experience at HHV.*			
2. Reduce Greenhouse Gas Emissions			
Strategy 9: Measure, manage, and plan for GHG emission reduction.			X
Strategy 10: Incorporate climate change planning into decision-making processes.	X		
Strategy 11: Promote energy conservation and efficiency through outreach, communication, and community and public engagement.			X
Strategy 12: Continue to invest in the deployment of clean energy technologies to reduce reliance on fossil fuels.	X		
Strategy 13: Expand the adoption of zero emission vehicles.			X
Strategy 14: Promote alternative modes of transportation.	X		
Strategy 15: Reduce the generation of waste, including plastic waste.	X		
Strategy 16: Increase diversion of waste through recycling, reuse, and composting.	X		
<u>Discussion:</u> *According to the Air Quality study conducted for the Project (Appendix D), in the long-term, air quality could be impacted by on-site area and stationary and mobile sources; however, these impacts are not expected to be significant. Additionally, the AMB Tower is not anticipated to generate a large amount of vehicular traffic (Section 4.7.1). Guests of the Project will be able to take advantage of the area's high density of services in the vicinity to reduce vehicular use. The Project will improve the pedestrian environment at its street frontage along Ala Moana Boulevard. More pedestrian traffic could mean less vehicular traffic, and thereby incrementally support the reduction of GHG emissions. Finally, as is currently done at the Village campus, the Project will implement recycling of food waste, cardboard, glass, and plastics.*			
3. Improve Climate Resilience			
Strategy 17: Integrate climate change adaptation and resilience considerations into planning and implementation.	X		
Strategy 18: Assess and communicate the impacts of climate change to residents, businesses, and communities most likely to be impacted.			X
Strategy 19: Implement actions that improve the State's resilience to climate change.	X		
Strategy 20: Increase the resilience of vulnerable populations to the impacts of climate change and other shocks and stressors.			X

Table 5.2: Hawaiʻi 2050 Sustainability Plan HRS, Section 226-65 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *The design of the Project considers the future impacts of SLR and includes. adaptive design and resilience planning. The tower will include a finished floor elevation of 8.0~~7.5~~ above msl. LID measures will be incorporated and will be determined as design progresses. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible. Utilities will be located at higher elevations where feasible.*			
4. Advance Sustainable Communities			
Strategy 21: Advance smart growth initiatives and multimodal transportation systems.	X		
Strategy 22: Advance sustainability in school and university operations			X
Strategy 23: Integrate sustainable design principles into new and existing buildings.	X		
Discussion: *The Project is located at the ʻewa gateway to Waikīkī, a densely populated residential and resort neighborhood. The site is developed, but has been underutilized. Locating the Project in an area that has adequate infrastructure and has already been developed is consistent with smart growth initiatives. Guests of the Project will be able to take advantage of the area's high density of services in the vicinity to reduce vehicular use. The Project will improve the pedestrian environment along Ala Moana Boulevard through the provision of a welcoming porte cochere, landscaping, water features, and ground-floor retail with an open seating area. With construction of the Project, the Village campus will continue to have more than 50 percent of open space, much of which is available to the public as a benefit. In addition, HHV maintains the adjacent 4.6-acre Duke Kahanamoku Lagoon and the adjacent beach for the benefit of the public.*			
5. Advance Equity			
Strategy 24: Strengthen broadband access to support digital learning and online solutions in rural areas.			X
Strategy 25: Continue to improve economic and social sustainability of individuals through access to affordable housing.			X
Strategy 26: Continue to implement strategies that reduce homelessness in Hawaiʻi to enhance livelihoods.			X
Strategy 27: Continue to advance opportunities for all, regardless of gender.	X		
Discussion: *The Project will support sustainable employment opportunities for all, regardless of gender identification.*			
6. Institutionalize Sustainability Throughout Government			
Strategy 28: Invest in staff and other resources to coordinate and advance sustainability goals across State agencies and local governments.			X
Strategy 29: Update State policies to reflect sustainability and climate change priorities.			X
Strategy 30: Incorporate sustainability into government operations.			X
Discussion: *The Hawaiʻi 2050 Sustainability Plan's focus area of institutionalizing sustainability through government is not directly applicable to the Project.*			
7. Preserve the Natural Environment			
Strategy 31: Improve water quality through reduced pollution and dumping.	X		
Strategy 32: Support water reuse strategies to conserve water.	X		
Strategy 33: Establish policies to protect Hawaiʻi's unique marine ecosystems.			X
Strategy 34: Manage climate change impacts to marine resources.			X
Strategy 35: Protect and manage watersheds.	X		
Strategy 36: Continue to adopt strategies that protect land-based natural resources.			X
Strategy 37: Conserve working forest landscapes, protect forests from harm, and enhance public benefits from trees and forests.			X
Discussion: *The Project will mitigate potential short- and long-term impacts to water quality due to stormwater runoff through compliance with the conditions of the necessary City grading permit and applicable provisions of HAR, Sections 11-54 and 11-55. Low-impact development measures, such as seepage wells, drywells, or permeable pavement, where feasible, will be integrated into Project design in the long term.*			

Table 5.2: Hawaiʻi 2050 Sustainability Plan HRS, Section 226-65 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
8. Perpetuate Traditional Ecological Knowledge and Values			
Strategy 38: Ground climate and sustainability strategies in our cultural foundation.	X		
Discussion: *HHV participates in the HTA's Mālama Hawaiʻi program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort also partners with the Kualoa Ranch to teach mālama ʻāina, giving visitors the opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the laʻau lapaʻau (medicinal plants).* *An AIS and CIA were conducted during the preparation of the SEIS to assess the sensitivity and potential presence of historic resources, including subsurface resources such as burials (Section 4.1). As needed, identified mitigative measures that are in accordance with State Historic Preservation laws will be administered, should such resources be discovered. Additionally, cultural community consultation will be ongoing through the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.*			

5.2.5 Hawaiʻi State Functional Plans

Developed in the late 1980s and early 1990s as part of the Statewide Planning System, the State Functional Plans are the primary guidance tools for implementing the Hawaiʻi State Plan. While the Hawaiʻi State Plan establishes long-term objectives for Hawaiʻi, the purposes of the Functional Plans are to identify major statewide concerns; define current strategies for particular functions; identify major relationships among different functions; and provide strategies for departmental policies, programs, and priorities. The Functional Plans provide guidance as to State and County roles and the allocation of resources to fulfill identified activities in the areas of agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism, transportation, and water resources. Applicable functional plans and their objectives are discussed in *Table 5.3.*

Table 5.3: Hawaiʻi State Functional Plans S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Employment State Functional Plan (1990)				
Objective I.A:	Improve the qualifications of entry level workers and their transition to employment			X
Objective I.B:	Develop and deliver education, training and related services to ensure and maintain a quality and competitive workforce.	X		
Objective II.A:	Improve labor exchange			X
Objective III.A:	Improve quality of life for workers and families.	X		
Objective IV.A:	Improve planning of economic development, employment and training activities	X		
Discussion: *As described in Section 4.10, the Project is anticipated to add 1,831 worker years on site and 610 worker years off-site during the construction period. In the long term, 370 FTE jobs on site and 123 FTE jobs off site are anticipated to be created. The creation of jobs and wages will result in a multiplier effect, increasing the flow of capital into the local economy. Operation and maintenance of the AMB Tower will also require goods and services from other local businesses, stimulating and supporting local industries.*				
Historic Preservation State Functional Plan (1991)				
Policy A.1:	Expand Statewide Historic Sites Inventory Program			X
Policy B.1:	Provide timely historic property reviews which are integrated effectively into the land use regulatory system.	X		
Policy B.2:	Establish and make available a variety of mechanisms to better protect historic properties.			X

Table 5.3: Hawai'i State Functional Plans S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Policy C.1:	Evaluate and designate significant historic properties for legal recognition in a timely manner.	X		
Policy C.2:	Encourage the preservation and maintenance of historical properties through economic incentives and support.			X
Policy C.3:	Explore innovative means to better manage historic properties.	X		
Policy C.4:	Encourage proper preservation techniques.	X		
Policy D.1:	Provide adequate facilities to preserve historic resources.	X		
Policy E.1:	Provide support and coordination to activities involved with the collection and conservation of historic records and materials.	X		
Policy F.1:	Support programs to facilitate the public's gathering of historic information			X
Policy F.2:	Coordinate and support programs to disseminate information to the public.			X
Policy G.1:	Provide opportunities for continuing education for persons involved with collecting and preserving historical resources.			X
Discussion: *An AIS was prepared for the Project (Section 4.1.1), and proposes mitigation commitments for potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP meeting the requirements of HAR, Section 13-279-4, and burial treatment in accordance with a BTP meeting the requirements of HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing through the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.* *Existing structures on the Added Parcels will be demolished to construct the Project. As concluded by the RLS, the buildings do not contain historic integrity and are neither eligible for listing on the Hawai'i and National Registers of Historic Places nor significant under any National Register criteria. With the results of the RLS, no significant adverse impacts to historic architectural resources are anticipated.*				
Tourism State Functional Plan (1991)				
Objective I.A:	Development, implementation and maintenance of policies and actions which support the steady and balanced growth of the visitor industry.	X		
Objective II.A:	Development and maintenance of well-designed visitor facilities and related developments which are sensitive to the environment, sensitive to neighboring communities and activities, and adequately serviced by infrastructure and support services.	X		
Objective III.A:	Enhancement of respect and regard for the fragile resources which comprise Hawai'i's natural and cultural environment. Increased preservation and maintenance efforts.	X		
Objective IV.A:	Support of Hawai'i's diverse range of lifestyles and natural environment.	X		
Objective IV.B:	Achievement of mutual appreciation among residents, visitors, and the visitor industry.	X		
Objective V.A:	Development of a productive workforce to maintain a high quality visitor industry.	X		
Objective V.B:	Enhancement of career and employment opportunities in the visitor industry.	X		
Objective VI.A:	Maintenance of high consumer awareness of Hawai'i as a visitor destination in specific desired market segments.	X		
Discussion: *The Project will support the continued recovery and planned growth of the visitor industry in Waikīkī. AMB Tower will provide 515 new hotel guestrooms and upgraded amenities available for use by all HHV visitors. The new tower will enhance the Project Site by replacing outdated or dilapidated buildings with a new tower that reflects Hawai'i's rich heritage and cultural diversity in a contemporary form. Economic expansion will result from increased employment, extending business to local companies beyond HHV, increased tax revenues to the State and County governments, and overall increased visitor spending.*				

Table 5.3: Hawaiʻi State Functional Plans S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Transportation State Functional Plan (1991)				
Objective A:	Expansion of the transportation system and reduction of congestion by increasing transportation capacity, modernizing transportation infrastructure, improving regional mobility, and promoting the development of public transportation systems.			X
Objective B:	Reduction of travel demand through zoning and decentralization initiatives, by closing the gap between where people live and work.			X
Objective C:	Management of existing transportation systems through a program of transportation systems management.			X
Objective D:	Identification and reservation of lands and rights-of-way required for future transportation improvements.			X
Objective E:	Planning and designing State highways to enhance inter-regional mobility.			X
Objective F:	Improving and enhancing transportation safety	X		
Objective G:	Improved transportation maintenance programs.			X
Objective H:	Ensure that transportation facilities are accessible to people with disabilities.	X		
Objective I:	Development of a transportation infrastructure that supports economic development initiatives.			X
Objective J:	Expansion of revenue bases for transportation improvements.			X
Objective K:	Providing educational programs.			X
Discussion: *The AMB Tower will enhance and activate Ala Moana Boulevard as the ʻewa gateway to Waikīkī through improved landscaping, increased connectivity to the HHV, and sidewalk improvements. The 8-foot-wide sidewalk will be preserved to maintain comfortable conditions and safety for pedestrians. Visitors to the site will also benefit from greater pedestrian access to various modes of transportation (e.g., bike facilities and bus stops). The porte cochere will be designed to be ADA-accessible.*				

5.2.6 Hawaiʻi Tourism Authority- Hawaiʻi Tourism Strategic Plan: 2020-2025

The Hawaiʻi Tourism Authority (HTA) was established by Act 156, SLH 1998 to "strategically manage Hawaiʻi tourism in a sustainable manner consistent with economical goals, cultural values, preservation of natural resources, community desires, and visitor industry needs." Introduced in 2020, *The Hawaiʻi Tourism Strategic Plan: 2020-2025*, the plan outlines four interacting "Pillars" supported by research and other administrative functions, and outlines goals and objectives for each. The Pillars, goals and objectives are outlined and discussed in *Table 5.4*:

Table 5.4: Hawaiʻi Tourism Strategic Plan: 2020-2025 S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Natural Resources Pillar				
Goal:	Dedicate resources to programs that enhance and support Hawaiʻi's natural resources and cultural sites to improve the quality of life for all of Hawaiʻi's residents and to enhance the visitor experience.	X		
Objective 1:	Encourage and support sustainable and responsible tourism.	X		
Objective 2:	Engage and encourage active natural and cultural resource management strategies in areas frequented by visitors.	X		
Objective 3:	Promote visitor industry alignment with the Aloha+ Challenge, Hawaiʻi's recognized model to achieve the UN SDGs, especially for energy and water			X

Table 5.4: Hawaiʻi Tourism Strategic Plan: 2020-2025 S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Discussion: *The Project will add approximately 515 new guestrooms to the HHV campus to serve existing and future demands. The urbanized district of Waikīkī has been planned as the anchor resort area of the State. Continuing to focus resort development in Waikīkī is consistent with the State's plan to direct urban development away from critical areas reserved for conservation or other uses.* *An AIS was prepared for the Project (Section 4.1.1), and proposes mitigation of potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP under HAR, Section 13-279-4, and burial treatment in accordance with a BTP under HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.* *HHV remains committed to reducing its carbon footprint through its participation in Hilton's "Light Stay" monitoring program, which will be implemented at the AMB Tower. Sustainability measures, as described in Section 4.12, will be implemented where feasible, and will include the use of LID measures and water conservation strategies. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible. The AMB Tower will add new public benefits, to be confirmed during the PD-R permit process. HHV will also continue providing its numerous benefits to the public, including maintenance of open space, and provision of entertainment (such as weekly fireworks shows at Duke Kahanamoku Beach).* *The AMB Tower will enable HHV to continue to support existing cultural, art, and educational programming on the HHV campus. HHV participates in the HTA's Mālama Hawaiʻi program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort also partners with the Kualoa Ranch to teach mālama ʻāina, giving visitors the opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the laʻau lapaʻau (medicinal plants).*				
Hawaiian Culture Pillar				
Goal:	Ho'oulu (grow) the uniqueness and integrity of the Native Hawaiian culture and community through genuine experiences for both visitors and residents.	X		
Objective 1:	Support the everyday use of the Hawaiian language.	X		
Objective 2:	Ensure the accurate portrayal of Hawaiian culture by HTA's marketing contractors			X
Objective 3:	Encourage accurate portrayal of Hawaiian culture in visitor industry marketing and experiences for visitors.	X		
Objective 4:	Increase understanding and respect for cultural practitioners, cultural sites, and cultural resources	X		
Objective 5:	Provide the visitor industry with opportunities for Native Hawaiian cultural education and training for its workforce.	X		
Discussion: *An AIS and CIA were prepared for the Project (Section 4.1). The Applicant<u>s</u> will continue to consult with cultural descendants on an appropriate plan to preserve historic properties that may be found on the site.* *Design of the AMB Tower will feature architectural elements that reflect a Hawaiian sense of place and cultural diversity in a contemporary form. The use of ʻōlelo Hawaiʻi may be incorporated into Project signage. HHV will also continue to hold cultural programming at the resort to bring awareness to the host culture and promote responsible tourism.* *The AMB Tower will enable HHV to continue to support existing cultural, art, and educational programming on the HHV campus. HHV participates in the HTA's Mālama Hawaiʻi program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort also partners with the Kualoa Ranch to teach mālama ʻāina, giving visitors the opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the laʻau lapaʻau (medicinal plants).*				
Community Pillar				
Goal:	Work to make sure residents and local communities benefit from tourism by supporting projects valued by the community and aligned with the destination's brand and image; informing both residents and visitors of these projects and events; strengthening relations between residents and visitors; and forming partnerships to build a resilient tourism workforce and community.	X		
Objective 1:	Generate and/or invest in initiatives and projects that provide for positive resident-visitor interaction, celebrate Hawaiʻi's multicultural heritage, and support better relations between communities and the tourism industry.	X		

Table 5.4: Hawai‘i Tourism Strategic Plan: 2020-2025 S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Objective 2:	Help build a globally competitive visitor industry workforce with programs for residents starting from school age to college students, and to those already in the visitor industry.	X		
Objective 3:	Generate effective messages to enhance residents' understanding of how Hawai‘i tourism helps perpetuate Hawaiian culture, preserve the environment, and support communities	X		
Objective 4:	Support education and prevention programs to improve safety among visitors and residents and to maintain Hawai‘i's reputation as a safe destination.	X		
Objective 5:	Actively participate in Hawai‘i Emergency Management Agency's (HI-EMA's) preparedness exercises and serve as a communications link to assist Hawai‘i's visitor industry and visitors during times of crisis			X
Objective 6:	Identify, mitigate, and address key issues threatening community support for tourism and the integrity of Hawai‘i's tourism industry by working with public agencies and private organizations	X		
Objective 7:	Support sports programs that create community engagement, have marketing value, provide economic benefits, support Hawai‘i's youth, and are aligned with Hawai‘i's brand.	X		
Discussion: *Expanding the HHV campus and replacing existing structures at the Project Site with the AMB Tower will help to reinvigorate and revitalize Ala Moana Boulevard as the primary ‘ewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience that reinforces the identity of Waikīkī as a premier, global tourism destination. As discussed in Section 4.10, the Project is expected to generate approximately 370 permanent FTE jobs on site and 123 FTE jobs off-site, resulting in a multiplier effect as wages result in an increased flow of capital through the local economy. By extension, through its utilization of local goods and services as described in Section 4.10, the AMB Tower will also support other local businesses.* *Design of the AMB Tower will feature architectural elements that reflect a Hawaiian sense of place in a contemporary form. The Project will also support HHV's ongoing cultural programming to bring awareness to the host culture and promote responsible tourism. HHV participates in the HTA's Mālama Hawai‘i program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort also partners with the Kualoa Ranch to teach mālama ‘āina, giving visitors the opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the la‘au lapa‘au (medicinal plants).*				
Brand Marketing Pillar				
Goal:	Take the lead in protecting and enhancing Hawai‘i's globally competitive brand in a way that is coordinated, authentic, and market-appropriate; is focused on Hawai‘i's unique culture and natural environment; and supports Hawai‘i's economy by effectively attracting higher-spending, lower-impact travelers.	X		
Objective 1:	Ensure that Hawai‘i's brand image is globally aligned and consistent with marketing principles of authenticity, uniqueness, and Responsible Tourism.	X		
Objective 2:	Ensure marketing is focused on higher-spending, lower impact market segments in each market area.			X
Objective 3:	Maintain or improve the strength of Hawai‘i's brand relative to its competitors.	X		
Discussion: *For over 60 years, HHV has remained strongly committed to creating exceptional experiences for guests from around the world. The purpose of expanding HHV to include the AMB Tower in the Village Master Plan is to provide a variety of accommodation needs that meet the expectations and demands of today's resort guest, revitalize the ‘ewa gateway of Waikīkī, and strengthen the HHV campus as a major and iconic destination, drawing visitors to Waikīkī. The AMB Tower will feature a fresh, modern design that also reflects Hawai‘i's rich heritage and cultural diversity in a contemporary form.* *The Project will support HHV's overall efforts in responsible tourism. HHV offers unique amenities like the Duke Kahanamoku Lagoon, world-class shopping and dining, on-campus programming like the Waikīkī Starlight Lū‘au and other activities for guests to enjoy on the property, reducing the impact on busy roads and visitor hotspots. The AMB Tower will add additional amenities on site that will be available for all HHV guests.* *In partnership with the HTA and the Hawai‘i Visitors and Convention Bureau (HVCB), HHV educates meeting planners about O‘ahu and its culture in an effort to shape more responsible, thoughtful visitors. Hilton's "Travel with Purpose" initiative is committed to doubling its investment in social impact and cutting its environmental footprint in half through responsible hospitality across its properties– including in Hawai‘i – by 2030. HHV also participates in the HTA Mālama Hawai‘i program, which aims to educate and encourage visitors to give back to the islands through volunteer experiences with local nonprofits. The resort partners with the Kualoa Ranch to teach mālama ‘āina, giving visitors the*				

Table 5.4: Hawai'i Tourism Strategic Plan: 2020-2025 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
opportunity to thatch traditional Hawaiian hale (grass huts), assist with cleaning, planting, harvesting the kalo (taro), or mālama of the la'au lapa'au (medicinal plants).			

5.2.7 Coastal Zone Management, Hawai'i Revised Statutes Chapter 205A

Under HRS, Chapter 205A, CZM is a comprehensive program that establishes and enforces standards and policies to guide the development of public and private lands within coastal areas. The State CZM objectives and policies address the following 10 subject areas: (1) recreational resources, (2) historic resources, (3) scenic and open space resources, (4) coastal ecosystems, (5) economic uses, (6) coastal hazards, (7) managing development, (8) public participation, (9) beach protection, and (10) marine resources. The subject areas primarily relate to potential development impacts on the shoreline, nearshore, and ocean environments.

The State's SMA permitting system is part of the CZM Program. The SMA permit is a management tool administered by counties to assure that uses, activities, or operations on land or touching water within an SMA are designed and carried out in compliance with the CZM objectives and policies and SMA guidelines as articulated in ROH, Chapter 25 (see *Section 5.3.5* for further discussion). *Table 5.5* discusses the Project's compliance with the CZM objectives and policies articulated in HRS, Chapter 205A.

	Table 5.5: Coastal Zone Management Program **HRS Section 205 A- Objective and Policies** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
OBJECTIVES & POLICIES				
(1)	**Recreational resources;**			
	Provide coastal recreational opportunities accessible to the public.			
(A)	Improve coordination and funding of coastal recreational planning and management; and	X		
(B)	Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			
	(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;	X		
	(ii) Requiring restoration of coastal resources that have significant recreational and ecosystem value, including but not limited to coral reefs, surfing sites, fishponds, sand beaches, and coastal dunes, when these resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when restoration is not feasible or desirable;			X
	(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			X
	(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			X
	(v) Ensuring public recreational uses of county, State and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources.			X
	(vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters	X		
	(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing			X
	(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of Section 46-6.			X

Table 5.5: Coastal Zone Management Program HRS Section 205 A- Objective and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
Discussion: *The Project supports the objectives for recreational opportunities. While not located along the shoreline, the AMB Tower will serve to connect the ʻewa side of the Village to the HHV campus, which offers direct access to Duke Kahanamoku Beach and the shoreline. HHV maintains the Lagoon, beach, and shoreline area directly adjacent to the Village and provides an open-access policy that guides residents and visitors to the beach via wayfinding signage. The Project will support the continuance of such public benefits as maintenance of and access to shoreline areas (including Kahanamoku Lagoon).* *The Project will also mitigate potential short- and long-term impacts to water quality due to stormwater runoff through compliance with the conditions of the necessary City grading permit and applicable provisions of HAR, Sections 11-54 and 11-55. LID measures, such as seepage wells, drywells, or permeable pavement, will be integrated into Project design.*				
(2)	**Historic resources;**			
	Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.			
(A)	Identify and analyze significant archaeological resources;	X		
(B)	Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C)	Support State goals for protection, restoration, interpretation, and display of historic resources.	X		
Discussion: *Section 4.1 discusses historic and cultural resources in the Project area. The Applicants will continue to consult with cultural descendants on a plan to appropriately handle any historic finds that may be encountered on the site. An AMP will be prepared and reviewed by SHPD for implementation during construction.*				
(3)	**Scenic and open space resources;**			
	Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.			
(A)	Identify valued scenic resources in the coastal zone management area;			X
(B)	Ensure that new developments are compatible with their visual environment by designing and locating those developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;	X		
(C)	Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and			X
(D)	Encourage those developments that are not coastal dependent to locate in inland areas.	X		
Discussion: *The AMB Tower is located inland (approximately 800 feet from the shoreline) and will blend with the surrounding urban environment. The Project will not be discernable from public views articulated in the PUC DP, including the Ala Wai Yacht Harbor, Punchbowl Lookout, Ala Moana Beach Park, or Kūhiō Beach Park. It will be visible from Fort DeRussy Park; however, makai views from the park at Kālia Road and from Kalākaua Avenue are already partially blocked by existing buildings.* *As is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site, near ʻEna Road, have views that may be partially blocked by the new tower. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected.* *The Project will enhance the visual environment of the Project Site by replacing the existing dated or dilapidated buildings with the AMB Tower, a contemporary structure featuring modern, culturally appropriate design using materials that complement that surrounding environment.*				
(4)	**Coastal ecosystems;**			
	Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, from disruption and minimize adverse impacts on all coastal ecosystems.			
(A)	Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;	X		
(B)	Improve the technical basis for natural resource management;			X
(C)	Preserve valuable coastal ecosystems of significant biological or economic importance, including reefs, beaches, and dunes;			X

Table 5.5: Coastal Zone Management Program HRS Section 205 A- Objective and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
(D)	Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and			X
(E)	Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and non-point source water pollution control measures.	X		
Discussion: *The Project will mitigate potential short- and long-term impacts to water quality due to stormwater runoff through compliance with the conditions of the City grading permit and applicable provisions of HAR, Sections 11-54 and 11-55. LID measures, such as seepage wells, drywells, or permeable pavement, will be integrated into Project design where feasible.*				
(5)	**Economic uses;**			
	Provide public or private facilities and improvements important to the State's economy in suitable locations.			
(A)	Concentrate coastal dependent development in appropriate areas;	X		
(B)	Ensure that coastal dependent development and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area; and	X		
(C)	Direct the location and expansion of coastal development to areas designed and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of designated areas when: (i) Use of designated locations is not feasible; (ii) Adverse environmental effects and risks from coastal hazards are minimized; and (iii) The development is important to the State's economy.	X		
Discussion: *The HHV campus was developed over 60 years ago within the designated WSD.The characteristics of the Project Site and surrounding environment are consistent with development of the AMB Tower. The Project Site is located approximately 800 feet inland from the shoreline and will not interfere with other coastal-dependent or coastal-related development. The Project will utilize previously developed, underutilized urban land for the new AMB Tower, which will support existing and anticipated demand for hotel guestrooms in the resort area, add needed jobs to the region, and enhance the existing Village campus.*				
(6)	**Coastal hazards;**			
	Reduce hazard to life and property from coastal hazards.			
(A)	Develop and communicate adequate information about the risks of coastal hazards;			X
(B)	Control development, including planning and zoning control, in areas subject to coastal hazards;	X		
(C)	Ensure that developments comply with requirements of the National Flood Insurance Program; and	X		
(D)	Prevent coastal flooding from inland projects.	X		
Discussion: *The Project is not expected to pose a hazard to life, property, or coastal ecosystems. The parcels and immediate surrounding areas are located within Flood Zone D, areas where flood hazards are undetermined, but possible, and within the extreme tsunami evacuation zone (Sections 4.4.3 and 4.4.4). It is also within the 3.2-foot SLR-XA, and is particularly susceptible to chronic passive flooding. As such, design of the AMB Tower will have a finished floor elevation of 8.0~~7.5~~ feet above msl, and will adhere to IBC, State, and City building code standards to promote public safety. Utilities will be located at higher elevations where feasible. LID measures will be incorporated where feasible, and will be determined as design progresses. The use of green infrastructure features, such as a green wall on portions of the podium, may also be incorporated where feasible.*				
(7)	**Managing development;**			
	Improve the development review process, communication, and public participation in the management of coastal resources and hazards.			
(A)	Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;			X
(B)	Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and			X
(C)	Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.	X		

	Table 5.5: Coastal Zone Management Program HRS Section 205 A- Objective and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
	Discussion: *This Draft SEIS has been prepared in compliance with environmental requirements outlined in HRS, Chapter 343 and HAR, Chapter 11-200.1. The Project will be conducted in compliance with all necessary State and City environmental rules and regulations as discussed throughout this SEIS.*			
(8)	**Public participation;**			
	Stimulate public awareness, education, and participation in coastal management.			
(A)	Promote public involvement in coastal zone management processes;	X		
(B)	Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and			X
(C)	Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.			X
	Discussion: *A SEISPN was published by the ERP in The Environmental Notice on November 8, 2021 to notify agencies, organizations, and individuals that a Draft SEIS would be prepared for the Project. Publication of the SEIS was followed by a 30-day public comment period to solicit guidance on the scope of the studies to be prepared and to gather input on important topics to be covered in the Draft SEIS. A total of 23 agencies and individuals provided responses during the public comment period. In addition, a SEIS public scoping meeting was held virtually on November 15, 2021 to collect further input. See Section 7.0 for a listing of those who provided comments, input received during the SEIS public scoping meeting, and responses provided.*			
(9)	**Beach and coastal dune protection;**			
(A)	Protect beaches and coastal dunes for:			
	(i) Public use and recreation;	X		
	(ii) The benefit of coastal ecosystems; and	X		
	(iii) Use as natural buffers against coastal hazards;	X		
(B)	Coordinate and fund beach management and protection.			
(A)	Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;	X		
(B)	Prohibit construction of private shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;			X
(C)	Minimize the construction of public shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;			X
(D)	Minimize grading and damage to coastal dunes;			X
(E)	Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and			X
(F)	Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.			X
	Discussion: *The AMB Tower site is not located along the coastline. The Project will enhance connectivity within the HHV campus, which continues to maintain an open access policy for the public to access Duke Kahanamoku Beach and the shoreline. The construction of the AMB Tower does not propose shore-hardening structures.*			
(10)	**Marine and coastal resources;**			
	Promote the protection, use, and development of marine and coastal resources to assure their sustainability.			
(A)	Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;			X
(B)	Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;			X
(C)	Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;			X

Table 5.5: Coastal Zone Management Program HRS Section 205 A- Objective and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(D) Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and			X
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.			X
Discussion: *The Project will not impact the protection or use of marine and coastal resources. BMPs will be in place to mitigate potential impacts to the environment, as described throughout Section 4.0.*			

5.3 City and County of Honolulu Plans, Policies and Controls

5.3.1 City and County of Honolulu General Plan

The General Plan for the City was adopted in 1977 and subsequently amended. The Revised Oʻahu General Plan was adopted by City Council on December 21, 2021 under Resolution 21-023, CD1 and signed by the Mayor on January 14, 2022. The 2021 General Plan is a statement of long-range socio-economic, environmental, and design objectives and policies to be achieved for the general prosperity and welfare for the people of the Oʻahu. It is intended to serve as a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens (City and County of Honolulu Revised Charter, 2000). The General Plan consists of 11 subject areas and provides the framework for the City's expression of public policy concerning the needs of the people and the functions of government. The subject areas address all aspects of health, safety, and welfare for Oʻahu's communities, and include the following: population trends and growth, economic activity, the natural environment, housing, transportation and utilities, energy, physical development and urban design, public safety, health and education, culture and recreation, and government operations and fiscal management. *Table 5.6* discusses how the Project addresses the applicable objectives and policies of the City's General Plan.

The proposed action's consistency with the applicable objectives and policies of the 2021 General Plan is described in *Table 5.6*.

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
PART I: POPULATION			
Objective A: To plan for anticipated population in a manner that acknowledges the limits of Oʻahu's natural resources, protects the environment, and minimizes social, cultural, and economic disruptions.			
Policy 1: Allocate efficiently the money and resources of the City in order to meet the needs of Oʻahu's current and future population.			X
Policy 2: Provide adequate support facilities to accommodate future numbers of visitors to Oʻahu while seeking to minimize disruption to residents and protect the natural environment.	X		
Policy 3: Seek a balanced pace of physical development in harmony with the City's environmental, social, cultural, and economic goals by effecting and enforcing City regulations.	X		
Policy 4: Establish geographic growth boundaries to accommodate future population growth while at the same time protecting valuable agricultural lands, environmental resources, and open space.			X
Policy 5: Support family planning and social equity.			X
Objective B: To establish a pattern of population distribution that will allow the people of Oʻahu to live, work and play in harmony.			

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 1: Facilitate the full development of the primary urban center through higher-density redevelopment and the provision of adequate infrastructure.	X		
Policy 2: Encourage development within the secondary urban center at Kapolei and the ʻEwa and Central Oʻahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the primary urban center.			X
Policy 3: Manage land use and development in the urban-fringe and rural areas so that: a. Development is contained within growth boundaries; and b. Population densities in all areas remain consistent with the character, culture, and environmental qualities desired for each community.	X		
Policy 4 Direct growth according to Policies 1, 2, and 3 above by providing development capacity and needed infrastructure to support a distribution of Oʻahu's resident population that is consistent with the following for the Primary Urban Center: 43% distribution of the 2040 Oʻahu population.	X		
Discussion: *Expansion of the HHV to include the Project Site is consistent with the General Plan's policies for population growth as indicated above. The site is currently underutilized and will be redeveloped with the AMB Tower. The Project will provide 515 hotel guestrooms to accommodate existing and anticipated hotel lodging needs. The Project adds jobs to Waikīkī, maintaining and enhancing the region as an important employment growth center in a manner consistent with planned development in the PUC. As discussed in Section 4.8, the Project Site is adequately served by utilities.*			
PART II: BALANCED ECONOMY			
Objective A: To promote diversified economic opportunities that enable all the people of Oʻahu to attain meaningful employment and a decent standard of living.			
Policy 1: Support a strong, diverse, and dynamic economic base that protects the natural environment and is resilient to changes in global conditions.	X		
Policy 2: Encourage the viability of businesses and industries, including support for small businesses, which contribute to the economic and social well-being of Oʻahu residents.	X		
Policy 3: Pursue opportunities to grow and strategically develop non-polluting industries such as healthcare, agriculture, renewable energy, and technology in appropriate locations that contribute to Oʻahu's long-term environmental, economic, and social sustainability.			X
Policy 4: Support entrepreneurship and innovation through creative efforts such as partnerships with businesses and non-profit organizations, and by encouraging complementary policies that support access to capital markets.			X
Policy 5: Foster a healthy business climate by streamlining regulatory processes to be transparent, predictable, and efficient.			X
Policy 6: Encourage the development of local, national, and world markets for the products of Oʻahu-based industries.			X
Policy 7: Explore and encourage alternate economic models that reflect traditional cultural values and improve economic resilience, i.e., subsistence, barter and a culture of reciprocity and sharing.			X
Objective B: To maintain a successful visitor industry that creates living wage employment, enhances quality of life, and actively supports our unique sense of place, natural beauty, Native Hawaiian culture, and multi-cultural heritage.			
Policy 1: Encourage the visitor industry to support the quality of the visitor experience, the economic and social well-being of communities, the environment, and the quality of life of residents.	X		
Policy 2: Respect and emphasize the value that Native Hawaiian culture, its cultural practitioners, and other established ethnic traditions bring to enrich the visitor experience and appreciation for island heritage, culture, and values.	X		
Policy 3: Guide the development and operation of visitor accommodations and attractions in a manner that avoids unsustainable increases in the cost of providing public services and infrastructure, and that respects existing lifestyles, cultural practices, and natural, cultural, and historic resources.	X		
Policy 4: Partner with the private sector to support the long-term viability of Waikīkī as a world class visitor destination and as Oʻahu's primary resort area, and to support adequate adaptation strategies against climate change impacts.	X		
Policy 5: Provide related public expenditures for rural and urban-fringe areas that are highly impacted by the visitor industry.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 6: Provide for a high-quality, livable, and safe environment for visitors and residents in Waikīkī, and support measures to ensure visitors' and residents' safety in all areas of O'ahu.	X		
Policy 7: Concentrate on the quality of the visitor experience in Waikīkī, rather than on development densities.	X		
Policy 8: Facilitate the development of the following secondary resort areas: Ko 'Olina, Turtle Bay, Hoakalei, and Mākaha Valley in a manner that respects existing lifestyles and the natural environment.			X
Policy 9: Preserve scenic qualities of O'ahu for residents and visitors alike.	X		
Policy 10: Encourage physical improvements, social services, and cultural programs that contribute to a high-quality visitor experience, while seeking financial support of these improvements from the visitor industry.	X		
Objective C: To ensure the long-term viability, continued productivity, and sustainability of agriculture on O'ahu.			
Policy 1: Foster a positive business climate for agricultural enterprises of all sizes, as well as innovative approaches to farming as a business, to ensure the continuation of agriculture as an important component of O'ahu's economy.			X
Policy 2: Support agricultural diversification to strengthen the agricultural industry and make more locally grown food available for local consumption.			X
Policy 3: Foster market opportunities and increased consumer demand for safe, locally grown, fresh, processed, and value-added agricultural products.			X
Policy 4: Streamline the implementation of regulations to enhance a producer's ability to develop, market, and distribute locally grown food and products.			X
Policy 5: Identify the economic benefits of local food production for local markets. Provide economic incentives to encourage local food production and sustainability, and encourage agricultural and aquaculture occupations.			X
Policy 6: Promote small-scale farming activities and other operations, such as truck farming, flower growing, aquaculture, livestock production, taro growing, subsistence farms, and community gardens.			X
Policy 7: Encourage landowners to actively use agricultural lands for agricultural purposes, and to pursue the long-term preservation of agricultural land with high productivity potential for agricultural production.			X
Policy 8: Encourage sustainable agricultural production to coexist on lands with renewable energy generation.			X
Policy 9: Prohibit the urbanization of agricultural land located outside the City's growth boundaries.			X
Policy 10: Support and encourage technologies and agricultural practices that conserve and protect water, soil, air quality, and drainage areas, reduce carbon emissions, and promote public health and safety.			X
Policy 11: Support and encourage the availability and use of non-potable water for irrigation, where feasible.			X
Policy 12: Provide plans, incentives, and strategies to ensure the affordability of agricultural land for farmers.			X
Policy 13: Encourage both public and private investments to improve and expand agricultural infrastructure, such as irrigation systems, agricultural processing centers, and distribution networks.			X
Policy 14: Promote farming as a desirable and fulfilling occupation by encouraging agricultural education and training programs and by raising public awareness and appreciation for agriculture.			X
Policy 15: Protect the right to farm by enforcing right-to-farm laws, enacting policies to protect agricultural operations, and imposing meaningful buffer zones.			X
Policy 16: Seek ways to discourage agricultural theft and vandalism.			X
Policy 17: Recognize the scenic value of agricultural lands as an open-space resource and amenity.			X
Objective D: To use the economic resources of the sea in a sustainable manner.			
Policy 1: Encourage the fishing industry to maintain its viability at a level that does not degrade or damage marine ecosystems.			X
Policy 2: Encourage the ongoing development of aquaculture, ocean research, and other ocean-related industries.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 3: Encourage the expansion of ocean recreation activities for residents and visitors that are operated in a sustainable manner.			X
Objective E: To ensure meaningful employment and economic equity.			
Policy 1: Support public and private training and employment programs to prepare residents for existing and future jobs, including those for historically marginalized communities.			X
Policy 2: Make full use of State and Federal employment and training programs.			X
Policy 3: Encourage the provision of retraining programs for workers in industries with planned reductions in their labor force.			X
Policy 4: Identify emerging industries, encourage investments needed to support the industries, and develop a skilled workforce in these fields			X
Objective F: To maintain federal programs and economic activity on Oʻahu consistent with the City's infrastructure and environmental goals.			
Policy 1: Take full advantage of Federal programs and grants which will contribute to the economic and social well-being of Oʻahu's residents.			X
Policy 2: Encourage the Federal government to pay for the cost of public services used by Federal agencies.			X
Policy 3: Encourage the Federal government to lease new facilities rather than construct them on tax exempt public land.			X
Policy 4: Encourage the military to purchase locally all needed services and supplies which are available on Oʻahu.			X
Policy 5: Encourage the continuation of a high level of military-related employment both on and off base in the Hickam-Pearl Harbor, Wahiawā, Kailua-Kāneʻohe, and ʻEwa areas.			X
Objective G: To bring about orderly economic growth on Oʻahu.			
Policy 1: Concentrate economic activity and government services in the primary urban center and in the secondary urban center at Kapolei.	X		
Policy 2: Advance the equitable distribution of City capital spending, employment opportunities, infrastructure investments, and other benefits throughout communities based on need and regardless of income level. Allow infrastructure and business activity in urban fringe areas appropriate to population needs.			X
Policy 3: Maintain sufficient land in appropriately located commercial and industrial areas to help ensure a favorable business climate on Oʻahu.	X		
Policy 4: Encourage the continuation of a high level of military-related employment in the Hickam-Pearl Harbor, Wahiawa, Kailua-Kaneohe, and ʻEwa areas.			X

Discussion: *The Project meets the City's objectives and policies as they relate to a balanced economy, particularly with regards to maintaining a successful visitor industry, encouraging improvements that enhance the visitor experience, ensuring meaningful employment, and bringing about orderly economic growth. Expansion of the HHV campus to include the Project Site, which consists of dilapidated or outdated structures, will enhance the quality of the visitor and residence experience by installing pedestrian improvements such as landscaping, activating the streetscape, and replacing dated structures with the new AMB Tower that will reflect a Hawaiian sense of place and cultural diversity in a contemporary form.*

The Project will add 515 hotel guestrooms to the HHV campus to meet existing and anticipated demand for a variety of accommodation choices. As discussed in Section 4.10, the Project is estimated to create 1,831 worker years on site and 610 worker years off-site during the construction period. In the long term, 370 FTE jobs on site and 123 FTE jobs off site are anticipated to be generated. It is expected that there will be an overall benefit/multiplier effect to the State and City economy from creation of these jobs and generation of wages. Operation of the AMB Tower will also require goods and services from other local small businesses, thereby supporting the growth of other industries on the island. In addition to the direct economic impacts of the AMB Tower, the Project will add new public benefits, to be confirmed during the PD-R permit process.

HHV will continue to provide its robust public benefits program that supports the community and provides a high-quality visitor and pedestrian experience through access to and maintenance of recreational/shoreline areas, weekly entertainment (e.g., public fireworks show), and maintenance of a friendly pedestrian environment.

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Design of the AMB Tower will protect the surrounding natural environment through the implementation of mitigation measures discussed in Section 4.0. Public views articulated in the PUC DP will be protected; however, there may be unavoidable adverse impacts to views from surrounding residential towers at high floors (Section 4.11).			
PART III: NATURAL ENVIRONMENT AND RESOURCE STEWARDSHIP			
Objective A: To protect and preserve the natural environment.			
Policy 1: Protect Oʻahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.	X		
Policy 2: Seek the restoration of environmentally damaged areas and natural resources.			X
Policy 3: Preserve, protect, and restore stream flows and stream habitats to support aquatic and environmental processes and riparian, scenic, recreational, and Native Hawaiian cultural resources.			X
Policy 4: Require development projects to give due consideration to natural features and hazards such as slope, inland and coastal erosion, flood hazards, water-recharge areas, and existing vegetation, as well as to plan for coastal hazards that threaten life and property.	X		
Policy 5: Require sufficient setbacks from Oʻahu's shorelines to protect life and property, preserve natural shoreline areas and sandy beaches, and minimize the future need for protective structures or relocation of structures.			X
Policy 6: Design and maintain surface drainage and flood-control systems in a manner which will help preserve natural and cultural resources.	X		
Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.	X		
Policy 8: Protect plants, birds, and other animals that are unique to the State of Hawaiʻi and the Island of Oʻahu.			X
Policy 9: Increase tree canopy and ensure its integration into new developments, and protect significant trees on public and private lands.	X		
Policy 10: Increase public awareness and appreciation of Oʻahu's land, air, and water resources.			X
Policy 11: Support the State and federal governments in the protection of the unique environmental, marine, cultural and wildlife assets of the Northwestern Hawaiian Islands.			X
Policy 12: Plan, prepare for, and mitigate the impacts of climate change on the natural environment, including strategies of adaptation.	X		
Objective B: To preserve and enhance the natural monuments and scenic views of Oʻahu for the benefit of both residents and visitors.			
Policy 1: Protect the Island's well-known resources: its mountains and craters; forests and watershed areas; marshes, rivers, and streams; shoreline, fishponds, and bays; and reefs and offshore islands.	X		
Policy 2: Protect Oʻahu's scenic views, especially those seen from highly developed and heavily traveled areas.	X		
Policy 3: Locate roads, highways, and other public facilities and utilities in areas where they will least obstruct important views of the mountains and the sea.			X
Policy 4: Protect and expand public access to the natural and coastal environment for recreational, educational, and cultural purposes, and maintain access in a way that does not damage natural, historic, or cultural resources.			X
Discussion: *Design of the AMB Tower will protect the surrounding natural environment through the implementation of mitigation measures discussed throughout Section 4.0. Potential impacts to water quality will be mitigated through compliance with the conditions of the City grading permit and applicable provisions of HAR, Sections 11-54 and 11-55.* *The Project will also consider the future impacts of SLR. Design of the AMB Tower will include a finished floor elevation of 8.0~~7.5~~ above msl. LID measures such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design. Utilities will be located at higher elevations where feasible. The Project will increase the vegetation provided on the site and may consist of native, Polynesian-introduced, or tropical trees, palms, and shrubs of varying sizes that provide shade and screening. Landscaping will be consistent with the WSD Guidelines and will be finalized as Project design progresses. Additionally, public views articulated in the PUC DP will be protected; however, there may be unavoidable adverse impacts to views from surrounding residential towers at high floors (Section 4.11).*			

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
PART IV: HOUSING			
Objective A: To ensure a balanced mix of housing opportunities and choices for all residents at prices they can afford.			
Policy 1: Support programs, policies, and strategies that will provide decent and affordable homes for local residents, especially those in the lowest income brackets			X
Policy 2: Streamline approval and permit procedures, in a transparent manner, for housing and other development projects.			X
Policy 3: Encourage innovative residential developments that result in lower costs, sustainable use of resources, more efficient use of land and infrastructure, greater convenience and privacy, and a distinct community identity.			X
Policy 4: Support and encourage programs to maintain and improve the condition of existing housing.			X
Policy 5: Make full use of government programs that provide assistance for low- and moderate-income renters and homebuyers.			X
Policy 6: Maximize local funding programs available for affordable housing.			X
Policy 7: Provide financial and other incentives to encourage the private sector to build homes for low- and moderate-income residents.			X
Policy 8: Encourage and participate in joint public-private development of low- and moderate-income housing.			X
Policy 9: Encourage the replacement of low- and moderate-income housing in areas which are being redeveloped at higher densities.			X
Policy 10: Promote the design and construction of dwellings which take advantage of O‘ahu's year-round moderate climate and use other sustainable design techniques.			X
Policy 11: Encourage the construction of affordable homes within established low-density and rural communities by such means as ‘ohana units, duplex dwellings, and cluster development that embraces the ‘ohana concept by maintaining multi-generational proximity for local families.			X
Policy 12: Promote higher-density, mixed-use development where appropriate, including rail transit-oriented development, to increase the supply of affordable and market housing in convenient proximity to jobs, schools, shops, and public transit.			X
Policy 13: Encourage the production and maintenance of affordable rental housing.			X
Policy 14: Encourage the provision of affordable housing designed for the elderly and people with disabilities in locations convenient to critical services and to public transit.			X
Policy 15: Encourage equitable relationships between landowners and leaseholders, between landlords and tenants, and between condominium developers and owners.			X
Policy 16: Support collaborative partnerships that work toward immediate solutions to house and service homeless populations and also toward long-term strategies to prevent and eliminate homelessness.			X
Policy 17: Support programs to address all facets of homelessness, so that every homeless person has a place to stay, along with the infrastructure and support services that are needed.			X
Objective B: To reduce speculation in land and housing.			
Policy 1: Encourage the State government to coordinate its urban-area designations with the developmental policies of the City and County.			X
Policy 2: Discourage speculation in lands outside of areas planned for urban use, reduce the prevalence of vacant dwelling units, and reduce the use of residential dwelling units for short-term vacation rentals.			X
Policy 3: Seek public benefits from increases in the value of land owing to City and State developmental policies and decisions.			X
Policy 4: Require government-subsidized housing to be delivered to appropriate purchasers and renters.			X
Policy 5: Ensure that owners of housing properties, including government-subsidized housing, maintain housing affordability over the long term.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Objective C: To provide residents with a choice of living environments that are reasonably close to employment, schools, recreation, and commercial centers, and that are adequately served by transportation networks and public utilities.			
Policy 1: Ensure that residential developments offer affordable housing to people of different income levels and to families of various sizes to alleviate the existing condition of overcrowding.			X
Policy 2: Encourage the fair distribution of low- and moderate-income housing throughout the Island.			X
Policy 3: Encourage the co-location of residential development and employment centers with commercial, educational, social, and recreational amenities in the development of desirable communities.			X
Policy 4: Encourage residential development in suburban areas where existing roads, utilities, and other community facilities are not being used to capacity, and in urban areas where higher densities may be readily accommodated.			X
Policy 5: Support mixed-use development and higher-density redevelopment in areas surrounding rail transit stations.			X
Policy 6: Discourage residential development in areas where the topography makes construction difficult or hazardous, where sea level rise and flooding are a hazard, and where providing and maintaining roads, utilities, and other facilities would be extremely costly or environmentally damaging.			X
Policy 7: Encourage public and private investments in older communities as needed to keep the communities vibrant and livable.			X
Policy 8: Encourage the military to provide housing for active duty personnel and their families on military bases and in areas turned over to military housing contractors.			X
Discussion: *While the Project supports the General Plan objectives and policies in regard to housing, they are not directly applicable to the Project.*			
PART V: TRANSPORTATION AND UTILITIES			
Objective A: To create a multi-modal transportation system that moves people and goods safely, efficiently, and at a reasonable cost and minimizes fossil fuel consumption and greenhouse gas emissions; serves all users, including limited income, elderly, and disabled populations; and is integrated with existing and planned development.			
Policy 1: Develop a comprehensive, well-connected and integrated ground transportation system that reduces carbon emissions and enables safe, comfortable and convenient travel for all users, including motorists, pedestrians, bicyclists, and public transportation users of all ages and abilities.	X		
Policy 2: Provide multi-modal transportation services to people living within the ʻEwa, Central Oʻahu, and Pearl City-Hawaiʻi Kai corridors primarily through a mass transit system including exclusive right-of-way rail transit and feeder-bus components as well as through the existing highway system.			X
Policy 3: Provide transportation services outside the ʻEwa, Central Oʻahu, and Pearl City-Hawaiʻi Kai corridors primarily through a system of express- and feeder-buses as well as through the highway system with limited to moderate improvements sufficient to meet the needs of the communities being served.			X
Policy 4: Work with the State to ensure adequate and safe access for communities served by Oʻahu's coastal highway system, and to plan for the relocation of highways and roads subject to sea level rise away from coastlines.			X
Policy 5: Support the rail transit system as the transportation spine for the urban core, with links to the airport and maritime terminals, which will work together with other alternative modes of transit and transit-oriented development to reduce automobile dependency and increase multi-modal travel.			X
Policy 6: Support the development of transportation plans, programs, and facilities that are based on Complete Streets features. Maintain and improve road, bicycle, pedestrian, and micro mobility facilities in existing communities to eliminate unsafe conditions.	X		
Policy 7: Design street networks to incorporate greater roadway and pathway connectivity.			X
Policy 8: Make available transportation services to people with limited mobility: the young, the elderly, the handicapped, and the poor.			X
Policy 9: Consider environmental, social, cultural, and climate change and natural hazard impacts, as well as construction and operating costs, as important factors in planning transportation system improvements.	X		

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 10: Reduce traffic congestion and maximize the efficient use of transportation resources by pursuing transportation demand management strategies such as carpooling, telecommuting, flexible work schedules, and incentives to use alternative travel modes.			X
Policy 11: Enhance pedestrian-friendly and bicycle-friendly travel via public and private programs and improvements.	X		
Policy 12: Maintain separate aviation facilities for general aviation operations to supplement the capacity of the Daniel K. Inouye International Airport.			X
Policy 13: Support improvements to Kalaeloa Barbers Point Harbor as Oʻahu's second deep-water harbor.			X
Policy 14: Support the operation, maintenance and improvement of Honolulu Harbor as Oʻahu's primary cargo and ocean transportation hub.			X
Policy 15: Advance the transition to electric and alternative fuel infrastructure to provide adequate and accessible charging spaces and renewal fueling stations for ground transportation on Oʻahu.	X		
Objective B: Provide an adequate supply of water and environmentally sound systems of waste disposal for Oʻahu's existing population and for future generations, and support a one water approach that uses and manages freshwater, wastewater, and stormwater resources in an integrated manner.			
Policy 1: Develop and maintain an adequate, safe, and reliable supply of fresh water in a cost-effective way that supports the long-term sustainability of the resource and considers the impacts of climate change.			X
Policy 2: Help to develop and maintain an adequate, safe, and reliable supply of water for agricultural and industrial needs in a resource-integrated and cost-effective way that supports the long-term health of the resource.			X
Policy 3: Use technologies that provide water, waste disposal, and recycling services at a reasonable cost and in a manner that addresses environmental and community impacts.			X
Policy 4: Encourage the increased availability and use of recycled or brackish water to meet nonpotable demands.			X
Policy 5: Pursue strategies and programs to reduce the per capita consumption of water and the per capita production of waste.	X		
Policy 6: Provide safe, reliable, efficient, and environmentally sound waste-collection, waste disposal, and recycling services that consider the near- and long-term impacts of climate change during the siting and construction of new facilities.	X		
Policy 7: Pursue programs to expand on-island recycling and resource recovery from Oʻahu's solid waste and wastewater streams.	X		
Policy 8: Support initiatives that educate the community about the importance of conserving resources and reducing waste streams through reduction, reuse, and recycling.			X
Policy 9: Require the safe use and disposal of hazardous materials.	X		
Objective C: To ensure reliable, cost-effective, and responsive service for all utilities with equitable access for residents.			
Policy 1: Maintain and upgrade utility systems in order to avoid major breakdowns and service interruptions.			X
Policy 2: Provide improvements to utilities in existing neighborhoods to reduce substandard conditions, and increase resilience to use fluctuations, natural hazards, extreme weather, and other climate impacts.			X
Policy 3: Facilitate timely and orderly upgrades and expansions of utility systems.			X
Policy 4: Increase the efficiency of public-serving utilities by encouraging a mixture of uses with peak periods of demand aligning with the availability of resources.			X
Objective D: To maintain transportation and utility systems which will help Oʻahu continue to be a desirable place to live and visit.			
Policy 1: Provide adequate resources to ensure the maintenance and improvement of transportation systems and utilities.			X
Policy 2: Evaluate the social, cultural, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.			X
Policy 3: Require the installation of underground utility lines wherever feasible.			X

Table 5.6: City and County of Honolulu General Plan **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Policy 4: Seek improved taxing powers for the City in order to provide a more equitable means of financing transportation and utility services.			X
Policy 5: Evaluate impacts of sea level rise on existing public infrastructure, especially sewage treatment plants, roads, and other public and private utilities located along or near O‘ahu’s coastal areas, and avoid the placement of future public infrastructure in threatened areas.			X
Discussion: *The Project will include sidewalk modifications and added landscaping along Ala Moana Boulevard to enhance the pedestrian environment and provide access connecting pedestrians to the building and the wider HHV campus. Ground floor retail within the AMB Tower will activate the streetscape, consistent with Complete Streets principles.* *Long-term adverse impacts to vehicular traffic conditions at the site are not anticipated to occur with the Project. To minimize impacts during construction, BMPs will be implemented and a Construction Management Plan will be prepared, as required. Alternative transportation options, including bikes, TheBus, and The Trolley, will continue to be accessible from the Project Site.* *Safe, reliable solid waste collection will serve the Project. The AMB Tower will continue practices implemented at the Village, including recycling of food waste and hauling away of cardboard, glass, and plastics by a private food recycler. The Project will also integrate water conserving measures to the extent possible. Refer to Section 4.8 for further discussion regarding utilities.* *Recycled water may be used for the new landscaping at the AMB Tower site and at proximate areas, including the existing landscaped area along Kālia Road and Ala Moana Boulevard, pending further detailed design and analysis.*			
PART VI: ENERGY			
Objective A: To increase energy self-sufficiency through renewable energy and maintain an efficient, reliable, resilient, and cost-efficient energy system.			
Policy 1: Encourage the implementation of a comprehensive plan to guide and coordinate energy conservation and renewable energy development and utilization programs.			X
Policy 2: Support and encourage programs and projects, including economic incentives, regulatory measures, and educational efforts, and seek to eliminate O‘ahu's dependence on fossil fuels.			X
Policy 3: Ensure access to an adequate reserve of fuel and energy supplies to aid disaster response and recovery.			X
Policy 4: Support the increased use of solid waste energy recovery and other biomass energy conversion systems.			X
Policy 5: Support and participate in research, development, demonstration, commercialization, and optimization programs aimed at developing cost-effective and environmentally sound renewable energy supplies.			X
Policy 6: Support State and federal initiatives to utilize renewable energy sources.			X
Policy 7: Manage resources and development of communities in line with long-term efficiency and sustainability goals and targets in the areas of energy, carbon emissions, waste streams, all utilities, and food security.	X		
Policy 8: Encourage and equitably incentivize the use of commercially available renewable energy systems in public facilities, institutions, residences, and business developments.			X
Policy 9: Consider health, safety, environmental, cultural, and aesthetic impacts, as well as resource limitations, land use patterns, and relative costs in all major decisions on renewable energy.			X
Policy 10: Work closely with the State and federal governments in the formulation and implementation of all City energy-related programs and regulations, including updating building energy codes.			X
Objective B: To conserve energy through the more efficient management of its use and through more energy-efficient technologies.			
Policy 1: Ensure that the efficient use of energy is a primary factor in the preparation and administration of land use plans and regulations.			X
Policy 2: Provide incentives and, where appropriate, mandatory controls to achieve energy efficient and sustainable siting and design of new developments. Support the increased use of nationally recognized energy efficiency and resource conservation rating and certification systems.			X
Policy 3: Provide incentives and, where appropriate, mandatory controls to reduce energy consumption in existing buildings and outdoor facilities, and in design and construction practices.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 4: Promote the development of a multi-modal transportation system that minimizes and seeks to eliminate fossil fuel consumption and greenhouse gas emissions.			X
Policy 5: Encourage the implementation of an adaptable and reliable electrical grid, energy transmission, energy storage, microgrids, and energy generation technologies.			X
Policy 6: Support the availability and use of energy efficient vehicles, especially hybrid, fuel cell, and pure electrical vehicles.	X		
Objective C: To foster an ethic of energy conservation that inspires residents to engage in sustainable practices.			
Policy 1: Provide citizens with the information they need to fully understand severe climate change, supply chain issues, costs, security, and other issues associated with O'ahu's dependence on imported fossil fuels.			X
Policy 2: Increase consumer awareness of available renewable energy sources and their costs and benefits.			X
Policy 3: Provide information concerning the impact of public and private decisions on future energy generation, transmission, storage, and use.			X
Policy 4: Provide communities with timely, relevant, and accurate information concerning renewable energy facilities proposed in their area, and ensure adequate buffer zones required for health or safety.			X
Discussion: *Through participation in the Hilton "Light Stay" program implemented across the Village campus, and to be implemented at the AMB Tower, the Project supports the intent of the General Plan's objectives and policies related to energy.*			
PART VII: PHYSICAL DEVELOPMENT AND URBAN DESIGN			
Objective A: To coordinate changes in the physical environment of O'ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.			
Policy 1: Provide infrastructure improvements to serve new growth areas, redevelopment areas, and areas with badly deteriorating infrastructure.			X
Policy 2: Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and other public facilities and services.	X		
Policy 3: Require new developments to provide or pay the cost of all essential community services, including roads, utilities, schools, parks, and emergency facilities that are intended to directly serve the development.	X		
Policy 4: Facilitate and encourage compact, higher-density development in urban areas designated for such uses.	X		
Policy 5: Encourage the establishment of mixed-use town centers that are compatible with the physical and social character of their community.	X		
Policy 6: Facilitate transit-oriented development in rail transit station areas to create live/work/play multi-modal communities that reduce travel and traffic congestion.			X
Policy 7: Encourage the clustering of development to reduce the cost of providing utilities and other public services.	X		
Policy 8: Locate new industries and new commercial areas so that they will be well-related to their markets and suppliers, and to residential areas and transportation facilities.			X
Policy 9: Locate community facilities on sites that will be convenient to the people they are intended to serve.			X
Policy 10: Discourage uses which are major sources of noise, air, and light pollution			X
Policy 11: Implement siting and design solutions that seek to reduce exposure to natural hazards, including those related to climate change, flooding, and sea level rise.	X		
Policy 12: Prohibit new airfields, high-powered electromagnetic-radiation sources, and storage places for fuel and explosives from locating on sites where they will endanger or disrupt nearby communities.			X
Policy 13: Promote opportunities for the community to participate meaningfully in planning and development processes, including new forms of communication and social media.			X
Objective B To plan and prepare for the long-term physical impacts of climate change.			
Policy 1: Integrate climate change adaptation into the planning, design, and construction of all significant improvements to and development of the built environment.	X		

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 2: Coordinate plans in the private and public sectors that support research, monitoring, and educational programs on climate change.			X
Policy 3: Prepare for the anticipated impacts of climate change and sea level rise on existing communities and facilities through mitigation, adaptation, managed retreat, or other measures in exposed areas.	X		
Objective C: To develop the urban corridor stretching from Wai'alae-Kāhala to Pearl City as the island's primary urban center.			
Policy 1: Provide downtown Honolulu and other major business centers with a well-balanced mixture of uses.			X
Policy 2: Encourage the development of attractive residential communities in downtown and other business centers.			X
Policy 3: Maintain and improve downtown as the financial and office center of the island, and as a major retail center.			X
Policy 4: Provide for the continued viability of the Hawai'i Capital District as a center of government activities and as an attractive park-like setting in the heart of the city.			X
Policy 5: Foster the development of Honolulu's waterfront as the State's major port and maritime center, as a people-oriented mixed-use area, and as a major recreation area with accommodation for sea level rise.			X
Objective D: To develop a secondary urban center in 'Ewa with its nucleus in the Kapolei area.			
Policy 1: Support public projects that are needed to facilitate development of the secondary urban center at Kapolei.			X
Policy 2: Encourage the development of a major residential, commercial, and employment center within the secondary urban center at Kapolei.			X
Policy 3: Encourage the continuing development of the area encompassing Campbell Industrial Park, Kalaeloa Barbers Point Harbor, and West Kapolei as a major industrial center.			X
Policy 4: Coordinate plans for the development of the secondary urban center at Kapolei with the State and federal governments, major landowners and developers, and the community.			X
Policy 5: Cooperate with the State and federal governments in the improvements to the deep water harbor at Kalaeloa Barbers Point.			X
Policy 6: Encourage the development of the Ocean Pointe/Hoakalei Communities as a major residential and recreation area emphasizing recreational activities and a waterfront commercial center containing light-industrial, commercial, and visitor accommodation uses.			X
Objective E: To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.			
Policy 1: Develop and maintain urban-fringe areas as predominantly residential areas characterized by generally low rise, low density development which may include significant levels of retail and service commercial uses as well as satellite institutional and public uses geared to serving the needs of households.			X
Policy 2: Coordinate plans for developments within the 'Ewa and Central O'ahu urban-fringe areas with the State and Federal governments and with major landowners and developers, agricultural industries, and the community			X
Policy 3: Maintain a "green belt" of open space and agricultural land around developed communities in the 'Ewa and Central O'ahu areas of O'ahu.			X
Policy 4: Maintain rural areas that reflect an open and scenic setting, dominated by small to moderate size agricultural pursuits, with small towns of low-density and low-rise character, and which allows modest growth opportunities tailored to address area residents' future needs.			X
Policy 5: Encourage the development of a variety of housing choices including affordable housing in rural communities, to give people the choice to continue to live in the community that they were raised in.			X
Policy 6: Ensure the social and economic vitality of rural communities by supporting infill development and modest increases in heights and densities around existing rural town areas where feasible to maintain an adequate supply of housing for future generations.			X
Objective F: To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu.			
Policy 1: Encourage distinctive community identities for both new and existing communities and neighborhoods.			X
Policy 2: Require the consideration of urban design principles in all development projects.	X		

Table 5.6: City and County of Honolulu General Plan **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	S	N/S	N/A
Policy 3: Require developments in stable, established communities and rural areas to be compatible with the existing communities and areas.			X
Policy 4: Provide design guidelines and controls that will allow more compact development and intensive use of lands in the primary urban center and along the rail transit corridor.	X		
Policy 5: Seek to protect residents' quality of life and to maintain the integrity of neighborhoods by strengthening regulatory and enforcement strategies that address the presence of inappropriate non-residential activities.	X		
Policy 6: Promote public and private programs to beautify the urban and rural environments.	X		
Policy 7: Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve.	X		
Policy 8: Design public street networks to be safe and accessible for users of all ages and abilities, to accommodate multiple modes of travel to be visually attractive and to support sustainable ecological processes, such as stormwater infiltration.	X		
Policy 9: Recognize the importance of using Native Hawaiian plants in landscaping to further the traditional Hawaiian concept of mālama ʻāina and to create a more Hawaiian sense of place.	X		
Objective G: To promote and enhance the social and physical character of Oʻahu's older towns and neighborhoods.			
Policy 1: Encourage new construction in established areas to be compatible with the character and cultural values of the surrounding community.	X		
Policy 2: Encourage, wherever desirable, the rehabilitation of existing substandard structures.			X
Policy 3: Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.			X
Policy 4: Seek the satisfactory relocation of residents before permitting their displacement by new development, redevelopment, or neighborhood rehabilitation.			X
Policy 5: Acknowledge the cultural and historical significance of kuleana lands, the ancestral ownership of kuleana lands, and promote policies that preserve and protect kuleana lands.			X
Policy 6: Support and encourage cohesive neighborhoods which foster interactions among neighbors, promote vibrant community life, and enhance livability.	X		
Discussion: *The Project will be developed and designed in a manner consistent with the General Plan. The Project is located in Waikīkī, where development has been planned for and is compatible with surrounding high-rise resort and residential towers. Design of the AMB Tower will feature architectural elements that reflect Hawaiʻi's rich heritage and cultural diversity in a contemporary form, consistent with the City's WSD guidelines. Planned improvements to enhance the street frontage include landscaping with water features and an open, welcoming porte cochere. As appropriate, the selection and use of native plants will be encouraged with specificity to express identified culturally appropriate themes and experiences throughout the HHV campus.* *In prior redevelopment of the Village campus, HHV provided necessary infrastructure upgrades; therefore, adequate infrastructure is available to the AMB Tower project (Section 4.8). Utilities will be relocated where needed, and will not adversely impact public facilities. Long-term impacts to air quality and noise are not anticipated (Sections 4.2.3 and 4.9).* *The Project Site may be susceptible to passive flooding with 3.2 feet of SLR (Section 4.4.5). As such, design of the tower will consider adaptive design and resiliency planning. Design will include a finished floor elevation of 8.0~~7.5~~ above msl, and LID measures will be incorporated where feasible and will be determined as design progresses. Utilities will be located at higher elevations where feasible. The use of green infrastructure features, such as a green wall on portions of the podium, may also be incorporated where feasible. HHV will continue its contribution and participation with local stakeholders regarding a regional coordinated effort to address the effects of climate change and SLR.*			
PART VIII: PUBLIC SAFETY AND COMMUNITY RESILIENCE			
Objective A: To prevent and control crime and maintain public order.			
Policy 1: Provide a safe environment for residents and visitors on Oʻahu.	X		
Policy 2: Provide adequate criminal justice facilities and staffing for City and County law- enforcement agencies.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 3: Provide adequate training, staffing, and support for City public safety agencies.			X
Policy 4: Emphasize improvements to police and prosecution operations which will result in a higher proportion of wrongdoers who are arrested, convicted, and punished for their crimes.			X
Policy 5: Support policies and programs that expand access to treatment, rehabilitation, and reentry programs for adult and juvenile offenders.			X
Policy 6: Keep the public informed of the nature and extent of criminal activity on O'ahu			X
Policy 7: Establish and maintain programs to encourage public cooperation in the prevention and solution of crimes, and promote strong community-police relationships.			X
Policy 8: Seek the help of State and federal law-enforcement agencies to curtail the activities of organized crime syndicates on O'ahu.			X
Policy 9: Conduct periodic reviews of criminal laws to ensure their relevance to the community's needs and values.			X
Policy 10: Cooperate with other law-enforcement agencies to develop new methods of addressing crime. Support communication and coordination across federal, State and City law enforcement and corrections agencies.	X		
Policy 11: Encourage the improvement of rehabilitation programs and facilities for criminals and juvenile offenders.			X
Objective B: To protect the people of O'ahu 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.	X		
Policy 2: Require all developments in areas subject to floods and tsunamis, and coastal erosion to be located and constructed in a manner that will not create any health or safety hazards or cause harm to natural and public resources.	X		
Policy 3: Participate with State and federal agencies in the funding and construction of flood control projects, and prioritize the use of ecologically sensitive flood-control strategies whenever feasible.			X
Policy 4: Collaborate with State and federal agencies to provide emergency warnings, protection, mitigation, response, and recovery, during and after major emergencies such as tsunamis, hurricanes, and other high-hazard events.			X
Policy 5: Cooperate with State and federal agencies to provide protection from war, civil disruptions, pandemics, and other major disturbances.			X
Policy 6: Reduce hazardous traffic conditions.			X
Policy 7: Provide adequate resources to effectively prepare for and respond to natural and manmade threats to public safety, property, and the environment.	X		
Policy 8: Foster disaster-ready communities and households through implementation of resilience hubs and other resiliency strategies.			X
Policy 9: Plan for the impacts of climate change and sea level rise on public safety, in order to minimize potential future hazards.	X		
Policy 10: Develop emergency management plans, policies, programs, and procedures to protect and promote public health, safety, and welfare of the people.	X		
Policy 11: Provide educational materials on emergency management preparedness, fire protection, traffic hazards, and other unsafe conditions.			X
Discussion: *The Project supports the General Plan objectives and policies in regard to public safety. The AMB Tower will provide security to help ensure the safety of visitors and guests. In the event of a natural disaster or emergency, HHV has protocols in place to inform visitors as to proper actions to be taken. In the long term, the Project is preparing for the potential impacts of 3.2 feet of SLR by the year 2100, which may result in future occasional passive flooding. The AMB Tower will be designed with a finished floor elevation of 8.0~~7.5~~ feet above msl to prevent passive flooding into the building and to protect public safety.*			

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
PART IX: HEALTH AND EDUCATION			
Objective A: To protect the health and well-being of residents and visitors.			
Policy 1: Encourage the provision of health-care facilities that are accessible to both employment and residential centers.			X
Policy 2: Encourage prompt and adequate ambulance and first-aid services in all areas of Oʻahu.			X
Policy 3: Coordinate City and County health codes and other regulations with State and Federal health codes to facilitate the enforcement of air-, water-, and noise-pollution controls.	X		
Policy 4: Integrate public health concerns such as air and water pollution as a consideration in land use planning decisions.	X		
Policy 5: Encourage healthy lifestyles by supporting opportunities that increase access to and promote consumption of fresh, locally grown foods.	X		
Policy 6: Encourage healthy lifestyles through walkable and livable communities, safe street crossings, safe routes to schools, and parks and pathways for pedestrians and bicyclists.	X		
Policy 7: Support efforts to make healthcare accessible and affordable for everyone.			X
Policy 8: Support efforts to improve and expand access to mental health, drug treatment, community-based programs, and other similar programs for those requiring such services.			X
Policy 9: Support becoming an age-friendly city that provides people of all ages with user-friendly parks and other public gathering places, that offers safe streets and multi-modal transportation options, that provides an adequate supply of affordable housing, that encourages growth in needed and desirable jobs, that provides quality health-care and support services, and that encourages civic participation, social inclusion, and respect between interest groups.			X
Policy 10: Plan for our aging population's growing health-care, personal service, and diverse daily activity needs, and encourage these services to be provided in a timely manner, including age-specific social activities.			X
Objective B: To provide a wide range of educational opportunities for the people of Oʻahu.			
Policy 1: Support education programs that encourage the development of employable skills.			X
Policy 2: Encourage the provision of informal educational programs for people of all age groups.			X
Policy 3: Encourage the after-hours use of school buildings, grounds, and facilities.			X
Policy 4: Encourage the construction of school facilities that are designed for flexibility and high levels of use.			X
Policy 5: Facilitate the appropriate location of childcare facilities as well as learning institutions from the preschool through the university levels			X
Policy 6: Encourage outdoor learning opportunities and venues that reflect our unique natural environment and Native Hawaiian culture.			X
Objective C: To make Honolulu the center of higher education in the Pacific.			
Policy 1: Encourage continuing improvement in the quality of higher education in Hawaiʻi, as well as ways to make higher education more affordable.			X
Policy 2: Encourage the development of diverse opportunities in higher education.			X
Policy 3: Encourage research institutions to establish branches on Oʻahu.			X
Policy 4: Establish Honolulu as a knowledge center and international Pacific crossroads hub.			X
Discussion: *The Project supports the above General Plan objectives and policies regarding health. It is anticipated that guests of the AMB Tower will benefit from the SDOC clinic on the HHV campus, available to all visitors and the public. The Project has also considered air quality and water pollution concerns, and will implement BMPs to mitigate potential short-term impacts during construction (Sections 4.2.3 and 4.3.2, respectively). During the construction and operation of the AMB Tower, applicable Federal, State, and City controls related to air, water, and noise pollution will be implemented, as discussed throughout this SEIS. The Project is not anticipated to have adverse impacts on public health.*			

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
PART X: CULTURE AND RECREATION			
Objective A: To foster the multiethnic culture of Hawai‘i and respect the host culture of the Native Hawaiian people.			
Policy 1: Recognize the Native Hawaiian host culture, including its customs, language, history, and close connection to the natural environment, as a dynamic, living culture and as an integral part of O‘ahu’s way of life.	X		
Policy 2: Promote the preservation and enhancement of local cultures, values and traditions.	X		
Policy 3: Encourage greater public awareness, understanding, and appreciation of the cultural heritage and contributions to Hawai‘i made by O‘ahu’s various ethnic groups.	X		
Policy 4: Foster equity and increased opportunities for positive interaction among people with different ethnic, social, and cultural backgrounds.			X
Policy 5: Preserve the identities of the historical communities of O‘ahu.			X
Objective B: To preserve and enhance O‘ahu's cultural, historic, architectural, and archaeological resources.			
Policy 1: Promote the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.	X		
Policy 2: Identify and, to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.	X		
Policy 3: Cooperate with the State and federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.	X		
Policy 4: Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts.	X		
Policy 5: Seek public and private funds, and encourage public participation and support, to protect, preserve and enhance social, cultural, historic, architectural, and archaeological resources.			X
Policy 6: Provide incentives for the restoration, preservation, maintenance, and enhancement of social, cultural, historic, architectural, and archaeological resources.			X
Policy 7: Encourage the protection of areas that are historically important to Native Hawaiian cultural practices and to the cultural practices of other ethnicities, in order to further preserve and continue these practices for future generations.	X		
Objective C: To foster the visual and performing arts.			
Policy 1: Encourage and support programs and activities for the visual and performing arts.	X		
Policy 2: Encourage creative expression and access to the arts by all segments of the population.			X
Policy 3: Provide permanent art in appropriate City public buildings and places.			X
Objective D: To provide a wide range of recreational facilities and services that are readily available to residents and visitors alike, and to balance access to natural areas with the protection of those areas.			
Policy 1: Develop and maintain community-based parks to meet the needs of the different communities on O‘ahu.			X
Policy 2: Develop, maintain, and expand a system of regional parks and specialized recreation facilities, based on the cumulative demand of residents and visitors.	X		
Policy 3: Develop, maintain, and improve urban parks, squares, and beautification areas in high density urban places.	X		
Policy 4: Encourage public and private botanic and zoological parks on O‘ahu to foster an awareness and appreciation of the natural environment.			X
Policy 5: Encourage the State to develop and maintain a system of natural resource-based parks, such as beach, shoreline, and mountain parks.			X
Policy 6: Ensure that public recreational facilities balance the demand for facilities against capital and operating cost constraints so that they are adequately sized and properly maintained			X
Policy 7: Ensure and maintain convenient and safe access to beaches, ocean environments and mauka recreation areas in a manner that protects natural and cultural resources.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 8: Encourage ocean and water-oriented recreation activities that do not adversely impact the natural environment and cultural assets, or result in overcrowding or overuse of beaches, shoreline areas and the ocean.			X
Policy 9: Require all new developments to provide their residents with adequate recreation space.			X
Policy 10: Utilize our unique natural environment in a responsible way to promote cultural events and activities, and maintain cultural practices.			X
Policy 11: Encourage the after-hours, weekend, and summertime use of public schools facilities for recreation.			X
Policy 12: Provide for safe and secure use of public parks, beaches, and recreation facilities.			X
Policy 13: Create and promote recreational venues for kūpuna and keiki and for kamaʻāina and malihini.	X		
Policy 14: Encourage the State and Federal governments to transfer excess and underutilized land to the City and County for public recreation use.			X
Discussion: *The Project meets the General Plan's objectives and policies for culture and recreation. Design of the AMB Tower will feature architectural elements that reflect Hawaiʻi's rich heritage and cultural diversity in a contemporary form. The Project will beautify the existing streetscape and encourage pedestrian access to areas that are currently not available for public use. An AIS and CIA were prepared for the Project (Section 4.1). The AIS proposes mitigation measures for potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP under HAR, Section 13-279-4, and burial treatment in accordance with a BTP under HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.*			
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 and adequately fund County government services at the level necessary to be effective.			X
Policy 2: Promote alignment and consolidation of State and City functions whenever more efficient and effective delivery of government programs and services may be achieved.			X
Policy 3: Ensure that government attitudes, actions, and services are sensitive to community needs and concerns, and held accountable to the public trust.			X
Policy 4: Sufficiently fund and staff the timely preparation, maintenance, and update of public policies and plans to guide and coordinate City programs and regulatory responsibilities.			X
Policy 5: Expand the adoption of technology across all City agencies to achieve greater transparency, efficiency, and accountability to the general public throughout government operations.			X
Objective B: To ensure fiscal integrity, responsibility, and efficiency by the City and County government in carrying out its responsibilities.			
Policy 1: Provide for a balanced budget.			X
Policy 2: Allocate fiscal resources of the City and County to efficiently implement the policies of the General Plan and Development Plans.			X
Policy 3: Ensure accountability and transparency in government operations.			X
Objective C: To achieve equitable outcomes for City programs, policies, and allocation of resources throughout the Oʻahu community.			
Policy 1: Promote policies that actively address and eliminate disparate outcomes for historically underserved communities.			X
Policy 2: Seek equitable distribution of City investments towards promoting employment opportunities, infrastructure, and other community benefits appropriate to the community needs and proportionate to the population size.			X
Policy 3: Promote adherence to processes that advance procedural, distributional, structural, intergenerational, and cultural equity within the City.			X

Table 5.6: City and County of Honolulu General Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 4: Provide resources for City employees to understand and actively advance equity solutions within all agencies of City government.			X
Discussion: *The General Plan objectives and policies regarding government operations and fiscal management are not directly applicable to the Project.*			

5.3.2 City and County of Honolulu Primary Urban Center Development Plan

The City and County of Honolulu prepares and updates eight Development Plans (DPs) and Sustainable Communities Plans (SCPs) for the island of O‘ahu. Each of these plans corresponds to one geographic area and serves as a guide for projected growth and future development. The DPs/SCPs are required by City Charter and are adopted by City Council Ordinance.

The purpose of the DPs is to implement the comprehensive vision of the General Plan through policies and guidelines that reflect the unique conditions, geography and concerns of each region. The Project and Village campus are located within the PUC DP area, which stretches from Kāhala to Pearl City, extending along a portion of the southern coastline to the top of the mountain watersheds. It is the most populous of the DP areas, and is called on to absorb the majority of projected population growth by the City General Plan.

The PUC DP was adopted in 2004, and is currently undergoing revision. DPP has released a public review draft, which states a vision for the PUC DP through 2035, and has closed the public comment period. The timeline for publication and adoption of the final updated PUC DP is unknown. Accordingly, the following *Table 5.7* presents an overview of policies and guidelines provided in the current adopted PUC DP (2004), and discusses how the Project supports the PUC DP's Vision Statement and land use policies.

Table 5.7: City and County of Honolulu Primary Urban Center Development Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
The Vision for the PUC's Future (2025) The PUC stretches from Kahala to Pearl City. It hosts the capital of the State of Hawai‘i, is the State's commercial and financial center, and the home of its premier educational and cultural institutions. It is the heart of Hawai‘i's economic, political and cultural life. The value created in the PUC nourishes the entire State. The Key Elements of the vision for the PUC reflect the size and importance of Honolulu and its lead role in the State's business:			
Honolulu's natural, cultural and scenic resources are protected and enhanced.	X		
Livable neighborhoods have business districts, parks and plazas, and walkable streets.	X		
The PUC offers in-town housing choices for people of all ages and incomes.			X
Honolulu is the Pacific's leading city and travel destination	X		
A balanced transportation system provides excellent mobility for residents and visitors.	X		
Discussion: *The Project is consistent with the planned vision of the PUC DP. Expanding the HHV campus and replacing existing structures at the Project Site with the AMB Tower will reinvigorate and revitalize Ala Moana Boulevard as the primary ‘ewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience that reinforces the identity of Waikīkī as a premier, global tourism destination.* *Development of the tower along Ala Moana Boulevard will enhance the immediate pedestrian surroundings and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus. Planned improvements to the street frontage will support non-motorized transportation (i.e., walking and biking) and include the integration of landscaping with water features and an open, welcoming porte cochere.*			

Table 5.7: City and County of Honolulu Primary Urban Center Development Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
The tower podium will also include ground level retail comprised of the ABC Store and outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape for the benefit of all residents and visitors. *The implementation of BMPs as described throughout Section 4.0 will help to mitigate for potential impacts to the surrounding environment.*			
Protecting and Enhancing Natural, Cultural and Scenic Resources			
Preserve historic and cultural sites.	X		
Preserve and protect natural resource and constraint areas	X		
Preserve panoramic views of natural landmarks and the urban skyline	X		
Improve access to shoreline and mountain areas	X		
Develop stream greenbelts			X
Provide parks and active recreation areas			X
Discussion: *The Project meets the General Plan's objectives and policies for culture and recreation. Design of the AMB Tower will feature architectural elements that reflect a Hawaiian sense of place and cultural diversity in a contemporary form. An AIS was prepared for the Project (Section 4.1.1), and proposes mitigation measures for potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP under HAR, Section 13-279-4, and burial treatment in accordance with a BTP under HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.*			
Cultivating Livable Neighborhoods			
Develop a system for collaborative neighborhood planning			X
Cultivate existing and new "neighborhood centers"			X
Promote mixed land uses	X		
Create parks that draw people and activity			X
Make streets "pedestrian-friendly"	X		
Discussion: *The Project includes improvements to the 'ewa gateway to Waikīkī that will benefit both residents and visitors. Planned improvements to enhance the street frontage include landscaping with water features, and an open, welcoming porte cochere. Connectivity within the HHV will be emphasized and enhanced. The tower podium will also include ground level retail comprised of the ABC Store and outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape.*			
In-Town Housing choices			
Promote people-scaled apartment and townhouse dwellings in low- or midrise buildings oriented to the street			X
Improve the feasibility of redeveloping small lots			X
Reduce costs for apartment homes			X
Provide adequate schools and parks for in-town neighborhoods			X
Expand the capacity of infrastructure, including water supply, sewers, and storm drains			X
Preserve and expand the current inventory of affordable rental housing units			X
Support the retention, rehabilitation and improvement of older, low-rent apartment buildings			X
Provide for special needs housing			X
Provide incentives and cost savings for affordable housing			X
Provide for high-density housing options in mixed-use developments around transit stations			X
Discussion: *The PUC DP's objectives regarding in-town housing choices are not directly applicable to the Project.*			

Table 5.7: City and County of Honolulu Primary Urban Center Development Plan S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
The Pacific's Leading City			
Create public open space along the Pearl Harbor waterfront and strengthen the physical and visual connections between the urban center and the water			X
Redevelop the Downtown/Iwilei waterfront			X
Stimulate the development of high technology and knowledge-based industries			X
Develop and implement a plan for a vibrant and livable Waikīkī	X		
Support attractions that are of interest to both residents and visitors in the Ala Moana/Kakaako/Downtown corridor	X		
Provide opportunities for the development of visitor units in the Ala Moana/Kakaako/Downtown corridor	X		
Provide opportunities for the development of village inns in existing commercial centers and allow bed and breakfast establishments in residential neighborhoods			X
Support continuation of military uses			X
Enhance Honolulu Harbor and harbor-related uses			X
Support industrial uses in Kalihi-Pālama industrial districts			X
Define the role of town centers and promote a mixture of land uses in Aiea/Pearl City			X
Encourage the full use of existing private and public parking garages			X
Discussion: *Expanding the HHV campus and replacing existing structures at the Project Site with the AMB Tower will help to reinvigorate and revitalize Ala Moana Boulevard as the primary 'ewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience that reinforces the identity of Waikīkī as a premier global tourism destination. It will provide 515 hotel guestrooms, meeting the PUC DP's policy of developing visitor units in the Ala Moana corridor, and is compatible with surrounding high-rise resort and residential towers. Amenities at the AMB Tower will be available for guests of the HHV, providing new opportunities for recreation. The Project will also include a food and beverage component and ground floor retail, which will serve as an attraction for both residents and visitors in the area.*			
Develop a Balanced Transportation System			
Implement land use strategies to achieve a balanced transportation system	X		
Improve the public transit system, including development of a rapid transit component			X
Implement Transportation Demand Management (TDM) strategies			X
Review existing plans and establish priorities for roads and road improvements			X
Implement the Honolulu Bicycle Master Plan			X
Enhance and improve pedestrian mobility	X		
Encourage the full use of existing private and public parking garages			X
Discussion: *As the island's primary resort destination, Waikīkī is characterized by a high density of attractive destinations in close proximity to one another, elevated pedestrian traffic, and limited parking. The Project will include sidewalk modifications along the AMB Tower frontage on Ala Moana Boulevard to provide access and connect pedestrians to the building and the wider HHV campus. Improvements, including landscaping, will provide a continuous pedestrian-friendly experience along this portion of Ala Moana Boulevard, and enhance the resort environment at the 'ewa gateway of Waikīkī and within the Village.*			

5.3.3 City and County of Honolulu Land Use Ordinance: Waikīkī Special District

The purpose of the LUO (ROH, Chapter 21) is to regulate land use in a manner that will encourage orderly development in accordance with adopted land use policies, including the City General Plan and the PUC DP. The LUO also promotes and protects public health, safety, and welfare by:

- Minimizing adverse effects resulting from the inappropriate location, use or design of sites and structures;
- Conserving the city's natural, historic and scenic resources and encouraging design that enhances the physical form of the city; and
- Assisting the public in identifying and understanding regulations affecting the development and use of land.

The LUO articulates development and design standards for each zoning district that 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.

As a recognized resort destination, Waikīkī continues to attract visitors from all parts of the world, serving as the foundation for the State's tourism industry, a major and vital employment center, and home for thousands of full-time residents. As such, in the City's commitment to maintain the socio-economic vitality of Waikīkī, the area is designated as a Special District, with specific design standards and guidelines established to direct its future growth (LUO, Sec. 21-9.80). Within the WSD, the AMB Tower site and the entirety of the HHV campus are zoned as Resort Mixed Use Precinct.

The Project's compliance with the objectives and general requirements and design controls for the WSD Resort Mixed Use Precinct are discussed in *Table 5.8*.

Notably, within the WSD Resort Mixed Use Precinct, projects may seek flexibility from certain strict development standards of the Special District under the approval of a PD-R. The HHV is developed under an existing PD-R; therefore, the Project will request an amendment to that PD-R to include the Added Parcels and develop the AMB Tower project, and to allow for continued development flexibility. See *Section 3.3.9* for the Project's proposed compliance with the development standards articulated in the LUO for the WSD Resort Mixed Use Precinct. For a discussion of the Project's compliance with review standards for issuing a PD-R permit, please see *Section 5.3.4*.

Table 5.8: Land Use Ordinance – Waikīkī Special District ROH, Section 21-9.80 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Sec. 21-9.80 Waikīkī Special District--Findings. (A) To the world, Waikīkī is a recognized symbol of Hawai'i; and the allure of Waikīkī continues, serving as the anchor for the State's tourist industry. In addition to its function as a major world tourist destination, Waikīkī serves as a vital employment center and as a home for thousands of full-time residents. (B) The creation of the Waikīkī Special District was largely a response to the rapid development of the 1960s and 1970s, and the changes produced by that development. Now, Waikīkī can be described as a mature resort plant and residential locale. Waikīkī needs to maintain its place as one of the world's premier resorts in an international market; yet, the sense of place that makes Waikīkī unique needs to be retained and enhanced. (C) Because of the city's commitment to the economic, social and physical well-being of Waikīkī, it is necessary to guide carefully Waikīkī's future and protect its unique Hawaiian identity. (Added by Ord. 99-12)			

Table 5.8: Land Use Ordinance – Waikīkī Special District ROH, Section 21-9.80 S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
The objectives of the Waikīkī Special District are to:				
a)	Promote a Hawaiian sense of place at every opportunity.	X		
b)	Guide development and redevelopment in Waikīkī with due consideration to optimum community benefits. These shall include the preservation, restoration, maintenance, enhancement and creation of natural, recreational, educational, historic, cultural, community and scenic resources.	X		
c)	Support the retention of a residential sector in order to provide stability to the neighborhoods of Waikīkī.			X
d)	Provide for a variety of compatible land uses which promote the unique character of Waikīkī, emphasizing mixed uses.	X		
e)	Support efficient use of multimodal transportation in Waikīkī, reflecting the needs of Waikīkī workers, businesses, residents, and tourists. Encourage the use of public transit rather than the private automobile, and assist in the efficient flow of traffic.	X		
f)	Provide for the ability to renovate and redevelop existing structures which otherwise might experience deterioration. Waikīkī is a mature, concentrated urban area with a large number of nonconforming uses and structures. The zoning requirements of this special district should not, therefore, function as barriers to desirable restoration and redevelopment lest the physical decline of structures in Waikīkī jeopardize the desire to have a healthy, vibrant, attractive and well-designed visitor destination.	X		
g)	Enable the city to address concerns that development maintain Waikīkī's capacity to support adequately, accommodate comfortably, and enhance the variety of worker, resident and visitor needs.	X		
h)	Provide opportunities for creative development capable of substantially contributing to rejuvenation and revitalization in the special district, and able to facilitate the desired character of Waikīkī for areas susceptible to change.	X		
i)	Encourage architectural features in building design which complement Hawai'i's tropical climate and ambience, while respecting Waikīkī's urbanized setting. The provision of building elements such as open lobbies, lanais, and sunshade devices is encouraged.	X		
j)	Maintain, and improve where possible: mauka views from public viewing areas in Waikīkī, especially from public streets; and a visual relationship with the ocean, as experienced from Kalākaua Avenue, Kālia Road and Ala Moana Boulevard. In addition, improve pedestrian access, both perpendicular and lateral, to the beach and the Ala Wai Canal.	X		
k)	Maintain a substantial view of Diamond Head from the Punchbowl lookouts by controlling building heights in Waikīkī that would impinge on this view corridor	X		
l)	Emphasize a pedestrian-orientation in Waikīkī. Acknowledge, enhance and promote the pedestrian experience to benefit both commercial establishments and the community as a whole. Walkway systems shall be complemented by adjacent landscaping, open spaces, entryways, inviting uses at the ground level, street furniture, and human-scaled architectural details. Where appropriate, open spaces should be actively utilized to promote the pedestrian experience.	X		
m)	Provide people-oriented, interactive, landscaped open spaces to offset the high-density urban ambience. Open spaces are intended to serve a variety of objectives including visual relief, pedestrian orientation, social interaction, and fundamentally to promote a sense of "Hawaiianness" within the district. Open spaces, pedestrian pathways and other ground level features should be generously supplemented with landscaping and water features to enhance their value, contribute to a lush, tropical setting and promote a Hawaiian sense of place.	X		
n)	Support a complementary relationship between Waikīkī and the convention center.	X		
Discussion: *The Project is an opportunity for creative development that will significantly rejuvenate the largest resort property in Waikīkī, and allow HHV to continue to meet the evolving expectations of guests from around the world. The expansion of the HHV campus and replacement of existing outdated or dilapidated structures at the site is consistent with the WSD's objectives of revitalizing the Special District. In addition to hotel guestrooms, the Project will include food and beverage components available to all guests and will also include a ground floor retail with outdoor seating that will be available to the general public.* *Design will feature architectural elements that complement the unique surroundings and reflect Hawai'i's rich heritage and cultural diversity in a contemporary form. Consistent with the WSD, the porte cochere will offer a welcoming arrival area.*				

Table 5.8: Land Use Ordinance – Waikīkī Special District ROH, Section 21-9.80 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
The lobby will be enclosed with sliding glass doors to create an open feeling while also mitigating potential traffic noise along Ala Moana Boulevard. Design of this area will provide a close indoor-outdoor relationship at the pedestrian ground level. Improvements along Ala Moana Boulevard, including landscaping and water features, will promote an interactive and positive pedestrian experience to visitors and residents alike. *The tower is oriented in a fashion to preserve public viewsheds to the extent possible and will not have a significant adverse impact of significant public views, including those from Punchbowl. Existing public benefits provided at the HHV will continue and will not be affected by expansion of the Village campus.*			
Sec. 21-9.80-3 Prominent view corridors and historic properties. i. The following streets and locations identify significant public views of Waikīkī landmarks, the ocean, and the mountains from public vantage points:			
(1) Intermittent ocean views from Kālia Road across Fort DeRussy Park and from the Ala Wai Bridge on Ala Moana Boulevard; (2) Continuous ocean views along Kalākaua Avenue, from Kūhiō Beach to Kapahulu Avenue; (3) Ocean views from Ala Wai Yacht Harbor; (4) Ocean views from Kūhiō Beach Park; (5) Views of Ala Wai Yacht Harbor from Ala Moana Park (Magic Island Park); (6) Mauka views from the portions of the following streets mauka of Kūhiō Avenue: (a) Nohonani Street; (b) Nāhua Street; (c) Kanekapōlei Street; (d) Kai'olu Street; (e) Lewers Street; (f) Walina Street; and (g) Seaside Avenue (7) View of Diamond Head from Ala Wai Boulevard between McCully Street and Kapahulu Avenue.	X		
ii. Development should preserve, maintain and enhance these views whenever possible. Additional yard area and spacing between buildings may be required by the director, in connection with the issuance of special district permits, and the council and/or the director, in connection with planned development-resort and planned development-commercial approvals pursuant to Section 21-2.110-2, to protect these significant views.	X		
iii. Development should preserve, maintain and enhance historic properties whenever possible. Special district permit applications involving buildings over 50 years old shall be submitted to the State Department of Land and Natural Resources for review and comments. (Added by Ord. 99-12)	X		
Discussion: *The visual environment within the Project Site is typical of the dense, urban environment of Waikīkī. Existing one- and two-structures at the site will be demolished and replaced by the 36-story AMB Tower. The maximum height of the tower will be 350 feet (exclusive of permitted rooftop equipment and structures), which complies with development standards set forth in the LUO.* *As shown in the view study conducted for the Project (Section 4.11), existing public views articulated above will be minimally affected. A majority of public views in the area currently consist of buildings that define the urban form of Waikīkī. The AMB Tower is located inland (approximately 800 feet from the shoreline) and will blend with the surrounding urban environment, and is designed appropriately in its orientation, scale, height, form, and design. The Project will not be discernable from the Ala Wai Yacht Harbor, Punchbowl Lookout, Ala Moana Beach Park, or Kūhiō Beach Park. It will be visible from Fort DeRussy Park; however, makai views from the park at Kālia Road and from Kalākaua Avenue are currently partially blocked by existing buildings.* *As is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site, near 'Ena Road, have views that may be partially blocked by the new tower. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected.*			

Table 5.8: Land Use Ordinance – Waikīkī Special District **ROH, Section 21-9.80** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
The Project will enhance the visual environment of the Project Site by replacing the existing dated or dilapidated buildings with the AMB Tower, a contemporary structure featuring modern, culturally appropriate design using materials that complement that surrounding environment. The AMB Tower will help to reinvigorate Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the Project. This area will provide an open, safe and attractive pedestrian experience that supports connectivity with the HHV campus and the broader Waikīkī neighborhood. *An AIS was prepared for the Project (Section 4.1.1), and proposes mitigation measures for potential impacts to historic archaeological properties present on the Project Site, including archaeological monitoring in accordance with an AMP under HAR, Section 13-279-4, and burial treatment in accordance with a BTP under HAR, Section 13-300-33. The results and recommendations within the AIS are currently in review and awaiting concurrence from SHPD. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.* *Existing structures on the Added Parcels will be demolished to construct the Project. As concluded by the RLS, the buildings do not contain historic integrity and are neither eligible for listing on the Hawaiʻi and National Registers of Historic Places nor significant under any National Register criteria. With the results of the RLS, no significant adverse impacts to historic architectural resources are anticipated.*			
Sec. 21-9.80-4 General requirements and design controls. The design of buildings and structures in the Waikīkī Special District should always reflect a Hawaiian sense of place, as outlined in the design controls of this section. These design controls shall be supplemented by a design guidebook prepared and made available to the public by the director. The design guidebook shall be used as a principal tool by the director to express those various planning and architectural design elements which demonstrate consistency with the intent, objectives, guidelines, and standards of the Waikīkī Special District. The director shall submit the design guidebook and any revisions thereof to the council for review and comment prior to making the guidebook and any revisions available to the public. The following requirements shall be applied in all precincts within the district. Where the following requirements are silent, the applicable provisions of this chapter shall apply.			
(a) Uses and Structures Allowed in Required Yards and Setbacks. The provisions of Section 21-4.30 shall apply except as provided by this subsection. No business activity of any kind, including advertising, promotion, solicitation, merchandising or distribution of commercial handbills, or structures or any other use or activity, except as provided by this subsection, shall be located or carried out within any required yard, street or building setback area, except those areas occupied by enclosed nonconforming buildings.	X		
(b) Curb Cuts. Curb cuts for driveway openings and sight distances at all intersections shall comply with the design standards of the department of transportation services unless modified by the city council. The number of curb cuts should be kept to a minimum in order to enhance pedestrian movement along sidewalks.	X		
(c) Design Guidelines.			
(1) General Guidelines. All structures, open spaces, landscape elements and other improvements within the district shall conform to the guidelines specified on the urban design controls marked Exhibit 21-9.15, set out at the end of this article, the design standards contained in this section and other design guidelines promulgated by the director to further define and implement these standards.	X		
(2) Yards. Yard requirements shall be as enumerated under development standards for the appropriate zoning precinct under Table 21-9.6(B).	X		
(3) Automobile Service Stations and Car Rental Establishments			X
(4) Utility Installations. Utility installations shall be designed and installed in an aesthetic manner so as to hide or screen wires and equipment completely from view, including views from above (except for antennas).	X		
(5) Building Materials. Selection and use of building materials should contribute to a Hawaiian sense of place through the use of subdued and natural materials, such as plaster finishes, textured concrete, stone, wood and limited use of color-coated metal. Freestanding walls and fences should be composed of moss rock, stucco-finished masonry or architectural concrete whenever possible. Colors and finishes shall be characterized as being absorptive rather than reflective. The use of shiny metal or reflective surfaces, including paints and smooth or plastic-like surfaces should be avoided.	X		
(6) Building Scale, Features and Articulation. Project designs should provide a human scale at ground level. Buildings composed of stepped forms are preferred. Articulated facades are encouraged to break up building bulk. Use of the	X		

Table 5.8: Land Use Ordinance – Waikīkī Special District ROH, Section 21-9.80 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
following building features is encouraged: sunshades; canopies; eaves; lanais; hip-form roofs for low-rise, freestanding buildings; recessed windows; projecting eyebrows; and architectural elements that promote a Hawaiian sense of place.			
(7) Exterior Building Colors. Project colors should contribute to a tropical resort destination. They should complement or blend with surrounding colors, rather than call attention to the structure. Principal colors, particularly for high-rise towers, should be of neutral tones with more vibrant colors relegated to accent work. Highly reflective colors shall not be permitted.	X		
(8) Ground Level Features. (A) Within a development, attention should be given to pedestrian-oriented ground level features. A close indoor-outdoor relationship should be promoted. Design priority should include the visual links through a development connecting the sidewalk and other public areas with on-site open spaces, mountains and the ocean. (B) Building facades at the ground level along open spaces and major streets (including Kalākaua Avenue, Kūhiō Avenue, Kapahulu Avenue, Ala Wai Boulevard and Ala Moana Boulevard) shall be devoted to open lobbies, arcade entrances, and display windows, and to outdoor dining where it is permitted. (C) Where commercial uses are located at ground level, other than as required by paragraph (B), at least one-half of the total length of the building facade along streets shall be devoted to open lobbies, arcade entrances, display windows and outdoor dining where permitted. (D) The street facades of ground level hotel lobbies should include wide, open entryways. Ventilation in these lobbies should primarily depend on natural air circulation. (E) Where buildings are situated between a street and the shoreline or between a street and open spaces, ground level lobbies, arcades and pedestrian ways should be provided to create visual links between the street and the shoreline or open space. (F) Where blank walls must front a street or open space, they shall be screened with heavy landscaping or appropriately articulated exterior surfaces. (G) Ground level parking facilities should not be located along any street, park, beachfront, public sidewalk or pedestrian way. Where the site plan precludes any other location, the garage may front these areas provided landscaping is provided for screening. Principal landscaping shall include trees, and secondary landscape elements may include tall hedges and earth berms. (H) For purposes of the Waikīkī Special District, an "open lobby" shall mean a ground-floor lobby which shall not be enclosed along the entire length of at least two of its sides or 50 percent of its perimeter, whichever is greater, and which shall provide adequate breezeways and views to interior and/or prominent open spaces, intersecting streets, gateways or significant pedestrian ways.	X		
(9) Outdoor Lighting. Outdoor lighting shall be subdued or shielded so as to prevent glare and light spillage onto surrounding properties and public rights-of-way. It shall not be used to attract attention to structures, uses or activities; provided, however, that indirect illumination which shall be integrated with the architectural design of a building may be allowed when it is utilized to highlight and accentuate exterior building facades, and architectural and/or ground level features. Rotating, revolving, moving, flashing and flickering lights shall not be visible to the public, except lighting installed by a public agency for traffic safety purposes or temporary lighting related to holiday displays.	X		
Discussion: *The Project is consistent with general design guidelines and controls set forth for the WSD. The AMB Tower is designed as a contemporary structure featuring modern, culturally appropriate design using materials and colors that complement the surrounding environment and reflect the district's rich heritage. As such, it will help to reinvigorate Ala Moana Boulevard as the primary 'ewa gateway to Waikīkī, providing visitors with a sense of arrival to a special place and more appealing, welcoming experience.* *The Project will adhere to average front yard setback requirements, providing an average 20-foot front yard setback along the street frontage at Ala Moana Boulevard (Section 3.3.9.4). Outdoor seating provided for the Project, accessory to the ground floor retail, is allowed within the front yard. Consistent with the WSD, the ground-level lobby along Ala Moana Boulevard will offer a close indoor-outdoor relationship at the pedestrian ground level and create visual links. The lobby will be enclosed with sliding glass doors to create an open feeling, while also mitigating potential traffic noise and dust and enhancing security along Ala Moana Boulevard. Improvements along Ala Moana Boulevard, including the landscaping and water feature, will promote an interactive and positive pedestrian experience to visitors and residents alike. Outdoor lighting will be subdued and shielded so as to prevent glare onto surrounding properties or public ROW.*			

Table 5.8: Land Use Ordinance – Waikīkī Special District ROH, Section 21-9.80 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
With the addition of the Project to the Village campus, HHV will exceed the maximum FAR of 3.50 for the Resort Mixed Use Precinct. The existing FAR of the Village is 3.76. The Applicants will seek a maximum FAR of 4.00 during the PD-R amendment process. *Refer to Section 3.0 for further description of the Project and Table 3.9 for a summary of the Project's compliance with design controls for the WSD Resort Mixed Use Precinct.*			
Sec. 21-9.80-4(f) General requirements and design controls: Landscaping. (1) Any tree six inches or greater in trunk diameter shall not be removed or destroyed except as follows: (A) The tree is not visible from any street, park or other public viewing area. (B) Appropriate development of the site cannot be achieved without removal of the tree. (C) The tree is a hazard to the public safety or welfare. (D) The tree is dead, diseased or otherwise irretrievably damaged. (E) The applicant can demonstrate the tree is unnecessary due to overcrowding of vegetation.	X		
(2) Any tree removed which is visible from any street, park or other public viewing area shall be replaced by an approved tree of a minimum two-inch caliper, except palms which shall have a minimum trunk height of 15 feet, or by alternative approved landscaping material, unless the replacement results in overcrowded vegetation. Larger replacement trees may be required depending on the size of the trees removed.	X		
(3) Where possible, trees proposed for removal shall be relocated to another area of the project site.	X		
(4) Parking structures shall be landscaped. Rooftop parking areas shall also be landscaped wherever they are visible to the public.	X		
(5) Landscaped screening shall be required to prevent undesirable vistas and sight lines, and to reduce the visual impact of blank walls and parked vehicles. Spacing and other design elements shall be determined by species, plant size and mix of plant material.	X		
(6) Whenever landscaping is required, the use of fragrant, lush, tropical vegetation and native plant species is encouraged.	X		
(7) All fences and walls exceeding 36 inches in height, except for moss rock walls, shall be landscaped with vine or hedge planting, or other approved vegetation on the street side.	X		
(8) All landscaped areas shall include an adequate irrigation system.	X		
Discussion: *The planned landscape improvements along Ala Moana Boulevard and at the Floor 8 recreation deck will integrate lush, fragrant, tropical vegetation to invoke a more appealing and welcoming experience that will accentuate the 'ewa gateway into Waikīkī and fits with the tradition of the Village campus. Existing trees will be preserved where possible or relocated to the extent practical. The landscaping palette may consist of native, Polynesian-introduced, or tropical trees and palms of varying sizes that provide shade and screening. Water features will be integrated to complement the landscaping. Overall landscaping will be consistent with the WSD Guidelines and will be finalized as Project design progresses. As appropriate, the selection and use of native plants will be encouraged with specificity to express identified culturally appropriate themes and experiences throughout the HHV campus. Additionally, adequate irrigation will be provided.*			
Sec. 21-9.80 4(g) General requirements and design controls: Height Regulations. (1) Rooftop Height Exemption: The director may exempt necessary mechanical appurtenances, and utilitarian and architectural features from the height regulations of the special district, provided they are erected only to such height as is necessary to accomplish the purpose they serve, but in no case exceeding 18 feet above the maximum height limit for roof forms and 12 feet above the maximum height limit for all other appurtenances and features. These building elements may be exempted only if the director finds they do not obstruct any significant views which are to be preserved, protected and enhanced and are consistent with the intent and objectives of the Waikīkī Special District. The design of roof treatment shall be attractive, contextual and an integral part of the building's design scheme. Except for flagpoles and smokestacks, all items listed in Section 21-4.60(c) shall also be exempt from the height provision of this subsection.	X		
(2) Coastal Height Setbacks: In addition to the above limits, there is a need to step back tall buildings from the shoreline to maximize public safety and the sense of open space and public enjoyment associated with coastal resources. Accordingly, the following minimum setbacks shall apply to all zoning lots along the shoreline:			X

Table 5.8: Land Use Ordinance – Waikīkī Special District ROH, Section 21-9.80 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(A) There shall be a building height setback of 100 feet in which no structure shall be permitted. This setback shall be measured from the certified shoreline; and (B) Beyond the 100-foot line there shall be a building height setback of 1:1 (45 degrees) measured from the certified shoreline.			
(3) The Council by resolution may approve a building that exceeds the building height limits established in Exhibit 21-9.15 and on the zoning map, provided that the council determines that the building with the added height would not be visible within the view cones from the Punchbowl lookout towards Diamond Head and the horizon line of the ocean or form the Kalakaua Avenue frontage of Fort DeRussy towards the slopes and ridgeline of the Koʻolau Range, and the building does not exceed a height of 350 feet.			X
Discussion: *The maximum height of the AMB Tower will reach 350 feet (exclusive of permitted rooftop equipment and structures), which complies with provisions of the LUO. The Project is not located along the shoreline; therefore, coastal height setbacks do not apply.*			
Sec. 21-9.80 4(h) General requirements and design controls: Parking. Off-street parking shall be provided in accordance with Article 6.	X		
Discussion: *The planned AMB Tower is included in the overall HHV Master Plan. Since development of the Village Master Plan, parking requirements as articulated in the LUO have changed. A minimum parking count is no longer required in the PUC DP area where the Project is located. However, to meet anticipated demand of the retail and hotel uses, approximately 50 parking stalls will be provided in the AMB Tower podium, which will be linked with the existing parking structure. Parking will be located in the rear of the podium and will not be visible from the street frontage. Refer to Section 3.3.8 for details regarding off-street parking requirements.*			

5.3.4 City and County of Honolulu Land Use Ordinance: Planned Development-Resort

The purpose of the PD-R is to provide opportunities for creative redevelopment not possible under a strict adherence to the development standards of the Special District. Flexibility may be provided for project density, height, precinct transitional height setbacks, yards, open space, and landscaping when timely, demonstrable contributions benefiting the community and the stability, function, and overall ambiance and appearance of Waikīkī are produced. PD-R projects are only permitted in the WSD Resort Mixed Used Precinct. Conceptual project plans proposed under a PD-R are reviewed by the City DPP and approved by the City Council. Following City Council approval, the project is further reviewed in detail by the DPP and the Design Advisory Committee, and ultimately approved by the DPP Director.

The Village is located within the WSD Resort Mixed Used Precinct and, pursuant to the Village Master Plan, has been developed under a PD-R (Resolution 11-278). The Project will require amendments to the HHV Village Master Plan's existing 2011 PD-R approval. The Applicants will seek amendments to the PD-R following completion of the environmental review process.

Section 3.3.9 discusses the Project's compliance with site development and design standards allowed under a PD-R pursuant to ROH, Section 21-9.80-4(d) (see also *Table 3.9*). Overall, the expansion of the Village to include the new AMB Tower will require flexibility from certain design standards allowed under the LUO's provisions for a PD-R, including an increase of FAR from 3.76 to 4.00.

Approval of a PD-R is subject to compliance with various criteria articulated in ROH, Section 21-9.80-4(d)(4)(F). The Project's compliance with the criteria is summarized in *Table 5.9* below.

Table 5.9: Land Use Ordinance – Planned Development–Resort Review Criteria ROH, Section 21-9.80-4(d)(4)(F) S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Section 21-9.80-4(d)(4)(F) Approval by Director Upon council approval of the conceptual plan for the PD-R or PD-A project, the application for the project, as approved in concept by the council, will continue to be processed by the director as provided under Section 21-2.110-2. Additional documentation may be required by the director, as necessary. The following criteria will be used by the director to review applications:			
i. The project will conform to the approved conceptual plan and any conditions established by the council in its resolution of approval;	X		
Discussion: *The Applicants will seek City Council approval of the Project's conceptual plan pursuant to the PD-R application process articulated in the LUO.*			
ii. The project also well implement the objectives, guidelines, and standards of the Waikīkī special district and this subsection (d);	X		
Discussion: *The Project implements the objectives, guidelines, and standards of the WSD (Table 5.8 of Section 5.3.3). The Project will significantly rejuvenate the largest resort property in Waikīkī, allowing HHV to continue to meet the evolving expectations of guests from around the world. The expansion of the HHV campus and replacement of existing outdated or dilapidated structures at the site is consistent with the WSD's objectives of revitalizing the Special District in a manner that benefits both residents and visitors. In addition to providing 515 hotel guestrooms, the Project will include improvements to the Ala Moana Boulevard street frontage, ground floor retail with outdoor seating available to the public, food and beverage components, and amenities available to all visitors and guests. The Project will create jobs, both directly and induced, and supports Waikīkī's role as, not only the State's tourism anchor, but a major employment center.* *Further, the Project meets the purpose of the PD-R. Amendments to the existing HHV Village Master Plan PD-R will allow for the creative redevelopment of the campus to include the Project parcels and addition of the AMB Tower. This expansion will create a more cohesive resort environment, revitalize the ʻewa gateway to Waikīkī, and strengthen the Village as a major and iconic destination drawing visitors to Waikīkī and local businesses.*			
iii. The project will exhibit a Hawaiian sense of place. The document "Restoring Hawaiianness to Waikīkī" (July 1994) and the supplemental design guidebook to be prepared by the director should be consulted by applicants as a guide for the types of features that may fulfill this requirement;	X		
Discussion: *The AMB Tower will present a contemporary design that will complement the existing resort experience at the Village and the surrounding area. The design will reflect a Hawaiian sense of place and cultural diversity, and will utilize modern materials to complement the natural setting and reflect a connection to the environment of Waikīkī. Landscaping and water features will be incorporated and may consist of native, Polynesian-introduced, or tropical trees, palms, shrubs, and ornamentals of varying sizes. Details on design features that will express a Hawaiian sense of place will be finalized as the Project progresses.*			
iv. The project must demonstrate a high level of compliance with the design guidelines of this special district and this subsection;	X		
Discussion: *The Project's compliance with WSD design standards is discussed in Table 5.8 of Section 5.3.3. As the Project is planned within the HHV campus, it will comply with development standards for Projects developed under a PD-R, including those related to maximum floor area, building height, transitional height, minimum yards, open space, and landscaping.* *Design will feature architectural elements that complement the unique surroundings and reflect Hawaiʻi's rich heritage and cultural diversity in a contemporary form. Consistent with the WSD, the ground-level arcade and lobby along Ala Moana Boulevard will offer a close indoor-outdoor relationship at the pedestrian ground level and create visual links. The lobby will be enclosed with sliding glass doors to create an open feeling, while also mitigating potential traffic noise and dust and enhancing security along Ala Moana Boulevard. Parking within the AMB Tower will be provided in the rear of the building, providing screening from the street frontage.* *Details on design features will be finalized as the Project progresses.*			
v. The project must contribute significantly to the overall desired urban design of Waikīkī;	X		
Discussion: *Expansion of the HHV campus and replacement of existing outdated or dilapidated structures at the site will contribute significantly to the overall urban design of the WSD. The Project will revitalize the ʻewa gateway to Waikīkī through improvements to the Ala Moana Boulevard street frontage, ground floor retail with outdoor seating to activate the streetscape, and landscaping treatments.*			

Table 5.9: Land Use Ordinance – Planned Development–Resort Review Criteria ROH, Section 21-9.80-4(d)(4)(F) S = Supportive, N/S = Not Supportive, N/A = Not Applicable		S	N/S	N/A
vi.	The project must reflect appropriate "contextual architecture";	X		
	Discussion: *Design of the AMB Tower will reflect a Hawaiian sense of place and cultural diversity, and will utilize materials that complement the natural setting and reflect a connection to the environment of Waikīkī. Landscaping and water features will be incorporated and may consist of native, Polynesian-introduced, or tropical trees, palms, shrubs, and ornamentals of varying sizes. Details on design will be finalized as the Project progresses.*			
vii.	The project must demonstrate a pedestrian system, open spaces, and landscaping and water features (such as water gardens and ponds) that must be integrated and prominently conspicuous throughout the project site at ground level;	X		
	Discussion: *The AMB Tower will essentially maintain existing open space at the HHV Campus. Under the existing PD-R, open space approved for the Village is 51.2 percent (Figure 3.23). After expansion of the Village campus and development of the AMB Tower, the resulting overall open space at the Village will be approximately 50.4 percent.* *The tower will enhance connectivity throughout the HHV campus and will directly integrate with the Village at various points of location. It will also enhance connectivity for the public from Ala Moana Boulevard to the campus grounds.* *Landscaping and water features will be incorporated along the street frontage and amenities areas, and may consist of native, Polynesian-introduced, or tropical trees, palms, shrubs, and ornamentals of varying sizes.*			
viii.	The open space plan must provide useable open spaces, green spaces, water features, public places and other related amenities that reflect a strong appreciation for the tropical environmental setting reflective of Hawai‘i;	X		
	Discussion: *As discussed above, usable open space will be retained at the campus with development of the Project. After expansion of the Village campus and development of the AMB Tower, the resulting overall open space at the Village will be approximately 50.4 percent. Landscaping and water features will be incorporated along the AMB Tower street frontage and amenities areas, and may consist of native, Polynesian-introduced, or tropical trees, palms, shrubs, and ornamentals of varying sizes. Existing open space at the Village, including the Great Lawn and pools, will continue to be available to visitors.*			
ix.	The system of proposed pedestrian elements must contribute to a strong pedestrian orientation that must be integrated into the overall design of the project, and must enhance the pedestrian experience between the project and surrounding Waikīkī areas; and	X		
	Discussion: *The Project will enhance connectivity to the Village and revitalize the ‘ewa gateway to Waikīkī. Consistent with the WSD, the ground-level arcade and lobby along Ala Moana Boulevard will offer a close indoor-outdoor relationship at the pedestrian ground level and create visual links. The lobby will be enclosed with sliding glass doors to create an open feeling, while also mitigating potential traffic noise and dust and enhancing security along Ala Moana Boulevard. Improvements along Ala Moana Boulevard, including landscaping and water features, will promote an interactive and enhanced pedestrian experience to visitors and residents alike.*			
x.	The parking management plan must minimize impacts upon public streets where possible, must enhance local traffic circulation patterns, and must make appropriate accommodations for all anticipated parking and loading demands. The approved parking management plan will constitute the off-street parking and loading requirements for the project.	X		
	Discussion: *The planned AMB Tower is included in the overall HHV Master Plan. Since development of the Village Master Plan, parking requirements as articulated in the LUO have changed. A minimum parking count is no longer required in the PUC DP area where the Project is located. However, to meet anticipated demand of the retail and hotel uses, approximately 50 parking stalls will be provided in the AMB Tower podium, and linked to the existing HHV parking garage. Parking will be located in the rear of the podium and will not be visible from the street frontage.* *In addition to off-street parking, the Project will also provide five off-street loading stalls and will comply with requirements articulated in ROH, Section 21-6. Refer to Section 3.3.8 for details regarding off-street parking and loading requirements.*			

5.3.5 City and County of Honolulu Special Management Area

Within the City, the SMA Use Permit application review is administered by the DPP, and the decision on its issuance is rendered by the City Council. It is the policy of the City to preserve, protect, and to restore the natural resources of the coastal zone of Hawaiʻi. The SMA designation places special controls on development within an area along the shoreline to avoid permanent loss of valuable resources and to insure that adequate public access is provided to publicly-owned or used beaches, recreation areas, and natural reserves. The Project is located in the designated SMA and valued at over $500,000 (*Figure 1.6*); therefore, an SMA Use Permit, Major is required.

Issuance of the SMA Use Permit, Major is based on the consistency of the Project with the policies and objectives specified in the CZM Law (*Table 5.5*) and review guidelines articulated in ROH, Chapter 25. Amendments to ROH, Chapter 25 were recently adopted on March 9, 2023. *Table 5.10* discusses the Project's compliance with the SMA review guidelines (ROH, Section 25-3.2):

Table 5.10: Special Management Area – Objectives and Policies **ROH, Chapter 25** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
~~(a) All development in the special management area are subject to reasonable terms and conditions set by the authority in order to ensure:~~			
~~1) Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas, and natural reserves is provided to the extent consistent with sound conservation principles;~~	~~X~~		
~~2) Adequate and properly located public recreation areas and wildlife preserves are reserved.~~	~~X~~		
~~3) Provisions are made for solid and liquid waste treatment, disposition, and management that will minimize adverse effects upon special management area resources.~~	~~X~~		
~~4) Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.~~	~~X~~		
~~***Discussion:*** *The Project will not restrict access to beaches, recreation areas and natural reserves adjacent to the HHV campus. HHV maintains an open-access policy for residents and visitors to enjoy these recreational resources.*~~ ~~*Adequate solid and liquid waste treatment will be provided for the AMB Tower, as discussed in Section 4.8.4. A slight increase of solid waste is anticipated from the Project; however, this will not result in a significant adverse impact to City services. As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV's longtime sustainability practices, including the implementation of various recycling programs, the use of low flow water fixtures, incorporation of EV charging, and bicycle storage. The AMB Tower's estimated sewer transmission capacity is within HHV's limits allotted in the Memorandum of Agreement (2012) with the City.*~~ ~~*Soil disturbance will be limited to construction associated grading and excavation. The impact of construction activities on soils will be mitigated through implementation of BMPs, including strict erosion control and dust control measures. Storm water quality and water quantity and quality control will be consistent with City and State standards. Construction, grading and drainage plans for the Project will be submitted to appropriate agencies for review and approval. Finally, design of the Project will incorporate landscaping and installation of LID measures to mitigate the impacts and protect water quality.*~~ ~~*The AMB Tower site is within the XTEZ where additional areas must be evacuated during an extreme tsunami event, flood inundation area (Zone AE), and the 3.2 foot SLR XA. Design of the tower will have a finished floor elevation of 7.5 above msl, and will be in compliance with IBC, State, and City safety standards to minimize potential impacts of natural hazards and promote public safety (Section 4.4). In the case of a natural hazard event, standard emergency operating procedures of the hotel and village will be implemented.*~~			
25-3.1 Objectives, policies, and guidelines			
The objectives, policies, and guidelines of this chapter are those contained in HRS § 205A-2 and 205A-26(1). The objectives, policies, and guidelines summarized below are the basis for analysis of uses, activities, or operations within the special management area.			

Table 5.10: Special Management Area – Objectives and Policies **ROH, Chapter 25** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(a) Recreational resources. Development within the SMA should provide coastal recreational opportunities to the public. Adequate access, by dedication or other means, to beaches, coastal dunes, recreation areas, and natural reserves must be provided to the extent consistent with sound conservation principles. Adequate and properly located public recreation areas and wildlife preserves must be preserved.	X		
Discussion: *Redevelopment of the site for the AMB Tower will support and enhance existing connections to recreational resources in the Project vicinity. While not publicly-owned, the Village campus includes various recreational opportunities for HHV guests and the public. Access to nearby coastal recreational resources, including the beach and 4.6-acre Duke Kahanamoku Lagoon, will continue with implementation of the Project.*			
(b) Historic and cultural resources. Development within the SMA should protect, preserve, and restore natural or human-made historical and cultural resources.	X		
Discussion: *An AIS and CIA were conducted during the preparation of the SEIS to assess the sensitivity and potential occurrence of historic resources, including subsurface resource such as burials (Section 4.1). The AIS identified three significant historic properties within the Project Site. Pursuant to HAR, Section 13-284-8, the Project will have an "effect with mitigation commitments." In consultation with SHPD, archaeological monitoring and burial treatment are proposed as appropriate mitigation for potential impacts to the affected sites. Accordingly, an AMP and BTP will be prepared in consultation with SHPD and Native Hawaiian cultural descendants.* *The CIA determined that the Project will not result in impacts to ongoing traditional cultural practices and natural resources or cultural sites and wahi pana within the Project area. In the event that iwi kūpuna and/or cultural finds are encountered during construction, identified mitigation measures, in accordance with State Historic Preservation laws, will be administered. Additionally, cultural community consultation will be ongoing throughout the entitlements and construction process. Any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.* *An RLS was also conducted for the Project and determined that the existing structures on the Added Parcels were not considered to be historically significant. The SHPD concurred with this determination, and, as such, no significant adverse impacts to historic architectural resources are anticipated.*			
(c) Scenic and open space resources. Development within the SMA should protect, preserve, and whenever desirable, restore or improve the quality of coastal scenic and open space resources. Alterations to existing land forms and vegetation, other than for the cultivation of coastal dependent crops, must be limited so they result in minimum adverse impacts on water resources, beaches, coastal dunes, and scenic or recreational amenities. Development that is not dependent on the coast is encouraged to locate mauka of the SMA.	X		
Discussion: *The Project will be located approximately 800 feet inland from the shoreline and will blend with the surrounding urban environment in terms of its orientation, scale, height, form, and design. As discussed in Section 4.11, public views as articulated in the PUC DP will be minimally affected. The AMB Tower will not be discernable from the Ala Wai Yacht Harbor, Punchbowl Lookout, Ala Moana Beach Park, or Kūhiō Beach Park. It will be visible from Fort DeRussy Park; however, the addition of the AMB Tower will have minimal impact on views from this location as it will be located between two existing buildings.* *The Project will enhance the visual environment of the site at street level by replacing the existing dated or dilapidated buildings with the AMB Tower, a timeless, contemporary structure featuring modern, culturally appropriate design using materials that complement the surrounding environment. The AMB Tower will reinvigorate Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience.* *As discussed in Sections 3.3.6 and 3.3.9.3, approximately half of the existing HHV campus is dedicated to at-grade open space. Existing open space square footage at the Village is 51.2 percent. The amount of at-grade open space to be added on the Added Parcels is approximately 2,373.9 sf. After expansion of the Village campus and development of the AMB Tower, the resulting overall open space for HHV will be increased, not reduced. However, because less than 51.2 percent of the Added Parcels will be dedicated to open space, the overall percentage of the Village that is open space, after the addition of the new parcels and construction of the AMB Tower, will be 50.4 percent (Table 3.3), but will continue to meet both the LUO's standards for the WSD Resort Mixed Use Precinct and applicable open-space requirements under the PD-R.* *Along Ala Moana Boulevard, the Project will improve the quality of open space resources in the SMA by including landscaping with water features and trees to provide intermittent shade, and a welcoming porte cochere. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible.*			

Table 5.10: Special Management Area – Objectives and Policies **ROH, Chapter 25** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(d) Coastal ecosystems. Development within the SMA should protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes from disruption. and minimize adverse impacts on all coastal ecosystems. Solid and liquid waste treatment and disposition must be managed to minimize adverse impacts on SMA resources.	X		
Discussion: *The Project will be located approximately 800 feet inland from the shoreline; therefore, no impacts to coastal ecosystems are anticipated. However, in order to protect downstream water quality during construction, the Project will adhere to State and City standards, and potential impacts will be mitigated through the employment of treatment controls and BMPs (Section 4.8.1). In the long term, LID BMPs to be integrated into the Project design may include, but not be limited to, green roofs, bioretention basins, vegetated bioswales, infiltration basins and trenches, seepage wells, drywells, detention basins, rainwater harvesting and reuse, permeable pavements, and manufactured treatment devices designed to remove trash and sediment in stormwater. Additionally, source control BMPs such as covering trash areas and loading docks and routing stormwater from paved areas to landscaped areas, will be included as necessary to prevent pollution of stormwater.*			
(e) Economic uses. Development within the SMA should consist of facilities and improvements important to the State's economy, and ensure that coastal-dependent development and coastal-related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts within the SMA.	X		
Discussion: *The Village is situated at the 'ewa gateway into Waikīkī, one of the world's most iconic visitor destinations and a significant contributor to the local and state economy. As both a major resort destination and residential community, Waikīkī serves a unique social and economic function. HHV remains strongly committed to creating exceptional guest experiences on its campus. As such, services and accommodations at the Village must be continuously improved and refreshed to meet with the evolving expectations of guests from around the world. The AMB Tower will add 515 hotel guestrooms to the HHV campus to meet existing and anticipated demand for a variety of accommodation choices; revitalize Waikīkī's 'ewa gateway; and strengthen the Village as a major and iconic destination in the important Waikīkī region.* *The AMB Tower is designed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts within the SMA, discussed throughout Section 4.0.*			
(f) Coastal hazards. Development within the SMA should reduce impacts of coastal hazards on life and property, and must be designed to minimize impacts from landslides, erosion, sea level rise, siltation, or failure in the event of earthquake.	X		
Discussion: *The Project is being proactively planned and designed to be sustainable and resilient, and to address the impacts of climate change and rising sea levels. Design of the AMB Tower will have a finished floor elevation of 8.0 feet above msl, and will adhere to IBC, State, and City building code standards to promote public safety. Utilities will be located at higher elevations where feasible. LID measures will be incorporated where appropriate, and will be determined as design progresses. The use of green infrastructure features, such as a green wall on portions of the podium, may also be incorporated where feasible. See Section 4.4.5 for further discussion.*			
(g) Managing development and public participation. The development review process should stimulate public awareness, education, and participation in coastal management.	X		
Discussion: *Public outreach conducted for the Project to-date includes an SEISPN scoping meeting and presentations to the Waikīkī Neighborhood Board No. 9 and WIA, as detailed in Section 7.0. Additionally, publication of the SEISPN and Draft SEIS were followed by a public comment period. During the public outreach conducted for the Project, comments related to coastal management were shared, primarily regarding the potential impacts of SLR on the AMB Tower.* *The Project is being proactively planned and designed to be sustainable and resilient, and to address the impacts of climate change and rising sea levels. Design of the AMB Tower will have a finished floor elevation of 8.0 feet above msl, and will adhere to IBC, State, and City building code standards to promote public safety. Utilities will be located at higher elevations where feasible. LID measures will be incorporated where appropriate, and will be determined as design progresses. The use of green infrastructure features, such as a green wall on portions of the podium, may also be incorporated where feasible.*			

Table 5.10: Special Management Area – Objectives and Policies **ROH, Chapter 25** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(h) Beach and coastal dune protection. Development within the SMA should facilitate beach management and protection by safeguarding beaches and coastal dunes for public use and recreation, the benefit of ecosystems, and use as natural buffers against coastal hazards. New structures should be located mauka of the shoreline setback line to conserve open space, minimize interference with natural shoreline processes, and minimize the loss of improvements due to erosion.	X		
Discussion: *AMB Tower will be located approximately 800 feet mauka of the shoreline, outside of the shoreline setback area. As such, the Project supports the SMA's objectives with regard to beach and coastal dune protection.*			
(i) Marine and coastal resources. Development within the SMA should promote the protection, use, and development of marine and coastal resources to ensure that these resources are ecologically and environmentally sound and economically beneficial. Impacts on water resources, beaches, coastal dunes, and scenic or recreational amenities resulting from the construction of structures must be minimized. Development within wetland areas should be limited to activities that are dependent on or enhance wetlands, or are otherwise approved by appropriate State and federal agencies. Examples include traditional Hawaiian agricultural uses such as wetland taro production aquaculture, and fishpond management, as well as activities that clean and restore traditional wetland areas or create new wetlands in appropriate areas.			X
Discussion: *The Project does not involve the use of marine and coastal resources or wetlands.*			
(j) Cumulative impact or significant effect and compelling public interest. Development within the SMA should not have any cumulative impact or significant effect, unless minimized to the extent practicable and clearly outweighed by public health, safety, or other compelling public interest.	X		
Discussion: *As discussed in Section 4.13.1, AMB Tower is part of HHV's continuing reinvestment into one of Waikīkī's primary resort destinations at the ʻewa gateway to the region. The Project also represents a continuing trend of reinvestment into Waikīkī, which aligns with State and City policies for this major resort community.* *As discussed in the Economic Impact Analysis prepared for the Project (Appendix M), it is estimated that the unmet lodging demand on Oʻahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for short-term rentals being closed by the City. The Project will directly fulfill the demonstrated demand for hotel guestrooms in the designated resort area of Waikīkī, while preserving areas identified for other uses.* *Together with various projects planned for the region, the Project is not anticipated to result in cumulative adverse impact or significant effect. Mitigation measures to address potential impacts, as summarized in Table 1.1 and discussed throughout this SEIS, will be implemented to extent practicable.*			
(k) Consistency with plans and regulations. Development within the SMA must be consistent with the general plan, development plans, sustainable communities plans, and zoning ordinances: provided that a finding of inconsistency does not preclude concurrent processing of amendments to applicable plans or a zone change.	X		
Discussion: *The Project is consistent with the City General Plan and PUC DP, and with zoning and development standards articulated in the LUO for a PD-R project within the Resort Mixed Use Precinct of the WSD (Sections 5.3.1, 5.3.2, 5.3.3, and 5.3.4). Following the completion of the environmental review process, the Applicants will obtain a PD-R, SMA Use Permit, and WSD Permit. These permits will include review by the DPP, public hearings, and final approval by the Honolulu City Council.*			
25-4.1 Permit review guidelines.			
(a~~b~~) No development ~~shall~~ may be approved unless the ~~authority~~ agency or the council has first found:			
1) That the development is consistent with the objectives, policies, and guidelines set forth in this chapter and will not have any ~~substantial~~ significant adverse environmental or ecological effect, except as such for situations in which the adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or a compelling public interests. ~~Such adverse effects shall include, but not be~~ Adverse effects include, but are not limited to, the potential cumulative impact of individual developments, each ~~one~~ of which taken ~~in~~ by itself ~~might~~ not have a ~~substantial~~ significant adverse effect~~, and the elimination of planning options;~~. Adverse effects may also involve development that would eliminate future planning options.	X		

Table 5.10: Special Management Area – Objectives and Policies ROH, Chapter 25 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
~~2) That the development is consistent with the objectives, policies, and special management area guidelines of this chapter and any guidelines enacted by the legislature;~~	~~X~~		
~~3) That the development is consistent with the county general plan and zoning. Such a finding of consistency does not preclude concurrent processing where a general plan or zoning amendment may also be required.~~	~~X~~		
Discussion: *The construction of the AMB Tower will not create substantial adverse environmental impacts. Identified potential long-term impacts and recommended mitigation measures are discussed throughout Section 4.0. The site has been previously developed and is situated within the dense resort region of Waikīkī. The Project is scaled for the surrounding area, and design elements will be reflective of the community's character.* *The Project is consistent with the policies and objectives set forth in HRS, Chapter 205A CZM (Section 5.2.7), as well as the ROH, Chapter 25 SMA guidelines. The Project is also consistent with the City General Plan and PUC DP (Sections 5.3.1 and 5.3.2). The Project will reinvigorate and revitalize Ala Moana Boulevard as the primary 'ewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience that reinforces the identity of Waikīkī as a premier, global tourism destination. ~~The AMB Tower will provide accommodation choice to meet the demands and expectations of today's visitor.~~ The Project will add 515 hotel guestrooms to the HHV campus to meet existing and anticipated demand for a variety of accommodation choices. It will also provide direct and induced jobs, reinforcing the region as an employment center. Additionally, utilizing goods and services from other local businesses, the Project will ~~also~~ support the growth of other sectors of the economy (Section 4.10).* *The Project parcels are zoned WSD Resort Mixed Use Precinct, as is the entirety of the HHV campus. The proposed hotel and retail uses are allowed within this zoning district, and the Project is consistent with LUO development standards for the WSD Resort Mixed Use Precinct (Section 5.3.3). Additionally, the Applicants will seek an amendment to the HHV Village Master Plan 2011 PD-R to include the Project and seek flexibility from certain development standards (Section 3.3.9).*			
(c) The ~~authority~~ agency or council shall seek to minimize, ~~where~~ whenever reasonable:			
i. Dredging, filling or otherwise altering any bay, estuary, salt marsh, wetland, river mouth, slough or lagoon, except for restoration purposes;	X		
ii. Any development ~~which~~ that would reduce the size of any beach, coastal dune, or other area usable for public recreation;	X		
iii. Any development ~~which~~ that would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, coastal dunes, portions of rivers and streams, ~~within the special management areas~~ and the mean high tide line where there is no beach;	X		
iv. Any development ~~which~~ that would substantially interfere with or detract from the line of sight toward the ~~sea~~ocean from the State highway nearest the coast;	X		
v. Any development ~~which~~ that would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, coastal ecosystems, wildlife habitats, or potential or existing agricultural uses of land; and,~~.~~	X		
vi. Risk to development from sea level rise and other coastal hazards, which may be accomplished by siting habitable structures outside of the sea level rise exposure area if feasible, or if not feasible adapting habitable structures within the sea level rise exposure area to accommodate sea level rise.	X		

Table 5.10: Special Management Area – Objectives and Policies **ROH, Chapter 25** **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *Development of the Project will not involve dredging or filling, and will not adversely impact public access and usage of coastal resources, wildlife preserves, coastal views, and water quality. Project improvements will not reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the SMA.* *Pedestrian-level public coastal views from Ala Moana Boulevard will not be affected by the Project (Section 4.11). The Project will incorporate site-specific BMPs to protect water quality and prevent stormwater runoff and sediment discharges from the site. No adverse effects are anticipated to water quality, open water, fisheries or fishing grounds, wildlife habitats, or potential or existing agricultural uses of the land.* *The Project ~~S~~site is situated approximately 800 feet inland from the shoreline and within the 3.2-foot SLR-XA. The PacIOOS model predicts that the site and surrounding roads will particularly be affected by future occasional passive flooding as a result of 3.2 feet of SLR. As such, the AMB Tower is designed with a finished floor elevation of 8.0 feet above msl to prevent passive flooding into the building. Additionally, access to the tower will be provided on multiple levels to locate exits away from potentially flooded areas.* *Additional adaptation strategies will be integrated into the design to mitigate the effects of climate change and SLR, including the addition of landscaping and installation of LID, where feasible. In general, utility connections in new buildings are also vulnerable to the effects of SLR. As such, water meters, backflow preventers, electrical boxes, handholes, transformers, and equipment that could be damaged from flooding at the AMB Tower will be located at higher elevations, where feasible. Design will be finalized as the Project progresses.*			

5.3.6 City and County of Honolulu Shoreline Setback

To accomplish the objectives of HRS, Chapter 205A discussed in *Section 5.2.7,* shoreline setback areas were established, and counties were authorized to develop and administer permitting systems to control development within the shoreline setback area. The shoreline setback area encompasses the land between the certified shoreline and the shoreline setback line, generally established 40 feet inland from the certified shoreline with exceptions that allow for adjustments.

City Shoreline Setback rules are defined in ROH, Chapter ~~23~~26 pursuant to HRS, Chapter 205A and regulated by the City DPP. The purpose of the policy is to:

> *"(a) protect and preserve the natural shoreline, especially sandy beaches; to protect and preserve public pedestrian access laterally along the shoreline and to the sea; and to protect and preserve open space along the shoreline…[and to] reduce hazards to property from coastal floods." (ROH Section 23-1.2)*

Specifically, ROH, Chapter ~~23~~26 establishes standards that generally prohibit within the shoreline area any construction or activity which may adversely affect beach processes, public access along the shoreline, or shoreline open space. However, allowances are permitted for specific structures and circumstances with the approval of a variance. Notably, Act 16 (SB2060, SD2, HD2) adopted on September 15, 2020 amended HRS, Chapter 205A . The City DPP is in the process of making revisions to ROH, Chapter ~~23~~26, which must then be adopted by the Honolulu City Council. The following subsections analyze the Project's consistency with the current regulations under ROH, Chapter ~~23~~26.

Discussion: *The Project is located approximately 800 feet inland from the shoreline and is therefore not within the shoreline setback area. A shoreline setback variance will not be required.*

5.3.7 City and County of Honolulu, Flood Hazard Areas

Congress has determined that regulation of construction in areas subject to flood hazards is necessary for the protection of life and property and reduction of public costs for flood control, rescue and relief efforts, thereby promoting the safety, health, convenience and general welfare of the community. In order to achieve these purposes, ROH, Chapter 21A, Flood Hazards, establishes flood hazard areas and imposes restrictions upon manmade changes to improved and unimproved real estate within the areas. These restrictions are necessary to qualify the City for participation in the federal flood insurance program.

DPP is tasked with granting or denying development permits in accordance with the provisions of ROH, Chapter 21A.

The Project Site is located within Zone AE, indicating areas subject to inundation by the 1 percent annual chance flood event and where the BFE has been determined (*Figure 1.7*). Zone AE is also considered a SFHA. For City regulatory purposes, the SFHA is considered a floodway area and is therefore subject to development standards articulated in ROH, Chapter 21A. Zone AE is further classified as a SHFA – Flood Fringe Area. In addition to adhering to development standards outlined in the LUO, the following standards are applicable to the Flood Fringe Area according to ROH, Section 21A-1.8:

"(a) In areas designated on the flood maps as zone AE or AH:
- *(1) All new construction or substantial improvements of residential structures shall have the lowest floor, including basements, elevated to or above the base flood elevation.*
- *(2) All new construction or substantial improvements of nonresidential structures shall have the lowest floor elevated to or above the base flood elevation; or together with attendant utility and sanitary facilities, be designed and constructed so that below the base flood elevation, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy due to the base flood.*
- *(3) Within zone AH, adequate drainage paths shall be provided around structures on slopes to guide floodwaters around and away from proposed structures."*

Discussion: *The site spans two BFE areas, and the highest 7-foot BFE will therefore be used. The finished floor elevation of AMB Tower is planned at 8.0~~7.5~~ feet above msl, therefore complying with the provisions of ROH, Chapter 21A.*

A licensed professional architect or engineer will develop or review the design, specifications, and plans and certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of the chapter.

5.3.8 City and County of Honolulu Waikīkī Livable Community Project

The Waikīkī Livable Community Project (WLCP) (2003) is a federally-funded planning study that was conducted under a grant obtained from Federal Highway Administration's Transportation and Community and System Preservation Pilot Program (TCSP) and federal funding from the O'ahu Metropolitan Planning Organization. The TCSP is a nationwide program providing cities and communities with grants to investigate the relationship between transportation and community. The transportation system in Waikīkī consists of a street network and sidewalk network. The WLCP examines how Waikīkī's system of public streets, sidewalks, and ROW are used and how the system might improve. The WLCP was designed, with assistance from the Waikīkī community and stakeholders, to improve transportation, circulation and pedestrian activity to assist in the improvement and support of the revitalization of Waikīkī as a pedestrian first community.

The Project's compliance with relevant objectives and guidelines identified in the WLCP are discussed in *Table 5.11*.

Table 5.11: Waikīkī Livable Community Project **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
WLCP Mission Statement: Waikīkī is a distinct, premier resort, residential and urban district. It must maintain its Hawaiian sense of place and economic vitality. Seeking solutions and compromises in physical planning, landscaping, and various modes of transportation, shall meet the needs of visitors, residents, and team members alike in the spirit of Aloha.			
Discussion: *The Project meets the vision statement articulated in the WLCP. The Project supports and reinforces the identity of Waikīkī as a premier neighborhood, global destination, and employment center. The AMB Tower will incorporate features that convey a Hawaiian sense of place, as discussed throughout Sections 5.3.3 and 5.3.4.*			
Vision Statements			
Kūhiō Avenue Vision Statement: Celebrating Living in Waikīkī. Kūhiō Avenue will be Waikīkī's "Main Street" where residents and visitors will gather.			X
Ala Wai Boulevard Vision Statement: A Stage for Recreation and Culture. Ala Wai Boulevard and Canal will focus on recreation and culture on the land and in the water.			X
Kalākaua Avenue Vision Statement: One of the World's Greatest Streets. Kalākaua Avenue will be the gathering place, where Waikīkī's main attractions occur.			X
Ala Moana Boulevard Vision Statement: A Green Gateway. Ala Moana Boulevard will continue to be a major gateway to Waikīkī, conveying a sense of arrival and welcome to visitors and residents.	X		
Mauka - Makai Streets: Creating Neighborhoods with Unique Character. Pedestrian traffic will be encouraged along mauka-makai streets, the character of the individual neighborhoods will be highlighted and developed.	X		
Discussion: *The Project directly supports the WLCP vision for Ala Moana Boulevard as the gateway to Waikīkī. Planned improvements will provide residents and visitors with a more appealing, welcoming experience that reinforces the identity of Waikīkī as a premier global destination. The new AMB Tower will replace existing outdated structures and present a contemporary design that will complement the existing resort experience at the Village and the surrounding area. Improvements along Ala Moana Boulevard, including landscaping and water features, will promote an interactive and positive pedestrian experience to visitors and residents alike. The tower podium will also include ground level retail comprised of the ABC Store and outdoor seating, which will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape for the benefit of all residents and visitors.*			
1.Pedestrian Routes			
Secondary pedestrian routes are sidewalk space along streets connecting primary pedestrian routes to recreational pedestrian routes and to pedestrian routes and attractions beyond Waikīkī. They are intended to accommodate lower volumes of pedestrian activity than the primary pedestrian routes. Roadways identified as secondary pedestrian routes include: Ala Moana Boulevard (between Atkinson Boulevard and Kālia Road)	X		
Design Principles and Improvements (Ala Moana Boulevard) 1. Sidewalks along secondary pedestrian routes should have a minimum width of 8-10 feet where possible. 2. Textured sidewalk pavement is recommended for secondary routes along Ala Moana Boulevard. 3. Provide continuous, even illumination on both sides of the street for a sense of comfort and safety at night along secondary routes. 4. Replace existing street light fixtures with historic light fixtures on Ala Moana Boulevard.	X		

Table 5.11: Waikīkī Livable Community Project S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Street/Sidewalk Improvements 1. Overhead utility lines detract from the character of streetscapes. Undergrounding of utility lines is recommended along the following streets: Ala Moana Boulevard, between Ala Moana bridge and Kalakaua Avenue. 2. Private developments fronting primary and secondary pedestrian routes are important contributors to defining the character of streetscapes. It is recommended that the WSD permit process encourage property owners to provide pedestrian enhancements such as street café dining and inviting storefronts, complementing landscaping in setbacks, outdoor seating areas, and arcades and gathering areas. 3. Add distinctive street furnishings. Amenities such as benches, canopies, and landscaping enhance the environment for pedestrians. Providing a place for people to rest, people-watch, and interact with people.	X		
Discussion: *The Project supports the WLCP goals for improvements street/sidewalk improvements. The Project will enhance connectivity to the Village and revitalize the 'ewa gateway to Waikīkī. Consistent with the WSD, the ground-level arcade and lobby along Ala Moana Boulevard will offer a close indoor-outdoor relationship at the pedestrian ground level and create visual links. The lobby will be enclosed with sliding glass doors to create an open feeling, while also mitigating potential traffic noise and dust and enhancing security along Ala Moana Boulevard. Improvements along Ala Moana Boulevard, including landscaping and water features, will promote an interactive and enhanced pedestrian experience to visitors and residents alike. Ground floor retail within the AMB Tower will be accessible from the street frontage and include an outdoor seating area. Finally, the Project will maintain the existing sidewalk width of 8 feet along Ala Moana Boulevard.*			
VII. Entry Features			
Entry features are important for well renowned urban resort areas such as Waikīkī. They help to establish a sense of arrival for first-time as well as repeat visitors. They offer a physical gesture of welcome, which is essential. Entry features create a pedestrian-friendly environment. Entry features are recommended at the main vehicle and pedestrian roadways/pathways into Waikīkī: 1. Ala Moana Boulevard Bridge 2. Ala Moana Boulevard and Kalakaua Avenue	X		
Design Principles: design elements recommended for entry features include: • Landscaped lava rock with a water feature that represents the meaning of Waikīkī, "Spouting Water," such as reflected in the existing entry feature at the Kapahulu Avenue and Ala Wai Boulevard intersection. • Lush tropical landscaping • Torches or other fire element, as appropriate • Lighting	X		
Discussion: *As the Project is located at the primary 'ewa gateway to Waikīkī, it will be designed to provide residents and visitors with a more appealing, welcoming experience. Planned improvements are consistent with the WLCP, including the use of landscaping and lighting, as appropriate.*			
VIII. Signage			
Design • Entry and identification/entry features at Ala Moana Boulevard. • Parking direction/instruction signs to direct residents and visitors to public parking lots • Wayfinding and directional signage, to include signs for recreational paths, bicycle paths, beach access, orientation signs, etc. • International symbols	X		
Discussion: *The Project will include appropriate wayfinding signage to enhance the pedestrian experience at the site and promote connectivity through the overall Village campus.*			

5.3.9 City and County of Honolulu Climate Action Plan 2020-2025

The City Climate Action Plan (CAP) was prepared by the Office of Climate Change, Sustainability, and Resiliency (OCCSR) as a strategy for Oʻahu to address climate change and fossil fuel emissions. The CAP presents nine strategies with 47 specific actions for the City to pursue to reduce GHG emissions from ground transportation, electricity, and waste. While the CAP focuses on City actions to pursue, the Project supports several key actions, as discussed in *Table 5.12*:

Table 5.12: City and County of Honolulu Climate Action Plan 2020-2025: Strategies and Actions **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Strategy 1: Encourage Density and Mixed Land Use in Strategic Areas			
1.1 Continue to adopt policies that support greater housing affordability located near transit and in areas in proximity to job centers and key destinations.			X
1.2 Continue revising the City's land use and zoning regulations to allow for mixed-use development across Oʻahu to support "complete communities."	X		
1.3 Work with private sector to provide connectivity and streetscape infrastructure in new developments to support complete streets principles.	X		
Discussion: *The Project directly complements the CAP's vision to support complete streets principles through connectivity and streetscape infrastructure. The Project will enhance connectivity to the Village and revitalize the ʻewa gateway to Waikīkī. Consistent with the WSD, the ground-level arcade and lobby along Ala Moana Boulevard will offer a close indoor-outdoor relationship at the pedestrian ground level and create visual links. The lobby will be enclosed with sliding glass doors to create an open feeling, while also mitigating potential traffic noise and dust and enhancing security along Ala Moana Boulevard. Improvements along Ala Moana Boulevard, including landscaping and water features, will promote an interactive and enhanced pedestrian experience to visitors and residents alike. Ground floor retail within the AMB Tower will be accessible from the street frontage and include an outdoor seating area. Finally, the Project will maintain the existing sidewalk width of 8 feet along Ala Moana Boulevard.*			
Strategy 2: Enable and Provide Multiple Modes of Green Transportation			
2.1 Implement the Oʻahu Bike Plan and continue to build out protected bikeways for all ages and abilities with safe connections between existing bike lanes.			X
2.2 Develop a City-focused Transportation Demand Management (TDM) program and consider updating the telework policy	X		
2.3 Complete the Oʻahu Pedestrian Plan and implement high priority pedestrian projects	X		
2.4 Plan and plant trees as part of roadway rehabilitation projects to provide shade for pedestrian, bicycle, and transit infrastructure and promote comfort for frequent trips.	X		
2.5 Repurpose general travel and parking lanes for multimodal and active transportation use.			X
2.6 Increase non-vehicular mode share in new multi-family housing and commercial developments through TDM programs.	X		
2.7 Identify candidate projects and develop dedicated bus lanes along high occupancy transit corridors.			X
2.8 Launch integrated transit fare card (Holo) to include a fare-capping program for relevant daily, monthly, and annual rates			X
2.9 Hire a Mobility Manager to leverage opportunities to increase micromobility services.			X
2.10 Create a universal trip planning and fare app to improve the connectivity of multimodal transportation options.			X
2.11 Seek innovative business solutions to deliver Vehicle Miles Traveled reduction services.			X
Discussion: *The Project supports the CAP goals for supporting multimodal forms of transportation. Landscaping and water features will be provided along the Ala Moana Boulevard street frontage to create a pedestrian-friendly environment. Design of the tower will include bicycle storage, designated off-street parking stalls with EV charging, and existing TDM programs at the Village will be implemented for staff to encourage the use of public and active forms of transportation.*			

Table 5.12: City and County of Honolulu Climate Action Plan 2020-2025: Strategies and Actions S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Strategy 3: Encourage Mode Shift through Parking Efficiency			
3.1 Allow for flexibility in the provision of parking by eliminating minimum off-street parking requirements.	X		
3.2 Encourage unbundling of the sale or rent of multi-dwelling housing units from parking in Transit-Oriented Development (TOD) and other suitable neighborhoods.			X
3.3 Develop curb management systems within TOD and other high-demand areas			X
3.4 Maximize efficiency of public parking at City-owned lots and parking spaces in destinations with high transportation alternatives. Implement dynamic metering rates.			X
3.5 Repurpose underutilized public parking in preference to multimodal transportation infrastructure, urban greenery, and public-serving spaces.			X
Discussion: *The Project supports parking efficiency through the reconfiguration of existing stalls at the adjacent Coral Ballroom parking garage to support parking needs of the AMB Tower. The AMB Tower podium will only include a modest provision of approximately 50 parking stalls to meet anticipated demand of the hotel and retail uses. Overall, the Project supports the use of alternative modes of transportation. Guests will be able to take advantage of the Project's close proximity to a large concentration of destinations in Waikīkī. Development of the tower along Ala Moana Boulevard will enhance the immediate pedestrian surroundings and create an open, safe, and cohesive resort experience that improves connectivity with the HHV campus and in the surrounding environment.*			
Strategy 4: Electrify the City Fleet and Support High Efficiency Vehicles			
4.1 Develop and adopt an electric bus purchasing policy for the City's bus fleet to reach 100% renewable-powered city fleet goal by 2035.			X
4.2 Develop a plan and implement City passenger vehicle fleet transition to achieve 100% clean fleet goal by 2035.			X
4.3 Develop, for EV buses and other City owned EVs, charging protocols such that it facilitates integration of intermittent renewable energy			X
4.4 Expand EV charging infrastructure for the City EV fleet by tripling public charging capacity on City facilities; enable electricity cost recovery			X
4.5 Provide private car sharing with high fuel efficiency vehicles priority access parking to enable point-to-point service in high usage areas.			X
Discussion: *The Project supports the CAP's objectives to electrify the City fleets; however, this is not directly related to the AMB Tower. The AMB Tower podium will include charging stations at certain parking stalls as required by City rules to support the use of EVs.*			
Strategy 5: Reduce Energy Demand by Increasing Energy Efficiency			
5.1 Put in place a system to regularly update relevant building code ordinances, adopt State codes as required, and consider adopting further local standards to reduce greenhouse gas emissions over time.			X
5.2 Develop a "lead by example" municipal energy and water benchmarking program for covered City facilities along with data transparency, reporting, and building performance standards. Develop internal and publicly-available dashboard with energy and water data reporting protocols.			X
5.3 Develop a building energy benchmarking program, building performance standards, and transparent reporting mechanisms for large covered commercial and multi-family buildings.	X		
5.4 Deploy a Healthy and Resilient Buildings program in response to COVID-19.			X
Discussion: *The Hilton "Light Stay" monitoring program will be implemented at the AMB Tower to measure and manage the environmental impact of the Project, including tracking water and energy consumption and waste generation. Additional measures to increase energy efficiency of the Project include, but are not limited to, the incorporation of low-flow plumbing fixtures to encourage water efficiency; the use of low-emittance window glazing, air-conditioning controls, and use of compact fluorescent lamps and light-emitting diodes light fixtures; and, the use of low-emitting materials for applications of adhesives, sealants, paints, carpets and flooring systems to promote a healthy indoor environment. See Section 4.12.*			

Table 5.12: City and County of Honolulu Climate Action Plan 2020-2025: Strategies and Actions S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Strategy 6: Maximize Energy Efficiency and Renewable Energy throughout City Operations and Assets			
6.1 Retrofit City buildings, facilities, and operations to be more energy efficient.			X
6.2 Leverage City rooftops, parking lots, and other previously developed lands to increase on-site and City-owned renewable energy generation by 200%.			X
6.3 Continue to pilot and implement flexible energy demand response programs for City operations.			X
6.4 Facilitate and invest in energy efficiency for City-owned housing.			X
Discussion: *The Project does not directly involve city-owned assets.*			
Strategy 7: Expand Renewable Energy Planning and Expedite Permitting			
7.1 Proactively engage with State partners in land use and community planning for large-scale renewable energy projects and assess City lands and facilities for additional utility-scale energy projects.			X
7.2 Streamline permitting for solar PV (including distributed battery technologies) on commercial, multifamily, and townhome rooftops through use of online platforms.			X
7.3 Continue to advocate before the PUC for fair and efficient regulation around the renewable energy transition.			X
7.4 Launch a Solarize Oʻahu pilot to increase residential solar access for low- to moderate-income households.			X
Discussion: *The Project supports the CAP's objectives to expand renewable energy planning and expedite permitting; however, this is not directly related to the AMB Tower.*			
Strategy 8: Promote Waste Prevention			
8.1 Continue to eliminate single-use plastics and expand multiple-use foodware and serviceware in food distribution and sale.	X		
8.2 Establish a Sustainable (Low GHG) Procurement Policy for the City.			X
8.3 Strengthen infrastructure and partnerships for edible food recovery	X		
8.4 Advance development of a volume-based residential refuse pickup program that appropriately prices refuse pickup services for customers.			X
8.5 Expand the location of public drinking water fountains and retrofit existing public drinking fountains to include devices capable of refilling reusable water flasks, cups and containers.			X
8.6 Establish a building deconstruction reuse and recycling program; enable reuse, recycling, and repair systems.	X		
8.7 Develop end-of-life requirements for solar PV and other relevant renewable energy technologies, including battery storage.			X
Discussion: *The Project supports waste prevention, as described in Sections 4.8.4 and 4.12. Practices at the Village will be implemented at the AMB Tower, and may include the following:* • *Glass, plastic bottles, and cardboard will be recycled.* • *The use of compostable or alternative disposal cutlery, like cups and silverware made from cornstarch or bamboo, will be encouraged.* • *Usable food will be sent to Aloha Harvest or similar organizations for distribution to charities.* • *Soap will be recycled through the Clean the World program, which is a national social enterprise that collects and recycles discarded soap and plastic amenity bottles from hospitality partners, and distributes the hygiene kits to countries in need.*			
Strategy 9: Maximize Waste Resource Efficiency			
9.1 Implement methane collection systems at landfill and wastewater treatment facilities, where feasible, that would allow the City or others to benefit from methane capture and reuse.			X
9.2 Explore the feasibility of adding an anaerobic digester capacity or other resource recovery project to the City's solid waste and wastewater processing and treatment infrastructure.			X

Table 5.12: City and County of Honolulu Climate Action Plan 2020-2025: Strategies and Actions S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
9.3 Based on lifecycle GHG analysis, assess the benefits of flow of materials to out of-State recycling instead of H-POWER.			X
9.4 Explore new public-private partnerships to increase the diversion of food and other organic materials from the waste stream through composting and/or other solutions.	X		
Discussion: *The Project supports the CAP's objectives for waste resource efficiency, specifically as it relates to the diversion of food from the waste stream. As described in Sections 4.8.4 and 4.12, existing practices at the Village will be implemented at the AMB Tower, and will include recycling food waste by sending it to pig farms for feed and recycling frying oil for conversion to biodiesel.*			

5.4 EIS Significance Criteria

The potential impacts of the Project have been fully examined and discussed in this SEIS. The following is an assessment of Project's impacts based on the 13 significance criteria established in HAR 11-200.1-13.

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

Discussion: The Project does not involve a significant loss of natural or cultural resources. An AIS and CIA were conducted during the preparation of the SEIS to assess the sensitivity and potential occurrence of historic resources, including subsurface resource such as burials (*Section 4.1*). The AIS identified three significant historic properties within the Project Site. Pursuant to HAR, Section 13-284-8, the Project will have an "effect with mitigation commitments." In consultation with SHPD, archaeological monitoring and burial treatment are proposed as appropriate mitigation for potential impacts to the affected sites. Accordingly, an AMP and BTP will be prepared in consultation with SHPD and Native Hawaiian cultural descendants. The CIA determined that the Project will not result in impacts to ongoing traditional cultural practices and natural resources or cultural sites and wahi pana within the Project area. In the event that iwi kūpuna and/or cultural finds are encountered during construction, identified mitigation measures, in accordance with State Historic Preservation laws, will be administered. Additionally, cultural community consultation will be ongoing throughout the entitlement process and any significant finds will be reported to SHPD, OHA, the OIBC, and the participating members of the cultural community consultation process.

An RLS was also conducted for the Project and determined that the existing structures on the Added Parcels were not considered to be historically significant. The SHPD concurred with this determination, and, as such, no significant adverse impacts to historic architectural resources are anticipated.

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

Discussion: The range of beneficial uses of the environment is not significantly curtailed by the planned Project. Located at the ʻewa gateway of Waikīkī, the Village has been developed as a tourist destination since its inception over 60 years ago. The Project Site has also been developed, and is currently underutilized, with some structures remaining in a dilapidated state. The Project plans to replace the structures with the AMB Tower, which will add hotel lodging accommodations and other accessory uses to the site and complement existing surrounding resort uses. The planned expansion of the Village and construction of the AMB Tower is consistent with the objectives of the WSD, standards for the Resort Mixed Use Precinct, and current land uses. The Project will improve the character and setting of the ‘ewa gateway to Waikīkī in general, and create a cohesive resort environment within the Village campus.

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

Discussion: The Project is consistent and supportive of State and City long-term goals related to the environment, as discussed throughout this section. The Project Site is currently developed, and is planned to be integrated into the HHV campus. The Project supports the City's goals of concentrating development in already dense areas, and keeping tourists in designated resort areas. Sustainable design practices and BMPs will help minimize potential impacts of the AMB Tower on the surrounding environment. As part of its commitment to continued environmental responsibility at the Village, the AMB Tower will integrate HHV's longtime sustainability practices, including the implementation of various recycling programs, the use of low flow water fixtures, incorporation of EV charging, and bicycle storage (*Sections 4.8.2, 4.8.4, and 4.12*). Hilton's "Light Stay" monitoring program will be used at the AMB Tower to manage its water and energy consumption. Over the last eight years since the program's implementation, HHV has reduced water consumption at the Village campus by more than 70 million gallons. Additionally, the Village campus has reduced its carbon footprint by 61.5 million pounds, which is equivalent to keeping more than 5,800 cars off the road.

With the addition of the AMB Tower, at least 50 percent of the Village will continue to be maintained as open space, helping to control the overall urban heat island effect. Landscaping will be integrated at the ground floor and throughout common amenities spaces, and LID measures will be incorporated and will be determined as design progresses. The use of green infrastructure features, such as a green wall on portions of the podium, may also be incorporated where feasible. Improvements to landscaping along Ala Moana Boulevard will help to enhance the pedestrian environment and encourage active forms of transportation.

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

Discussion: The proposed improvements within the Village will positively benefit the State's economic welfare by providing new hotel facilities, and enhancing the visitor experience of one of Waikīkī's flagship resort destinations. Economic and social benefits will result from increased employment, support for other local businesses, and State and City tax revenues (*Section 4.10*). The Project reflects HHV's dedication to maintaining Waikīkī as one of the world's premier global destinations.

(5) *Have a substantial adverse effect on public health;*

Discussion: The AMB Tower is consistent with existing land uses and will not substantially affect public health. The Project will continue to support the health and well-being of its team members and guests, as is currently done at the HHV. Additionally, the Village campus is supported by an SDOC clinic located on the campus. Solid waste and wastewater collection and disposal services will meet regulatory requirements to maintain public health standards. Long-term adverse impacts to air, water quality, and noise are not anticipated as a result of the AMB Tower (*Sections 4.2.3, 4.3.2, and 4.9*).

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

Discussion: The Village improvements will not have substantial secondary impacts, such as effects on public facilities or population changes (*Sections 4.6 and 4.10*). The net addition of approximately 515 hotel guestrooms will primarily affect the daily visitor or de facto population in Waikīkī. However, the increase in population is anticipated to be minor. Existing water, power, and wastewater systems are available to accommodate the AMB Tower (*Section 4.8*). It is anticipated that necessary relocation of utilities will not take place within the City ROW; therefore, no short-term impacts are anticipated.

(7) Involve a substantial degradation of environmental quality;

Discussion: The Project will not involve a substantial degradation of environmental quality on-site or in the surrounding environment. Construction impacts related to noise and air quality are temporary and will be minimized by implementing construction and erosion control BMPs, as described throughout *Section 4.0* of this SEIS. Long-term significant impacts to air and water quality, noise, and natural resources are not anticipated. The Project will integrate sustainable design features, such as LID and the use of water conservation features, which will be determined as design progresses.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;

Discussion: The Project is not anticipated to have substantial cumulative adverse impacts on the environment, and is not intended as a commitment to a larger action by the Applicants. This SEIS is intended to complement the 2011 Village Master Plan, and serves as a full disclosure of the expansion of the HHV and construction of the AMB Tower. The 2011 EIS identifies all other Village Master Plan components that have been constructed or are planned in the future.

The Project directly responds to the State and the City's expressed objectives and policies for the WSD and visitor industry. Additional improvements to the street frontage along Ala Moana Boulevard will provide benefits to the overall Waikīkī region and create a cohesive resort environment. The modernizing of retail space and amenities at the site will reinvigorate the visitor experience and local economy. The planned improvements are within the existing developed area which is served by existing utilities, thereby reducing impacts to public infrastructure and the environment.

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

Discussion: The Project Site does not contain known rare, threatened, or endangered species or critical habitat. As outlined in *Section 4.3.4,* 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 at the site. Additionally, mitigation measures as outlined in *Section 4.3.4* to minimize impacts to manu-o-kū or Hawaiian seabirds that may occasionally fly over the Project Site will be implemented. Design of the AMB Tower will incorporate light fixtures that are shielded downwards to mitigate potential impacts to birds. No long-term impacts are anticipated.

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

Discussion: An Air Quality Technical Report (*Appendix E*) and Acoustic Study (*Appendix L*) were conducted for the Project to assess potential impacts to the environment as a result of the Project. Temporary impacts associated with construction are identified throughout *Section 4.0* of this SEIS. Short-term effects on air, water quality/stormwater runoff, and ambient noise levels during construction will be mitigated through adherence to State and City regulations and mitigation measures, as summarized in *Table 1.1*.

No detrimental long-term impacts to air, water, or acoustic quality are anticipated from the Project. While stationary and mobile sources of emissions slightly increase as a result of the Project, significant adverse impact on air quality is not anticipated (*Section 4.2.3*). There may be a minimal increase of traffic noise levels with the Project; however, noise levels will remain within the acceptable standard. BMPs to mitigate the potential increase in long-term noise include the use of air conditioning in AMB Tower units, closure of units, special glazing, and the use of weather seals (*Section 4.9*).

(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, fresh water, or coastal waters;

Discussion: The AMB Tower site is within the XTEZ, flood inundation area (Zone AE), and the 3.2-foot SLR-XA. To mitigate potential impacts to the Project due to natural hazards, design of the tower will have a finished floor elevation of 8.0~~7.5~~ above msl, and will be in compliance with IBC, State, and City safety standards to minimize potential impacts of natural hazards and promote public safety (*Section 4.4*). Additional mitigation measures to address passive flooding that may result from the anticipated 3.2 feet in SLR will include, but are not limited to, locating utilities at higher elevations where feasible and the use of LID measures. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible. Final measures will be determined as design progresses.

(12) Have a substantial adverse effect on scenic vistas and view planes, during day or night, identified in county or State plans or studies; or

Discussion: Short-term impacts to visual resources related to construction of the AMB Tower will be mitigated by the use of fencing and confining equipment to work areas. In the long-term, no adverse impacts to public views articulated in the PUC DP are anticipated. Due to its location along Ala Moana Boulevard, the AMB Tower will be most discernable along this road between Hobron Lane and Kalākaua Avenue. Therefore, there will be unavoidable adverse impacts to existing views from some private residential high-rise condominiums in the Project vicinity. However, in the long term, the Project will enhance the visual environment of the Project Site by replacing the existing dated or dilapidated buildings with the AMB Tower. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed, enhancing the surrounding visual environment.

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

Discussion: As a component of the Village Master Plan, the AMB Tower will incorporate Hilton's "Light Stay" program into its own operation in an effort to conserve energy. Water conservation measures will be implemented in design of the AMB Tower as required by BWS and may include, but not be limited to the utilization of nonpotable water for irrigation and the use of Water Sense-labeled ultra-low flow water fixtures and toilets. While stationary and mobile sources of emissions slightly increase as a result of the Project, there will be no significant adverse impact on air quality (*Section 4.2.3*).

Section 6

Alternatives to the Proposed Project

Section 6

Alternatives to the Proposed Project

The Village Master Plan reflects HHV's vision and intent to transform the Village through a well-defined and coordinated planning process. Over the decades, HHV has continuously reinvested in its campus as part of its commitment to providing a world-class visitor experience in Waikīkī. The AMB Tower furthers that commitment to ensuring a high quality of guest experience at HHV and in Waikīkī. The purpose of expanding HHV to include the AMB Tower is to provide a variety of accommodation needs that meet the expectations and demands of today's resort guest, revitalize an important portion of Waikīkī's ʻewa gateway, strengthen the Village as a major and iconic destination, and to advance Waikīkī's social and economic condition. The AMB Tower is a direct fulfillment of the Village Master Plan's primary objectives, which are listed below in relevant part:

Master Plan Objectives Advanced by the Project

1. Fortify Waikīkī as a world-class resort destination and add new vibrancy to the entrance of Waikīkī.
2. Improve the guest experience at the Village.
3. Provide the local construction industry with quality jobs, stimulate local construction spending, and increase revenues to the City's and State's tax base.
4. Create long-term hospitality career opportunities for all levels within service and management.
5. Support other local businesses within Waikīkī.
6. Develop sustainable practices to minimize demand on local infrastructure and resources.
7. Maintain and enhance the quality of the near-shore coastal environment and its resources by prudent management actions.
8. Ensure the quality of the existing open spaces in the Village and connectivity to surrounding areas.
9. Help maintain a Hawaiian sense of place celebrating the history and cultural vibrancy of Waikīkī and Kālia.
10. Enable HHV to continue and expand its community leadership role and make significant social investment in Hawaiʻi.

Evaluation Criteria

Within the context of the Village Master Plan Objectives, HHV established six primary Evaluation Criteria (I-VI) in the 2011 EIS that must be satisfied for the Village Master Plan to be economically viable, and socially and environmentally responsible. The six criteria were developed to analyze alternative actions included in the Master Plan. Expansion of the Village campus to include the AMB Tower is therefore evaluated using the following criteria:

I. Meet present market demand and expectations of today's resort guests and clientele.
II. Create a positive economic return on investment.
III. Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.
IV. Generate new long-term employment while sustaining existing jobs on-property.
V. Create incentives for broad-based visitor expenditures beyond direct accommodations.
VI. Seek to minimize and mitigate adverse impacts of development on the area's natural, cultural, social and economic environment through sound development planning, preserving and enhancing open space, and creating and offsetting natural, cultural, social and economic benefits for Village guests and the surrounding community.

In addition to the Project, five alternatives to the AMB Tower were evaluated and assessed for their ability to achieve the Village Master Plan Objectives and satisfy the Evaluation Criteria. The Project is considered the Preferred Alternative. The development alternatives include the following:

1. No-Action
2. Alternative Design
3. Alternative Development Site
4. Alternative Use as Timeshare or Condominium/Apartment
5. Alternative Use as a Commercial Development

6.1 No-Action Alternative

The No-Action Alternative is the baseline against which all other alternatives are measured. Under this scenario, HHV would be maintained in its existing configuration. Ongoing operations and accommodations at the site would continue. The increased demand for hotel rooms in Waikīkī would not be met. Existing facilities and infrastructure would largely remain the same. Ongoing operations and regularly scheduled maintenance of existing campus facilities are assumed to continue.

Under this scenario, the AMB Tower and associated amenities, pedestrian and landscaping improvements fronting Ala Moana Boulevard, community benefits, property expansion, and connection within the campus, would not be actualized. The Project parcels would not be utilized to their full potential, and existing outdated buildings would remain. The opportunity to expand the campus to include the Project Site, thereby refreshing the property and reinvesting in the Village, would be missed. HHV would not reach its full potential as a current and future world class resort, and the existing Project area – at the prominent ʻewa gateway to Waikīkī along Ala Moana Boulevard – would remain dated and inconsistent with the identity of Waikīkī as a premier, global tourism destination. Improvements to the Ala Moana Street frontage would not be realized, and this portion of the road would remain inactivated and unattractive for pedestrians. Without comprehensive improvements, the properties would remain underutilized and in eventual need of redevelopment. The positive net benefits associated with the Project would not be realized.

Under the No-Action Alternative, existing jobs should not be affected, but anticipated temporary new jobs and the full-time new jobs would not be created. As a result, there would be no positive benefit of new employment opportunities for the construction industry or additional long-term operational employment in support of the AMB Tower. Further, the new employment and business associated with ancillary uses within the AMB Tower, including retail and food and beverage offerings, would not occur. Off-site businesses in Waikīkī that would have provided additional goods and services to the expanded number of Village visitors would also not benefit. Although the No-Action Alternative may result in less environmental impacts, it would not produce the benefits anticipated by the AMB Tower. In the long-term, taking no action at the property may produce negative environmental impacts through deterioration of the existing structures. Therefore, the No-Action Alternative is not considered a reasonable solution to an economy that is dependent on the continued strength and vitality of the Waikīkī visitor industry.

An assessment of the No-Action Alternative under the six Evaluation Criteria (I-VI) shows the following:

- *Criterion I: Meet present market demand and expectations of Hilton's guests and clientele*.

  Discussion: The No-Action Alternative would not meet the present market demand and other expectations of HHV's guests. New hotel guestrooms have not been constructed at the Village since 2001. There is a demonstrated demand at the Village for a variety of accommodations and guest amenities, which would not be fully realized in this scenario.

- *Criterion II: Create a positive economic return on investment.*

  Discussion: There would be no new economic returns anticipated from the No-Action Alternative.

- *Criterion III: Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.*

  Discussion: Under this alternative, revitalization of the ʻewa gateway to Waikīkī along Ala Moana Boulevard would not occur. The addition of amenities and ground floor retail and the associated outdoor seating at the AMB Tower would not be provided. Existing structures at the property may continue to age or deteriorate. The ideal balanced mix of accommodations would not be realized. No new public benefits at the Village would result from this scenario.

- *Criterion IV: Generate new long-term employment while sustaining existing jobs on-property.*

  Discussion: While existing jobs at the site would continue, no new long-term employment opportunities would result from the No-Action scenario.

- *Criterion V: Create incentives for broad-based visitor expenditures beyond direct accommodations.*

  Discussion: The No-Action Alternative would not create additional incentives for broad-based visitor expenditures beyond direct accommodations.

- *Criterion VI: Seek to minimize and mitigate adverse impacts and create benefits for Village guests and the surrounding community.*

  Discussion: The No-Action Alternative would not preserve any undeveloped lands, as the Project Site has already been developed for many decades. Moreover, the No-Action Alternative may produce negative environmental impact in the long run through deterioration of the existing structures and would not produce any of the new benefits offered by construction and integration of the AMB Tower into the HHV campus, including a significantly improved and welcoming streetscape at the ʻewa gateway to Waikīkī.

The No-Action Alternative does not achieve the stated Master Plan Objectives, and does not satisfy any of the Evaluation Criteria, including meeting market demand and creating significant additional employment opportunities. Although this alternative may result in less environmental impact in the short-term, long-term incremental environmental impacts from the Project are not expected to be significant, and the lack of action taken at the property would prevent the Project's positive and beneficial impacts from being realized. Additionally, this may eventually result in an overall negative effect on the future of HHV and diminish Waikīkī's position as a world-class visitor destination. The No-Action Alternative is not a practical strategy for effective stewardship of the Village and is dismissed from further consideration.

6.2 Alternative Design

An alternative design for the AMB Tower was evaluated for the Project which would use all of the existing authorized density (floor area) provided under the Hilton Hawaiian Village PD-R permit or request additional amendments, including increased flexibility for ground level open space, front yards, and transitional height setbacks. Under this alternative, the existing dining and retail spaces on the Added Parcels ~~parcels~~ would be demolished and replaced with a 350-foot hotel tower, as is currently proposed in the Project, but with 689 hotel guestrooms instead of 515 as proposed. However, this alternative design would minimize the setbacks of the property and create a much larger and wider structure. The design would reflect a more massive, covered appearance as compared to a softer and more natural glass structure that blends with the existing setting, as is planned with the AMB Tower. The hotel would reflect a more massive appearance along Ala Moana Boulevard, which is a key location as the entry to the Village campus and gateway to Waikīkī.

This alternative to the planned Project would result in the layout and construction of a substantially larger hotel tower. Thus, this Project alternative would result in a greater overall footprint on the site. As a result, improvements to the streetscape and pedestrian walkways would be more limited than in the preferred Project. Short-term construction and long-term hospitality jobs may be realized under this alternative, but they would not be expected to be materially greater than those to be realized under the preferred design. This design would lead to greater adverse impacts to the surrounding environment, particularly with regard to viewplanes, streetscape, infrastructure, traffic, and pedestrian facilities.

The objectives of the Village Master Plan would not be met by the Alternative Development Site option. An assessment under the six Evaluation Criteria (I-VI) shows the following:

- *Criterion I: Meet present market demand and expectations of Hilton's guests and clientele*.

  Discussion: Under this alternative, a larger AMB Tower providing 689 rooms would be constructed. This would meet the present market demand for hotel lodging units. However, the streetscape and pedestrian walkways throughout the campus would be limited, which would not meet guest expectations in regard to connectivity and an overall comfortable resort experience. Design of a larger tower would reduce opportunities for landscaping and would not blend with the existing setting of the Village campus.

- *Criterion II: Create a positive economic return on investment.*

  Discussion: A larger tower may result in unneeded inventory, resulting in a lower return on investment.

- *Criterion III: Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.*

  Discussion: While construction of a larger hotel would further the goal of providing a balanced mix of accommodations and amenities, the preferred AMB Tower design achieves this goal with fewer negative impacts.

- *Criterion IV: Generate new long-term employment while sustaining existing jobs on-property.*

  Discussion: While some additional short-term construction and long-term hospitality jobs may be created under this alternative, it would not be expected to result in a significantly greater number of jobs than the AMB Tower as planned.

- *Criterion V: Create incentives for broad-based visitor expenditures beyond direct accommodations.*

  Discussion: While a larger tower might accommodate more visitors than the planned Tower design, incentives for broad-based visitor expenditures beyond direct accommodations would not necessarily be greater than with the preferred design. There is no assurance that all additional rooms could be filled, and a less welcoming tower and streetscape may be less attractive to visitors, creating a potentially negative impact on demand and off-site spending

- *Criterion VI: Seek to minimize and mitigate adverse impacts and create benefits for Village guests and the surrounding community.*

  Discussion: Under this alternative, the hotel would be a more expansive built mass along Ala Moana Boulevard, resulting in increased adverse impacts to the surrounding environment. A larger hotel would also demand more infrastructure. Property setbacks and pedestrian and landscaping enhancements along Ala Moana Boulevard would be minimized, resulting in a less attractive and less welcoming revitalization at the ‘ewa gateway to Waikīkī.

Although the Alternative Design would achieve most or all of the stated Master Plan Objectives, it does so to a lesser degree than the preferred AMB Tower design. Although this alternative may result in additional hotel accommodations, there can be no guarantee that the additional rooms provided by the larger tower would be filled, and the prospects of marginally greater employment and marginally greater visitor expenditures in a larger tower may not be realized. Further the larger tower would likely result in more significant adverse environmental impacts than the preferred alternative. A larger building mass along Ala Moana Boulevard makes this alternative a less attractive option for meeting the Project’s goal of revitalizing the ‘ewa gateway to Waikīkī. For these reasons, this Alternative has been dismissed from further consideration.

6.3 Alternative Development Site

Alternative Development Site – Away from HHV: The HHV campus goals are to revitalize and reinvest in its assets at the existing Village property and to support Waikīkī as a world-class visitor destination by revitalizing its ‘ewa gateway. Given this objective, the options to develop the AMB Tower at an alternative site away from HHV is not considered a practical alternative. The Project parcels are located directly adjacent to the Village and operations in the new tower can be readily integrated into the rest of the resort. Vacant properties in Waikīkī are infrequent, and there are no other available properties adjacent to the Village campus that are practical for HHV expansion or redevelopment or that could be added to the existing PD-R permit. Demolition, infrastructure improvements, and other steps necessary to develop an alternative site could also have significantly greater environmental impacts than the planned Project if the alternative site were not already developed, as is the Project Site. There would also be additional traffic to link the alternative site to HHV.

Locating the tower in a different neighborhood is not practical and is inconsistent with the City’s and State’s stated goals to focus resort development in the urbanized district of Waikīkī to preserve critical areas reserved for conservation or other uses. Developing the Project at an alternative site would require construction of additional facilities since the Project would not be able to share amenities and support buildings with the HVV campus, resulting in less efficient economies of scale and potential wasting of resources. Waikīkī is already densely developed and designated as a preferred tourist zone. Attracting tourists to and keeping them in Waikīkī is sensible and appropriate from a planning perspective and is consistent with both the State's and the City's goals, and with the HTA's recently adopted DMAP for O'ahu. Additional development that upgrades the already densely developed areas of Waikīkī is preferred over new development elsewhere, and helps mitigate the negative impacts to traditional residential neighborhoods on O'ahu that results from illegal vacation rentals in non-resort areas. Further, building the AMB Tower in another location would not address the goal of significantly improving the 'ewa gateway to Waikīkī or improving the pedestrian experience along Ala Moana Boulevard.

Alternative Development Site – Within HHV Campus: An alternative development site within the existing HHV campus is also not as favorable as developing the preferred Project Site. Developing the Project on other locations within the HHV campus would not upgrade the 'ewa gateway to Waikīkī and would not eliminate underutilized and deteriorating structures that are currently located on the Added Parcels. The pedestrian experience along Ala Moana Boulevard would not be improved. The location of the alternative development site within the campus would be difficult to connect to the existing parking structure, thereby inhibiting overall connectivity throughout the Village campus. Placing a new tower in the existing boundaries of the Village would also likely reduce open space within the campus and impair operations during construction to a far greater degree than the envisioned Project would.

The objectives of the Village Master Plan would not be met by the Alternative Development Site option. An assessment under the six Evaluation Criteria (I-VI) shows the following:

- *Criterion I: Meet present market demand and expectations of Hilton's guests and clientele.*

  Discussion: Developing the Project at an alternative site away from the Village campus would not meet the present market demand for additional hotel accommodations at the Village site or the expectations of visitors for a cohesive resort experience. An alternative site off campus would not enjoy connectivity to the Village campus and would not offer guests the full benefits and amenities associated with the HHV campus. Developing the Project within the existing Village campus would significantly disrupt existing operations, thereby failing to meet the expectations of HHV's guests. The reduction of open space within the Village would negatively affect the guest experience and would fail to meet this criterion.

- *Criterion II: Create a positive economic return on investment.*

  Discussion: Higher costs of an Alternative Location scenario could result in substantially lower return on investment and could result in higher costs to the City and State to provide supporting infrastructure that already exists at sufficient scale on the proposed site.

- *Criterion III: Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.*

  Discussion: If the Project were developed at an alternative site, pedestrian and landscape improvements along Ala Moana Boulevard and enhanced connectivity throughout the Village campus would not be realized. The opportunity to revitalize the 'ewa gateway to Waikīkī would be lost, and activation of this portion of the Village to enhance the visitor experience would not occur. The efficiency of having a number of compatible resort amenities and accommodations at a single location would also be lost, resulting in fewer added public benefits at the Village.

- *Criterion IV: Generate new long-term employment while sustaining existing jobs on-property.*

  Discussion: This option would produce construction and long-term hospitality jobs. However, the Project would not benefit from integration into the main HHV campus, or from the significant pedestrian improvements envisioned by the preferred Project.

- *Criterion V: Create incentives for broad-based visitor expenditures beyond direct accommodations.*

  Discussion: The separation of hotel guests from the businesses at the Village campus would deprive the businesses of new customers, resulting in fewer incentives for broad-based visitor expenditures beyond direct accommodations at the Village and in the surrounding neighborhood.

- *Criterion VI: Seek to minimize and mitigate adverse impacts and create benefits for Village guests and the surrounding community.*

  Discussion: Environmental impacts of developing an alternative site are likely to be greater than building on land adjacent to the Village campus due to the need to prepare an alternative site for development, including infrastructure improvements. Building within the existing campus would likely entail significantly more demolition and groundwork than the planned Project, resulting in greater environmental impact and would almost certainly result in a loss of open space. Development outside the Village would likely require the construction of on-site amenities for a stand-alone project that are currently provided by the Village and would likely also require significant improvements to municipal infrastructure supporting a stand-alone project. In either scenario, the significant streetscape improvements and revitalization of the ‘ewa gateway to Waikīkī would not occur.

The Alternative Development Site would not achieve the full range of stated Master Plan Objectives and does not satisfy several of the Evaluation Criteria. Under this scenario, expectations of visitors for a cohesive resort experience would not be met and improvements at the ‘ewa gateway to Waikīkī would also not occur. Preparation of a separate site would result in added cost and environmental impacts. For these reasons, this Alternative has been dismissed from further consideration.

6.4 Alternative Use as Timeshare or Condominium/ Apartment

Alternative uses for the proposed AMB Tower have been evaluated. The AMB Tower could be developed as a timeshare and/or residential apartment or condominium project, or a mix of those uses. These alternative uses would likely result in a larger floorplate, which would result in a larger, more dense structure given that the typical timeshare or condominium/apartment unit is significantly larger than the typical hotel room, and would not meet the demands of transient hotel guests. A larger, more dense building presents issues similar to those addressed in *Section 6.2*. Reduction of potential hotel room inventory at HHV and in Waikīkī would reduce the number of long-term hospitality jobs that could be provided because the number of employees needed to operate a timeshare or condominium/apartment is less than those needed to operate a hotel. In addition, timeshare or condominium/apartment uses may demand more parking than hotel uses and would thereby result in increased traffic-related impacts.

Condominium/apartments are permitted in the Resort Mixed-Use District. However, they are not currently offered at the Village (other than the Diamond Head Apartments, a small apartment building that is used for employee housing and by other, typically short-term, apartment renters). Park Ala Moana LLC, as a subsidiary of Park Hotels & Resorts Inc. (a publicly-traded hotel ownership company), would not be interested in constructing the Project for condominium/apartment uses, as it would meet neither its core business of investing in hotel and resort properties nor its operational goal of providing additional hotel lodging accommodations at HHV. Additionally, development of condominium/ apartment products would be inconsistent with the resort experience at the HHV campus and may alter the nature of the Village as a visitor destination. The addition of more condominium/apartment units to HHV would require a different approach to the future of the resort and would not achieve the objectives of the Village Master Plan.

Timeshares are also permitted in the Resort Mixed-Use District. However, in the last 15 years, additional timeshare products have been added to the HHV campus, while no new hotel guestrooms have been constructed since 2001. Developing new timeshares instead of new hotel guestrooms would not meet the demand for new hotel accommodations and amenities As with the timeshare alternative, Park Ala Moana LLC, as a subsidiary of Park Hotels & Resorts Inc. (a publicly-traded hotel ownership company), would not be interested in constructing the Project for timeshare only, as it would not meet its business and operational goals. This alternative would provide less beneficial impacts in terms of employment, support for local jobs, and other objectives of the Master Plan.

In fact, few of the stated objectives for the Village Master Plan would be met by the Alternative Use as Timeshare or Condominium/Apartment to the same degree as the AMB Tower. An assessment of this alternative under the six Evaluation Criteria (I-VI) shows the following:

- *Criterion I: Meet present market demand and expectations of Hilton's guests and clientele.*

  Discussion: The Alternative Use as timeshare or condominium/apartment does not meet the present and anticipated demand for a new, contemporary hotel product at the Village. In particular, constructing condominium/apartments is inconsistent with the resort environment of HHV. Condominium/apartments would also not add updated amenities to the Village campus and would not satisfy the expectations of its guests.

- *Criterion II: Create a positive economic return on investment.*

  Discussion: The return on investment from these alternatives uses may be less favorable than the returns associated with the AMB Tower project, and the investment would not be a desirable investment for the Village owners, whose focus is on owning hotels and resorts.

- *Criterion III: Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.*

  Discussion: Construction of more timeshare units does not strike the proper balance of accommodations at the Village campus, and condominiums/apartments are inconsistent with the resort nature of the Village. If the Project were developed as a timeshare or condominium/apartment, the mix of commercial opportunities and recreational amenities that would be available to hotel guests as part of the AMB Tower would not be provided.

- *Criterion IV: Generate new long-term employment while sustaining existing jobs on-property.*

  Discussion: This alternative would reduce the potential for long-term hospitality jobs, as timeshares and condominiums/apartments require significantly less employment for operation than a hotel.

- *Criterion V: Create incentives for broad-based visitor expenditures beyond direct accommodations.*

  Discussion: Under this alternative, there would be fewer guestrooms and, therefore, a smaller number of additional visitors attracted to the property than with the preferred alternative. Hotel amenities and retail outlets might not be constructed or might be available to a smaller number of individuals than would be true with the AMB Tower. The lower number of timeshare, condo or apartment units as compared to hotel units may result in overall less business for dining establishments, retail stores, and other local businesses both on the Village campus and off-site, meaning fewer visitor expenditures beyond accommodations. HHV's demand for local goods and services as described in *Section 4.10* would be lower for a timeshare project than for a hotel and even lower for condominium or apartment residents.

- *Criterion VI: Seek to minimize and mitigate adverse impacts and create benefits for Village guests and the surrounding community.*

  Discussion: While the addition of timeshare or residential condominium/apartment use at the site may result in impacts to the environment and the community that are similar to the AMB Tower project, the change to a more residential character at the Village would not be consistent with the Village's business plan and could negatively impact the overall Village environment. A timeshare or residential project could be expected to have a greater impact on traffic and parking than a hotel would, and use of water, electricity and other resources could be greater. A timeshare or residential project would be expected to create far less demand for social, cultural and economic offerings within the Village and the surrounding community and would offer fewer benefits to hotel guests.

The Alternative Use as Timeshare or Condominium/Apartment would not achieve several of the Master Plan objectives and would not satisfy the six Evaluation Criteria to the same degree as a hotel tower. Construction of more timeshare units would not meet the need for additional hotel rooms at the Village, and condominiums/apartments are inconsistent with both the Village's overall resort environment and its owner's investment objectives. These uses would also result in substantially fewer long-term jobs than hotel use. This alternative may result in increased environmental impacts to the surrounding environment, especially in regard to traffic. Therefore, this Alternative is dismissed from further consideration.

6.5 Alternative Use as Commercial Development

The Village is one of Waikīkī's leading destinations, providing commercial and retail attractions that are utilized by Village guests and area locals alike. The alternative use of the site for commercial development would maintain and expand on the existing commercial uses of the property. Under this alternative, the existing commercial buildings on the Project Site might be expanded or replaced with renovated or new commercial structures (subject to the feasibility and financial viability of such a project), thereby potentially expanding retail use in Waikīkī and drawing additional patrons to the site.

However, Park Ala Moana LLC, as a subsidiary of Park Hotels & Resorts Inc. (a publicly-traded hotel ownership company), would not be interested in acquiring these properties for commercial redevelopment purposes, as it would meet neither its core business of investing in hotel and resort properties nor its operational goal of providing additional hotel lodging accommodations at HHV. If not integrated into the Village, commercial development on the Added Parcels would require new parking and other dedicated supporting infrastructure, resulting in increased costs and potentially lower return on investment as compared to the proposed AMB Tower development, With this alternative, the HHV campus would not be expanded and additional visitor resort accommodation, experiences, and amenities would not be created.

Under this development alternative, commercial uses would continue to operate independently and this area in Waikīkī's ‘ewa gateway would not provide a cohesive resort experience at HHV.

An assessment of the Alternative Use as Commercial Development under the six Evaluation Criteria (I-IV) shows the following:

- *Criterion I: Meet present market demand and expectations of Hilton's guests and clientele.*

  Discussion: This alternative would not meet the demonstrated demand at the Village and in Waikīkī for new hotel guestrooms and guest amenities.

- *Criterion II: Create a positive economic return on investment.*

  Discussion: The site might remain underutilized compared to other commercial properties in Waikīkī. Assuming project feasibility and financial viability, economic return on investment under this alternative might be substantially less than would be realized with the planned Project (due to the need to make available on-site parking and other supporting infrastructure for a commercial project that would be provided within the Village for a new hotel tower).

- *Criterion III: Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.*

  Discussion: Commercial development of the Added Parcels would not meet the objective of revitalizing the overall resort experience by improving and expanding the offering of hotel accommodations and other amenities at the Village.

- *Criterion IV: Generate new long-term employment while sustaining existing jobs on-property.*

  Discussion: The Alternative Use as a Commercial Development would create some construction employment and long-term employment, but it is expected that this option would create substantially fewer temporary and permanent jobs than the AMB Tower.

- Criteria V: Create incentives for broad-based visitor expenditures beyond direct accommodations.

  Discussion: Under this alternative, additional commercial/retail opportunities could possibly enhance visitor expenditures, but it would not increase the number of visitors making expenditures in the area. The need to provide parking and other infrastructure to support a stand-alone commercial operation could challenge the economic viability of such a project.

- *Criterion VI: Seek to minimize and mitigate adverse impacts and create benefits for Village guests and the surrounding community.*

  Discussion: The Added Parcels are already developed, and existing operations on the Added Parcels already have an environmental impact. Expansion of the commercial development on the Added Parcels would likely increase the impact on the environment. Depending on the nature of Commercial Development, impacts on the surrounding environment might be greater than or less than the impact of operating a hotel, but the long-term environmental impact of operating a hotel in this already densely developed part Waikīkī is not expected to be significant. Development of a stand-alone commercial project on the site would not produce any of the benefits to the surrounding community offered by integrating the Added Parcels into the Village and building the AMB Tower. Planned streetscape improvements might not be made.

The Alternative Use as a Commercial Development falls outside of the Village owner's core business and misses the opportunity to integrate key parcels along Ala Moana Boulevard into the HHV campus. Under this alternative, the properties would likely remain underutilized, due to the challenges of building a stand-alone project on the site. The enhancements to the streetscape and revitalization of the ʻewa gateway to Waikīkī envisioned by the AMB Tower project might not occur. Additionally, this alternative does not address demand for new hotel guestrooms at the Village, and would not increase visitor spending in Waikīkī. The full range of stated Master Plan Objectives and six Evaluation Criteria would also not be achieved with this alternative; therefore, it is dismissed from further consideration.

6.6 Preferred Alternative (Project)

The Project would expand the existing HHV campus to include the three Added Parcels along Ala Moana Boulevard and replace existing dated structures with the contemporary AMB Tower. This preferred alternative best meets the Project's purpose of expanding HHV to provide a variety of accommodation needs that meet the expectations and demands of today's resort guest; revitalize an important portion of Waikīkī's ʻewa gateway; strengthen the Village as a major and iconic destination; and support Waikīkī's social and economic vitality. Further, it achieves the objectives of the Village Master Plan and satisfies all six Evaluation Criteria.

An assessment of the Preferred Alternative (i.e., the AMB Tower project) under the six Evaluation Criteria (I-IV) shows the following:

- *Criterion I: Meet present market demand and expectations of Hilton's guests and clientele.*

  Discussion: This alternative provides new hotel accommodations and amenities to HHV guests, and meets both the present and anticipated market demand and expectations of visitors to Waikīkī.

- *Criterion II: Create a positive economic return on investment.*

  Discussion: Investing in the expansion of the Village and construction of the AMB Tower will enhance the guest experience and attract both guests and local visitors, creating a positive economic return on investment for the Project.

- *Criterion III: Revitalize the overall resort experience by providing a balanced mix of accommodations and a diverse selection of retail, dining, amenities and recreational activities.*

  Discussion: Development of new hotel accommodations is vital for maintaining the Village's success and helps ensure the long-term viability of Waikīkī as a world-class visitor destination area. Building the AMB Tower will help revitalize the overall resort experience at HHV by expanding and balancing the mix of accommodations available at the resort and adding new retail, dining, amenities and recreational opportunities for guests. The Project also revitalizes the streetscape along Ala Moana Boulevard, creating a positive and welcoming experience to visitors approaching the primary ʻewa gateway to Waikīkī.

- *Criterion IV: Generate new long-term employment while sustaining existing jobs on-property.*

  Discussion: Expansion of the Village to include the AMB Tower will create long-term hospitality career opportunities at all levels of service and management. As addressed in *Section 4.10*, the Project is estimated to add a total of 493 FTE jobs, both on- and off-site.

- *Criteria V: Create incentives for broad-based visitor expenditures beyond direct accommodations.*

  Discussion: Adding 515 hotel guestrooms and related amenities to the Village will bring more visitors to Waikīkī who will spend money at businesses within the Village and in the surrounding community. Reinvigorating this portion of Ala Moana Boulevard, at the primary ʻewa gateway to Waikīkī, will help maintain the region's iconic and historic sense of place and is expected to draw new visitors to the area to support local businesses.

- *Criterion VI: Seek to minimize and mitigate adverse impacts and create benefits for Village guests and the surrounding community.*

  Discussion: While short-term construction-related impacts are anticipated, as discussed elsewhere in this SEIS, the Project is expected to create substantial long-term economic, cultural, and social benefits. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the Project, creating an open and attractive pedestrian experience that supports connectivity with the HHV campus and the broader Waikīkī neighborhood, Constructing the AMB Tower on the Project Site will help preserve open space within the Village and will help the Village in its commitment to promoting and preserving Hawaiian culture and maintaining the area's natural, cultural, social and economic environment.

Although the five alternative development scenarios would be compatible with existing zoning and neighboring uses, they do not meet the objectives of the Village Master Plan to the same degree as the Preferred Alternative. In comparison to the Project, the alternatives considered each fail to meet several important objectives of the Village Master Plan and, when examined under the six Evaluation Criteria, would have potentially greater environmental impact and produce fewer benefits for the community and local economy. Therefore, they are less viable alternatives from the perspective of the established Village Master Plan.

The Preferred Alternative was determined to be the most viable option, as it achieves the objectives of the Village Master Plan and satisfies the six Evaluation Criteria to a greater degree than the alternatives.

Section 7

Agencies and Parties Consulted

Section 7

Agencies and Parties Consulted

7.1 Consultation List

The SEISPN was published by the ERP in *The Environmental Notice* on November 8, 2021 to notify agencies, organizations, and individuals that a Draft SEIS would be prepared for the Project. Publication of the SEISPN was followed by a 30-day public comment period to solicit guidance on the scope of the studies to be prepared and to gather input on important topics to be covered in the Draft SEIS. *Table 7.1* lists those agencies, organizations, and individuals that received notification of the SEISPN publication. A total of 23 agencies and individuals provided responses during the public comment period.

Subsequently, the Draft SEIS was published in *The Environmental Notice* on November 23, 2022, followed by the 45-day public comment period. Those listed in *Table 7.1* ~~will also be~~ were notified of the availability of the~~is~~ Draft SEIS in conjunction with the publication ~~in *The Environmental Notice*~~. A total of 16 agencies, organizations, and individuals provided comments on the Project.

Table 7.1: Agencies, Organizations and Individuals Receiving Copies of the Draft SEIS

Respondents and Distribution	Early Consultation	Received ~~Early Consultation~~ SEISPN Comments	~~Receiving~~ Received Draft SEIS Notification	Draft SEIS Comments Received
Federal Agencies				
U.S. Fish and Wildlife Service (USFWS)	X	X	X	
State of Hawai‘i Agencies				
Department of Agriculture			X	
Department of Accounting and General Services (DAGS)	X	X	X	
Department of Business, Economic Development & Tourism (DBEDT)	X		X	
DBEDT, Energy Division	X		X	
DBEDT, Office of Planning and Sustainable Development	X	X	X	X
Department of Defense	X		X	
Department of Education	X		X	
Department of Hawaiian Home Lands (DHHL)	X	X	X	
Department of Health (HDOH)[1]	X	X	X	

Table 7.1: Agencies, Organizations and Individuals Receiving Copies of the Draft SEIS				
Respondents and Distribution	**Early Consultation**	**Received ~~Early Consultation~~ SEISPN Comments**	**~~Receiving~~ Received Draft SEIS Notification**	**Draft SEIS Comments Received**
Department of Human Services	X		X	
Department of Labor and Industrial Relations	X		X	
Department of Land and Natural Resources (DLNR)[2]	X	X	X	X
DLNR, Historic Preservation Division	X		X	
Department of Transportation (HDOT)	X	X	X	X
Hawaii Housing Finance and Development Corporation	X		X	
Hawaii Tourism Authority	X		X	
Office of Hawaiian Affairs	X		X	X
University of Hawaiʻi, Environmental Center	X		X	
City and County of Honolulu Agencies				
Board of Water Supply (BWS)	X	X	X	X
Department of Community Services (DCS)	X	X	X	X
Department of Design and Construction (DDC)	X	X	X	X
Department of Environmental Services (ENV)	X	X	X	
Department of Facility Maintenance (DFM)	X	X	X	X
Department of Planning and Permitting (DPP)	X	X	X	X
Department of Parks and Recreation (DPR)	X	X	X	
Department of Transportation Services (DTS)	X	X	X	X
Honolulu Fire Department (HFD)	X	X	X	X
Honolulu Police Department (HPD)	X	X	X	X
Waikīkī Neighborhood Board, No. 9	X		X	X
Office of Climate Change, Sustainability, and Resiliency			X	
Elected Officials				
U.S. Senator Brian Schatz			X	
U.S. Senator Mazie Hirono			X	
U.S. Representative Ed Case, First Congressional District			X	
State Senator Sharon Moriwaki, District 12	X		X	
State House Representative Adrian K. Tam, District 22	X		X	

Table 7.1: Agencies, Organizations and Individuals Receiving Copies of the Draft SEIS

Respondents and Distribution	Early Consultation	Received ~~Early Consultation~~ SEISPN Comments	~~Receiving~~ Received Draft SEIS Notification	Draft SEIS Comments Received
Mayor Rick Blangiardi	X		X	
City Council Chair and District Representative Tommy Waters, District 4	X		X	
City Council Vice Chair Esther Kiaʻāina, District 3	X			
City Council Zoning and Planning Committee Chair Brandon Elefante, District 8	X		X	
City Council Zoning and Planning Committee Member, Councilmember Radiant Cordero, District 7	X			
Native Hawaiian Groups and Descendant Groups				
Cultural Descendants Previously Identified with HHV[3]	X		X	
Native Hawaiian Chamber of Commerce	X		X	
Native Hawaiian Hospitality Association	X		X	
Oʻahu Island Burial Council	X		X	
Libraries				
Waikīkī Public Library	X		X	
State Main Library	X		X	
Legislative Reference Bureau	X		X	
Individuals and Organizations				
Hawaiʻi Chamber of Commerce	X		X	
Hawaiʻi Hotel Alliance	X		X	
Hawaiʻi Lodging and Tourism Association	X		X	
Honolulu Star Advertiser	X		X	
Hawaiʻi Tourism Authority	X		X	
Waikīkī Improvement Association	X		X	
Waikīkī Business Improvement District Association	X		X	
Waikīkī Residents Association	X		X	
Waikīkī Transportation Management Association Special Improvement District				X
Barbara Snyder[4]		X	X	X
John T.		X	X	
Justin Michalek		X	X	

Table 7.1: Agencies, Organizations and Individuals Receiving Copies of the Draft SEIS				
Respondents and Distribution	**Early Consultation**	**Received ~~Early Consultation~~ SEISPN Comments**	**~~Receiving~~ Received Draft SEIS Notification**	**Draft SEIS Comments Received**
Mark Monoscalco		X	X	
Michael Brant		X	X	
Robert Randel		X	X	
Utilities				
Hawaiian Electric Company			X	
Hawaiian Telcom			X	X
Spectrum			X	

1 Individual comments provided by the following divisions: HDOH Clean Air Branch (CAB), Clean Water Branch (CWB), Safe Drinking Water Branch (SDWB), and Solid and Hazardous Waste Branch (SHWB).

2 Comments provided by DLNR Engineering Division

3 See *Section 4.1* for detailed information regarding consultation with Cultural Descendants as part of the AIS and CIA.

4 This individual provided two comment letters.

7.2 SEIS Public Scoping Meeting

Publication of the SEISPN in *The Environmental Notice* was followed by a public scoping meeting held on November 15, 2021. The meeting was held virtually in accordance with State and City orders related to the COVID-19 pandemic that were in place at the time. Thirteen members of the public attended. Community questions and concerns primarily related to the following: AMB Tower design and development standards, traffic and pedestrian safety, property ownership, construction schedule, density at the HHV campus, and studies to be conducted, including the CIA, Wind Study, and PER. The following comments and questions were raised and received verbal responses, which are summarized below:

1. **Tower Design and Development Standards:** A community member expressed appreciation to HHV for how well the campus has been maintained as it has expanded and emphasized that the current aesthetic should be retained at the AMB Tower site.

   Another participant expressed concern about obstructing their private views and asked if the AMB Tower would adhere to setbacks. Response: AMB Tower will comply with the City's zoning development standards (which include requirements for setbacks and height), subject to any flexibility that may be provided (*e.g.*, Project density).

   Lastly, a community member asked about the maximum height allowed in the Resort Mixed Use District. Response: It has been confirmed that the AMB Tower would adhere to development standards for the district allowed under the PD-R and will not exceed a height of 350 feet (exclusive of permitted rooftop equipment and structures).

2. **Traffic and Pedestrian Safety:** Concern about potential vehicular traffic that would be generated by the AMB Tower, circulation at the site, and pedestrian safety was expressed by two participants. Response: A TIR analyzing vehicular and pedestrian traffic has been prepared and is attached as *Appendix I*. The results of the TIR are discussed in *Sections 4.7.1* and *4.7.2* of this SEIS.

3. **Property Ownership:** One participant inquired about the ownership of the three Project properties. Response: Parcel 4 is owned by Park Ala Moana LLC, while parcels 5 and 6 are currently owned by SMK, Inc. (*Table 3.2*). Both landowners are listed as Applicants for the planned Project. It is expected that Park Ala Moana LLC will own all three parcels prior to commencement of construction.[1]

4. **Construction Schedule:** A community member inquired about the anticipated construction timeline for the Project. Response: Subject to market conditions and receipt of necessary entitlements and permits, construction is expected to begin in late 2024 or 2025. Construction is anticipated to last 30 months, and the AMB Tower is estimated to be complete in early to mid-2027.

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[1] SMK, Inc. is no longer an Applicant because Park Ala Moana LLC now owns all three of the Added Parcels (Parcels 4, 5 and 6) following its acquisition of Parcels 5 and 6 from SMK Inc. on March 2, 2023.

5. **Density at the HHV Campus:** Two participants expressed concern about density at the HHV campus. One participant inquired about conducting a study to analyze density overall. The resident was concerned about overcrowding within the Village campus and the area vicinity, including at adjacent beaches, particularly in the context of social distancing. Response: This SEIS focuses on the AMB Tower site, and a separate study on overall density and beach capacity will not be included in the scope of this SEIS.

6. **Cultural Impact Assessment:** A Cultural Descendant asked if a CIA would be conducted for the Project. The participant was advised that a CIA would be prepared by CSH, and the participant was asked to send their thoughts on what should be included in the scope of the study. The participant responded that they would save their comments for the upcoming consultation with CSH. The CIA prepared by CSH is attached to this SEIS as *Appendix C*, and its results are discussed in *Section 4.1.2*.

7. **Wind Study:** A participant expressed interest in reading the forthcoming wind study examining air flow between buildings. Response: A wind study has been prepared and is attached to this SEIS as *Appendix D*. The results of the wind study are discussed in *Section 4.2.2*.

8. **Infrastructure Study:** The same participant also expressed interest in the impact of the Project on municipal infrastructure, with particular interest in sewer infrastructure. Response: A PER has been prepared and is attached to this SEIS as *Appendix K.* The results of the PER are discussed in *Section 4.8* of this SEIS including a discussion of wastewater and sewer capacity in *Section 4.8.3*.

7.3 SEISPN Comment Letter Summary

A total of 23 agencies and individuals provided comments during the 30-day public SEISPN comment period. Copies of each comment letter are provided in *Appendix A-1*. A summary of comments received and associated responses is provided in *Table 7.2*. Comments are organized by major topics.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Biological Resources		
Species that may occur in the Project Area: Hawaiian hoary bat (*Lasiurus cinereus semotus*), band-rumped storm-petrel Hawaiʻi DPS/ʻakēʻakē (*Oceanodroma castro*), Hawaiian petrel/ʻuaʻu (*Pterodroma sandwichensis*), Newell's shearwater/ʻaʻo (*Puffinus auricularis newelli*), wedge-tailed shearwater/ʻuaʻu kani (*Ardenna pacificus*), white tern/manu-o-kū (*Gygis alba*).	USFWS	Construction BMPs will be implemented to mitigate for the possibility of Hawaiian hoary bats or Hawaiian seabirds overflying the Project area. See *Section 4.3.4* for further discussion.
Hazardous Wastes		
Hazardous Waste Program: • The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR). These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.	HDOH Solid and Hazardous Waste Branch (SHWB)	The Applicants will ensure that hazardous materials of all types will be managed in accordance with applicable law. Refer to *Section 4.5* for further discussion.
Underground Storage Tank Program • The state's underground storage tank (UST) regulations, found in chapter 11-280.1, HAR, include specific requirements that UST owners and operators must meet when installing, operating, and permanently closing their UST systems and addressing releases from USTs. Violations are subject to penalties under chapter 11-280.1, HAR, and chapter 342L, HRS. • For release response actions, responsible parties and their consultants and contractors should follow the applicable guidance in the Department of Health Hazard Evaluation Emergency (HEER) Office Technical Guidance Manual, HEER Environmental Action Level (EAL) guidance, and other guidance documents on the DOH HEER Office website, including those pertaining to Multi-Increment Sampling of soil, low flow groundwater sampling, soil vapor sampling, and Environmental Hazard Evaluations (EHE)/Environmental Hazard Management Plans (EHMP).	HDOH SHWB	As discussed in *Section 4.5*, there is evidence indicating the historical existence of USTs at the site. Further soil and groundwater sampling may be conducted around the former UST location at parcel 004, as needed. Contractors will be required to follow applicable law.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Solid Wastes		
Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.	HDOH SHWB	The construction contractor will be responsible for the disposal of any construction debris and solid waste generated, including any hazardous materials, to an acceptable waste disposal facility in accordance with Federal, State, and City regulations (*Section 4.8.4*). Once construction is complete, solid waste from hotel operations will be handled in accordance with applicable law and consistent with HHV's existing practices.
Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes and divert recyclables from being landfilled. The project developer is highly encouraged to develop a solid waste management plan to ensure proper handling of wastes and divert recyclables from being landfilled. Ideally, the plan would seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.	HDOH SHWB	As discussed in *Section 4.8.4*, HHV's existing solid waste management and recycling practices will be implemented in the operation of the AMB Tower. This includes recycling of food waste, cardboard, glass, and plastics, which will continue to be hauled away by a private food recycler.
Construction Impacts and Best Management Practices		
If your project requires an Air Pollution Control Permit: You must obtain an air pollution control permit from the Clean Air Branch and comply with all applicable conditions and requirements. If you do not know if you need an air pollution control permit, please contact the Permitting Section of the Clean Air Branch.	HDOH CAB	An Air Pollution Control Permit is not anticipated to be required, as the Project does not involve construction or operation of a stationary air pollution source (such as factories or power plants) as articulated in HAR, Section 11-60.1-62. However, if required, a permit will be obtained.
If your project includes construction or demolition activities that involve asbestos: You must contact the Asbestos Abatement Office in the Indoor and Radiological Health Branch.	HDOH CAB	Should asbestos be identified on site, the Applicants will coordinate with the HDOH Asbestos Abatement Office of the Noise, Radiation and Indoor Air Quality Branch prior to demolition, and work with contractors who are specifically trained in abatement of asbestos containing materials to safely remove hazardous materials and limit potential exposure to anyone who may be onsite during demolition.

Table 7.2: SEISPN Summary of Comments and Responses

Comments	Commenter	Responses
Construction Impacts and Best Management Practices (continued)		
You must control the generation of all airborne, visible fugitive dust. Note that construction activities that occur near to existing residences, businesses, public areas and major thoroughfares exacerbate potential dust concerns. It is recommended that a dust control management plan be developed which identifies and mitigates all activities that may generate airborne, visible fugitive dust. The plan, which does not require Department of Health approval, should help you recognize and minimize potential airborne, visible fugitive dust problems. Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance complaints. You should provide reasonable measures to control airborne, visible fugitive dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following: a. Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact; b. Providing an adequate water source at the site prior to start-up of construction activities; c. Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase; d. Minimizing airborne, visible fugitive dust from shoulders and access roads; e. Providing reasonable dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and f. Controlling airborne, visible fugitive dust from debris being hauled away from the Project Site.	HDOH CAB	A dust control management plan will be developed and implemented during the construction phase. BMPs will include, but not be limited to, those recommended by the HDOH CAB.

Table 7.2: SEISPN Summary of Comments and Responses

Comments	Commenter	Responses
Construction Impacts and Best Management Practices (continued)		
Any project and its potential impacts to State waters must meet the following criteria: a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected. b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters. c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).	HDOH CWB	BMPs to protect water quality during construction will be implemented in accordance with HAR, Section 11-54, and are described in *Sections 4.3.2 and 4.8.1*.
You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for point source water pollutant discharges into State surface waters (HAR, Chapter 11-55). Point source means any discernible, confined, and discrete conveyance from which pollutants are or may be discharged.	HDOH CWB	Excavation during construction may require dewatering, which would be managed following the conditions of approval for an NPDES Construction Dewatering permit from the HDOH, CWB. The NPDES permit conditions will be administered in association with City permits for Excavation and Grading.
A Section 401 Water Quality Certification (WQC) is required if your project/activity: a. Requires a federal permit, license, certificate, approval, registration, or statutory exemption; and b. May result in a discharge into State waters. The term "discharge" is defined in Clean Water Act, Subsections 502(16), 502(12), and 502(6). Examples of "discharge" include, but are not limited to, allowing the following pollutants to enter State waters from the surface or in-water: solid waste, rock/sand/dirt, heat, sewage, construction debris, any underwater work, chemicals, fugitive dust/spray paint, agricultural wastes, biological materials, industrial wastes, concrete/sealant/epoxy, and washing/cleaning effluent.	HDOH CWB	The Project will not require a federal license, certificate, approval, registration, or statutory exemption; therefore, a WQC is not anticipated to be required.
Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with State Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation and up to 2 years in jail.	HDOH CWB	The Applicants confirm~~s~~ that potential impacts to surface waters resulting from soil erosion will be minimized by compliance with HAR, Sections 11-54 and 11-55. Additionally, standard BMPs as discussed in *Sections 4.3.2 and 4.8.1* will be employed to further minimize impacts.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Construction Impacts and Best Management Practices (continued)		
It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should: a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits. b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality. c. Consider stormwater BMP approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged. d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively. e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.	HDOH CWB	As described in *Sections 4.3.2 and 4.8.1*, the use of infiltration, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design to mitigate impacts to drainage patterns and water quality. Drainage improvements will comply with the City's Rules Relating to Water Quality. As part of the requirements, geotechnical drilling and testing of the site may be conducted to determine infiltration rates and water surface elevations, and to help in determining other strategies to mitigate stormwater runoff and minimize adverse impacts to the drainage system.
Construction Traffic Impacts		
All necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase.	HPD	To ensure public safety in the Project vicinity during construction, the contractor will follow necessary BMPs including, but not limited to, installing and maintaining signage, lights, barricades, and other safety equipment.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Construction Traffic Impacts (continued)		
HPD also recommends that adequate notification be made to businesses and residents in the area prior to deliveries or possible road closures, as any impacts to pedestrian and/or vehicular traffic may lead to complaints.	HPD	As recommended in the TIR prepared for the Project (*Appendix I*), the contractor will provide adequate notification to area representatives, the neighborhood board, residents, businesses, emergency personnel, and Oahu Transit Services, Inc. to minimize impacts to pedestrian and/or vehicular traffic.
The area representatives, neighborhood board, as well as the area residents, businesses, emergency personnel (fire, ambulance, and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the project and the impacts that the project may have on the adjoining local street area network.	DTS	Outreach with relevant stakeholders is ongoing. Area representatives, neighborhood board, residents, businesses, emergency personnel, and Oahu Transit Services, Inc. will be kept apprised of the Project.
Traffic Impact Report (TIR)[2]		
Based on the review of the project information, the HDOT anticipates a potential adverse impact to HDOT highways. A Traffic Impact Assessment Report (TIAR) prepared and stamped by a licensed engineer shall be submitted. The TIAR should include: a. A description of existing traffic conditions and use of multimodal routes in the study area. b. Forecasted traffic and multimodal conditions in the horizon year (year at full project build-out), without and with the project, and including trips generated by planned developments in the study area. c. An analysis of project-related direct, indirect, and cumulative transportation impacts, including impacts associated with multimodal transportation and safety. d. Recommend mitigation for impacts to transportation. e. Labeled jurisdictions of roadways in the vicinity. f. Location of existing and proposed site access driveways.	HDOT	A TIR was prepared for the Project and is provided as *Appendix I*. The TIR includes a description of existing traffic and multimodal conditions, forecasted traffic and multimodal conditions, analysis on potential Project-related impacts, recommended mitigation for potential impacts, and a discussion of existing and proposed site access driveways. Overall, the TIR found that there may be temporary increases in construction-related traffic, particularly during mobilization and demobilization of the construction area. There are no anticipated long-term adverse impacts related to operation of the Project. Traffic conditions are generally expected to remain similar to Year 2027 Without Project conditions. See *Section 4.7* for a summary of the report.

[2] The following terms are used interchangeably throughout *Table 7.2* to refer to the traffic study: Traffic Impact Assessment (TIA), Traffic Impact Assessment Report (TIAR), and Traffic Impact Report (TIR). A TIR was prepared for the Project.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Traffic Impact Report (TIR) (continued)		
The Applicant shall coordinate with HDOT to determine the study area by considering intersections along State highways where a change in peak hour traffic volume due to the development is greater than 3 percent.	HDOT	A TIR and Sidewalk Assessment were prepared for the Project and are provided in *Appendix I and Appendix J,* respectively. The TIR analyzed the following three main intersections along Ala Moana Boulevard in the Project vicinity, as discussed in *Section 4.7.1:* 1. Ala Moana Boulevard and Hobron Lane 2. Ala Moana Boulevard and Kahanamoku Street 3. Ala Moana Boulevard and Kālia Road/ʻEna Road
The applicant shall perform a traffic impact assessment to examine the vehicle, pedestrian, bicycle, and public transit stress and comfort levels at the nearby intersections and driveways with corresponding improvements to mitigate these impacts by applying Complete Streets principles. The applicant shall discuss the future year growth rate, trip generation and distribution, mode split, and route assignment assumptions used in the report.	DTS	The TIR assesses existing and proposed vehicle, pedestrian, bicycle, and public transit conditions at nearby intersections. The report also discusses the future year growth rate, trip generation and distribution, mode split, and route assignment assumptions that were used to inform the results and recommendations. Further, mitigation measures are proposed to address potential impacts. See *Section 4.7* for a summary of the report.
The Traffic Impact Assessment (TIA) should identify an appropriate speed limit for the streets adjacent to the project by analyzing conflict density and activity level, among other contextual factors, to determine the speed limit that will best minimize the risk of a person being killed or seriously injured. The National Association of City Transportation Officials Safe Speed Study methodology is recommended. A Safe Speed Study should be conducted for the longest relevant segment of a street corridor affected by the project.	DTS	The Project is located along Ala Moana Boulevard, which is under State jurisdiction. The Applicants will coordinate with HDOT as needed.
The applicant shall submit all native files (e.g., Synchro, Excel, etc.) for the raw multi-modal counts and accompanying analyses to the Regional Planning Branch at dtsplanningdiv@honolulu.gov. Please refer to the Department of Transportation Services TIA Guide for multimodal assessment tools and recommended analyses. The TIA Guide can be found at http://vwvw4.honolulu.gov/docushare/dsweb/View/Collection-7723.	DTS	Native files for multi-modal counts and accompanying analyses will be provided to the DTS Regional Planning Branch upon publication of the SEIS.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Traffic Impact Report (TIR) (continued)		
The TIA should discuss bicycle parking. The project shall quantify the number of secure on-site bicycle parking that will be provided. Refer to Section No. 21-6.150 Bicycle Parking in the City and County of Honolulu Land Use Ordinance for minimum requirements. ii. Bikeshare Station. Investigate the feasibility of including a bikeshare station on the project premises, to be maintained by the management entity. Bikeshare stalls shall not be counted as part of the provision of required bicycle parking. iii. Bicycle Repair Station. Examine feasibility of installing on-site tools and space for bicycle repair near bicycle parking area. iv. Pedestrian Improvements. Installation of lighting; pedestrian-oriented green infrastructure, trees, or other greening landscape consistent with the Complete Streets furniture zone; and trash receptacles per the Complete Streets Design Manual, Pedestrian Master Plan, Waikīkī Special District Guidelines, and any applicable streetscape plan.	DTS	As discussed in *Section 4.7.2,* the Project will designate secured bicycle parking consistent with the LUO. A final number will be determined as Project design progresses. Pedestrian improvements, including landscaping and lighting, will be installed along Ala Moana Boulevard, enhancing the ‘ewa gateway to Waikīkī.
A discussion regarding off-street parking, site generated parking demand, and proposed parking mitigation measures shall be added to this report. The applicant's parking discussion shall also include the following: i. If employee parking will be provided, investigate an employee parking cash out policy. ii. Include a description of how the project will promote, encourage, and monitor transit use by its staff and guests in the TIA.	DTS	Off-street parking is discussed in the TIA (*Appendix I*) and summarized in *Sections 3.3.8* and *4.7.3.*
The TIA should also include a discussion of a proposed Priority 1 Bike Lane project (Project ID 1-62 in the 2019 Oahu Bike Plan) is located on Ala Moana Boulevard fronting the Project Site. Any proposed driveway or porte cochere should be designed to minimize conflicts between bicyclists and turning vehicles. The management entity or owners' association should adopt (i.e., be responsible for litter removal, cleaning and maintenance of bus stop shelter, benches and floor area) any anticipated future bus stops fronting the Project Site at no cost to the City.	DTS	The TIA identifies proposed State and City bicycle facilities in the vicinity of the Project (see summary provided in *Section 4.7.2*). The planned driveways and porte cochere along Ala Moana Boulevard will be designed to minimize conflicts between bicyclists and turning vehicles. Transit stops are not planned along the street frontage of the AMB Tower.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Site Access and Design		
The project proposes to use the existing driveway on State Route 92. The applicant shall verify with the HDOT Highways Division, Oahu District Engineer (or County District Engineer) that the driveway meets current standards for the type and volume of anticipated traffic.	HDOT	Existing driveways along Ala Moana Boulevard serving the Project Site will be reconfigured and replaced by a new porte cochere served by two one-way driveways. The Project developer will consult with HDOT and other agencies to ensure that the new driveways will meet State and City standards for the type and volume of anticipated traffic.
Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by the Disability and Communication Access Board (DCAB) to ensure full compliance with Americans with Disabilities Act requirements.	DTS	Design of the Project will be in conformance with the ADA and finalized plans will be submitted to DCAB for review and approval.
Utilities (Sewer and Water)		
The existing water system is adequate to accommodate the domestic demands and off-site fire protection to the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.	BWS	The Applicants acknowledges~~s~~ that a final decision on the availability of water will be confirmed upon submittal and approval of the building permit application. See *Section 4.8.2* for further discussion regarding water requirements for the Project.
When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission, and daily storage.	BWS	The Applicants understands~~s~~ that BWS Water System Facilities Charges must be paid when water is made available to the Project.
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.	BWS	Water conservation measures will be implemented in design of the AMB Tower and may include, but not be limited to, the following: efficient irrigation systems such as a drip system and moisture sensors, utilization of nonpotable water for irrigation, drought tolerant plants, and the use of Water Sense-labeled ultra-low flow water fixtures and toilets (*Section 4.8.2*).

Table 7.2: SEISPN Summary of Comments and Responses

Comments	Commenter	Responses
Utilities (Sewer and Water) (continued)		
High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.	BWS	The Applicants acknowledge~~s~~ that the AMB Tower may be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.
The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.	BWS	The Applicants understands the comment and will adhere to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of building permits applications.
The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.	BWS	The Applicants will ensure that construction plans will be submitted to BWS for approval, and the contractor will coordinate construction activities to minimize potential impacts to the water system.
The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department (HFD).	BWS	The Applicants will coordinate on-site fire protection requirements with HFD.
A sewer connection application for the proposed project should be submitted to the Department of Planning and Permitting, Site Development Division, Wastewater Branch.	ENV	A sewer connection application for the Project will be submitted to the DPP, Site Development Division, Wastewater Branch.
The proposed project is subject to the terms and conditions of the enclosed Kālia Rd/Ala Moana Blvd/Kalakaua Ave Sewer Improvements MOA, December 31, 2012	ENV	Design of the Project will adhere to the terms and conditions of the subject MOA. See *Section 4.8.3* for further discussion. Pursuant to the MOA, the City shall approve no more than 338 ESDUs for future improvements, including the AMB Tower. The ESDUs for the Project are anticipated to total 258 ESDUs.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Flood Zone		
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). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 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.	DLNR	A discussion on flood zones is provided in *Section 4.4.3* of the SEIS. The Project is located within FEMA Flood Zone AE, where the BFE has been determined. Further, FEMA Flood Zone AE is designated as a SFHA subject to inundation by the 1% Annual Chance Flood, also known as the base flood. As such, a BFE of 7 feet is used for the Project. Design of the Project will adhere to County development standards for the SFHA articulated in ROH Chapter 21A. The finished floor elevation of AMB Tower is planned at 7 feet and 6 inches above msl.
Cultural and Historic Resources		
After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Land, we do not anticipate any impacts to our lands or beneficiaries from the project.	DHHL	The Applicants ~~confirms~~ confirm that there will be no anticipated impacts to Hawaiian Home Lands.
We highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.	DHHL	Consultation with kūpuna, lineal descendants, and Native Hawaiian organizations was conducted as part of the draft AIS and CIA prepared for the Project (*Appendices B and C*, respectively). See *Section 4.1.* for further discussion. The Applicants will continue ongoing dialogue with consulted parties as the Project progresses.
Design		
If the AMB Tower will conform to the heights of the Grand Waikikian (368 feet) and the Grand Islander (400 feet) then it will be approximately 400 feet tall. What is the proposed maximum height of the AMB Tower?	Mark Monoscalco	Both the Grand Waikikian and the Grand Islander are 350 feet tall (exclusive of permitted rooftop equipment and structures). As discussed in the *Section 3.3.3*, the AMB Tower is also proposed to reach a maximum height of 350 feet (exclusive of permitted rooftop equipment and structures), adhering to development standards for the Resort Mixed Use District.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Design (continued)		
The parcels of property under the proposed AMB Tower are not all owned by the same owner. The AMB Tower will ask for an increase in allowable floor area ratio using open space in other areas of the Hilton Hawaiian Village property. What section of the Land Use Ordnance permits a property owner to request additional floor area ratio using another property owner's open space as a bonus? For example, if 2 people purchase a parcel in Waikīkī and one of those people also owns a parcel in Kailua, can the open space from the parcel in Kailua be used to calculate the floor area ratio for the new parcel in Waikīkī?	Mark Monoscalco	HHV is developed under an existing PD-R approved in 2011. The purpose of the PD-R is to allow for flexible and creative redevelopment. Flexibility from various development standards may be provided, including open space and project density, when timely and demonstrable contributions benefiting the community and the stability, function, and overall ambiance and appearance of Waikīkī are produced. Currently, the LUO allows planned development flexibility on lands in the Waikīkī Special District's Resort Mixed Use and Apartment Districts and in designated TOD Special Districts. Pursuant to the LUO, Section 21-9.80-4(d), "multiple lots may be part of a single PD-R or PD-A project if the owners, lessees, developers or other designated representatives, including, but not limited to, a board or association of homeowners, condominium owners, timeshare owners, or cooperative housing owners, in lieu of individual owners, consent." The multiple landowners of the Project parcels have consented to development of the AMB Tower and are collectively identified as Applicants. Park Ala Moana LLC owns all three Added Parcels~~Further, it is expected that Park Ala Moana LLC will own all Added Parcels prior to commencement of construction~~. Additionally, in general, multiple lots of a single PD-R project must be contiguous, provided that lots that are not contiguous may be part of a single project if certain conditions are met. The Added Parcels are contiguous with the existing Village campus.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Open Space		
Also included in the Supplemental Environmental Impact Statement Notice of Preparation is the following: "Description of Proposed Project Inclusion of the new parcels will increase the floor area available to the Village under the Hilton Hawaiian Village Planned Development-Resort (PDR), following approval by the City and County of Honolulu, Department of Planning and Permitting (DPP) in accordance with the PD-R approval process set forth in the Land Use Ordinance. As part of the project, the applicant will request an increase in the allowable Floor Area Ratio (FAR) within the Village from 3.7 to 4.0 as permitted by existing land use laws. Under the approved 2011 PD-R, 3,943,335 SF of floor area is permitted for the Hilton Hawaiian Village Master Plan. With the proposed campus expansion and increased FAR, the new total floor area available will be 4,397,044 SF. The existing development within the Village comprises 3,737,055 SF and 396,000 SF will be added by the AMB Tower. The inclusion of the three new parcels within the Village will also help to preserve the existing open space and natural setting of the resort." How is it possible to construct a 400-foot tall, 396,000 square foot tower on a 0.46-acre parcel and claim that this will "help to preserve the existing open space and natural setting of the resort"? The AMB Tower will reduce the amount of open space along Ala Moana Blvd.	Mark Monoscalco	As explained in this SEIS, the AMB Tower will have a maximum height of 350 feet (exclusive of permitted rooftop equipment and structures). Approximately half of the existing HHV campus is dedicated to at-grade open space. As currently configured, open space provided at the Village is approximately 51.2 percent (*Figure 3.23*). Although the overall percentage of open space in the Village, as expanded, will be reduced to 50.4 percent, the total amount of open space within the Village will be increased and will continue to exceed 50 percent, meeting both the LUO's standards for the WSD Resort Mixed Use Precinct and the open space requirement set forth in the PD-R (*Table 3.3*). The existing Project Site consists of outdated or dilapidated structures with limited open space. As discussed throughout *Section 3.3*, the AMB Tower will help to improve the site and reinvigorate Ala Moana Boulevard as the primary 'ewa gateway to Waikīkī. Landscaping and pedestrian access along Ala Moana Boulevard will be enhanced as part of the Project, and will provide an open, safe and inviting experience that supports connectivity within the HHV campus and the broader Waikīkī neighborhood. Moreover, a substantial portion of the HHV campus is dedicated open space, much of which is comprised of outdoor amenities accented by purposefully designed landscaped gardens (*Section 3.3.6).* Open space at the Village campus will remain over 50 percent. Over half of the HHV campus will remain dedicated to open space following development of the AMB Tower.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Visual Impacts		
Also included in the Supplemental Environmental Impact Statement Notice of Preparation is the following: "12. Substantially affects scenic vistas and viewplanes identified in county or state plans: The project includes a hotel tower that may affect vistas and view perspectives from certain public and private locations in Waikīkī. The SEIS will include a view impact analysis with simulations of view conditions before and after development, as experienced from locations surrounding the Project Site." Hilton Hawaiian Village has gradually constructed a 300- to 400-foot-tall wall of buildings completely surrounding their property and blocking all vistas and view perspectives from outside their property. Each new tower impacted a portion of the vistas and view perspectives. Each individual new tower was approved with the understanding and acceptance that there was some loss of vistas and view perspectives. The cumulative effect of the loss of vistas and view perspectives must be considered. The AMB Tower will block the last open vista and view perspective from outside of the Hilton Hawaiian Village property. See the 2 attached photos for a before and after illustration of the loss of vistas and view perspectives.	Mark Monoscalco	Existing structures at the HHV do not exceed the maximum allowed height of 350 feet (exclusive of permitted rooftop equipment and structures). The design of the AMB Tower is also proposed to reach a maximum height of 350 feet (exclusive of permitted rooftop equipment and structures), adhering to development standards for the Resort Mixed Use District. A View Study conducted for the Project shows that public views identified in the PUC DP will be minimally affected by the AMB Tower (*Section 4.11*). A majority of public views in the area include buildings that define the urban form of Waikīkī. The Project will not be discernable from the Ala Wai Yacht Harbor, Punchbowl lookout, Ala Moana Beach Park, or Kūhiō Beach Park. While it will be visible from Fort DeRussy Park; makai views from the park at Kālia Road and from Kalākaua Avenue are partially obstructed by existing buildings. See *Figure 4.18*, which shows that the AMB Tower will be visible from that location, but the view from that location is already largely obscured by existing buildings, such that the additional impact on views from this location is minimal. As is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site near ‘Ena Road have views that may be partially blocked by the new tower. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected. The Project will improve the visual environment of the Project Site by replacing the existing dated or dilapidated buildings with the AMB Tower, a timeless, contemporary structure featuring modern, culturally appropriate design using materials that complement that surrounding environment. The AMB Tower will

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
		help to reinvigorate Ala Moana Boulevard as the primary ‘ewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the Project. This area will provide an open, safe and inviting pedestrian experience that supports connectivity with the HHV campus and the broader Waikīkī neighborhood.
The proposed new tower will also block the sight lines for many people living in the area. The two existing Hilton towers have already significantly damaged the view to the East and the view to DeRussy park. This new tower will eliminate at least 50% of the little view left from my condo. Not only to the park, but also just the light from the sky will be blocked. Why should the Hilton be allowed to block the views of so many existing people? Why should they not first be required to build their new tower where their existing parking structure sits and partially block the views from their own tower. They would not like to block the views of their own existing towers but are happy to block the views and air flows for everyone else. I really hope modifications to their plan can be made and that any new construction on that proposed site be limited to no more than 2 stories in height to protect the views. The Hilton should be required to build their new tower on the site of their existing parking garage and partially block their own views before being allowed to damage the conditions for everyone else just to preserve it for themselves.	Robert Randal	As discussed In *Section 4.11*, as is true of any large-scale development in a dense and growing urban environment, some loss of views from existing buildings is an inevitable result of in-fill development in this portion of Waikīkī. Some high-rise residential condominiums across Ala Moana Boulevard from the Project Site near ‘Ena Road have views that may be partially blocked by the new tower. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, and expansive views from these condominiums to the southeast, across Fort DeRussy, will be unaffected. The Applicants ha~~s~~ve the opportunity expand HHV to include the Project parcels, which are currently underutilized and comprised of outdated or dilapidated structures. The Project will improve the visual environment of the Project Site by replacing the structures with the AMB Tower, a timeless, contemporary structure featuring modern, culturally appropriate design using materials that complement that surrounding environment. Building the tower on HHV’s parking structure would deprive the resort of parking needed for its operations, and building elsewhere inside the existing campus would eliminate a substantial area of open space during the period of construction. The Project is anticipated to provide economic and social benefits to the overall Waikīkī community. Replacing existing structures with a new tower will help to reinvigorate and revitalize Ala Moana Boulevard as the primary ‘ewa gateway to Waikīkī, providing residents and visitors with a more appealing, welcoming experience. It will also help maintain Waikīkī’s iconic

Table 7.2: SEISPN Summary of Comments and Responses

Comments	Commenter	Responses
		and historic sense of place. Landscaping and pedestrian access along Ala Moana Boulevard will be renewed and enhanced as part of the Project. This area will provide an open, safe and inviting pedestrian experience that supports connectivity with the HHV campus and the broader Waikīkī neighborhood. The Applicants acknowledges~~s~~ the suggestion to construct the tower above the existing parking structure. However, siting the AMB Tower in this location would still impact private views. Furthermore, locating the AMB Tower elsewhere on the HHV campus and closer to the shoreline would result in greater adverse impacts to the surrounding environment than the planned Project.
Wind and Noise Impacts		
The towers block and change the natural wind flow in the area and the noise from the already heavy traffic bounces off the existing towers and amplifies the sound. Building another tower will further erode the living conditions in the area and benefit no one other than the Hilton corporation. I really hope modifications to their plan can be made and that any new construction on that proposed site be limited to no more than 2 stories in height to protect the air flow to the existing residents & buildings and to prevent creating an even worse "noise tunnel" with the traffic noise bouncing off the towers.	Robert Randal	Several studies were conducted as part of comprehensive preparatory work for the Project. A Pedestrian Wind Study (*Appendix D*) was conducted for the Project, and is summarized in *Section 4.2.2*. The study found that wind conditions in the surrounding areas are expected to remain suitable for intended pedestrian use throughout the year, and that existing uncomfortable locations through the Kālia Tower and Mid-Pacific Conference Center passageway will be alleviated with construction of the Project . Additionally, a Noise Study (*Appendix L*) conducted for the Project found that, in the long term, no significant increases in traffic noise are anticipated to occur as a result of the Project. Unavoidable, but temporary, short-term noise impacts may occur during construction of the Project and will be mitigated as discussed in *Section 4.9*.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Tourism/Overcrowding Concerns		
There is no need for another tower except greed. So glad the one proposed for Rainbow Bazaar didn't go through. I enjoy visiting all the shops and restaurants. I am an owner and don't need more people coming there. It is crowded enough! The beach is way over crowded in prime season. Can't get lounge chairs by the pool. I come there to relax, not stand in line for food and other amenities.	Barbara Snyder	The urbanized district of Waikīkī has been planned as the anchor resort area of the State. Continuing to focus resort development in Waikīkī is consistent with State and City policies to direct urban development away from critical areas reserved for conservation or other uses. As discussed in the Economic Impact Analysis prepared for the Project (*Appendix M*), it is estimated that the unmet lodging demand on O'ahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for short-term rentals being closed by the City. The Project will directly fulfill the demonstrated demand for hotel guestrooms in the designated resort area of Waikīkī, while preserving areas identified for other uses. The AMB Tower will complement and enhance existing retail and recreational opportunities at the HHV campus. Amenities provided in the AMB Tower will be available for use by all HHV guests, and will include a recreation area, fitness center, and ground-floor retail. The Project will therefore expand amenities available within the Village campus. As an added benefit, the expansion of the HHV to include the Project will help to reinvigorate Ala Moana Boulevard and provide an open, safe and inviting pedestrian experience that supports connectivity within the HHV campus and the broader Waikīkī neighborhood. Additionally, the project will evaluate opportunities to implement the HTA's DMAP for O'ahu, including educational and community service programming for visitors.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Tourism/Overcrowding Concerns (continued)		
I think the proposed new tower is a further step in the wrong direction. After a year of COVID-19, most everyone talked about over-tourism and trying to solve tourism here so it is better for residents of Hawaiʻi. I'm sure my message won't matter or be heard (as the hotel and tourism lobby runs Oʻahu) but at what point is tourism not sustainable? How many visitors are too many? I do not pretend to know the answers, but we need to figure it out as a community. Do we have enough hotel rooms already? Do we need another tower that will house thousands of visitors a day in an already crowded Waikīkī?	John T.	As discussed in the Economic Impact Analysis prepared for the Project (*Appendix M*), it is estimated that the unmet lodging demand on Oʻahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for short-term rentals being closed by the City. Further, evolving City regulations on short-term rentals are expected to further exacerbate the shortage of guestrooms. The demand for additional lodging inventory on Oʻahu, widely considered to be in a period of "tight supply", will continue to rise over the near to mid-term. New hotel guestrooms have not been constructed at the HHV campus since 2001. The AMB Tower will meet existing demand for guest capacity and expand accommodation choices, which supports the long-term viability of Waikīkī as Oʻahu's primary resort area and a world-class visitor destination. Since at least the [early] 1900s, Waikīkī has served as the center of Hawaii's hospitality industry. As such, appropriate infrastructure has been provided. Continuing to focus the visitor industry in Waikīkī is in alignment with the State and City's long-term land use plans.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Tourism/Overcrowding Concerns (continued)		
Aloha, I vehemently disagree with the planned Hilton tower in Waikīkī. The island has enough traffic, people, and overpopulation as it is. Jonathan Fuisz says, “ This project will add needed capacity within the visitor area of Waikīkī…,” which is akin to spitting in our face since we have well since maxed out the capacity of our island. The greedy tourism industry continues to rape the islands virtues and resources. We can only sustain so many people, and if the current flow of people is not enough then the island and businesses MUST diversify income streams. Has this pandemic not proven this? ENOUGH IS ENOUGH!	Justin Michalek	As discussed in the Economic Impact Analysis prepared for the Project (*Appendix M*), it is estimated that the unmet lodging demand on O‘ahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for short-term rentals being closed by the City. Further, evolving City regulations on short-term rentals are expected to further exacerbate the shortage of hotel guestrooms. The demand for additional lodging inventory on O‘ahu, widely considered to be in a period of "tight supply", will continue to rise over the near to mid-term. New hotel guestrooms have not been constructed at the HHV campus since 2001. The AMB Tower will meet existing demand for guest capacity and expand accommodation choices, which supports the long-term viability of Waikīkī as O‘ahu’s primary resort area and a world-class visitor destination. As noted above, Waikīkī has served for many decades as the center of the Hawaii’s hospitality industry. As such, appropriate infrastructure has been provided. Continuing to focus the visitor industry in Waikīkī is in alignment with the State and City’s long-term land use plans.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Tourism/Overcrowding Concerns (continued)		
I am totally against Hilton building any more on the resort. Enough towers already. Crowded with people as it is. Probably adverse environmental impact - more people - more garbage and waste and water usage. Please turn down the proposal.	Barbara Snyder	A discussion on the potential environmental impacts and proposed mitigation measures is summarized in *Section 1.6* and discussed in detail in *Chapter 4.0.* As discussed in the Economic Impact Analysis prepared for the Project (*Appendix M*), it is estimated that the unmet lodging demand on O‘ahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for short-term rentals being closed by the City. Further, evolving City regulations on short-term rentals are expected to further exacerbate the shortage of hotel guestrooms. The demand for additional lodging inventory on O‘ahu, widely considered to be in a period of "tight supply", will continue to rise over the near to mid-term. New hotel guestrooms have not been constructed at the HHV campus since 2001. The AMB Tower will meet existing demand for guest capacity and expand accommodation choices, which supports the long-term viability of Waikīkī as O‘ahu’s primary resort area and a world-class visitor destination. As noted above, Waikīkī has served for many decades as the center of the Hawaii’s hospitality industry. As such, appropriate infrastructure has been provided. Continuing to focus the visitor industry in Waikīkī is in alignment with the State and City’s long-term land use plans.

Table 7.2: SEISPN Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Project Demand		
The Supplemental Environmental Impact Statement Notice of Preparation includes the following: "2.1 Project Setting and Description Existing Conditions The Village provides a variety of unique accommodations, services, amenities, and experiences for its guests. Accommodations are currently located primarily within eight main towers: Ali‘i Tower, Rainbow Tower, Tapa Tower, Kālia Tower, Diamond Head Tower, Lagoon Tower, the Grand Waikikian, and the Grand Islander. A total of 2,971 hotel rooms and 1,248 timeshare units are approved on-site (To date, 2,860 hotel rooms and 1,088 timeshare units currently exist on-site.)." If Hotel Rooms are at such a premium that a new tower is required why has Hilton Hawaiian Village spent the last 10 years building new timeshare units and converting existing hotel rooms to timeshare?	Mark Monoscalco	New hotel guestrooms have not been constructed at the HHV campus since 2001. The AMB Tower will meet existing demand for guest capacity and expand accommodation choices, which supports the long-term viability of Waikīkī as O‘ahu's primary resort area and a world-class visitor destination.
Registration Fees		
Let's see that they are charged $2500/unit/year "registration fee" like Waikīkī vacation rental owners will be under DPP's Bill 41.	Michael Brant	Bill 41 relates to short-term rentals and does not apply to the Project.

7.4 Waikīkī Neighborhood Board No. 9 Meeting

A presentation of the Project was provided to the Waikīkī Neighborhood Board No. 9 at the November 1, 2022 meeting. The following questions and comments were discussed:

1. **Public Benefits**: Several members acknowledged the existing public benefits provided by HHV that are enjoyed by the surrounding community, and requested that benefits proposed by the Project would continue to be targeted towards the Waikīkī community. Response: As described in *Section 1.8*, the AMB Tower will support existing public benefits and will provide new public benefits, which will focus on elevating local artists and artisans, supporting local businesses, and revitalizing and reinvigorating the ʻewa gateway to Waikīkī. Public benefits that are currently anticipated include enhanced public access and landscape improvements, a public art commitment, a monthly public festival, continued participation and contribution to Waikīkī organizations and initiatives, and generation of short-term and full-time employment positions. These benefits will be further refined as the Project moves forward.

2. **Visual Resources:** Concerns were expressed about the impact of views from the mauka (mountain) side of the tower and on the pedestrian level. Response: The AMB Tower is situated in a mauka-makai orientation, as required by the standards for the WSD articulated in the LUO. As found in the View Study conducted for the Project, public views as articulated in the PUC DP will be minimally affected (*Section 4.11*). A majority of public views in the area already consist of buildings that define the urban form of Waikīkī. The AMB Tower is located inland (approximately 800 feet from the shoreline) and will blend with the surrounding urban environment in terms of its orientation, scale, height, form, and design. The Project will not be discernable from the Ala Wai Yacht Harbor, Punchbowl Lookout, Ala Moana Beach Park, or Kūhiō Beach Park. It will be visible from Fort DeRussy Park; however, the addition of the AMB Tower will have minimal impact on views from this location as it will be located between two existing buildings, as shown in *Figure 4.19*.

   The Project will enhance the visual environment of the site at the street level by replacing the existing dated or dilapidated buildings with the AMB Tower, a timeless, contemporary structure featuring modern, culturally appropriate design using materials that complement the surrounding environment. Views at the street level will be significantly upgraded by the streetscape improvements described in the SEIS, including landscaping and water features. The AMB Tower will reinvigorate Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī, providing visitors with a more appealing, welcoming experience.

3. **Required Permits and Approvals:** A member requested clarity regarding discretionary permits required for the AMB Tower. Response: Following the completion of the environmental review process, the Applicants will obtain a PD-R, SMA Use Permit, and WSD Permit. These permits are discretionary, and will include review by the DPP, public hearings, and final approval by the Honolulu City Council.

4. **Sea Level Rise:** A board member expressed concern regarding the proposed finished floor elevation of the AMB Tower given the potential impacts of SLR. Response: Following the meeting, design of the AMB Tower has been revised from a proposed finished floor elevation of 7.5 feet above msl to 8.0 feet above msl. Additional adaptation strategies will be integrated into the design to mitigate the effects of climate change and SLR, as discussed in *Section 4.4.5*. In general, utility connections in new buildings are also vulnerable to the effects of SLR. As such, water meters, backflow preventers, electrical boxes, handholes, transformers, and

equipment that could be damaged from flooding at the AMB Tower will be located at higher elevations, where feasible. Design will be finalized as the Project progresses.

5. **Parking**: A board member expressed concern regarding sufficient off-street parking for hotel guests and employees. Response: The AMB Tower will provide 50 new parking stalls. Additionally, the adjacent Coral Ballroom parking garage will be reconfigured to recapture 36 stalls. Therefore, following construction of the Project, a total of 1,930 parking stalls will be provided at the Village (*Table 3.4*). The Applicants noted that HHV provides an excess of the required off-street parking based on past standards articulated in the LUO. Since approval of the Village Master Plan PD-R in 2011, parking requirements have been modified and are no longer required in the PUC DP area where the Project is located.

6. **Pedestrian Improvements:** A board member inquired about the possibility of working with the City or State to provide a pedestrian bridge over Ala Moana Boulevard or a crosswalk at the Ala Moana Boulevard/Kahanamoku Street intersection. Response: The Applicants acknowledged past efforts to coordinate such improvements, but noted that facilities would need to be coordinated between the City and State as the agencies with jurisdictional authority.

7. **Drainage**: One board member requested that the Applicants clarify how drainage from the AMB Tower will be managed. Response: As discussed in *Section 4.8.1*, stormwater runoff will be managed on the HHV campus, and drainage improvements will comply with all applicable regulations and code requirements, including the City's Rules Relating to Water Quality. To mitigate potential impacts to drainage patterns, the use of LID measures and infiltration recommended in the PER, such as seepage wells, drywells, or permeable pavement, will be integrated into the Project design.

8. **2011 Master Plan**: A board member questioned why the AMB Tower was not included in the 2011 EIS. Response: The Applicants clarified that the opportunity to expand the existing campus with the Added Parcels did not exist at the time.

   The board member asked why a timeshare tower proposed in the 2011 Master Plan has not been built yet. Response: The Applicants noted that market conditions suggest demand for new hotel accommodations. As discussed in *Section 4.10*, it is estimated that the unmet lodging demand on Oʻahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for illegal short-term rentals being closed by the City. The demand for additional lodging inventory on Oʻahu, widely considered to be in a period of "tight supply", will continue to rise over the near to mid-term. New hotel guestrooms have not been constructed at the HHV campus since 2001. The AMB Tower will meet existing demand for guest capacity and expand accommodation choices, which supports the long-term viability of Waikīkī as Oʻahu's primary resort area and a world-class visitor destination.

7.5 Waikīkī Improvement Association Presentation

The Applicants provided a briefing of the Project to the WIA on December 14, 2022. The WIA board voted unanimously to support the Project in concept as it aligns with their vision to improve, enrich, and beautify Waikīkī for the benefit of residents and visitors alike. The Applicants will continue to keep the WIA apprised of the Project as it progresses.

7.6 Draft SEIS Comment Letter Summary

The Draft SEIS was published by ERP in the November 23, 2022 edition of *The Environmental Notice*, and was followed by a 45-day public comment period. A total of 16 agencies, organizations, and individuals provided comments on the Draft SEIS (*Table 7.1*). Copies of each comment letter are provided in *Appendix A-2*. A summary of comments received and associated responses is provided in *Table 7.3* and organized by major topics

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Biological Resources		
DOFAW concurs with the following measures included in the Draft SEIS intended to avoid construction and operational impacts to State-listed species including the Hawaiian Hoary bat (*Lasiurus cinereus semotus*), White Tern (*Gygis alba rothschildi*), Band-rumped Storm-petrel (*Oceanodroma castro*), Hawaiian Petrel (*Pterodroma sandwichensis*), and Newell's Shearwater (*Puffinus newelli*). We also concur with the measures outlined to use native plant species for landscaping.	DLNR DOFAW	The Applicants acknowledge that measures described in *Section 4.3.4* will be implemented during construction and operation.
DOFAW provides the following additional comments regarding the potential for the proposed work to affect listed species in the vicinity of the project area: For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf. • If nighttime construction is required during the seabird fledgling season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response. • If a white tern nest is discovered, please notify DOFAW staff for assistance.	DLNR DOFAW	The Project will implement the recommended mitigation measures during construction, as noted in *Table 1.1* and *Sections 4.3.3* and *4.3.4*.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
• DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid ʻŌhiʻa Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetles, etc.), or invasive plant parts (e.g., Miconia, Pampas Grass, etc.) that could harm our native species and ecosystems. We recommend consulting the Oʻahu Invasive Species Committee (OISC) at (808) 266-7994 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. • The invasive Coconut Rhinoceros Beetle (CRB) or Oryctes rhinoceros is known to occur in Oʻahu. On July 1, 2022, the Hawaiʻi Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of Oʻahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes a) entire dead trees, b) mulch, compost, trimmings, fruit and vegetative scraps, and c) decaying stumps. CRB host plants include the live palm plants in the following genera: Washingtonia, Livistona, and Pritchardia (all commonly known as fan palms), Cocos (coconut palms), Phoenix (date palms), and Roystonea (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/.		

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Access and On-Site Circulation		
4. The segment of Ala Moana Boulevard fronting the site is not access-controlled. The existing driveways within the site on Ala Moana Boulevard will be demolished and replaced by the two porte cochere driveways. Describe/show the location of the existing driveways relative to the proposed driveways. The new driveways (and other work within the State highway ROW) will require an HDOT Permit. See Comment 2.	HDOT	*Figure 3.24* identifies the existing and proposed driveways. See *Sections 3.3.7.1* and *4.7.3* for further discussion. An HDOT Permit will be obtained for construction of the new driveways within the State ROW.
5. The porte cochere is supposed to be the primary site access but porte cochere traffic is not reflected in the trip distribution. Revise the trip generation assumptions to reflect the anticipated use of the porte cochere as the primary guest access and address the following inconsistencies: • The trip distribution assumptions described in the TIAR Table 2 and Figure 5 suggest all projected peak traffic hour trips approach the site from the west and most exit Ala Moana Boulevard at Kahanamoku Street. The remaining 34/38 (A.M./P.M. peak traffic hour) vehicles would proceed toward the porte cochere, but none would exit the porte cochere to Ala Moana Boulevard. (HDOT Bullet Point 1) • The 47/73 (A.M./P.M.) project-related vehicles that leave the HHV via Kahanamoku Street and turn east onto Ala Moana Boulevard, are the only trips generated by the project that impact the Kalia Road intersection. (HDOT Bullet Point 2) • The porte cochere exit driveway is at the edge of one of the two Kalia Road right-turn-only traffic lanes on Ala Moana Boulevard; therefore, vehicles leaving the site, especially during peak traffic hours, would have to turn right onto Kalia Road. This is not reflected in the TIAR. (HDOT Bullet Point 3)	HDOT	Response to HDOT Bullet Point 1: The porte cochere is anticipated to primarily serve valet and drop-off operations. As part of the TMP that will be prepared for the Project, HHV will provide guests with access to the existing Coral Ballroom parking garage and will direct guests who elect to self-park during their stays to access the parking garage via Kahanamoku Street or Rainbow Drive, as shown in the Preliminary Circulation Plan (*Figure 3.25*). As shown in *Figure 3.7*, a direct pedestrian connection from the parking garage to the AMB Tower will be provided on Floor 5 of the tower podium. An internal connection from the porte cochere to the Coral Ballroom parking garage is planned. As such, valet or limited self-park vehicles being transferred from the porte cochere to the parking garage are not expected to exit onto Ala Moana Boulevard. Response to HDOT Bullet Point 2: The Applicants acknowledge the comment. As previously discussed, guests who elect to self-park will be directed to access the Coral Ballroom parking garage from Kahanamoku Street or Rainbow Drive. Response to HDOT Bullet Point 3: The Applicants acknowledge the driveway's proximity to the right-turn only lanes along Ala Moana Boulevard. Notably, the egress for the porte cochere is located prior to the solid striping that indicates lane change restrictions. Only vehicles dropping guests off or vehicles returned from the valet to a guest are expected to exit onto Ala Moana Boulevard (*Figure 3.25*). The majority of guests will be directed to utilize the signalized intersection with Kahanamoku Street to access the parking garage. In addition, a TMP will be prepared and will include strategies to manage this area, particularly during high traffic periods along Ala Moana Boulevard and within the porte cochere.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
6. The proximity of the three driveways (i.e., porte cochere entrance and exit, existing service road) to each other and the Kalia Road intersection introduces multiple potential conflict points among vehicles, pedestrians, and bicyclists. The TIAR includes potential recommendations to address pedestrian safety impacts but does not adequately assess the significance of the potential impacts. Further, the impact of the project traffic on queuing within Ala Moana Boulevard is not adequately described in the TIAR. The TIAR and Final SEIS should address these concerns and include: • A description of all existing and proposed uses (e.g., loading zones, parking) of the service road and direction of traffic on the Ala Moana Boulevard driveway (e.g., enter only) (HDOT Bullet Point 1) • Porte cochere traffic (See Comment 5) (HDOT Bullet Point 2) • A safety impact assessment, with queuing and storage depth analysis that considers the combined use of the service driveway and porte cochere driveways. (HDOT Bullet Point 3) • Specific recommendations to address the potential impacts to pedestrian/bicyclist safety. (HDOT Bullet Point 4)	HDOT	Response to HDOT Bullet Point 1: *Figure 3.25* illustrates the preliminary circulation plan for the site. The Project proposes a two-lane, one way driveway serving the porte cochere, with separate curb cuts for the entrance and exit points. A separate driveway will be designated for loading and commercial service operations. This existing driveway is currently gated. As part of the TMP for the Project and overall management of the Village, access to this driveway will remain controlled by installation of a gate or bollards. Response to HDOT Bullet Point 2: The Project will include preparation and implementation of a TMP that will include management strategies to ensure valet operations in the porte cochere do not impact the adjacent roadway. Strategies may include, but not be limited to, monitoring queueing and ensuring vehicles are transferred quickly and efficiently to the parking garage using an internal connection with the HHV campus that avoids the need for garage-bound vehicles to return to Ala Moana Boulevard. During operation, coordination with HDOT will be carried out as needed to implement adjustments to porte cochere operations, if necessary. Response to HDOT Bullet Point 3: The site plan and dimensions of the porte cochere and driveways will be reviewed and assessed for safety impacts as design progresses. Response to HDOT Bullet Point 4: Given the location of the Project and the high volume of pedestrians in the vicinity, the TIR (*Appendix I*) includes recommendations to be incorporated into design, including providing adequate sight distance at the Project driveways to ensure motorists and pedestrians are aware of the presence of one another. The Project has been designed to maintain the existing sidewalk width of 8 feet along the Ala Moana Boulevard frontage (*Section 4.7.2*). As design progresses, further studies may be conducted to address visibility of pedestrians at the driveways. A TMP will also be prepared and will include management strategies to address pedestrian and bicycle circulation and access to the Project.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Site Development Division, Traffic Review Branch Section 4.7, Roadways and Circulation. A time line or phasing plan of the anticipated dates to obtain major building permit(s) for demolition/construction work, including the projected date of occupancy, shall be prepared by the Applicant in a format acceptable to the Department. The time line should identify when the construction management plan (CMP), the traffic management plan (TMP) and updates/revisions, if any, to the traffic impact report (TIR) dated April 2022 will be submitted for review and approval. Typically, the CMP should be submitted for review and approval prior to the issuance of demolition/building permits for major construction work. The TMP or subsequent updates should be submitted and approved prior to the issuance of the (temporary) certificate of occupancy. The TIR, including supplemental studies or subsequent updates, should be submitted and approved prior to the commencement of each major phase of work, as required. A new TIR may be required if there is a significant change to the scope or timing of the major work items contained in the initial report. A construction management plan (CMP) should identify the type, frequency and routing of heavy trucks and construction related vehicles. Every effort shall be made to minimize impacts from these vehicles and related construction activities. The CMP should identify and limit vehicular activity related to construction to periods outside of the peak periods of traffic, utilizing alternate routes for heavy trucks, provisions for either on- site or off-site staging areas for construction related workers and vehicles to limit the use of on-street parking around the project site and other mitigation measures related to traffic and potential neighborhood impacts. Preliminary or conceptual traffic control plans should also be included in the CMP. The applicant should document the condition of roadways prior to the start of construction activities and provide remedial measures, as necessary, such as restriping, road resurfacing and/or reconstruction if the condition of the roadways has deteriorated as a result of the related construction activities. The TMP shall include traffic demand management (TDM) strategies to minimize the amount of vehicular trips for daily activities. TDM strategies could include carpooling and ride sharing programs, transit, bicycle and	DPP	Subject to market conditions and receipt of necessary approvals, construction of improvements is currently anticipated to begin as early as late 2024 or 2025. Construction is anticipated to last 30 months, and the AMB Tower is currently estimated to be completed by early to mid-2027. A more detailed timeline or phasing plan will be provided to DPP as design and permitting of the Project progresses. Construction activities will occur in the following general phases: demolition, site preparation, excavation, foundation installation, structure construction, grading, installation of interior finishes and fittings, architectural coatings, and landscaping. The Applicants acknowledge that a CMP, TMP, and updated TIR, if necessary, will be submitted to DPP prior to the issuance of demolition and building permits and will follow the guidance provided by the Traffic Review Branch.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
pedestrian incentives and other similar TDM measures. The TMP should address the parking, porte-cochere and loading/trash pick-up operations. A post TMP will be required approximately one year after the issuance of the certificate of occupancy to validate the relative effectiveness of the various strategies identified in the initial report.		
Site Development Division, Traffic Review Branch Section 4.7.3, Access and parking. A vehicular circulation plan should be provided for all aspects of the Project including valet patterns, self-park, and loading. Should there be an increase in the use of Rainbow Drive, the Kalia Road/Rainbow Drive intersection should be analyzed and included in the TIR. Provide a discussion of the proposed valet operations (i.e., where/how will valet service operate and how will they get to/from the drop-off/pick-up areas.	DPP	A vehicular circulation plan illustrating preliminary valet, self-park, and loading patterns is provided in *Figure 3.25* and discussed in *Sections 3.3.7.1* and *4.7.3.* As illustrated in the preliminary circulation plan, an increase in the use of Rainbow Drive and the Kalia Road/Rainbow Drive intersection is not anticipated. The porte cochere is anticipated to primarily serve valet and drop-off operations. An internal connection from the porte cochere to the Coral Ballroom parking garage is planned to be provided, and as such, valet or limited self-park vehicles being transferred from the porte cochere to the parking garage are not expected to exit onto Ala Moana Boulevard. Valet vehicles will return to the porte cochere from the parking garage via Lagoon Drive and Kahanamoku Street (*Figure 3.25*, Circulation Plan). An existing driveway along Ala Moana Boulevard will be restricted for ingress and egress of commercial freight vehicles only.
Traffic Impacts from Driveway Enhancement OPSD recommends that the Final SEIS discuss and illustrate how the existing driveway will enhance connection at the Village by allowing vehicles going to the Coral Ballroom parking garage to avoid Ala Moana Boulevard. The driveway improvements are intended to minimize traffic impacts on this busy throughfare, as stated in Section 3.3.6, page 3-30, Landscaping and Open Space Summary of the Draft SEIS	OPSD	A vehicular circulation plan is provided in *Figure 3.25* and discussed in *Section 3.3.7.1* and *4.7.3*. Valet vehicles and guests checking in with their own vehicles may access the Coral Ballroom parking garage from the porte cochere via a new connection provided on site. This will allow these vehicles to avoid Ala Moana Boulevard, thereby enhancing connection on site and minimizing traffic impacts on this busy thoroughfare.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Transportation Demand Management		
3. Transportation Demand Management (TDM) Strategies. The applicant must develop and submit a TDM Strategy to DTS, incorporating the following elements: i. Page 19 of the City's Transportation Impact Assessment (TIA) Guide requires sponsors of projects that generate 100 or more net new a.m. or p.m. peak period vehicle trips and contain ongoing operational strategies to submit an annual TDM compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City and County of Honolulu. The annual report should document the status and effectiveness of the transportation improvements including the actual vehicle trip reduction. The TIA Guide can be found at http://www4.honolulu.gov/docushare/dsweb/View/Collection-7723. ii. The DTS supports adding fewer parking stalls than calculated by the Institute of Transportation Engineers' Parking Generation Manual, and recommends the TDM strategies described on Pages 20-22 of the City's TIA Guide, including, but not limited to: providing subsidized transit passes to employees; informing staff and visitors of vanpool and car share programs to promote alternate modes of transportation; and parking cash out. iii. Inclusion of a bikeshare station area and/or designated drop zone, as a bus stop is present along the property frontage, as per the City and County of Honolulu's TIA Guide, Sections 4.1 and 4.2. iv. Applicant shall consider inclusion of car share spaces, consistent with the requirement for buildings within downtown with at least 50 units, as per the City and County of Honolulu's TIA Guide, Sections 4.1 and 4.2.	DTS	Response to DTS Comment i: The Applicants will comply with all requirements in connection with the entitlements process, and will provide the necessary materials when required. Response to DTS Comment ii: As described in *Section 3.3.8.1*, under the 2011 PD-R Permit, the Village was required to include 1,777 parking stalls, and provided 1,844 for an excess of 67 parking stalls. To meet anticipated demand of the hotel and retail uses at the AMB Tower, approximately 50 new parking stalls will be provided on Floors 2 through 4 of the tower. Additionally, the adjacent Coral Ballroom parking garage will be reconfigured to create approximately 36 new stalls. Therefore, following construction of the Project, a total of 1,930 parking stalls will be provided at the Village (1,880 at Coral Ballroom and 50 at the new AMB Tower). As stalls will be recaptured in the Coral Ballroom garage structure, the Project will construct fewer off-street parking stalls than would have been required under former off-street parking requirements. Additional stalls may be recaptured in the basement of the Coral Ballroom parking garage during large events, if needed. As noted throughout *Section 5.0*, existing TDM programs at the Village will be implemented for staff to encourage the use of public and active forms of transportation. Response to DTS Comment iii: Inclusion of a bikeshare station proximate to the HHV campus will be studied as Project design progresses. Response to DTS Comment iv: The Applicants will consider inclusion of carshare spaces, as required/feasible.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Multi-Modal Facilities		
Site Development Division, Traffic Review Branch Section 4.7.2, Multi-Modal Facilities. All internal walkways shall direct pedestrians to the corner of street intersections to minimize the potential for unintended mid-block crossings. A pedestrian circulation plan should also be included to provide accessibility and connectivity to the surrounding public sidewalks. Bicycle parking or bike racks shall be provided within this project and shall be located in a safe and convenient location.	DPP	A pedestrian circulation plan is provided in *Figure 3.26* and discussed in *Section 3.3.7.2*. All internal walkways will lead to public sidewalks. Based on current traffic patterns, pedestrians are expected to cross the street at Kalia Road/Ala Moana Boulevard and Hobron Lane/Ala Moana Boulevard. The Applicants will include appropriate wayfinding signage on the Project Site to guide pedestrians accordingly. Unintended pedestrian mid-block crossings in front of the Project are not anticipated, as this curving segment of Ala Moana Boulevard has a landscaped and fenced median, prohibiting pedestrian crossing. The Project will meet the City's bicycle parking requirements. Locations of bicycle parking will be determined as the Project progresses and reviewed as part of the PD-R and WSD Major Permit applications.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
1. Transit Improvements. i. The applicant shall construct a bus stop with transit amenities (shelter, seating, trash can, etc.) and associated infrastructure, either as an on-site pull-in/pull-out area or fronting the Project site on Ala Moana Boulevard. Contact the Department of Transportation Services – Transportation Mobility Division at TheBusStop@honolulu.gov for project coordination, bus stop location, and shelter specifications. ii. The developer, management entity, or owners' association shall adopt (i.e., be responsible for litter removal, cleaning and maintenance of bus stop shelter, benches and floor area) any existing or future bus stops fronting the Project site at no cost to the City.	DTS	The Applicants note that there are a total of five bus stop locations serving seven unique routes within a 0.25-mile radius of the Project Site. The nearest bus stops picking up east-bound passengers are located approximately 630 feet west the Project frontage in front of the Ilikai Hotel and Luxury Suites (Bus ID 884, Ala Moana Boulevard + Hobron Lane) and approximately 757 feet southeast of the site at the Grand Islander Bus Terminal (Bus ID 886, Kalia Road + Paoa Place). The nearest bus stops picking up westbound travelers are located directly across the street (Bus ID 879, Ala Moana Boulevard + Opp Kalia Road) and at approximately 650 feet west of the Project Site (Bus ID 880, Ala Moana Boulevard + Hobron Lane). Access to the surrounding bus stops is provided by pedestrian facilities along Ala Moana Boulevard and Kalia Road. Given the close proximity of existing bus stop facilities, an additional bus stop fronting the Project Site appears unnecessary. The Applicants will consult and coordinate with DTS, Transportation Mobility Division. However, the Applicants believe that DTS's request for a bus stop as part of a comment to the SEIS is outside the scope of the SEIS and is more appropriately discussed during the entitlement phase for the Project. The Applicants note that prior permit conditions concerning creation of a bus or trolley stop, or other traffic-related needs, near the Village proved infeasible to achieve due to differing ownership interests (City v. State) and conflicting opinions about responsibility. A fee was paid in lieu of constructing the bus stop to satisfy the prior permit condition. In light of past experience, the Applicants do not believe it would be feasible to construct another bus stop near the Project.
The Waikīkī Transportation Management Association ("WTMA") has reviewed the Hilton Hawaiian Village – Village Master Plan Improvements Ala Moana Boulevard Tower ("the Project") Draft Supplemental Environmental Impact Statement ("SEIS") submitted by the Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Ink. ("the Applicant") and would like to offer the following comments:	Waikiki Transportation Management Association Special Improvement District (WTMASID)	The Applicants acknowledge receipt of these comments and will coordinate directly with officials from the WTMASID as recommended by the WTMASID. In response to WTMASID Comments 1, 3, 4, and 5: The Applicant acknowledges these comments. The Applicants note that prior permit conditions concerning creation of a bus or trolley stop, or other traffic-related needs, near the Village proved infeasible to achieve due to differing ownership interests (City v. State). A fee was paid in lieu of constructing the bus stop to satisfy the prior permit condition.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
1. The Project's Draft SEIS Section 3.3.7.1, Vehicle Circulation, states "Primary vehicular access to the Project will be provided via a new porte cochere along Ala Moana Boulevard served by two one-way driveways." Draft SEIS Figures 3.17 to 3.21 offer renderings depicting this configuration that, if realized, would permanently prohibit the possibility of constructing the trolley stop previously discussed as a mitigation to the impacts upon historic street curb usage in this area. This historic commercial vehicle curb usage, and past efforts by Hilton Hawaiian Village to mitigate the loss of commercial vehicle curb utilization, should be addressed in the Final SEIS. This historical review should go back to the "Hilton Waikīkīan Site Traffic Impact Study" and include all subsequent technical reports and related correspondence with the approving or governing public agencies on this matter. 2. The Project's Draft SEIS, Section 3.3.8.2, Off-street Loading, refers to ROH, Section 21-6. The Draft SEIS successfully addresses all of the specifications of this ROH section. However, this ROH section provides requirements for commercial freight vehicles only, not passenger commercial vehicles. In the past, off-street loading for commercial vehicles at Hilton Hawaiian Village has included substantial numbers of both freight and passenger commercial vehicles. Often, the ability to access the Hilton Hawaiian Village campus, or the current land uses on the property to be added to the Hilton Hawaiian Village campus, has been so impeded that commercial vehicles have sought alternative means to conduct their business. Some of these alternative means include commercial passenger vehicles using Ala Moana Boulevard curb space to pick up or drop off visitors staying at the Hilton Hawaiian Village. Other alternative means have included freight commercial vehicles using Ala Moana Boulevard curb space to perform freight loading operations. It would be beneficial if the Applicant would voluntarily address the historical off-street loading operations for all commercial vehicles, the curb utilization of Ala Moana Boulevard by commercial vehicles, and how those past circumstances deemed to be undesirable will be addressed. This information would be valuable in providing for a complete Project Final SEIS.		In light of past experience, the Applicants do not believe it would be feasible to construct another bus stop near the Project. In response to WTMASID Comment 2: As discussed in *Section 3.3.8.2*, the new AMB Tower will provide off-street loading located at the rear of the building. Access to the loading area will be provided from a service lane that is connected to an existing two-way driveway along Ala Moana Boulevard. Access to the driveway will be restricted to commercial freight vehicles only. Provision of this designated off-street loading area should eliminate curbside utilization of Ala Moana Boulevard by commercial vehicles, and is therefore anticipated to improve traffic along this busy thoroughfare.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
3. Hilton representatives indicated the City and County of Honolulu (“the City”) received a payment from Hilton in 2014, or around that time, in lieu of the inability by Hilton to construct a trolley stop at the location now identified in the Draft SEIS as the primary access to the Project. Hilton and their representatives made every effort to construct the trolly stop. It was designed and submitted to the State Department of Transportation (“SDOT”) for approval. The SDOT required a Use and Occupancy Agreement (“Agreement”) eventually judged to be more appropriately executed by the City or those using the trolley stop. The Agreement would need to include responsibilities for maintenance, operations, and liability for the trolley stop. The City agreed to take responsibility for the construction of the trolley stop and coordinate with SDOT if Hilton would pay the City for the trolley stop construction in advance. At least one trolley stop user agreed to execute the required SDOT Agreement. Hilton made the payment to the City, but the City never used those funds to construct the trolley stop. It would be beneficial to confirm the accuracy and understandings reached during those discussions, what payment occurred, and how the Final SEIS will take into consideration any past obligations by any of the parties involved. If it is confirmed that a payment was made by a Hilton entity or its agent to the City for the purpose of constructing a trolley stop by the City at the location along Ala Moana Boulevard now being pre-empted by the Project; then, as part of the City’s approval of the Project’s Final SEIS, and in advance of that approval, the City should return such payment to Hilton.		

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
4. If the City returns the payment to the Hilton, it is requested that the payment amount be voluntarily applied to the purposes originally intended. However, since the construction of a trolley stop at the original location may not be possible, other options will be necessary. If Hilton is unable or unwilling to accept the return of the funds from the City, the WTMA is willing to accept them and apply them to solving the problems associated with the need for the trolley stop which still exists. WTMA has proposals warranting further investigation. If the Applicant agrees that official responses are not required in conjunction with the Final SEIS, but concurs the issues raised have merit and would like to discuss them further, the WTMA is glad to do so. All of the WTMA's comments are offered in the spirit of making the Hilton Hawaiian Village – Village Master Plan Improvements – the best they can be.		
Parking		
4. Parking. i. The DTS requires a Shared Parking Analysis, based on the Urban Land Institute (ULI) Shared Parking model, and a shared parking strategy. The analysis should include a qualitative description of how the applicant will monitor and manage opportunities for shared parking between the various users (guests, visitors and employees) of the Project building and the existing parking structure.	DTS	The Applicants have reviewed the Shared Parking (Third Edition) model by the Urban Land Institute. The analysis recommends shared parking techniques for traditional mixed use projects. The Project is not a traditional mixed use project, and includes hotel and ancillary uses only. As such, the ULI's model does not appear to be applicable. Currently, parking is available for use by all guests and employees. The TMP will address shared parking during the building permitting process. Refer to *Section 3.3.8.1* for further discussion on parking.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Intersection Impacts		
2. Traffic Impact Report (TIR). i. The applicant shall revise the TIR to include the intersection at Ala Moana Boulevard and Kalakaua Boulevard; as the traffic signal progression beyond the Ena Road/Kalia Road intersection will likely affect the Level of Service E on the Ena and Kalia Road approaches to Ala Moana Boulevard during the AM and PM peak hours (as shown on DSEIS, Table 4.4, Page 4-48).	DTS	The addition of site-generated trips to the intersection of Ala Moana Boulevard and Kalakaua Avenue represents a minimal increase in the overall entering traffic volumes (~2-3 percent) and is within the range of daily volume fluctuations along the surrounding roadways. As such, revision to the TIR does not appear to be necessary. In addition, given the recent changes at the intersection of Kalia Road and Ala Moana Boulevard in conjunction with the V2X Pilot Study which implements connected vehicle technology along this roadway, traffic progression along this corridor has already been impacted as traffic signal timing at this intersection was modified to accommodate an all-way pedestrian phase.
Site Development Division, Traffic Review Branch Continue to work with SDOT regarding any impacts to Ala Moana Boulevard and Kahanamoku Street and any of its intersections and access points.	DPP	The Project will continue to coordinate with HDOT as recommended.
General Development Standards		
Coastal Height Setbacks Pursuant to Revised Ordinances of Honolulu (ROH) Chapter 21, coastal height setbacks require tall buildings in Waikīkī special district to step back from the shoreline to maximize public safety and the sense of open space and public enjoyment associated with coastal resources. Given that the project site is situated approximately 800 feet inland from the shoreline, the Final SEIS should confirm with Department of Planning and Permitting (DPP), City and County of Honolulu (CCH), as to whether a Certified Shoreline (Survey) is required as listed under 1.10 Listing of Required Government Permits and Approvals for the proposed project.	OPSD	Coastal height setbacks articulated in Section 21-9.80-4 of the LUO are applicable to zoning lots along the shoreline. Accordingly, this is not applicable to the Project. The AMB Tower site is located approximately 800 feet from the nearest shoreline. The Applicants consulted with DPP regarding the need for a shoreline survey. A preliminary shoreline survey conducted in 2023 is provided in *Figure 4.9*. The shoreline survey will be submitted to the DLNR for certification, as and when required by applicable law.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Rooftop Height Exemption The Final SEIS shall consult and confirm with the DPP for the rooftop height exemption given that the maximum 350-foot allowable height of the AMB Tower will exclude permitted rooftop structures for mechanical appurtenances and utilitarian and architectural features. Please note that these building elements may be exempted only if the director finds they do not obstruct any significant views which are to be preserved, protected and enhanced and are consistent with the intent and objectives of the Waikīkī special district.	OPSD	DPP has confirmed that the maximum 350-foot allowable height of the AMB Tower may exclude permitted rooftop structures for mechanical appurtenances and utilitarian and architectural features, pursuant to Section 21-9.80-4(g)(1) of the LUO. As illustrated in the View Study (*Section 4.11*), public views as articulated in the PUC DP will be minimally affected. A majority of public views in the area already consist of buildings that define the urban form of Waikīkī. The AMB Tower is located inland (approximately 800 feet from the shoreline) and will blend with the surrounding urban environment in terms of its orientation, scale, height, form, and design. The Project will not be discernable from the Ala Wai Yacht Harbor, Punchbowl Lookout, Ala Moana Beach Park, or Kūhiō Beach Park. It will be visible from Fort DeRussy Park; however, the addition of the AMB Tower will have minimal impact on views from this location as it will be located between two existing buildings, as shown in *Figure 4.20*. Makai views from Fort DeRussy Park at Kālia Road and from Kalākaua Avenue are currently partially blocked by existing buildings.
Site Development Division, Subdivision Branch Section 4.4.3, Flood Hazards. As part of the City's climate adaptation strategy, and participation in the Community Rating System of the National flood Insurance Program, the DPP will be establishing a freeboard requirement of one foot above the base flood elevation for new and substantially improved buildings in the special flood hazard area. Please note that the Project will eventually be subject to a minimum flood elevation requirement of 8.0 feet (instead of 7.0 feet).	DPP	The AMB Tower will be designed with a finished floor elevation of 8.0 feet above msl, exceeding the current FEMA-designated base flood elevation of 7 feet (*Figures 3.12 through 3.15*).

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Open Space		
Open Space Concerns As the result of the proposed AMB Tower, the overall percentage of open space will be reduced to nearly the minimum requirement of 50% open space within a zoning lot set forth in the County Land Use Ordinance Standards. OPSD recommends that the Final Supplemental Environmental Impact Statement (Final SEIS) consider future modifications to the Hilton Hawaiian Village Master Plan to boost the overall open space percentage within the subject resort mixed use precinct	OPSD	As discussed in *Sections 3.3.6* and *3.3.9.2*, approximately half of the existing HHV campus is dedicated to at-grade open space. Existing open space at the Village is 51.2 percent. The amount of at-grade open space to be added on the Added Parcels is approximately 2,373.9 sf. After expansion of the Village campus and development of the AMB Tower, the resulting overall open space for HHV will be increased, not reduced. However, because less than 51.2 percent of the Added Parcels will be dedicated to open space, the overall percentage of the Village that is open space, after the addition of the new parcels, will be 50.4 percent (*Table 3.3*), but will continue to meet both the LUO's standards for the WSD Resort Mixed Use Precinct and applicable open-space requirements under the PD-R. The Project will generate higher quality at-grade open space along Ala Moana Boulevard as the primary ʻewa gateway to Waikīkī by including landscaping with water features and trees to provide intermittent shade, and a welcoming porte cochere. The use of green infrastructure features, such as a green wall on portions of the podium, may be incorporated where feasible.
Entitlements and Permitting		
2. The Applicant should determine applicability of the following HDOT permits and revise Table 1.3, as needed: • Permit to Perform Work Upon State Highways is required for any work within the State highway right-of-way (ROW) (Hawaii Revised Statutes [HRS] 264). The application includes the review and approval of construction drawings and a Traffic Management Plan. • Permit to Operate or Transport Oversize and/or Overweight Vehicles and Loads Over State Highways (HRS Chapter 291, Section 36). • Permit for the Occupancy and Use of State Highway ROW (HRS 264). Note: this is applicable to underground and overhead power lines, utility pipelines within the State highway ROW. The permit applications and instructions are available online at the following link: https://hidot.hawaii.gov/highways/home/doing-business/guide-to-permits	HDOT	As noted in *Section 4.7.1*, the Project will obtain the necessary street usage permits for construction-related work within the adjacent roadways. *Table 1.3* has been revised to include the applicable permits.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Land Use Permits Division, Urban Design Branch The proposed Project will require a Special Management Area Use Permit, and Special District (SD) Permit Major for Planned Development- Resort Amendment. The SD Permit should provide more discussion and details as to how the Project reflects a Hawaiian Sense of Place, generally supports the other objectives of the Waikiki Special District, and complies with the design guidelines of the District.	DPP	Following the completion of the environmental review process pursuant to HRS, Chapter 343 and HAR, Section 11-200.1, the Applicants will submit an application for an amendment to the HHV PD-R, an SMA Use Permit – Major, and a WSD Major Permit to DPP for review. The WSD Major Permit application will include additional discussion and Project detail with regards to its consistency and compliance with the objectives, general requirements, and design controls for the WSD Resort Mixed Use Precinct.
Water Requirements		
The existing water system is currently adequate to accommodate the proposed development. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come first-served basis. The Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application.	BWS	The Applicants acknowledge that a final decision on the availability of water will be confirmed upon submittal and approval of the building permit application. See *Section 4.8.2* for further discussion regarding water requirements for the Project.
When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission, and daily storage.	BWS	The Applicants acknowledge that BWS Water System Facilities Charges must be paid when water is made available to the Project.
We continue to request 10% voluntary water conservation of all customers until new sources are completed and require water conservation measures in all new developments. If water consumption significantly increases, progressively restrictive conservation measures may be required to avoid low water pressures and disruptions of water service.	BWS	The Applicants have planned water conservation measures will be implemented in design of the AMB Tower and may include, but not be limited to, the following: efficient irrigation systems such as a drip system and moisture sensors, utilization of nonpotable water for irrigation, drought tolerant plants, and the use of Water Sense-labeled ultra-low flow water fixtures and toilets (*Section 4.8.2*).

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
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. Prior to BWS approval of water availability, the developer is required to submit a Water Conservation and Reuse Plan for the Hilton Hawaiian Village development for BWS review and approval.	BWS	As discussed above, water conservation measures will be implemented in design of the AMB Tower and may include, but not be limited to, the following: efficient irrigation systems such as a drip system and moisture sensors, utilization of nonpotable water for irrigation, drought tolerant plants, and the use of Water Sense-labeled ultra-low flow water fixtures and toilets (*Section 4.8.2*). Prior to BWS approval of water availability, a Water Conservation and Reuse Plan for the Project will be submitted to BWS for review and approval.
High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.	BWS	The Applicants acknowledge that the Project will implement measures required for high-rise buildings.
The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.	BWS	The Applicants acknowledge that the Project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of building permits applications.
The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.	BWS	The Applicants acknowledge that construction plans will be submitted to BWS for approval, and the contractor will coordinate construction activities to minimize potential impacts to the water system.
The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.	BWS	The Applicants acknowledge it will coordinate on-site fire protection requirements with HFD.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Stormwater		
3. No additional stormwater runoff is permitted to the State highway ROW. Table 4.5 Stormwater Runoff Summary suggests there will be an increase in runoff of 0.35 cubic feet per second toward Ala Moana Boulevard. Various mitigation measures are proposed; however, the Final EIS should commit to avoiding additional stormwater runoff to Ala Moana Boulevard.	HDOT	The Applicants acknowledge the comment and the Project will be designed to meet all applicable regulations and code requirements regarding stormwater runoff. *Section 3.3* of the PER (*Appendix K*) has been revised accordingly.
Site Development Division, Civil Engineering Branch Section 4.8.1, Drainage. Compliance with the prevailing Rules Relating to Water Quality and Storm Drainage Standards will be verified during review of grading/construction plans.	DPP	As discussed in *Section 4.8.1*, the Project is designed to comply with the City's Rules Relating to Water Quality. The Applicants acknowledge that compliance will be verified during review of grading/construction plans.
Historic and Cultural Impacts		
The Office of Hawaiian Affairs (OHA) did put in a request to CSH for a copy of the AIS and BTP. Gina Farley of CSH responded by providing us a link to the AIS and indicating that a copy of the BTP would be provided when it is finished. See attached PDF of the email string. So, we are actively reviewing project materials and the consultations that have been ongoing so far. We encourage continued consultation with the OIBC and cultural descendants, and do certainly appreciate the past presentations and commitments made to the OIBC and cultural descendants regarding testing strategies. OHA would further appreciate any copies of SHPD comments and the draft BTP when it is ready. Should we have concerns regarding any of the reports, consultations, or SHPD comments, we will let you know.	OHA	The Applicants acknowledge that OHA is reviewing the AIS, which is currently in review and awaiting concurrence from SHPD. Copies of the Draft BTP and related SHPD correspondence will be provided to OHA when complete. The Applicants will continue to consult with OIBC and cultural descendants on the BTP as part of the results of the AIS.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Community Impacts		
The Waikīkī Improvement Association conceptually supports Park Hotels & Resorts' proposed Ala Moana Boulevard (AMB) Tower project. Upon receiving a briefing on the AMB Tower at our December 14, 2022 meeting, the WIA Board voted unanimously to support the project in concept as it aligns with our mission to improve, enrich and beautify Waikīkī for the benefit of residents and visitors alike. We look forward to receiving further updates about the AMB Tower as it moves through the permitting process.	Waikīkī Improvement Association (WIA)	The Applicants thank the WIA for its support, and will keep WIA updated as the Project progresses.
Our review indicates that the proposed project is located approximately three blocks from a property on ʻEna Road that the DCS leases out for the provision of special needs housing. We ask that this project take into consideration the health, safety, accessibility, and long-term wellbeing of people living nearby and/or involved with activities in the surrounding neighborhood.	City Department of Community Services	The Applicants acknowledge the comment. The Project will provide street/sidewalk improvements, and the existing sidewalk width of 8 feet along Ala Moana Boulevard will be maintained. As part of its purpose to revitalize Waikīkī's ʻewa gateway, the Project will incorporate landscaping with water features and a welcoming porte cochere. The planned improvements will provide an open, safe and attractive pedestrian experience that activates this key street frontage and supports connectivity with the HHV campus and the broader Waikīkī neighborhood. Planned ground floor retail will include an outdoor seating area and create a people-oriented and interactive streetscape. Project design will adhere to IBC, State, and City building code standards and ADA requirements to promote public safety. To ensure public safety in the Project vicinity during construction, the general contractor will implement all necessary BMPs. Additionally, the general contractor will provide adequate notification to area representatives, the neighborhood board, residents, businesses, emergency personnel, and Oahu Transit Services, Inc. to minimize impacts to pedestrian and/or vehicular traffic.
HPD anticipates short-term impacts in the area of the project due to the possible ingress and egress of construction vehicles, equipment, deliveries, and ongoing construction during the project. The HPD recommends that adequate notification be made to the Waikiki Neighborhood Board, businesses, and residents as that area is heavily populated with visitors and residents alike.	HPD	As recommended in the TIR prepared for the Project (*Appendix I*), the general contractor will prepare a CMP and provide adequate notification to parties recommended by HPD to minimize impacts to pedestrian and/or vehicular traffic. To ensure public safety in the Project vicinity during construction, the general contractor will implement all necessary BMPs.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
While our Board has previously commented on the merits and various anticipated impacts from this project during the environmental review and public input phase, we remain focused on the aspects of this project that will enhance the quality of life for and safety of the Waikiki residential community. At this gateway to Waikiki, we look for this project, through compliance with zoning regulations, land use and sustainability policies, to enhance the public realm with an aesthetically pleasing, pedestrian-safe space that adds value to the neighborhood as a sensible, sustainable, and resilient development. Waikiki is the economic engine for the State of Hawaii. The residential community of Waikiki is unique to the state in that it shares space with an even larger transient lodging population. As our community changes and upgrades to meet the demands of tourism, consideration of the residential community must be of foremost concern.	Waikiki NB No. 9	The Applicants acknowledge and thank the Neighborhood Board for the comment. Recognizing Waikīkī's unique social and economic function and the positive qualities that define its unique sense of place for residents and visitors alike, the Project intends to revitalize Waikīkī's ʻewa gateway, strengthen Hilton Hawaiian Village as a major and iconic destination in the important Waikīkī region, and to meet the expectations and demands of today's resort guest. Accordingly, the Project will create a modern resort facility for visitors and guests that connects seamlessly with the existing HHV campus. The tower will have a gracefully-curved glass façade following the curve of Ala Moana Boulevard, and building materials will contribute to a Hawaiian sense of place and complement the heritage of Waikīkī. Lush landscaping and water features will be incorporated along the Ala Moana Boulevard street frontage, and ground floor retail will include an outdoor seating area to activate the streetscape and create a people-oriented experience. The Hilton Hawaiian Village provides numerous public benefits as a result of its commitment to the community and its contributions to the economy. Under the existing PD-R and SMA approvals, the Village Master Plan provides various public benefits (*Table 1.2*). The AMB Tower will support existing public benefits, as well as provide new public benefits that will focus on elevating local artists and artisans, supporting local businesses, and revitalizing and reinvigorating the ʻewa gateway to Waikīkī. Although the new public benefits will be refined as the Project moves forward, benefits currently anticipated include enhanced public access and landscape improvements, a public art commitment, and a monthly public festival to celebrate local artists and artisans and Hawaiian culture. The proposed public benefits are intended to be enjoyed by all members of the community, including both residents and visitors. As discussed throughout *Section 5.0*, the Project is consistent with State and City zoning regulations and land use and sustainability policies. In addition, the Project is being proactively planned and designed to be sustainable and resilient, and to address the impacts of climate change and rising sea levels (*Sections 4.4.5 and 4.12*).

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
This development has an anticipated project schedule of 30 months. During the construction, please ensure all permit requirements are strictly met related to construction hours, street closure notifications and noise. This area contains a high density of residences and construction impacts are intensified in these areas.	Waikiki NB No. 9	The Applicants acknowledge that applicable permits will be obtained prior to construction. In accordance with permit requirements, construction BMPs will be implemented to mitigate for potential impacts and to ensure public safety, as summarized in *Table 1.1*. To ensure public safety in the Project vicinity during construction, the general contractor will implement all necessary BMPs. Additionally, the general contractor will provide adequate notification to area representatives, the neighborhood board, residents, businesses, emergency personnel, and Oahu Transit Services, Inc. to minimize impacts to pedestrian and/or vehicular traffic.
I am still opposed to this new tower. I am an owner in Lagoon Tower. I picked HHV because of its location and the beach. The beach gets more crowded every year without a new tower being added to the property. The homeless who "stay" on the beach don't help. Who wants to be near them. Lines are longer in the stores and restaurants. Rent the existing empty retail space first before creating new. If I was in certain rooms in Kalia Tower or the Grand Waikikian, I would be upset that the view I paid for will now be blocked. The only reason for this is corporate greed. It does nothing to enhance my Hawaiian experience. I spend good money to come to Hawaii every year and this really upsets me. The addition of the Grand Islander was bad enough. I know I'm wasting my time because this tower is probably a done deal anyway.	Barbara Snyder	The Applicants acknowledge the comment. The urbanized district of Waikīkī has been planned as the anchor resort area of the State. Continuing to focus resort development in Waikīkī is consistent with State and City policies to direct urban development away from critical areas reserved for conservation or other uses. As discussed in the Economic Impact Analysis prepared for the Project (*Appendix M*), it is estimated that the unmet lodging demand on Oʻahu through 2032 will total approximately 2,670 units, even if all proposed projects are built and before accounting for short-term rentals being closed by the City. The Project will directly fulfill the demonstrated demand for hotel guestrooms in the designated resort area of Waikīkī, while preserving areas identified for other uses. The AMB Tower will complement and enhance existing retail and recreational opportunities at the HHV campus. Amenities provided in the AMB Tower will be available for use by all HHV guests, and will include a recreation area, fitness center, and ground-floor retail. The Project will therefore expand amenities available within the Village campus. As an added benefit, the expansion of the HHV to include the Project will help to reinvigorate Ala Moana Boulevard and provide an open, safe and inviting pedestrian experience that supports connectivity within the HHV campus and the broader Waikīkī neighborhood. Additionally, the Project will evaluate opportunities to implement the HTA's DMAP for Oʻahu, including educational and community service programming for visitors.

Table 7.3: Draft SEIS Summary of Comments and Responses		
Comments	**Commenter**	**Responses**
Cumulative Impacts		
Public/Private Redevelopment in Waikīkī OPSD suggests that in the Final SEIS, the equivalent information listed in Section 4.13.1 Interrelationships and Cumulative Environmental Impacts of the Draft SEIS, assess potential incremental impacts that may result from the proposed action with a table and a location map of past, present and reasonably foreseeable future public and private redevelopments in Waikīkī under a temporal and spatial scope.	OPSD	The Applicants acknowledge the comment; however, the Applicants do not possess this information and it is not feasible for the Applicants to undertake such an analysis. The Applicants believe *Section 4.13.1* has adequately addressed potential cumulative impacts.
Fire Protection Requirements		
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 (46 meters) from fire department access roads as measured by an approved route around the exterior of the building or facility. (NFPA 1; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended.) 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; 2018 Edition, Section 18.2.3.2.1.) 2. Fire department access roads shall be in accordance with NFPA 1; 2018 Edition, Section 18.2.3.	HFD	The Applicants acknowledge that fire access roads will be designed in accordance with NFPA standards, and final construction drawings will be submitted to HFD as part of the building permitting process.
3. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1; 2018 Edition, Sections 18.3 and 18.4.	HFD	BWS has confirmed that the existing water system is currently adequate to accommodate the Project. The Applicants acknowledge that coordination with BWS and HFD will be conducted during the building permitting process to ensure that the water supply provided on-site is adequate to meet required flow levels for fire protection needs.
4. Submit civil drawings to the City and County of Honolulu's Department of Planning and Permitting and route them to the HFD for review and approval.	HFD	The Applicants acknowledge that final construction drawings will be submitted to DPP and HFD as part of the building permitting process.
5. The abovementioned provisions are required by the HFD. This project may necessitate that additional requirements to be met as determined by other agencies.	HFD	The Applicants acknowledge that additional requirements may be required, as determined by other agencies.

Section 8

References

Section 8

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Section 9

Preparers of the SEIS

Section 9

Preparers of the ~~Draft~~ Final SEIS

Below is a list of individuals that contributed to the preparation and completion of this Draft SEIS. The list includes the name of the individual and their role, or the name of the company and the subfield of professional expertise utilized to conduct and complete the SEIS.

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Jonathan Fuisz	Senior Vice President

Group 70 International, Inc.	**Title**
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Tracy Camuso	Principal Planner
Liana J. Takamine	Project Architect
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Silas Haglund	Graphics
Colin Park	Visual Analysis
Cookie Matsui	Visual Analysis
Reyna DePonte	Administrative Support

Technical Consultants	**Area of Specialty**
Y. Ebisu & Associates	Acoustic Assessment
Cultural Surveys Hawai‘i	Archaeological Inventory Survey
ARCADIS U.S., Inc.	Air Quality Assessment
Cultural Surveys Hawai‘i	Cultural Impact Assessment
CBRE	Economic and Fiscal Impact Analysis
Wilson Okamoto Corporation	Pedestrian Sidewalk Assessment
Rowan Williams Davies & Irwin Inc.	Pedestrian Wind Assessment
BCH, a Bowers + Kubota Consulting, Inc. Company	Preliminary Engineering Report
Wilson Okamoto Corporation	Traffic Impact Report
Tree Solutions and Environmental Consulting Services, Inc.	Tree Assessment

HILTON HAWAIIAN VILLAGE (HHV) VILLAGE MASTER PLAN IMPROVEMENTS - AMB TOWER

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT VOLUME II: APPENDICES

WAIKĪKĪ, OʻAHU, HAWAIʻI

APPLICANTS:

PARK ALA MOANA LLC

HILTON HAWAIIAN VILLAGE BEACH RESORT & SPA

PREPARED BY:

G70

JULY 2023

HILTON HAWAIIAN VILLAGE (HHV) VILLAGE MASTER PLAN IMPROVEMENTS - AMB TOWER

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT VOLUME II: APPENDICES

WAIKĪKĪ, OʻAHU, HAWAIʻI

TMKs (1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)

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JULY 2023

Appendices

A. <u>*Supplemental Environmental Impact Statement (SEIS) Comment Letters*</u>

<u>***A-1:*** </u>*Supplemental Environmental Impact Statement Preparation Notice (SEISPN) Comment Letters*

<u>***A-2****: Draft SEIS Comment Letters*</u>

B. Archaeological Inventory Survey (AIS) Report for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, *Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013*, September 2022. Cultural Surveys Hawaiʻi, Inc.

C. *Cultural Impact Assessment (CIA) for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013,* September 2022. Cultural Surveys Hawaiʻi, Inc.

D. *Hilton Hawaiian Village AMB Tower Pedestrian Wind Study*, August 23, 2022. RWDI.

E. *Air Quality Technical Report: Hilton Hawaiian Village AMB Tower*, September 2022. Arcadis.

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L. *Acoustic Study for the AMB Tower Project*, April 2022. Y. Ebisu & Associates.

M. *Economic Impact Analysis and Public Cost Benefit Assessment of the Proposed AMB Hotel Tower at Hilton Hawaiian Village*, September 25, 2022. CBRE, Inc.

Appendix A

Supplemental Environmental Impact Statement (SEIS) Comment Letters

Appendix A-1

Supplemental Environmental Impact Statement Preparation Notice (SEISPN) Comment Letters

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

November 8, 2021

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9, 13
(Waikīkī, Oʻahu, Hawaiʻi)

Dear Participant:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc., G70 is notifying you of the availability of the Supplemental Environmental Impact Statement Preparation Notice (SEISPN) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Island of Oʻahu, Hawaiʻi.

The SEISPN document can be downloaded from the website of the Office of Planning and Sustainable Development, Environmental Review Program online at this link: http://oeqc2.doh.hawaii.gov/Doc_Library/2021-11-08-OA-Supplemental-EISPN-Hilton-Hawaiian-Village-Master-Plan-Improvements-AMB-Tower.pdf.

Please provide comments via email, fax, or U.S. Mail. The 30-day comment period begins on November 8, 2021, and ends on December 8, 2021. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

The SEIS public scoping meeting will be held on Monday, November 15, 2021 at 5:30 PM. The meeting allows for agencies and the public to assist the Applicant in determining the range of actions, alternatives, impacts, significant issues and proposed mitigation to be considered in the Draft SEIS.

The SEIS public scoping meeting will be held virtually on the Zoom web platform at the following link: https://g70design.zoom.us/j/84608517672. We encourage you to download the Zoom platform prior to the meeting. If you have questions regarding the virtual scoping meeting, please contact us at ambtower@g70.design, and we can assist you.

Thank you for your participation in the environmental review process.

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

Federal

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaiʻi 96850

In Reply Refer To:
01EPIF00-2022-TA-0075

November 16, 2021

Mr. Jeffrey Overton
Group 70 International, Inc.
111 S. King St, Suite 170
Honolulu, Hawaiʻi 96813

Subject: Technical Assistance Regarding the Technical Assistance Regarding the Supplemental Environmental Impact Statement for the Hilton Village AMB Tower Project, Oʻahu

Dear Mr. Overton:

Thank you for your recent correspondence requesting technical assistance on species biology, habitat, or life requisite requirements. The Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) appreciates your efforts to avoid or minimize effects to protected species associated with your proposed actions. We provide the following information for your consideration under the authorities of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq*.), as amended.

Due to significant workload constraints, PIFWO is currently unable to specifically address your information request. The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area, in the '**Occurs In or Near Project Area**' column. Please note this list is not comprehensive and should only be used for general guidance. We have added to the PIFWO website, located at https://www.fws.gov/pacificislands/promo.cfm?id=177175840 recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality. If your project occurs on the island of Hawaiʻi, we have also enclosed our biosecurity protocol for activities in or near natural areas.

If you are representing a federal action agency, please request an official species list following the instructions at our PIFWO website

https://www.fws.gov/pacificislands/articles.cfm?id=149489558. You can find out if your project occurs in or near designated critical habitat here: https://ecos.fws.gov/ipac/.
Under section 7 of the ESA, it is the Federal agency's (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project "may affect" federally listed species or designated critical habitat. A "may affect, not likely to adversely affect" determination is appropriate when effects to federally listed species are expected to be discountable (i.e., unlikely to occur), insignificant (minimal in size), or completely beneficial. This conclusion requires written concurrence from the Service. If a "may affect, likely to adversely affect" determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have "no effect" on federally listed species and/or critical habitat do not require additional coordination or consultation.

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a "may affect, not likely to adversely affect" determination for your project. If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve endangered species. We regret that we cannot provide you with more specific protected species information for your project site. If you have questions that are not answered by the information on our website, you can contact PIFWO at (808) 792-9400 and ask to speak to the lead biologist for the island where your project is located.

Sincerely,

Island Team Manager
Pacific Islands Fish and Wildlife Office

Enclosures (2)

The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. For your guidance, we have marked species that may occur in the vicinity of your project, this list is not comprehensive and should only be used for general guidance.

Enclosure 1. Federal Status of Animal Species

Scientific Name	**Common Name / Hawaiian Name**	**Federal Status**	**May Occur In Project Area**
Mammals			
Lasiurus cinereus semotus	Hawaiian hoary bat/ʻōpeʻapeʻa	E	☒
Reptiles			
Chelonia mydas	green sea turtle/honu - Central North Pacific distinct population segment (DPS)	T	☐
Eretmochelys imbricata	hawksbill sea turtle/ honu ʻea or ʻea	E	☐
Birds			
Anas wyvilliana	Hawaiian duck/koloa	E	☐
Branta sandvicensis	Hawaiian goose/nēnē	T	☐
Fulica alai	Hawaiian coot/ʻalae keʻokeʻo	E	☐
Gallinula galeata sandvicensis	Hawaiian gallinule/ʻalae ʻula	E	☐
*Himantopus mexicanu*s *knudseni*	Hawaiian stilt/aeʻo	E	☐
Oceanodroma castro	band-rumped storm-petrel Hawaiʻi DPS/ʻakēʻakē	E	☒
Pterodroma sandwichensis	Hawaiian petrel/ʻuaʻu	E	☒
Puffinus auricularis newelli	Newell's shearwater/ʻaʻo	T	☒
Ardenna pacificus	wedge-tailed shearwater/ʻuaʻu kani	MBTA	☒
Buteo solitarius	Hawaiian hawk/ʻio	MBTA	☐
Gygis alba	white tern/manu-o-kū	MBTA	☒
Insects			
Manduca blackburni	Blackburn's sphinx moth	E	☐
Megalagrion pacificum	Pacific Hawaiian damselfly	E	☐
Megalagrion xanthomelas	orangeblack Hawaiian damselfly	E	☐
Megalagrion nigrohamatum nigrolineatum	blackline Hawaiian damselfly	E	☐

Enclosure 2. Federal Status of Plant Species

Plants				
Scientific Name	**Common Name or Hawaiian Name**	**Federal Status**	**Locations**	**May Occur In Project Area**
Abutilon menziesii	ko‘oloa‘ula	E	O, L, M, H	☐
Achyranthes splendens var. *rotundata*	‘ewa hinahina	E	O	☐
Bonamia menziesii	no common name	E	K, O, L, M, H	☐
Canavalia pubescens	‘āwikiwiki	E	Ni, K, L, M	☐
Colubrina oppositifolia	kauila	E	O, M, H	☐
Cyperus trachysanthos	pu‘uka‘a	E	K, O	☐
Gouania hillebrandii	no common name	E	Mo, M	☐
Hibiscus brackenridgei	ma‘o hau hele	E	O, Mo, L, M, H	☐
Ischaemum byrone	Hilo ischaemum	E	K, O, Mo, M, H	☐
Isodendrion pyrifolium	wahine noho kula	E	O, H	☐
Marsilea villosa	‘ihi‘ihi	E	Ni, O, Mo	☐
Mezoneuron kavaiense	uhiuhi	E	O, H	☐
Nothocestrum breviflorum	‘aiea	E	H	☐
Panicum fauriei var. *carteri*	Carter’s panicgrass	E	Molokini Islet (O), Mo	☐
Panicum niihauense	lau‘ehu	E	K	☐
Peucedanum sandwicense	makou	E	K, O, Mo, M	☐
Pleomele (Chrysodracon) hawaiiensis	halapepe	E	H	☐
Portulaca sclerocarpa	‘ihi	E	L, H	☐
Portulaca villosa	‘ihi	E	Le, Ka, Ni, O, Mo, M, L, H, Nihoa	☐
Pritchardia affinis (maideniana)	loulu	E	H	☐
Pseudognaphalium sandwicensium var. *molokaiense*	‘ena‘ena	E	Mo, M	☐
Scaevola coriacea	dwarf naupaka	E	Mo, M	☐
Schenkia (*Centaurium*) *sebaeoides*	‘āwiwi	E	K, O, Mo, L, M	☐
Sesbania tomentosa	‘ōhai	E	Ni, Ka, K, O, Mo, M, L, H, Necker, Nihoa	☐
Tetramolopium rockii	no common name	T	Mo	☐
Vigna o-wahuensis	no common name	E	Mo, M, L, H, Ka	☐

Location key: O=O‘ahu, K=Kaua‘i, M=Maui, H=island of Hawai‘i, L=Lāna‘i, Mo=Moloka‘i, Ka=Kaho‘olawe, Ni=Ni‘ihau, Le=Lehua

State of Hawai‘i

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

(P)21.214

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

DEC 20 2021

RECEIVED
DEC 23 2021
G70

Jeff Overton, Principal Planner
Group G70 International, Inc., dba G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Waikiki, Oahu, Hawaii
TMK: (1) 2-6-009: 004, 005, 006, 007, 009, and 013

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Ms. Gayle Takasaki of the Planning Branch at 586-0584.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

GT:mo

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

JOSH GREEN
LT GOVERNOR
STATE OF HAWAII

WILLIAM J. AILA, JR
CHAIRMAN
HAWAIIAN HOMES COMMISSION

TYLER I. GOMES
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P O BOX 1879
HONOLULU, HAWAII 96805

November 19, 2021 Ref.:PO-21-342

Jeffrey Overton
Principal Planner
Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
ambtower@g70.design

Aloha Mr. Overton:

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village Master Plan Improvements, AMB Tower
Waikīkī, Kona Ahupua'a, O'ahu, Hawai'i
TMK: (1) 2-6-9: 4, 5, 6, 7, 9, 13

The Department of Hawaiian Home Lands acknowledges receiving the request for comments on the above-cited project. After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Lands, we do not anticipate any impacts to our lands or beneficiaries from the project.

However, we highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

Mahalo for the opportunity to provide comments. If you have any questions, please call Andrew H. Choy, Acting Planning Program Manager at (808)620-9481, or contact via email at andrew.h.choy@hawaii.gov.

Me ke aloha,

William J. Ailā, Jr., Chairman
Hawaiian Homes Commission

Noelle Besa Wright

From:	Cab General <Cab.General@doh.hawaii.gov>
Sent:	Friday, December 10, 2021 8:16 AM
To:	219009-01 AMB Tower Park Hotels
Subject:	Hilton Hawaiian Village - Village Master Plan Improvements AMB Tower

Aloha

Thank you for the opportunity to provide comments on the subject project. I apologize for sending this past the deadline.
Please see our standard comments at:

https://health.hawaii.gov/cab/files/2019/08/Standard-Comments-Clean-Air-Branch-2019.pdf

Please let me know if you have any Questions

Lisa M.M. Wallace
EHS QA Officer
Clean Air Branch
Environmental Health Office
Hilo, Hawaii 96720

Standard Comments for Land Use Reviews
Clean Air Branch
Hawaii State Department of Health

If your proposed project:

<u>Requires an Air Pollution Control Permit</u>

You must obtain an air pollution control permit from the Clean Air Branch and comply with all applicable conditions and requirements. If you do not know if you need an air pollution control permit, please contact the Permitting Section of the Clean Air Branch.

<u>Includes construction or demolition activities that involve asbestos</u>

You must contact the Asbestos Abatement Office in the Indoor and Radiological Health Branch.

<u>Has the potential to generate fugitive dust</u>

You must control the generation of all airborne, visible fugitive dust. Note that construction activities that occur near to existing residences, business, public areas and major thoroughfares exacerbate potential dust concerns. It is recommended that a dust control management plan be developed which identifies and mitigates all activities that may generate airborne, visible fugitive dust. The plan, which does *not* require Department of Health approval, should help you recognize and minimize potential airborne, visible fugitive dust problems.

Construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust. In addition, for cases involving mixed land use, we strongly recommend that buffer zones be established, wherever possible, in order to alleviate potential nuisance complaints.

You should provide reasonable measures to control airborne, visible fugitive dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

a) Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
b) Providing an adequate water source at the site prior to start-up of construction activities;
c) Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
d) Minimizing airborne, visible fugitive dust from shoulders and access roads;
e) Providing reasonable dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
f) Controlling airborne, visible fugitive dust from debris being hauled away from the project site.

If you have questions about fugitive dust, please contact the Enforcement Section of the Clean Air Branch

Clean Air Branch (808) 586-4200 cab@doh.hawaii.gov	Indoor Radiological Health Branch (808) 586-4700

April 1, 2019

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

11007CEC.21

November 16, 2021

Mr. Jeffrey H. Overton, AICP, LEED AP
Principal Planner
G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Comments on Supplemental Environmental Impact Statement Preparation Notice for Hilton Hawaiian Village AMB Tower Waikiki, Island of Oahu, Hawaii Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9 and 13

Please refer to our letter dated October 21, 202 (No. 10019CEC.21). This letter is to inform you that the Department of Health (DOH), Clean Water Branch (CWB) will no longer be responding directly to requests for comments on the following documents (Pre-consultation, Early Consultation, Preparation Notice, Draft, Final, Addendums, and/or Supplements):

- Environmental Impact Statements (EIS)
- Environmental Assessments (EA)
- Stream Channel Alteration Permits (SCAP)
- Stream Diversion Works Permits (SDWP)
- Well Construction/Pump Installation Permits
- Conservation District Use Applications (CDUA)
- Special Management Area Permits (SMAP)
- Shoreline Setback Areas (SSA)

Please download the CWB Standard Comments Memo located at our website: https://health.hawaii.gov/cwb/files/2018/05/Memo-CWB-Standard-Comments.pdf as our standard comments regarding your project's responsibilities to maintain water quality and any necessary permitting. The DOH-CWB will not provide direct responses to these requests. Agencies and/or project coordinators may download and use this memo as the CWB's official comments.

If you have any questions, please visit our website at: http://health.hawaii.gov/cwb/, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,

Alec Wong

ALEC WONG, P.E., CHIEF
Clean Water Branch

EC:na

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
EMD/CWB

05023PDCL.18

May 10, 2018

MEMORANDUM

SUBJECT: Clean Water Branch Standard Project Comments

TO: Agencies and Project Owners

FROM: ALEC WONG, P.E., CHIEF Alec Wong
Clean Water Branch

This memo is provided for your information and sharing. You are encouraged to share this memo with your project partners, team members, and appropriate personnel.

The Department of Health (DOH), Clean Water Branch (CWB) will no longer be responding directly to requests for comments on the following documents (Pre-consultation, Early Consultation, Preparation Notice, Draft, Final, Addendums, and/or Supplements):

- Environmental Impact Statements (EIS)
- Environmental Assessments (EA)
- Stream Channel Alteration Permits (SCAP)
- Stream Diversion Works Permits (SDWP)
- Well Construction/Pump Installation Permits
- Conservation District Use Applications (CDUA)
- Special Management Area Permits (SMAP)
- Shoreline Setback Areas (SSA)

For agencies or project owners requiring DOH-CWB comments for one or more of these documents, please utilize the DOH-CWB Standard Comments below regarding your project's responsibilities to maintain water quality and any necessary permitting. DOH-CWB Standard Comments are also available on the DOH-CWB website located at: http://health.hawaii.gov/cwb/.

DOH-CWB Standard Comments

The following information is for agencies and/or project owners who are seeking comments regarding environmental compliance for their projects with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program.

1. Any project and its potential impacts to State waters must meet the following criteria:

   a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.

   b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

   c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for point source water pollutant discharges into State surface waters (HAR, Chapter 11-55). Point source means any discernible, confined, and discrete conveyance from which pollutants are or may be discharged.

   For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for a NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee ($1,000 for an individual NPDES permit or $500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: https://eha-cloud.doh.hawaii.gov/epermit/. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

Some of the activities requiring NPDES permit coverage include, but, are not limited to:

a. Discharges of Storm Water

   i. For Construction Activities Disturbing One (1) or More Acres of Total Land Area.

      By HAR Chapter 11-55, an NPDES permit is required before the start of the construction activities that result in the disturbance of one (1) or more acres of total land area, including clearing, grading, and excavation. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale.

   ii. For Industrial Activities for facilities with primary Standard Industrial Classification (SIC) Codes regulated in the Code of Federal Regulations (CFR) at 40 CFR 122.26(b)(14)(i) through (ix) and (xi). If a facility has more than one SIC code, the activity that generates the greatest revenue is the primary SIC code. If revenue information is unavailable, use the SIC code for the activity with the most employees. If employee information is also unavailable, use the SIC code for the activity with the greatest production.

   iii. From a small Municipal Separate Storm Sewer System (along with certain non-storm water discharges).

b. Discharges to State surface waters from construction activity hydrotesting or dewatering

c. Discharges to State surface waters from cooling water applications

d. Discharges to State surface waters from the application of pesticides (including insecticides, herbicides, fungicides, rodenticides, and various other substances to control pest) to State waters

e. Well-Drilling Activities

   Any discharge to State surface waters of treated process wastewater effluent associated with well drilling activities is regulated by HAR Chapter 11-55. Discharges of treated process wastewater effluent (including well drilling slurries, lubricating fluids wastewater, and well purge wastewater) to State surface waters requires NPDES permit coverage.

NPDES permit coverage is not required for well pump testing. For well pump testing, the discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices (BMPs) shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of the storm drain prior to discharge. Furthermore, BMPs shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.

3. A Section 401 Water Quality Certification (WQC) is required if your project/activity:

   a. Requires a federal permit, license, certificate, approval, registration, or statutory exemption; and

   b. May result in a discharge into State waters. The term "discharge" is defined in Clean Water Act, Subsections 502(16), 502(12), and 502(6).

   Examples of "discharge" include, but are not limited to, allowing the following pollutants to enter State waters from the surface or in-water: solid waste, rock/sand/dirt, heat, sewage, construction debris, any underwater work, chemicals, fugitive dust/spray paint, agricultural wastes, biological materials, industrial wastes, concrete/sealant/epoxy, and washing/cleaning effluent.

   Determine if your project/activity requires a federal permit, license, certificate, approval, registration, or statutory exemption by contacting the appropriate federal agencies (e.g. Department of the Army (DA), U.S. Army Corps of Engineers (COE), Pacific Ocean Division Honolulu District Office (POH) Tel: (808) 835-4303; U.S. Environmental Protection Agency, Region 9 Tel: (415) 947-8021; Federal Energy Regulatory Commission Tel: (866) 208-3372; U.S. Coast Guard Office of Bridge Programs Tel: (202) 372-1511). If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch regarding their permitting requirements.

   To request a Section 401 WQC, you must complete and submit the Section 401 WQC application. This application is available on the e-Permitting Portal website located at: https://eha-cloud.doh.hawaii.gov/epermit/.

Please see HAR, Chapter 11-54 for the State's Water Quality Standards and for more information on the Section 401 WQC. HAR, Chapter 11-54 is available on the CWB website at: http://health.hawaii.gov/cwb/.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of $25,000 per day per violation and up to two (2) years in jail.

5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:

    a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

    b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g. minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.

    c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.

d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.

e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
SAFE DRINKING WATER BRANCH
ULUAKUPU BLDG. 4
2385 WAIMANO HOME ROAD, SUITE 110
PEARL CITY, HI 96782

In reply, please refer to:
File: SDWB
SDWBStdCmts2020.docx

November 27, 2020

MEMORANDUM

TO: AGENCIES AND PROJECT OWNERS

FROM: JOANNA L. SETO, P.E., CHIEF
Safe Drinking Water Branch

Joanna L. Seto

SUBJECT: SAFE DRINKING WATER BRANCH STANDARD PROJECT COMMENTS

This memo is provided for your information and sharing. You are encouraged to share this memo with your project partners, team members, and appropriate personnel.

The Department of Health (DOH), Safe Drinking Water Branch (SDWB) will no longer be responding directly to requests for comments on the following documents (Pre-consultation, Early Consultation, Preparation Notice, Draft, Final, Addendums, and/or Supplements):

- Environmental Impact Statements (EIS)
- Environmental Assessments (EA)
- Conservation District Use Applications (CDUA)
- Drinking Water Operator Certification
- Source Water Assessment and Protection
- Underground Injection Control (UIC) Wells

For agencies or project owners requiring DOH-SDWB comments for one or more of these documents, please utilize the DOH-SDWB Standard Comments below regarding your project's responsibilities to maintain drinking water quality and any necessary permitting. DOH-SDWB Standard Comments are also available on the DOH-SDWB website located at: https://health.hawaii.gov/sdwb/.

DOH-SDWB Standard Comments

The following information is for agencies and/or project owners who are seeking comments regarding environmental compliance for their projects in the areas of: 1) Public Water Systems; 2) Underground Injection Control; 3) Groundwater Protection, and 4) Drinking Water State Revolving Fund with the Hawaii Administrative Rules (HAR), Chapters 11-19, 11-20, 11-21, 11-23, 11-23A, 11-25, and 11-65. You may be responsible for fulfilling additional requirements related to our program.

1. Public Water System Supervision

   a. Federal and state regulations define a public water system as a system that regularly serves an average of 25 or more individuals at least 60 days per year or has at least 15 service connections providing water for human consumption. All public water system owners and operators are required to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, "Rules Relating to Public Water Systems."

   b. All new public water systems are required to demonstrate and meet minimum capacity requirements prior to their establishment. This requirement involves demonstration that the system will have satisfactory technical, managerial, and financial capacity to enable the system to comply with safe drinking water standards and requirements.

   c. Projects that propose development of new sources of drinking water serving or proposed to serve a public water system must comply with the terms of HAR 11-20-29, entitled "Use of new sources of raw water for public water systems." This section requires that all new public water system sources be approved by the Director of Health (Director) prior to its use. Such approval is based primarily upon the submission of a satisfactory engineering report, which addresses the requirements set in HAR Section 11-20-29.

   d. The engineering report must identify all potential sources of contamination and evaluate alternative control measures, which could be implemented to reduce or eliminate the potential for contamination, including treatment of the water source. In addition, water quality analyses for all regulated contaminants, performed by a laboratory certified by the DOH State Laboratories Division (https://health.hawaii.gov/sdwb/approvedlablist/), must be submitted as part of the report to demonstrate compliance with all drinking water standards. Additional parameters may be required by the Director for this submittal or additional tests required upon his or her review of the information submitted.

   e. All sources of public water systems must undergo a source water assessment, which will delineate a source water protection area. This process is preliminary to the creation of a source water protection plan for that source and activities which will take place to protect the drinking water source.

   f. Projects proposing to develop new public water systems or proposing substantial modifications to existing public water systems must receive approval by the Director prior to construction of the proposed system or modification. These projects include treatment, storage, and distribution systems of public water systems. The approval authority for projects owned and operated by a County Board or Department of Water or Water Supply has been delegated to them.

g. All public water systems must be operated by certified distribution system and water treatment plant operators as defined by HAR Chapter 11-25, entitled "Rules Relating to Certification of Public Water System Operators."

h. All projects which propose the use of dual water systems or the use of a non- potable water system in proximity to an existing drinking water system to meet irrigation or other needs must be carefully designed and operated these systems to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the non-potable system to the drinking water system. The two (2) systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the drinking water supply. In addition, backflow devices must be tested annually to assure their proper operation. Further, all non-potable spigots and irrigated areas should be clearly labeled with warning signs to prevent the inadvertent consumption on non-potable water. Compliance with HAR Chapter 11-21, entitled "Cross-Connection and Backflow Control" is also required.

i. All projects which propose the establishment of a potentially contaminating activity (as identified in the Hawai`i Source Water Assessment Plan) within the source water protection area of an existing source of water for a public water supply should address this potential and activities that will be implemented to prevent or reduce the potential for contamination of the drinking water source.

For further information concerning the application of capacity, new source approval, operator certification, source water assessment, backflow/cross-connection prevention or other regulated public water system programs, please contact the Safe Drinking Water Branch Engineering Section at (808) 586-4258 or email sdwb@doh.hawaii.gov.

2. Underground Injection Control (UIC) Program

a. Injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under HAR Chapter 11-23 entitled "Underground Injection Control." The DOH's approval must be first obtained before any injection well construction commences. A UIC permit must be issued before any injection well operation occurs.

b. Authorization to use an injection well is granted when a UIC permit is issued to the injection well facility. The UIC permit contains discharge and operation limitations, monitoring and reporting requirements, and other facility management and operational conditions. A complete UIC permit application form found at https://eha-cloud.doh.hawaii.gov/epermit/Home/9034789e-2918-4f30-82a2-9a5940e467f2 is needed to apply for a UIC permit.

c. A UIC permit can have a valid duration of up to five (5) years. Permit renewal is needed to keep an expiring permit valid for another term.

d. The UIC line delineates the extent of our underground sources of drinking water and is used to define areas where certain types of injection wells are prohibited. The UIC line is plotted on official UIC maps available for review at SDWB or by contacting the UIC program. Online interpretations of the UIC line maps exists and should be used with

caution as they are not the official maps. One website hosting an interpretation of the UIC line map is at the following:
https://geoportal.hawaii.gov/datasets/4597dde2703a4e539f51588531e48101_20

e. If your project involves the construction of an injection well, you must first obtain the DOH's written approval to construct the injection well before any construction commences. The primary purpose of HAR, Chapter 11-23 is to protect underground sources of drinking water from injection well contamination. Written approval is obtained by filing an application for a UIC permit. You may submit your permit application via electronic filing (preferred method) through the DOH website at http://eha cloud.hawaii.gov/epermit or submit a hard copy permit application to:

Safe Drinking Water Branch
Uluakupu Bldg. 4
2385 Waimano Home Road, Suite 110
Pearl City, Hawaii 96782-1400

f. Areas mauka of the UIC line are considered to overlie underground sources of drinking water. Therefore, no new subclass A injection wells, such as sewage injection wells that receive greater than 1,000 gallons per day, will be allowed to be constructed.

g. New sewage injection wells have been further prohibited effective July 5, 2018. Hawaii Revised Statutes 340E-2(e) states *"The director shall promulgate regulations establishing an underground injection control program. Such program shall prohibit any underground injection which is not authorized by a permit issued by the director; provided that the director shall not issue permits for the construction of sewage wastewater injection wells unless alternative wastewater disposal options are not available, feasible, or practical;"*

h. New storm water drainage injection well construction must be sited beyond one-quarter mile of a drinking water well. If you intend to construct a drinking water well, be careful to site all drainage injection wells at least one-quarter mile away from the drinking water source well.

For further information about the UIC permit and the UIC Program, please contact UIC staff at (808) 586-4258 or email at sdwb@doh.hawaii.gov.

3. Drinking Water State Revolving Fund Program

The Drinking Water State Revolving Fund (DWSRF) is a federally-capitalized loan program that provides low interest loans to regulated community water systems in the State of Hawaii for their drinking water infrastructure projects. If you would like more information regarding DWSRF eligibility, financing options, etc., you may visit the DWSRF website at https://health.hawaii.gov/sdwb/drinking-water-state-revolving-fund/ or contact Ms. Joan Corrigan at joan.corrigan@doh.hawaii.gov.

4. Private Water Wells

   a. **WARNING!** As the owner of a privately-owned well, you should **NOT** assume that water from your well is safe for consumption. It is your responsibility to make sure that your well water is safe to drink. The only way to do this is to have your well regularly tested for bacteriological and chemical contaminants.

   b. There are no regulations controlling water quality in private wells serving individual residences as there are for public water systems (public or privately-owned utilities supplying water to 25 or more people or 15 service connections). In other words, there are no enforceable limits for contaminants and no requirements for regular testing. Private wells are often found in rural areas, where many activities such as onsite wastewater disposal can contaminate the ground water.

   c. U.S. Environmental Protection Agency (EPA) Recommendations: The EPA recommends that private well owners test their well water each year for such contaminants as Total Coliform bacteria, Nitrates, as well as any other contaminants that may be of concern in your area. More frequent testing may be appropriate if you suspect a problem. EPA also suggests that you consider testing for pesticides, organic chemicals, and heavy metals before using it for the first time. Please refer to the EPA website on Private Drinking Water Wells at http://www.epa.gov/privatewells.

   d. Other Contaminants: Water testing can be very expensive. It is important that you spend time to identify what other potential contaminants may be of concern. Please refer to the EPA website on Private Drinking Water Wells for more information. Be aware of what and how you use and dispose of household and garden chemicals. Also determine the location of nearby septic tanks or cesspools, and agricultural or industrial activities in the area. General information on known chemical contamination of ground water in Hawaii can be found at the DOH website http://health.hawaii.gov/sdwb/groundwater-contamination-viewer.

   e. Laboratories: Whenever possible, utilize a laboratory that is certified or approved for the specific drinking water tests and carefully follow their instructions for collecting, storing, and transporting the samples. Be sure to ask the lab to use EPA approved methods for drinking water analysis. A list of Drinking Water Laboratories Certified or Approved by the Hawaii Department of Health, State Laboratories Division can be found at https://health.hawaii.gov/sdwb/approvedlablist/. As lab certification status changes constantly, confirm their status when you contact the lab. Please note that the list is limited to currently regulated contaminants in public water systems.

   f. Results: Once the lab provides you with the test results, you will be in a better position to determine if your well water is safe to drink or what contaminant you need to treat for. Generally, you should compare the results with Federal (https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations) and State (http://health.hawaii.gov/sdwb/files/2014/07/MCL-Fct-2014-07-10.pdf) Maximum Contaminant Level (MCL) drinking water standards. Where your test results are greater than the Federal or State maximum contaminant levels, your well water should be considered as unsafe for consumption.

From:	Cathcart, MaryHelen <MaryHelen.Cathcart@doh.hawaii.gov>
Sent:	Tuesday, November 23, 2021 12:01 PM
To:	219009-01 AMB Tower Park Hotels
Cc:	Miyahira, Michael M; Uehara, Norris N; Birdsall, Megan
Subject:	RE: Supplemental EIS Preparation Notice Hilton Hawaiian Village AMB Tower

Good afternoon Mr. Jeffrey Overton,

The Department of Health (DOH), Safe Drinking Water Branch (SDWB) acknowledges receipt of your letter dated, November 8, 2021, regarding the Supplement Environmental Impact Statement Preparation Notice, Hilton Hawaiian Village AMB Tower, Tax Map Key (TMK): (1)2-6-9: 4,5,6,7,9,13, (Waikiki, Oahu, Hawaii.) We no longer respond directly to requests for comments on this type of action.

Please utilize the DOH-SDWB Standard Comments on the DOH-SDWB website at https://health.hawaii.gov/sdwb/ (direct link at https://health.hawaii.gov/sdwb/files/2020/11/SDWBStdCmts2020.docx-signed.pdf) regarding your project's responsibilities to maintain drinking water quality and any necessary permitting. Thank you for your understanding and cooperation.

If there are any questions, please contact Mr. Michael M. Miyahira, P.E., Supervisor of the Engineering Section, at (808) 586-4258 or Michael.miyahira@doh.hawaii.gov.

Thank you

From: shwb <shwb@doh.hawaii.gov>
Sent: Tuesday, November 16, 2021 2:51 PM
To: 219009-01 AMB Tower Park Hotels
Subject: Comments for Supplemental EIS Preparation Notice Hilton Hawaiian AMB Tower
Attachments: Supplemental EIS Preparation Notice Hilton Hawaiian Village AMB Tower.pdf; SHWB STANDARD COMMENTS.pdf

Aloha Jeffrey Overton,

Attached is our Branch's comment for Hilton Hawaiian AMB Tower.

Solid and Hazardous Waste Branch
State of Hawaii | Department of Health
2827 Waimano Home Road, #100, Pearl City, HI 96782
Phone Number: (808) 586-4226 | Fax Number: (808) 586-7509

G70

O 11-12-2021
EMD brancher
direct reply

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

November 8, 2021

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9, 13
(Waikīkī, O'ahu, Hawai'i)

Dear Participant:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc., G70 is notifying you of the availability of the Supplemental Environmental Impact Statement Preparation Notice (SEISPN) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Island of O'ahu, Hawai'i.

The SEISPN document can be downloaded from the website of the Office of Planning and Sustainable Development, Environmental Review Program online at this link: http://oeqc2.doh.hawaii.gov/Doc_Library/2021-11-08-OA-Supplemental-EISPN-Hilton-Hawaiian-Village-Master-Plan-Improvements-AMB-Tower.pdf.

Please provide comments via email, fax, or U.S. Mail. The 30-day comment period begins on November 8, 2021, and ends on December 8, 2021. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

The SEIS public scoping meeting will be held on Monday, November 15, 2021 at 5:30 PM. The meeting allows for agencies and the public to assist the Applicant in determining the range of actions, alternatives, impacts, significant issues and proposed mitigation to be considered in the Draft SEIS.

The SEIS public scoping meeting will be held virtually on the Zoom web platform at the following link: https://g70design.zoom.us/j/84608517672. We encourage you to download the Zoom platform prior to the meeting. If you have questions regarding the virtual scoping meeting, please contact us at ambtower@g70.design, and we can assist you.

Thank you for your participation in the environmental review process.

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

,..

Solid and Hazardous Waste Branch Standard Comments

November 26, 2018

The Solid and Hazardous Waste Branch administers programs in the areas of:

1) Management of hazardous waste;
2) Management of solid waste; and
3) Regulation of underground storage tanks.

Our general comments on projects are below. For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226. All chapters of the Hawaii Revised Statutes (HRS) are at https://www.capitol.hawaii .gov/hrscurrent/.

Hazardous Waste Program

- The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR) [http://health.hawaii.go v/shwb/hwrules/]. These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.

Solid Waste Section

- The Solid Waste Section (SWS) enforces laws and regulations contained in chapters 342H and 3421, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" [http://health.hawaii .gov/shwb/solid-waste/].

- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation and transfer systems.

- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, and salvage facilities. Medical waste, infectious waste, and foreign waste treatment facilities are also included.

- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

Solid and Hazardous Waste Branch Standard Comments

- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. The project developer is highly encouraged to develop a solid waste management plan to ensure proper handling of wastes and divert recyclables from being landfilled. Ideally, the plan would seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Office of Solid Waste Management

- The Office of Solid Waste Management (OSWM) administers statewide integrated solid waste management planning activities, which apply to the counties, as well as various recycling programs, e.g. the Glass Advance Disposal Fee (ADF) and Deposit Beverage Container (DBC) Programs. Management of the DBC Program is conducted pursuant to chapter 342G, HRS, which contains compliance and enforcement provisions, and chapter 11-282, HAR, "Deposit Beverage Recycling" [http://health.hawaii.gov/hi5/rules-regulations-additional- links/]. OSWM is also responsible for limited enforcement and compliance of solid waste management facilities that operate primarily as certified DBC redemption centers pursuant to chapter 342H, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" [http://health.hawaii.gov/shwb/solid-waste/]. Authority for the integrated solid waste management planning and ADF programs is contained in chapter 342G, HRS.

- Glass Advance Disposal Fee Program: Businesses that import glass containers into Hawaii are required to register with the Department of Health and pay a 1.5 cent per container fee. Fee revenue is distributed to the counties for the operation of glass recycling programs.

- Deposit Beverage Container Program: Business that manufacture or import deposit beverage containers into Hawaii are required to register with the Department of Health and pay the five-cent deposit and one cent container fee on each deposit container. Deposits and fees are deposited into a special fund and are used to reimburse DBC redemption center refunds paid to consumers; and to pay handling fees to redemption/recycling companies to process and recycle collected deposit beverage containers; and to pay program administrative costs.

- The Department of Health reimburses and pays an associated handling fee for the redemption of deposit beverage containers (DBC). These transactions are conducted only with certified redemption centers. Certification requires obtaining a solid waste management permit from the SWS (which addresses environmental issues) and a certification from the DBC program (which standardizes the redemption process).

- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes and divert recyclables from being landfilled. The project developer is highly encouraged to develop a solid waste management plan to ensure proper handling of wastes and divert recyclables from being landfilled. Ideally, the plan would seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

- Solid waste management plans seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Underground Storage Tank Program

- The state's underground storage tank (UST) regulations, found in chapter 11-280.1, HAR [http://health.hawaii.gov/shwb/underg round-storage-tanks/], include specific requirements that UST owners and operators must meet when installing, operating, and permanently closing their UST systems and addressing releases from USTs. Violations are subject to penalties under chapter 11-280.1, HAR, and chapter 342L, HRS.

- A permit is required prior to the installation and operation of a UST. Any new UST system that will be installed must have secondary containment with interstitial monitoring. Refer to subchapters 2, 3, 4, and 12 of chapter 11-280.1, HAR. The installation permit expires 1 year from the date of issuance. The operation permit expires 5 years from the date of issuance.

- §11-280.1-50, HAR, requires owners and operators of USTs or tank systems to notify DOH within twenty-four (24) hours and follow the procedures in§ 11-280.1-52, HAR, if any of the following occur, with specific exceptions found in the rules:
  1) The discovery by any person of evidence of regulated substances which may have been released at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, or nearby surface water);
  2) Unusual UST system operating conditions observed or experienced (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST, or an unexplained presence of water in the tank); or
  3) Monitoring results from a release detection method required under §§11-280.1-41 or 11-280 .1-42 indicate a release may have occurred.

- For release response actions, responsible parties and their consultants and contractors should follow the applicable guidance in the Department of Health Hazard Evaluation Emergency (HEER) Office Technical Guidance Manual, HEER Environmental Action Level (EAL) guidance, and other guidance documents on the DOH HEER Office website [http://eha-web.doh.hawaii.gov /eha-cma/Org/HEER/], including those pertaining to Multi-Increment Sampling of soil, low flow groundwater sampling, soil vapor sampling, and Environmental Hazard Evaluations (EHE)/Environmental Hazard Management Plans (EHMP).

DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
DIRECTOR

Deputy Directors
ROSS M. HIGASHI
EDUARDO P. MANGLALLAN
PATRICK H. MCCAIN
EDWIN H. SNIFFEN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
DIR 1071
STP 8.3314

December 6, 2021

VIA EMAIL: ambtower@g70.design

Mr. Jeffrey Overton, AICP, LEED AP
Principal Planner
Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Supplemental Environmental Impact Statement Preparation Notice (SEISPN)
Hilton Hawaiian Village AMB Tower
Waikiki, Oahu, Hawaii
Tax Map Keys: (1) 2-6-009: 004, 005, 006, 007, 009, and 013

Thank you for your letter dated November 8, 2021, requesting the review and comment of the subject SEISPN. The Hawaii Department of Transportation (HDOT) has reviewed the SEISPN and understands Hilton Hawaiian Village (HHV) Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc is proposing to expand the HHV Master Plan to add three new parcels totaling 0.46 acres along Ala Moana Boulevard (AMB). The expansion includes replacing existing structures with a new 36-story AMB Tower to provide hotel lodging, parking, retail spaces, pedestrian walkways, pool, and recreation area. The proposed AMB Tower will be located along Ala Moana Boulevard (State Route 92).

HDOT has the following comments:

1. Based on the review of the project information, the HDOT anticipates a potential adverse impact to HDOT highways. A Traffic Impact Assessment Report (TIAR) prepared and stamped by a licensed engineer shall be submitted. The TIAR should include:

    a. A description of existing traffic conditions and use of multimodal routes in the study area.

    b. Forecasted traffic and multimodal conditions in the horizon year (year at full project build-out), without and with the project, and including trips generated by planned developments in the study area.

    c. An analysis of project-related direct, indirect, and cumulative transportation impacts, including impacts associated with multimodal transportation and safety.

d. Recommend mitigation for impacts to transportation.

e. Labeled jurisdictions of roadways in the vicinity.

f. Location of existing and proposed site access driveways.

2. The Applicant shall coordinate with HDOT to determine the study area by considering intersections along State highways where a change in peak hour traffic volume due to the development is greater than 3 percent.

3. The project proposes to use the existing driveway on State Route 92. The applicant shall verify with the HDOT Highways Division, Oahu District Engineer (or County District Engineer) that the driveway meets current standards for the type and volume of anticipated traffic.

If there are any questions, please contact Mr. Blayne Nikaido of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

JADE T. BUTAY
Director of Transportation

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 07, 2021

LD 1278

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813

Via email: ambtower@g70.design

Attn: Jeffrey Overton, Principal Planner

Dear Sirs:

SUBJECT: **Supplemental Environmental Impact Statement Preparation Notice**
Hilton Hawaiian Village AMB Tower
Honolulu, Island of Oahu, Hawaii
TMK: (1) 2-6-009:004, 005, 006, 007, 009 & 013

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to various DLNR divisions, as indicated on the attached, for their review and comment.

Attached are comments received from our Engineering Division. Should you have any questions, please feel free to contact Barbara Lee via email at barbara.j.lee@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments

Cc: Central Files

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

November 09, 2021

LD 1278

MEMORANDUM

FROM:

~~TO:~~ **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

TO:

~~FROM:~~ Russell Y. Tsuji, Land Administrator Russell Tsuji

SUBJECT: **Supplemental Environmental Impact Statement Preparation Notice (SEISPN) Hilton Hawaiian Village Master Plan Improvements - AMB Tower**

LOCATION: 2005 Kalia Road, Honolulu, Island of Oahu, Hawaii
TMK: (1) 2-6-009:004, 005, 006, 007, 009, & 013

APPLICANT: **G70 on behalf of Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc.**

Transmitted for your review and comment is information on the above-referenced subject. The SEISPN was published on November 08, 2021 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2021-11-08-TEN.pdf

Please submit any comments by **December 07, 2021** to barbara.j.lee@hawaii.gov at Land Division. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly via email at the above email address. Thank you.

BRIEF COMMENTS:

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

Signed:
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Nov 30, 2021

Attachments
Cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Supplemental Environmental Impact Statement Preparation Notice (SEISPN)
Hilton Hawaiian Village Master Plan Improvements - AMB Tower
Location: 2005 Kalia Road, Honolulu, Island of Oahu
TMK(s): (1) 2-6-009:004, 005, 006, 007, 009, & 013
Applicant: G70 on behalf of Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc.

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). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 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 zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT) could also be used to research flood hazard information.

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) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed: [signature]
CARTY S. CHANG, CHIEF ENGINEER

Date: Nov 30, 2021

LD 1278

G70

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

November 8, 2021

RECEIVED
LAND DIVISION
2021 NOV -8 AM 2:46
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9, 13
(Waikīkī, Oʻahu, Hawaiʻi)

Dear Participant:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc., G70 is notifying you of the availability of the Supplemental Environmental Impact Statement Preparation Notice (SEISPN) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Island of Oʻahu, Hawaiʻi.

The SEISPN document can be downloaded from the website of the Office of Planning and Sustainable Development, Environmental Review Program online at this link: http://oeqc2.doh.hawaii.gov/Doc_Library/2021-11-08-OA-Supplemental-EISPN-Hilton-Hawaiian-Village-Master-Plan-Improvements-AMB-Tower.pdf.

Please provide comments via email, fax, or U.S. Mail. The 30-day comment period begins on November 8, 2021, and ends on December 8, 2021. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

The SEIS public scoping meeting will be held on Monday, November 15, 2021 at 5:30 PM. The meeting allows for agencies and the public to assist the Applicant in determining the range of actions, alternatives, impacts, significant issues and proposed mitigation to be considered in the Draft SEIS.

The SEIS public scoping meeting will be held virtually on the Zoom web platform at the following link: https://g70design.zoom.us/j/84608517672. We encourage you to download the Zoom platform prior to the meeting. If you have questions regarding the virtual scoping meeting, please contact us at ambtower@g70.design, and we can assist you.

Thank you for your participation in the environmental review process.

RECEIVED
2021 NOV -8 AM 8:44
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

City and County of Honolulu

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

November 30, 2021

DEC 2021

Mr. Jeffrey Overton, AICP, LEED AP
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Your Letter Dated November 8, 2021 Requesting Comments on the Supplemental Environmental Impact Statement Preparation Notice for the Proposed Hilton Hawaiian Village AMB Tower on Ala Moana Boulevard in Waikiki – Tax Map Keys: 2-6-009: 004, 005, 007, 009, 013

Thank you for your letter regarding the proposed 515-unit hotel tower.

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

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

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.

High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our approval, 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 (808) 748-5443.

Very truly yours,

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

DEPARTMENT OF COMMUNITY SERVICES
CITY AND COUNTY OF HONOLULU
925 DILLINGHAM BOULEVARD, SUITE 200•HONOLULU, HAWAII 96817
PHONE: (808) 768-7762 • FAX: (808) 768-7792
www.honolulu.gov/dcs

RICK BLANGIARDI
MAYOR

ANTON C. KRUCKY
DIRECTOR DESIGNATE

November 12, 2021

Group 70 International, Inc. dba G70
111 South King Street, Suite 170
Honolulu, Hawai'i 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design

RECEIVED
NOV 1 8 2021
G70

Dear Mr. Overton:

SUBJECT: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
TMK: (1) 2-6-009:004, 005, 006, 007, 009, and 013
Waikīkī, Honolulu, O'ahu, Hawai'i

Thank you for your Supplemental Environmental Impact Statement Preparation Notice (SEISPN) for the Hilton Hawaiian Village AMB Tower project.

Our review indicates that the proposed project will have no adverse impacts on any Department of Community Services activities or projects in the surrounding neighborhood.

Thank you for providing us the opportunity to comment on this matter.

Sincerely,

Anton C. Krucky

Anton C. Krucky
Director Designate

G70

DCS/Admin
4566

21 NOV -8 11:56

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

November 8, 2021

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9, 13
(Waikīkī, Oʻahu, Hawaiʻi)

Dear Participant:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc., G70 is notifying you of the availability of the Supplemental Environmental Impact Statement Preparation Notice (SEISPN) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Island of Oʻahu, Hawaiʻi.

The SEISPN document can be downloaded from the website of the Office of Planning and Sustainable Development, Environmental Review Program online at this link: http://oeqc2.doh.hawaii.gov/Doc_Library/2021-11-08-OA-Supplemental-EISPN-Hilton-Hawaiian-Village-Master-Plan-Improvements-AMB-Tower.pdf.

Please provide comments via email, fax, or U.S. Mail. The 30-day comment period begins on November 8, 2021, and ends on December 8, 2021. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

The SEIS public scoping meeting will be held on Monday, November 15, 2021 at 5:30 PM. The meeting allows for agencies and the public to assist the Applicant in determining the range of actions, alternatives, impacts, significant issues and proposed mitigation to be considered in the Draft SEIS.

The SEIS public scoping meeting will be held virtually on the Zoom web platform at the following link: https://g70design.zoom.us/j/84608517672. We encourage you to download the Zoom platform prior to the meeting. If you have questions regarding the virtual scoping meeting, please contact us at ambtower@g70.design, and we can assist you.

Thank you for your participation in the environmental review process.

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

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

RICK BLANGIARDI
MAYOR

ALEX KOZLOV, P.E.
DIRECTOR

HAKU MILLES, P.E.
DEPUTY DIRECTOR

November 26, 2021

Mr. Jeffrey H. Overton, AICP, LEED AP
Principal Planner
Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9, 13
(Waikiki, Oahu, Hawaii)

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any further questions, please contact me at 768-8480.

Sincerely,

for Alex Kozlov, P.E.
Director

AK:krn (866999)

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

RICK BLANGIARDI
MAYOR

WESLEY T. YOKOYAMA, P.E.
DIRECTOR

MICHAEL O'KEEFE
DEPUTY DIRECTOR

ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO:
PRO 21-124

December 9, 2021

Mr. Jeffery Overton, Principal Planner
Group 70 International, Inc., dba G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

RECEIVED
DEC 14 2021
G70

Dear Mr. Overton:

SUBJECT: Supplemental Environmental Impact Statement Preparation Notice, Hilton Hawaiian Village AMB Tower, TMK: 2-6-009:004, 005, 006, 007, 009, and 013

We have reviewed the subject document referenced in your letter dated November 8, 2021. We have the following comments on the proposed project:

1. A sewer connection application for the proposed project should be submitted to the Department of Planning and Permitting, Site Development Division, Wastewater Branch.

2. The proposed project is subject to the terms and conditions of the enclosed Kalia Rd/Ala Moana Blvd/Kalakaua Ave Sewer Improvements Memorandum of Agreement, December 31, 2012.

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

Sincerely,

Wesley T. Yokoyama, P.E.
Director

Enclosure

cc: DPP, SDD, Wastewater Branch

MEMORANDUM OF AGREEMENT

(Kalia Rd/Ala Moana Blvd/Kalakaua Ave Sewer Improvements)

THIS MEMORANDUM OF UNDERSTANDING AND AGREEMENT (this "Agreement"), is made this 31st day of December, 2012, by and among HILTON HAWAIIAN VILLAGE LLC (the "Company"), a Hawaii limited liability company, and the CITY AND COUNTY OF HONOLULU (the "City").

RECITALS:

A. The Company is a Hawaii limited liability company and is the owner of Hilton Hawaiian Village located at 2005 Kalia Road, in Waikiki, Honolulu, Hawaii (the "Resort"). The properties included in the Resort are shown on the map attached hereto as Exhibit 1 and incorporated herein by reference.

B. The Company desires to build new facilities on the Resort which is currently anticipated to include approximately 900 additional timeshare units and approximately 14,379 square feet of additional retail space (the "Proposed Development"). The Company intends to complete the first tower of timeshare units, containing approximately 428 timeshare units ("Tower 1") in 2016. A second tower ("Tower 2"), anticipated to contain approximately 122 timeshare units and an additional 14,379 square feet of retail space, is currently scheduled to be completed in 2022. Completion of the remaining 350 timeshare units may occur at some future date that has not yet been scheduled.

C. The Proposed Development requires additional sewer transmission capacity.

D. The existing 12-inch sewer on Kalia Road, the existing 24-inch sewer on Ala Moana Boulevard, and the existing 24-inch sewer on Kalakaua Avenue, which together serve the Resort, lack the capacity to accommodate the increase in sewer transmission demand anticipated for the Proposed Development.

E. The Company recognizes the immediate need for additional sewer capacity to accommodate the Proposed Development, as well as long-range requirements to provide adequate sewer facilities for future development in the Waikiki area.

F. The Company is entering into this Agreement for the benefit of the Proposed Development.

G. The City currently contemplates completing the sewer system improvements in the Sand Island Wastewater Basin by the end of calendar year 2020. Scheduling and completion of the sewer system improvements in the Sand Island Wastewater Basin will need to take into account the status of the City's long-range capital improvement plan, and the City reserves the right and sole discretion to determine the final timing and completion of the sewer system improvements to be done by the City.

NOW THEREFORE, the parties agree as follows:

1. Construction of the Sewer Improvements. The Company, at its expense, shall be responsible for the design, planning and permits, management and construction of the sewer improvements along Kalia Road, Ala Moana Boulevard, and Kalakaua Avenue (the "Sewer Improvements"). The Sewer Improvements shall be designed and constructed based on plans and specifications approved by the City. The proposed Sewer Improvements are shown on the figure attached hereto as Exhibit 2 and incorporated herein by reference. Should the Company elect not to construct the Sewer Improvements, the Company will not be entitled to any of the benefits of this Agreement.

2. Completion of the Sewer Improvements. The Sewer Improvements shall be completed in a timely manner and made available for transfer to the City not later than eighteen months following issuance of the last required permit for the Sewer Improvements, subject to reasonable extensions due to force majeure, including, without limitation, shipping strikes and acts of God.

3. Acceptance of the Sewer Improvements. Upon the completion of the Sewer Improvements, the Company shall transfer the Sewer Improvements to the City, which transfer shall be completed pursuant to Chapter 14 of the Revised Ordinances of Honolulu 1990, as amended.

4. Reservation of Sewer Capacity. Upon the Company's commitment to complete the Sewer Improvements, the City agrees to provide the Company with sewer transmission capacity of 300 Equivalent Single-Family Dwelling Units ("ESDUs") in accordance with an approved sewer connection application, subject only to completion of the Sewer Improvements. After the completion of the future required improvements by the City, and upon submission of a properly completed sewer connection application by the Company for the remainder of the Proposed Development, the City shall approve the sewer connection application for no more than 338 ESDUs.

5. Wastewater Facility Charge Credits. In consideration of the Company's construction and delivery of the Sewer Improvements, the City agrees to make available to the Company Wastewater System Facility Charge Credits in the amount of the actual total construction (not including planning, design, and permitting) costs of the Sewer Improvements, as allowed under Sections 14-10.3 and 14-10.4, and Appendix 14-D of the Revised Ordinances of Honolulu 1990, as amended and further clarified under Wastewater Policy No. 2001/WWPOL-11 of the Department of Planning and Permitting, based on Wastewater System Facility Charge rates at the time of building permit approval, not to exceed the Company's allocated capacity of 638 ESDUs.

6. Term. The reservation of sewer capacity described in paragraph 4 in favor of the Company, if not previously used, shall expire as of December 31, 2032 and shall no longer be reserved for use by the Company.

7. Remedies. If any party to this Agreement fails to fulfill or perform any of its obligations hereunder, non-defaulting parties shall be entitled to all remedies available at law or in equity, including damages, specific performance and injunctive relief. In any dispute or litigation arising out of or in connection with this Agreement, the prevailing party shall be entitled to receive and recover its costs and expenses, including reasonable attorney's fees, from the other party.

8. Notices. Any notice to be given to or served upon any of the parties hereto shall be deemed to have been sufficiently given or served for all purposes when actually delivered by messenger or by certified mail, return receipt requested, as follows:

In the case of the City:

Department of Environmental Services
City and County of Honolulu
1000 Uluohia Street, Suite 308
Kapolei, Hawaii 96707
Attention: Director

Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Attention: Director

If to the Company:

Hilton Hawaiian Village LLC
c/o Hilton Worldwide, Inc.
7930 Jones Branch Drive
McLean, VA 22102
Attention: Legal Department

9. No Party Deemed Drafter. The parties agree that no party shall be deemed to be the drafter of this Agreement and further that in event that this Agreement is ever construed by a court of law, such court shall not construe this Agreement or any provision of this Agreement against any party as the drafter of the Agreement.

10. Successors and Assigns. All of the terms, provisions, conditions and agreements contained herein shall inure to the benefit of and be binding upon each of the parties hereto, and their respective successors and permitted assigns, to the same extent as said terms, provisions, conditions and agreements inure to the benefit of and are binding upon each of the respective parties.

11. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Hawaii.

12. Recitals; Exhibits. All recitals set forth at the beginning of this Agreement shall be deemed to be incorporated as agreements of the parties in this Agreement. All Exhibits referred to in this Agreement shall be deemed to be incorporated herein by the reference made to them as fully as though the entire Exhibit were set forth within the body of this Agreement itself.

13. Survival. All agreements, representations, warranties, covenants, and undertakings of the parties contained herein shall survive the consummation of the transactions contemplated hereby and shall not be merged therein.

14. Amendments. This Agreement shall not be modified except by an instrument in writing signed by all the parties.

15. Counterparts/Electronic Signature. This Agreement may be executed in counterparts, each of which so executed shall, irrespective of the date of its execution and delivery, be deemed an original and said counterparts together shall constitute one and the same instrument. Copies shall have the same effect as original ink signatures.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective on the day and year first above written.

CITY AND COUNTY OF HONOLULU

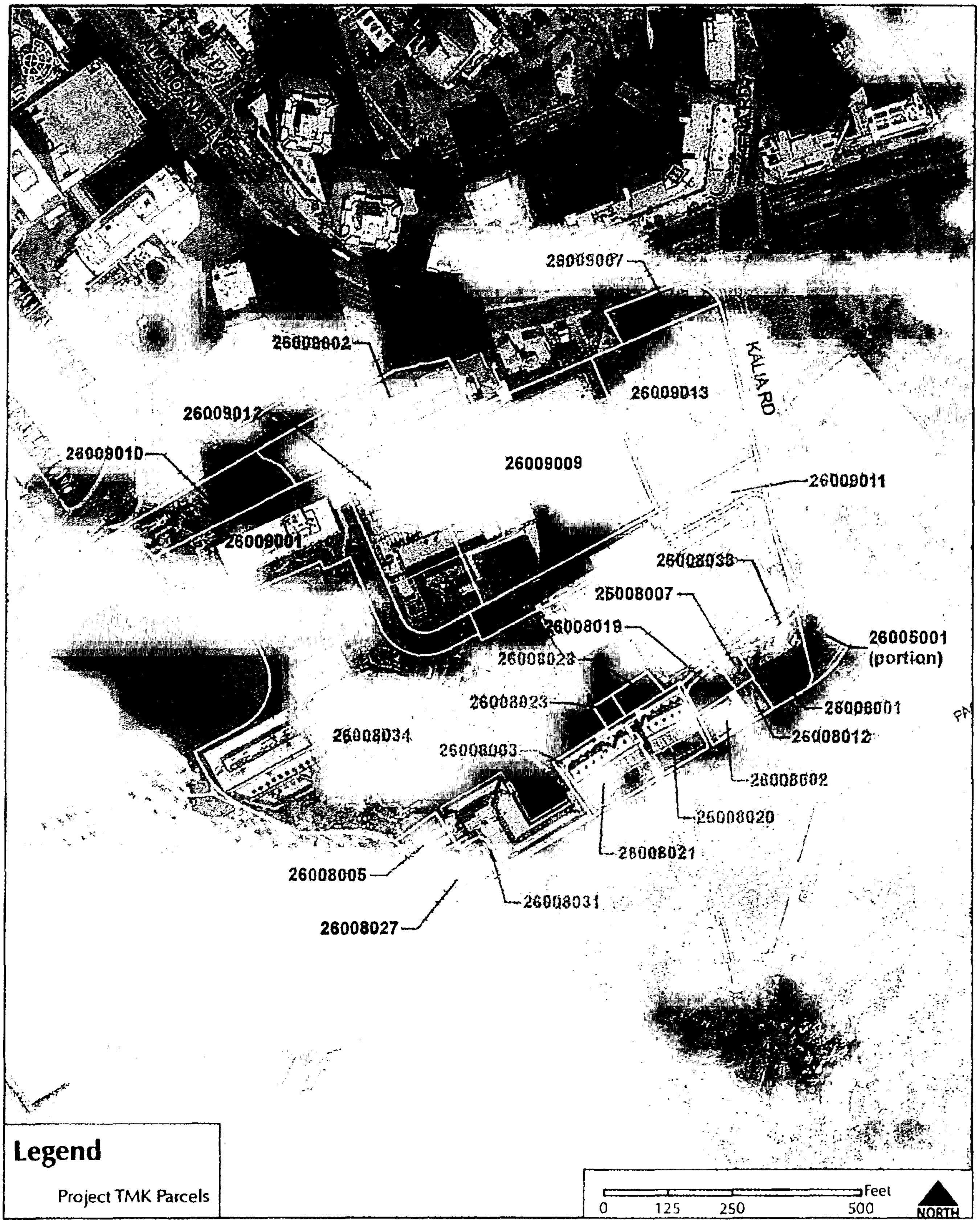
By ______________________________
Timothy E. Steinberger, P.E.
Director, Department of Environmental Services
City and County of Honolulu

APPROVED AS TO FORM
AND LEGALITY

____
Deputy Corporation Counsel

HILTON HAWAIIAN VILLAGE, LLC

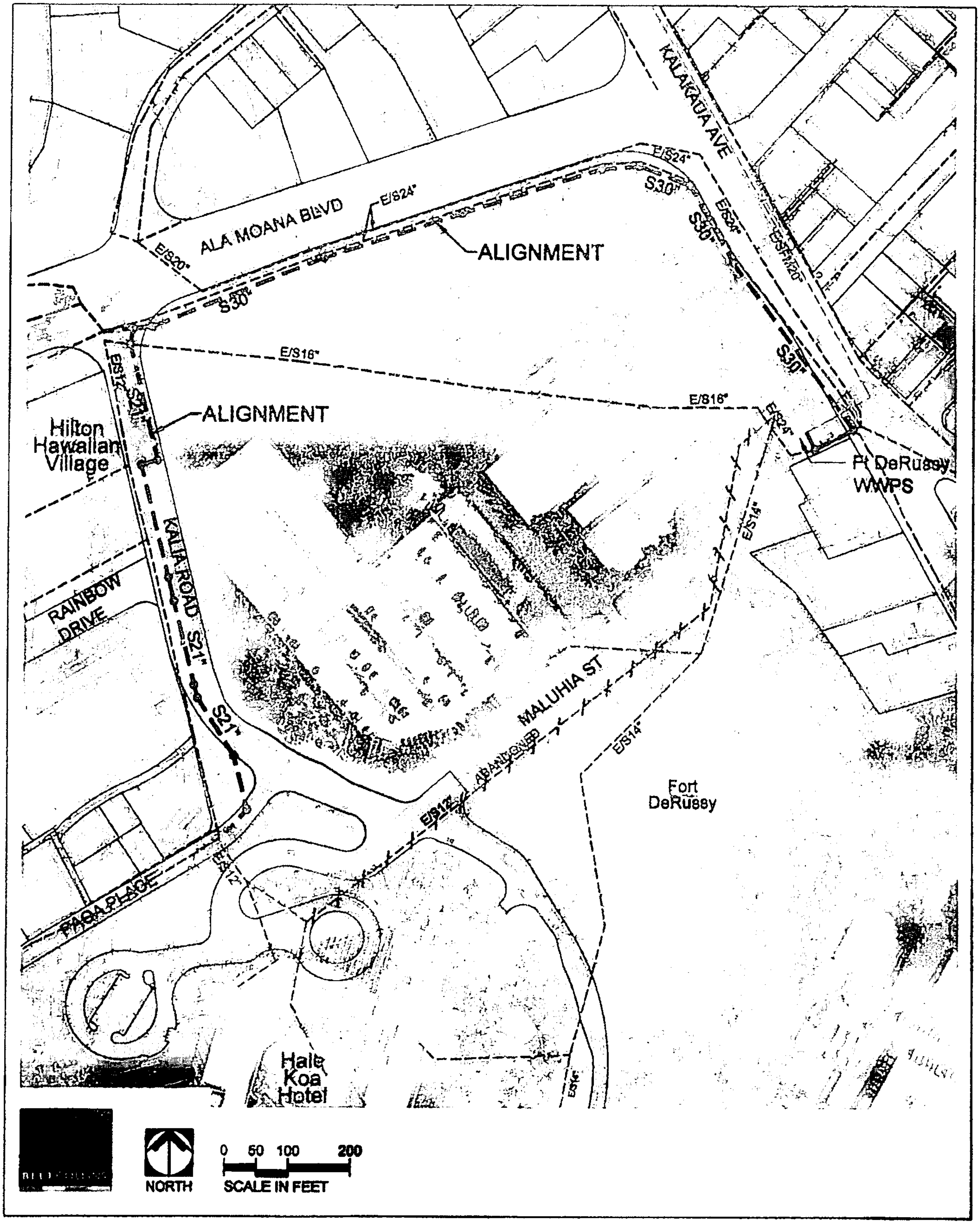
By ______________________________
Gerard C. Gibson
Vice President



Hilton Hawaiian Village

Exhibit 1
Hilton Hawaiian Village TMK Map

GROUP 70 INTERNATIONAL



Hilton Hawaiian Village

Exhibit 2
Kalia-DeRussy Wastewater System Improvements

GROUP 70 INTERNATIONAL

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

RICK BLANGIARDI
MAYOR

ROGER BABCOCK, JR., Ph.D., P.E.
DIRECTOR AND CHIEF ENGINEER

DAWN B. SZEWCZYK, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO:
21-666

November 18, 2021

G70
111 S. King Street
Honolulu, Hawaii 96813
Attention: Jeffery Overton, Princpal Planner

Dear Mr. Jeffery Overton:

Subject: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9:4, 5, 6, 7, 9, 13
(Waikīkī, O'ahu, Hawai'i)

Thank you for the opportunity to review and to give our input regarding the subject, "Supplemental Environmental Impact Statement Preparation Notice Hilton Hawaiian Village AMB Tower."

We have no comments at this time, as we do not have any facilities or easements on the subject property. Please note that Ala Moana Boulevard is under the jurisdiction of the State Department of Transportation, Highways Division.

Should you have any questions, please contact Kyle Oyasato of the Division of Road Maintenance, at 768-3697.

Sincerely,

Roger Babcock, Jr., Ph.D., P.E.
for Director and Chief Engineer

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

RICK BLANGIARDI
MAYOR

LIONEL CAMARA JR.
ACTING FIRE CHIEF

SHELDON K. HAO
ACTING DEPUTY FIRE CHIEF

DEC 2021

November 30, 2021

Mr. Jeffrey Overton, AICP, LEED AP
Principal Planner
Group 70 International, Inc.
111 S. King Street, Suite 170
Honolulu, HI 96813

Dear Mr. Overton:

Subject: Environmental Assessment
Hilton Hawaiian Village AMB Tower
2005 Kalia Road
Honolulu, Hawaii 96815
Tax Map Keys: 2-6-009: 004, 005, 006, 007, 009, and 013

In response to your letter dated November 8, 2021, regarding the above-mentioned subject, the Honolulu Fire Department reviewed the submitted information and determined that there will be no significant impact to fire department services.

Should you have questions, please contact Battalion Chief Reid Yoshida of our Fire Prevention Bureau at 808-723-7151 or ryoshida@honolulu.gov.

Sincerely,

for Jason Samala
Assistant Chief

JS/CM:gl

4DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU
1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

RICK BLANGIARDI
MAYOR

LAURA H. THIELEN
DIRECTOR

KEHAULANI PU'U
DEPUTY DIRECTOR

RECEIVED
NOV 19 2021
G70

November 11, 2021

Mr. Jeffrey Overton, AICP, LEED AP
Principal Planner
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Keys (1) 2-6-9: 4, 5, 6, 7, 9, 13
Honolulu, Hawaii

Thank you for the opportunity to review and comment on the subject Supplemental Environmental Impact Statement Preparation Notice for the Hilton Hawaiian Village-Village Master Plan Improvements, AMB Tower project.

The Department of Parks and Recreation has no comment and as the project will not impact any facility or program of the department, you may remove us as a consulted party to the balance of the Environmental Impact Statement process.

Should you have any questions, please contact Mr. John Reid, Planner at 808-768-3017.

Sincerely,

Laura H. Thielen
Director

LHT:jr
(867026)

Noelle Besa Wright

From: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Sent: Wednesday, December 8, 2021 8:19 AM
To: Tracy Camuso
Cc: Jeff Overton; Noelle Besa Wright
Subject: Hilton Hawaiian Request for Comments SEISPN

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Tracy,

Wanted to let you know, that DPP has not comments for this round. We look forward to the SEIS and will provide comments then.

Janet

Janet Meinke-Lau
Planner, Urban Design Branch
Land Use Permits Division
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
808-768-8033
j.meinkelau@honolulu.gov

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

RICK BLANGIARDI
MAYOR

J. ROGER MORTON
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

DEC 1 . 2021

TP11/21-867123

December 13, 2021

Mr. Jeffrey Overton, AICP, LEED AP, Principal Planner
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Supplemental Environmental Impact Statement Preparation Notice
Hilton Hawaiian Village AMB Tower
Tax Map Key (TMK): (1) 2-6-9: 4, 5, 6, 7, 9, 13
(Waikiki, Oahu, Hawaii)

Thank you for the opportunity to provide written comments regarding the subject project. We have the following comments.

1. **Transportation Impact Assessment (TIA).** The applicant shall perform a TIA to examine the vehicle, pedestrian, bicycle, and public transit stress and comfort levels at the nearby intersections and driveways with corresponding improvements to mitigate these impacts by applying Complete Streets principles. The applicant shall discuss the future year growth rate, trip generation and distribution, mode split, and route assignment assumptions used in the TIA.

   The TIA should identify an appropriate speed limit for the streets adjacent to the project by analyzing conflict density and activity level, among other contextual factors, to determine the speed limit that will best minimize the risk of a person being killed or seriously injured. The National Association of City Transportation Officials Safe Speed Study methodology is recommended. A Safe Speed Study should be conducted for the longest relevant segment of a street corridor affected by the project.

The applicant shall submit all native files (e.g., Synchro, Excel, etc.) for the raw multi-modal counts and accompanying analyses to the Regional Planning Branch at dtsplanningdiv@honolulu.gov. Please refer to the Department of Transportation Services TIA Guide for multimodal assessment tools and recommended analyses. The TIA Guide can be found at http://www4.honolulu.gov/docushare/dsweb/View/Collection-7723.

The TIA should also address the following items:

i. **Bicycle Parking.** The project shall quantify the number of secure on-site bicycle parking that will be provided. Refer to Section No. 21-6.150 Bicycle Parking in the City and County of Honolulu Land Use Ordinance for minimum requirements.

ii. **Bikeshare Station**. Investigate the feasibility of including a bikeshare station on the project premises, to be maintained by the management entity. Bikeshare stalls shall not be counted as part of the provision of required bicycle parking.

iii. **Bicycle Repair Station**. Examine feasibility of installing on-site tools and space for bicycle repair near bicycle parking area.

iv. **Pedestrian Improvements**. Installation of lighting; pedestrian-oriented green infrastructure, trees, or other greening landscape consistent with the Complete Streets furniture zone; and trash receptacles per the Complete Streets Design Manual, Pedestrian Master Plan, Waikiki Special District Guidelines, and any applicable streetscape plan.

2. **Parking**. A discussion regarding off-street parking, site generated parking demand, and proposed parking mitigation measures shall be added to this report. The applicant's parking discussion shall also include the following:

   i. If employee parking will be provided, investigate an employee parking cash out policy.

   ii. Include a description of how the project will promote, encourage, and monitor transit use by its staff and guests in the TIA.

   iii. The management entity should inform staff and guests of the City's vanpool, car share, and bikeshare programs to promote alternate modes of transportation.

iv. Consider providing staff with subsidized transit passes.

v. Buildings within downtown with between 50 and 200 units shall have one car share space, then one car share space per each additional 200 units, as per the City and County of Honolulu's TIA Guide, Sections 4.1 and 4.2.

vi. Places of accommodation with at least 100 parking spaces available for use by the general public shall have at least one parking space exclusively for electric vehicles and equipped with an electric vehicle charging system located anywhere in the parking structure, as per Hawaii Revised Statutes §291-71.

3. **Complete Streets.** The TIA should also include a discussion of the following:

   i. A proposed Priority 1 Bike Lane project (Project ID 1-62 in the 2019 Oahu Bike Plan) is located on Ala Moana Boulevard fronting the project site. Any proposed driveway or porte cochere should be designed to minimize conflicts between bicyclists and turning vehicles.

   ii. The management entity or owners' association should adopt (i.e., be responsible for litter removal, cleaning and maintenance of bus stop shelter, benches and floor area) any anticipated future bus stops fronting the project site at no cost to the City.

   iii. The applicant shall make a contribution for complete streets improvements as recommended by the forthcoming TIA.

4. **Neighborhood Impacts**. The area representatives, neighborhood board, as well as the area residents, businesses, emergency personnel (fire, ambulance, and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details and status throughout the project and the impacts that the project may have on the adjoining local street area network.

5. **Disability and Communication Access Board (DCAB)**. Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.

Should you have any questions, please contact Greg Tsugawa, of my staff, at (808) 768-6683.

Very truly yours,

J. Roger Morton
Director

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR

RADE K. VANIC
INTERIM CHIEF

OUR REFERENCE **EO-DK**

November 26, 2021

SENT VIA EMAIL

Mr. Jeffrey Overton, AICP, LEED AP
ambtower@g70.design

Dear Mr. Overton:

This is in response to your letter of November 8, 2021 requesting input on the Supplemental Environmental Impact Statement Preparation Notice for the proposed Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project.

The Honolulu Police Department (HPD) recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor during the construction phase of the project. The HPD also recommends that adequate notification be made to businesses and residents in the area prior to deliveries or possible road closures, as any impacts to pedestrian and/or vehicular traffic may lead to complaints.

If there are any questions, please call Major Mark Cricchio of District 6 (Waikiki) at (808) 723-3346.

Thank you for the opportunity to review this project.

Sincerely,

DARREN CHUN
Assistant Chief of Police
Support Services Bureau

Individuals

Noelle Besa Wright

From: Barbara S <barbara.tuulenbird@gmail.com>
Sent: Monday, November 15, 2021 3:24 AM
To: 219009-01 AMB Tower Park Hotels
Subject: Proposed new Hilton Hawaiian Village tower

There is no need for another tower except greed. So glad the one proposed for Rainbow Bazaar didn't go through. I enjoy visiting all the shops and restaurants.
I am an owner and don't need more people coming there. It is crowded enough! The beach is way over crowded in prime season. Can't get lounge chairs by the pool. I come there to relax, not stand in line for food and other amenities.

Also not good for Honolulu - adds more waste and uses more resources.

Barbara Snyder

Noelle Besa Wright

From: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Sent: Thursday, December 16, 2021 11:36 AM
To: 'Barbara S'
Cc: 219009-01 AMB Tower Park Hotels
Subject: RE: Proposed Hilton Hawaiian Village tower

Hi Barbara,

Apologies for this delayed response. I am confirming receipt of your email and relaying your message to the Applicant's team.

Aloha,
Janet

From: Barbara S [mailto:barbara.tuulenbird@gmail.com]
Sent: Monday, November 15, 2021 3:15 AM
To: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Subject: Proposed Hilton Hawaiian Village tower

I am totally against Hilton building any more on the resort.

Enough towers already.
Crowded with people as it is.
Probably adverse environmental impact - more people - more garbage and waste and water usage.

Please turn down the proposal.

Barbara Snyder

From: john t <bhnoob@gmail.com>
Sent: Thursday, November 18, 2021 9:43 AM
To: j.meinkelau@honolulu.gov
Cc: 219009-01 AMB Tower Park Hotels
Subject: Hilton hawaiian village - village master plan improvements amb tower

Ms. Meinkelau,

I think the proposed new tower is a further step in the wrong direction. After a year of covid-19, most everyone talked about over tourism and trying to solve tourism here so it is better for residents of hawaii. I'm sure my message won't matter or be heard (as the hotel and tourism lobby runs oahu) but at what point is tourism not sustainable? How many visitors are too many? I do not pretend to know the answers, but we need to figure it out as a community. Do we have enough hotel rooms already? Do we need another tower that will house thousands of visitors a day in an already crowded waikiki?

I think we should pause these mega resort projects until the residents of hawaii figure out what number of tourists is the right number for sustainable tourism. It cannot grow forever. The island is only so big and overtoruism is already a problem.

John

Noelle Besa Wright

From: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Sent: Thursday, December 16, 2021 11:35 AM
To: 'Justin Michalek'
Cc: 219009-01 AMB Tower Park Hotels
Subject: RE: Hilton tower

Hi Justin,

Apologies for this delayed response. I am confirming receipt of your email and relaying your message to the Applicant's team.

Aloha,
Janet

From: Justin Michalek [mailto:justinmichalekaccount@protonmail.com]
Sent: Saturday, November 13, 2021 9:56 AM
To: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Subject: Hilton tower

Aloha,

I vehemently disagree with the planned Hilton tower in Waikiki. The island has enough traffic, people, and overpopulation as it is. The John Fuisz says " This project will add needed capacity within the visitor area of Waikiki.." , which is akin to spitting in our face since we have well since maxed out the capacity of our island. The greedy tourism industry continues to rape the islands virtues and resources. We can only sustain so many people, and if the current flow of people is not enough then the island and businesses MUST diversify income streams. Has this pandemic not proven this? ENOUGH IS ENOUGH!

Noelle Besa Wright

From:	Mark Monoscalco <mark.monoscalco@hotmail.com> on behalf of Mark Monoscalco <mark@monoscalco.com>
Sent:	Tuesday, November 30, 2021 9:58 AM
To:	j.meinkelau@honolulu.gov
Cc:	219009-01 AMB Tower Park Hotels; dbedt.opsd.erp@hawaii.gov; tommy.waters@honolulu.gov; reptam@Capitol.hawaii.gov; senmoriwaki@capitol.hawaii.gov
Subject:	AMB Tower, Hilton Hawaiian Village
Attachments:	Existing without AMB Tower.jpg; Proposed AMB Tower.jpg

Aloha,

I attended the EIS Public Scoping Zoom meeting for the AMB Tower, Hilton Hawaiian Village on Monday, November 15, 2021. I have the following 5 questions and comments:

1. If the AMB Tower will conform to the heights of the Grand Waikikian (368 feet) and the Grand Islander (400 feet) then it will be approximately 400 feet tall. What is the proposed maximum height of the AMB Tower?

2. The parcels of property under the proposed AMB Tower are not all owned by the same owner. The AMB Tower will ask for an increase in allowable floor area ratio using open space in other areas of the Hilton Hawaiian Village property. What section of the Land Use Ordnance permits a property owner to request additional floor area ratio using another property owner's open space as a bonus? For example, if 2 people purchase a parcel in Waikiki and one of those people also owns a parcel in Kailua, can the open space from the parcel in Kailua be used to calculate the floor area ratio for the new parcel in Waikiki?

3. The Supplemental Environmental Impact Statement Notice of Preparation includes the following:

> 2.1 Project Setting and Description
> Existing Conditions
> The Village provides a variety of unique accommodations, services, amenities, and experiences for its guests. Accommodations are currently located primarily within eight main towers: Ali'i Tower, Rainbow Tower, Tapa Tower, Kālia Tower, Diamond Head Tower, Lagoon Tower, the Grand Waikikian, and the Grand Islander. A total of 2,971 hotel rooms and 1,248 timeshare units are approved on-site (To date, 2,860 hotel rooms and 1,088 timeshare units currently exist on-site.).

If Hotel Rooms are at such a premium that a new tower is required why has Hilton Hawaiian Village spent the last 10 years building new timeshare units and converting existing hotel rooms to timeshare?

4. Also included in the Supplemental Environmental Impact Statement Notice of Preparation is the following:

> Description of Proposed Project
>
> Inclusion of the new parcels will increase the floor area available to the Village under the Hilton Hawaiian Village Planned Development-Resort (PDR), following approval by the City and County of Honolulu, Department of Planning and Permitting (DPP) in accordance with the PD-R approval process set forth in the Land Use Ordinance. As part of the project, the applicant will request an increase in the allowable Floor Area Ratio (FAR) within the Village from 3.7 to 4.0 as permitted by existing land use laws. Under the approved 2011 PD-R, 3,943,335 SF of floor area is permitted for the Hilton Hawaiian Village Master Plan. With the proposed campus expansion and increased FAR, the new total floor area

available will be 4,397,044 SF. The existing development within the Village comprises 3,737,055 SF and 396,000 SF will be added by the AMB Tower. The inclusion of the three new parcels within the Village will also help to preserve the existing open space and natural setting of the resort.

How is it possible to construct a 400-foot tall, 396,000 square foot tower on a 0.46-acre parcel and claim that this will "help to preserve the existing open space and natural setting of the resort"? The AMB Tower will reduced the amount of open space along Ala Moana Blvd.

5. Also included in the Supplemental Environmental Impact Statement Notice of Preparation is the following:

> 12. Substantially affects scenic vistas and viewplanes identified in county or state plans:
> The project includes a hotel tower that may affect vistas and view perspectives from certain public and private locations in Waikīkī. The SEIS will include a view impact analysis with simulations of view conditions before and after development, as experienced from locations surrounding the project site.

Hilton Hawaiian Village has gradually constructed a 300 to 400-foot tall wall of buildings completely surrounding their property and blocking all vistas and view perspectives from outside their property. Each new tower impacted a portion of the vistas and view perspectives. Each individual new tower was approved with the understanding and acceptance that there was some loss of vistas and view perspectives. The cumulative effect of the loss of vistas and view perspectives must be considered. The AMB Tower will block the last open vista and view perspective from outside of the Hilton Hawaiian Village property. See the 2 attached photos for a before and after illustration of the loss of vistas and view perspectives.

Sincerely yours,
Mark A. Monoscalco
808-224-4439
www.monoscalco.com

Noelle Besa Wright

From: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Sent: Thursday, December 16, 2021 11:35 AM
To: 'Michael Brant'
Cc: 219009-01 AMB Tower Park Hotels
Subject: RE: Proposed Hawaiian Village AMB Tower

Hi Michael,

Apologies for this delayed response. I am confirming receipt of your email and relaying your message to the Applicant's team.

Aloha,
Janet

From: Michael Brant [mailto:michaeljbrant@hotmail.com]
Sent: Friday, November 12, 2021 9:41 PM
To: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Subject: Proposed Hawaiian Village AMB Tower

Let's see that they are charged $2500/unit/year "registration fee" like Waikiki vacation rental owners will be under DPP's Bill 41.

Michael Brant

Noelle Besa Wright

From: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Sent: Thursday, December 2, 2021 4:08 PM
To: 'Robert Randel'
Cc: 219009-01 AMB Tower Park Hotels; Shoji, Joyce M.
Subject: RE: Hilton Hawaiian Village proposed Tower comment

Aloha Robert,

I am confirming receipt of your input and CCing the project team to inform them of your comments as well.

Thanks,
Janet

-----Original Message-----
From: Robert Randel [mailto:robman1@me.com]
Sent: Sunday, November 28, 2021 8:43 AM
To: Meinke-Lau, Janet <j.meinkelau@honolulu.gov>
Subject: Hilton Hawaiian Village proposed Tower comment

CAUTION: Email received from an EXTERNAL sender. Please confirm the content is safe prior to opening attachments or links.

Good Morning Ms Meinkelau, I hope this email finds you well.

I wanted to comment on the proposed new Hilton tower along Ala Moana Blvd and really was unsure how to properly do this. I'm hoping an email to you for my comment is ok.

I am very disappointed to read of another tower and specifically in this location. The Hilton already has two large towers on this corner that have already negatively changed the living conditions in the area. The towers block and change the natural wind flow in the area and the noise from the already heavy traffic bounces off the existing towers and amplifies the sound. Building another tower will further erode the living conditions in the area and benefit no one other than the Hilton corporation.

The proposed new tower will also block the sight lines for many people living in the area. The two existing Hilton towers have already significantly damage the view to the East and the view to Durussy park. This new tower will eliminate at least 50% of the little view left from my condo. Not only to the park, but also just the light from the sky will be blocked. Why should the Hilton be allowed to block the views of so many existing people? Why should they not first be required to build their new tower where their existing parking structure sits and partially block the views from their own tower. They would not like to block the views of their own existing towers but are happy to block the views and air flows for everyone else.

I really hope modifications to their plan can be made and that any new construction on that proposed site be limited to no more than 2 stories in height to protect the views and air flow to the existing residents & buildings and to prevent creating an even worse “noise tunnel” with the traffic noise bouncing off the towers.

The Hilton should be required to build their new tower on the site of their existing parking garage and partially block their own views before being allowed to damage the conditions for everyone else just to preserve it for themselves.

Sincerely,
Robert Randel

Appendix A-2

Draft SEIS Comment Letters

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

November 23, 2022

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
Tax Map Key (TMK): (1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)
(Waikīkī, Oʻahu, Hawaiʻi)

Dear Participant:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc., G70 is notifying you of the availability of the Draft Supplemental Environmental Impact Statement (SEIS) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Island of Oʻahu, Hawaiʻi.

The Draft SEIS document can be downloaded from the Office of Planning and Sustainable Development, Environmental Review Program website on November 23, 2022 at this link: https://files.hawaii.gov/dbedt/erp/Doc_Library/2022-11-23-OA-DSEIS-Hilton-Hawaiian-Village-AMB-Tower.pdf.

Please provide comments via email, fax, or U.S. Mail. The 45-day public comment period begins on November 23, 2022, and ends on January 9, 2023. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

Thank you for your participation in the environmental review process.

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

State of Hawai‘i

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

January 24, 2023

LD 0555

Group 70 International
111 S. King Street, Suite 170
Honolulu, HI 96813

Attn: Jeffrey Overton, Principal Planner *Via email: ambtower@g70.design*

Dear Sirs:

SUBJECT: **Draft Supplemental Environmental Impact Statement**
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
Waikiki, Honolulu, Island of Oahu, Hawaii
TMK: (1) 2-6-009:004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)

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

Enclosed are responses/comments received from our (a) Engineering Division and (b) Division of Forestry and Wildlife. Should you have any questions, please feel free to contact Barbara Lee via email at *barbara.j.lee@hawaii.gov*. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files

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 06, 2022

LD 0555

MEMORANDUM

FROM: ~~TO:~~ **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

Russell Tsuji
TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator
SUBJECT: **Draft Supplemental Environmental Impact Statement**
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
LOCATION: Waikiki, Honolulu, Island of Oahu, Hawaii
TMK: (1) 2-6-009:004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)
APPLICANT: **G70 on behalf of the Hilton Hawaiian Village Beach Resort & Spa, *et al.***

Transmitted for your review and comment is information on the above-referenced subject. The DEA was published on November 23, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-23-TEN.pdf

Please submit any comments by **January 05, 2023,** to *barbara.j.lee@hawaii.gov* at Land Division. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly at the above email address. Thank you.

BRIEF COMMENTS:

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

Signed: [signature]
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Dec 30, 2022

Attachments
Cc: Central Files

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 06, 2022

LD 0555

MEMORANDUM

FROM: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
_X_Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
_X_Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
_X_Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
_X_Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

Russell Tsuji

TO: Russell Y. Tsuji, Land Administrator
SUBJECT: **Draft Supplemental Environmental Impact Statement**
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
LOCATION: Waikiki, Honolulu, Island of Oahu, Hawaii
TMK: (1) 2-6-009:004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)
APPLICANT: **G70 on behalf of the Hilton Hawaiian Village Beach Resort & Spa, *et al.***

Transmitted for your review and comment is information on the above-referenced subject. The DEA was published on November 23, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-23-TEN.pdf

Please submit any comments by **January 05, 2023,** to barbara.j.lee@hawaii.gov at Land Division. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly at the above email address. Thank you.

BRIEF COMMENTS:

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

Signed: Lainie Berry
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Jan 10, 2023

Attachments
Cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

January 10, 2023

MEMORANDUM

Log no. 3933

TO: RUSSELL Y. TSUJI, Land Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: **Division of Forestry and Wildlife Comments for the Draft Supplemental Environmental Impact Statement (SEIS) for the Hilton Hawaiian Village (HHV) -Village Master Plan Improvements, Ala Moana Boulevard (AMB) Tower Project on Oʻahu**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments for the Draft SEIS for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, on the island of Oʻahu; TMKs: (1) 2-6-009:004, 2-6-009:005, 2-6-009:006, 2-6-009:007 (por.), 2-6-009:009 (por.), and 2-6-009:013 (por.). The proposed project consists of expanding the HHV Master Plan to include a 0.46-acre site along AMB that involves replacing existing structures at the site with the new AMB Tower. The new AMB Tower will provide hotel lodging accommodations and include a lobby area, porte cochere, ground floor retail accessible to pedestrians, landscaping, pedestrian walkways, food and beverage offerings, pool and recreation area, fitness center, and parking.

DOFAW concurs with the following measures included in the Draft SEIS intended to avoid construction and operational impacts to State-listed species including the Hawaiian Hoary bat (*Lasiurus cinereus semotus*), White Tern (*Gygis alba rothschildi*), Band-rumped Storm-petrel (*Oceanodroma castro*), Hawaiian Petrel (*Pterodroma sandwichensis*), and Newell's Shearwater (*Puffinus newelli*).

- Clearing and grubbing of woody vegetation taller than 15 feet would be planned to occur outside of the Hawaiian Hoary bat pupping season between June 1 and September 15.
- Barbed wire will not be utilized for fencing.
- Trees will be examined prior to cutting to determine if there are white terns nesting in them, especially during the white tern breeding season (January thru June).
- Trees with nesting white terns will not be trimmed or removed.
- If night-time construction activity or equipment maintenance is required, all associated lights shall be shielded downward. When large flood/work lights are used, they shall be placed on poles that are high enough to allow the lights to be pointed directly at the ground.

- In the long-term, exterior facility lighting shall be shielded downward to reduce the potential for interactions of nocturnally flying seabirds with external lights and manmade structures.
- If a nest of an avifaunal species described above is discovered during construction, 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. These standard guidelines are intended to protect chicks, and may be shortened if monitoring is conducted often enough to note when chicks have fledged (usually five to nine weeks after hatching).
- If a previously undiscovered nest is found after work begins or a downed seabird is found during the duration of construction, work will cease within a minimum radius of 100 feet of the nest, and the U.S. Fish and Wildlife Service will be contacted within 24 hours.
- Information about seabird fallout will be provided to staff working on the site prior to the initiation of work.

We also concur with the measures outlined to use native plant species for landscaping. DOFAW provides the following additional comments regarding the potential for the proposed work to affect listed species in the vicinity of the project area.

- For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawaiʻi please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.
- If nighttime construction is required during the seabird fledgling season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/#response.
- If a white tern nest is discovered, please notify DOFAW staff for assistance.
- DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid ʻŌhiʻa Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetles, etc.), or invasive plant parts (e.g., Miconia, Pampas Grass, etc.) that could harm our native species and ecosystems. We recommend consulting the Oʻahu Invasive Species Committee (OISC) at (808) 266-7994 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.
- The invasive Coconut Rhinoceros Beetle (CRB) or *Oryctes rhinoceros* is known to occur in Oʻahu. On July 1, 2022, the Hawaiʻi Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of Oʻahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes a) entire dead trees, b) mulch, compost, trimmings, fruit and vegetative scraps, and c) decaying stumps. CRB host plants include the live palm plants in the following genera: *Washingtonia*, *Livistona*, and *Pritchardia* (all commonly known as fan palms), *Cocos* (coconut palms), *Phoenix* (date

palms), and *Roystonea* (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Myrna N. Girald Pérez, Protected Species Habitat Conservation Planning Associate at (808) 265-3276 or myrna.girald-perez@hawaii.gov.

Sincerely,

Lainie Berry

LAINIE BERRY
Wildlife Program Manager

LD Ø555

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

November 21, 2022

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
Tax Map Key (TMK): (1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)
(Waikīkī, Oʻahu, Hawaiʻi)

Dear Participant:

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The Draft SEIS document can be downloaded from the Office of Planning and Sustainable Development, Environmental Review Program website on November 23, 2022 at this link: https://files.hawaii.gov/dbedt/erp/Doc_Library/2022-11-23-OA-DSEIS-Hilton-Hawaiian-Village-AMB-Tower.pdf. Please note that an error message may be received if the link is used prior to this date.

Please provide comments via email, fax, or U.S. Mail. The 45-day public comment period begins on November 23, 2022, and ends on January 9, 2023. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

Thank you for your participation in the environmental review process.

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

RECEIVED
LAND DIVISION
2022 NOV 25 PM 2:31
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

JOSH GREEN, M.D.
GOVERNOR

EDWIN H. SNIFFEN
DIRECTOR

Deputy Directors
DREANALEE K. KALILI
TAMMY L. LEE
ROBIN K. SHISHIDO
ROSS M. HIGASHI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

DIR 1128
STP 8.3523

December 30, 2022

VIA EMAIL: ambtower@g70.design

Mr. Jeffrey Overton
Principal Planner
Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Draft Supplemental Environmental Impact Statement (SEIS)
Hilton Hawaiian Village (HHV) – Village Master Plan Improvements, AMB Tower
Waikiki, Oahu, Hawaii
Tax Map Key: (1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), 013 (por.)

Thank you for your letter dated November 21, 2022, requesting the Hawaii Department of Transportation's (HDOT) review and comment on the subject Draft SEIS. HDOT understands that Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC and SMK, Inc. is proposing to expand the HHV and develop a new AMB Tower with approximately 515 hotel guestrooms on three parcels totaling approximately 0.46 acres. The project will also include retail spaces, additional parking spaces, and other amenities.

The project site will be accessed from Ala Moana Boulevard (State Route 92). The one-way interior road through the porte cochere will have two driveways on Ala Moana Boulevard. Adjacent and east of the project site is an existing driveway on Ala Moana Boulevard that is used as a service road to adjacent HHV facilities, including a parking garage.

There is a landscaped median along this segment of Ala Moana Boulevard and vehicle turning movements at the three driveways are limited to right-turn-in and right-turn-out (RIRO). The exiting traffic enters a right-turn only lane on Ala Moana Boulevard.

The nearest intersections with Ala Moana Boulevard to the west of the site are at Kahanamoku Street (Private) and Hobron Lane (County); and to the east of the site, Kalia Road (County).

A 20-foot setback from Ala Moana Boulevard is required. Approximately 337 square feet of the tower podium encroach 1 to 4 feet into the 20-foot setback. However, the lobby area is 6.5 to 15 feet set back from the requisite 20-foot setback and with the permitted use of yard averaging, the project meets the 20-foot setback from Ala Moana Boulevard (Section 3.3.9.4).

HDOT has the following comments:

1. Thank you for including a Traffic Impact Analysis Report (TIAR) in the Draft SEIS, as requested in our Supplemental Environmental Impact Statement Preparation Notice comments.

2. The Applicant should determine applicability of the following HDOT permits and revise Table 1.3, as needed:

    - Permit to Perform Work Upon State Highways is required for any work within the State highway right-of-way (ROW) (Hawaii Revised Statutes [HRS] 264). The application includes the review and approval of construction drawings and a Traffic Management Plan.

    - Permit to Operate or Transport Oversize and/or Overweight Vehicles and Loads Over State Highways (HRS Chapter 291, Section 36).

    - Permit for the Occupancy and Use of State Highway ROW (HRS 264). Note: this is applicable to underground and overhead power lines, utility pipelines within the State highway ROW.

    The permit applications and instructions are available online at the following link:
    https://hidot.hawaii.gov/highways/home/doing-business/guide-to-permits

3. No additional stormwater runoff is permitted to the State highway ROW. Table 4.5 Stormwater Runoff Summary suggests there will be an increase in runoff of 0.35 cubic feet per second toward Ala Moana Boulevard. Various mitigation measures are proposed; however, the Final EIS should commit to avoiding additional stormwater runoff to Ala Moana Boulevard.

4. The segment of Ala Moana Boulevard fronting the site is not access-controlled. The existing driveways within the site on Ala Moana Boulevard will be demolished and replaced by the two porte cochere driveways. Describe/show the location of the existing driveways relative to the proposed driveways.

    The new driveways (and other work within the State highway ROW) will require an HDOT Permit. See Comment 2.

5. The porte cochere is supposed to be the primary site access but porte cochere traffic is not reflected in the trip distribution. Revise the trip generation assumptions to reflect the anticipated use of the porte cochere as the primary guest access and address the following inconsistencies:

    - The trip distribution assumptions described in the TIAR Table 2 and Figure 5 suggest all projected peak traffic hour trips approach the site from the west and most exit Ala Moana Boulevard at Kahanamoku Street. The remaining 34/38 (A.M./P.M. peak traffic hour) vehicles would proceed toward the porte cochere, but none would exit the porte cochere to Ala Moana Boulevard.

- The 47/73 (A.M./P.M.) project-related vehicles that leave the HHV via Kahanamoku Street and turn east onto Ala Moana Boulevard, are the only trips generated by the project that impact the Kalia Road intersection.

- The porte cochere exit driveway is at the edge of one of the two Kalia Road right-turn-only traffic lanes on Ala Moana Boulevard; therefore, vehicles leaving the site, especially during peak traffic hours, would have to turn right onto Kalia Road. This is not reflected in the TIAR.

6. The proximity of the three driveways (i.e., porte cochere entrance and exit, existing service road) to each other and the Kalia Road intersection introduces multiple potential conflict points among vehicles, pedestrians, and bicyclists. The TIAR includes potential recommendations to address pedestrian safety impacts but does not adequately assess the significance of the potential impacts.

   Further, the impact of the project traffic on queuing within Ala Moana Boulevard is not adequately described in the TIAR.

   The TIAR and Final SEIS should address these concerns and include:

   - a description of all existing and proposed uses (e.g., loading zones, parking) of the service road and direction of traffic on the Ala Moana Boulevard driveway (e.g., enter only)

   - porte cochere traffic (See Comment 5)

   - a safety impact assessment, with queuing and storage depth analysis that considers the combined use of the service driveway and porte cochere driveways

   - specific recommendations to address the potential impacts to pedestrian/bicyclist safety.

If there are any questions, please contact Mr. Blayne Nikaido of the HDOT Statewide Transportation Planning Office at (808) 831-7979, or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

EDWIN H. SNIFFEN
Director of Transportation

Noelle Besa Wright

From:	Tracy Camuso
Sent:	Wednesday, January 25, 2023 4:21 PM
To:	Noelle Besa Wright
Subject:	FW: Supplemental Draft EIS: Hilton Hawaiian Village Master Plan Improvements
Attachments:	RE_ Requesting consultation for the Hilton Hawaiian Village Ala Moana Boulevard Tower project.pdf

Tracy Camuso
Principal

t 808.441.2125
e tracyc@g70.design

From: Kamakana Ferreira <kamakanaf@oha.org>
Sent: Wednesday, January 25, 2023 1:46 PM
To: Tracy Camuso <tracyc@g70.design>
Cc: Gina Farley <gfarley@culturalsurveys.com>; Kai Markell <kaim@oha.org>
Subject: RE: Supplemental Draft EIS: Hilton Hawaiian Village Master Plan Improvements

Aloha Tracy,

The Office of Hawaiian Affairs (OHA) did put in a request to CSH for a copy of the AIS and BTP. Gina Farley of CSH responded by providing us a link to the AIS and indicating that a copy of the BTP would be provided when it is finished. See attached PDF of the email string. So, we are actively reviewing project materials and the consultations that have been ongoing so far.

We encourage continued consultation with the OIBC and cultural descendants, and do certainly appreciate the past presentations and commitments made to the OIBC and cultural descendants regarding testing strategies. OHA would further appreciate any copies of SHPD comments and the draft BTP when it is ready.

Should we have concerns regarding any of the reports, consultations, or SHPD comments, we will let you know.

Mahalo,

Kamakana C. Ferreira, M.A.
Lead Compliance Specialist
Office of Hawaiian Affairs
560 N. Nimitz Hwy
Honolulu, Hi. 96817

(808)594-0227

From: Tracy Camuso <tracyc@g70.design>
Sent: Wednesday, January 25, 2023 1:27 PM
To: Kamakana Ferreira <kamakanaf@oha.org>
Subject: Supplemental Draft EIS: Hilton Hawaiian Village Master Plan Improvements

Aloha Kamakana,

G70 is finalizing the Supplemental EIS for the Hilton Hawaiian Village Master Plan Improvements. We have noted that the Office of Hawaiian Affairs (OHA) has not commented on Draft SEIS. Although the comment period has officially ended (January 9, 2023), we are reaching out to confirm whether OHA will be submitting comments. Please see the attached Participant Letter sent to your office on November 23, 2002 for your reference. If comments will be provided, we appreciate submittal as soon as possible.

We apologize if you are not the correct contact for this correspondence, it was the last we had listed in our files.

Please let me know if you have any questions.

Thank you,
Tracy

G70

Tracy Camuso
Principal

111 S. King Street, Suite 170
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d 808.441.2125
e tracyc@g70.design
www.G70.design

STATE OF HAWAIʻI
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

JOSH GREEN, M.D.
GOVERNOR

SCOTT J. GLENN
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Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Branch

DTS 202211281531NA

January 25, 2023

Mr. Jeffrey Overton
Principal Planner
Group 70 International, Inc.
111 S. King Street, Suite 170
Honolulu, Hawaiʻi 96813

Dear Mr. Overton:

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village - Village Master Plan Improvements, Ala Moana Boulevard Tower
Waikīkī, Oʻahu, Hawaiʻi
TMK: (1) 2-6-009: 004, 005, 006, 007 (por), 009 (por), and 013 (por)

Thank you for the opportunity to provide comments for the Draft Supplemental Environmental Impact Statement (Draft SEIS) for the proposed Hilton Hawaiian Village (HHV) - Village Master Plan Improvements, Ala Moana Boulevard (AMB) Tower. The Draft SEIS was received by our office via memo dated November 21, 2022.

It is our understanding that this project calls for the expansion of the HHV to include a 0.46-acre site along Ala Moana Boulevard. This expansion includes replacing existing structures at the site with the new AMB Tower, which will provide upscale hotel lodging. The AMB Tower is expected to enhance the HHV resort property and serve as a new gateway into Waikīkī.

The new tower will include a lobby area, porte cochere, ground floor retail accessible to pedestrians, landscaping, pedestrian walkways, food and beverage offerings, pool and recreation area, fitness center, and parking. The project is anticipated to produce new jobs through the construction process and resort operation.

The Office of Planning and Sustainable Development (OPSD) has reviewed the transmitted material, and has the following comments to offer:

1. <u>Open Space Concerns</u>
As the result of the proposed AMB Tower, the overall percentage of open space will be reduced to nearly the minimum requirement of 50% open space within a zoning lot set forth in the County Land Use Ordinance Standards. OPSD recommends that the Final Supplemental Environmental Impact Statement (Final SEIS) consider future modifications to the Hilton Hawaiian Village Master Plan to boost the overall open space percentage within the subject resort mixed use precinct.

2. <u>Coastal Height Setbacks</u>
Pursuant to Revised Ordinances of Honolulu (ROH) Chapter 21, coastal height setbacks require tall buildings in Waikīkī special district to step back from the shoreline to maximize public safety and the sense of open space and public enjoyment associated with coastal resources. Given that the project site is situated approximately 800 feet inland from the shoreline, the Final SEIS should confirm with Department of Planning and Permitting (DPP), City and County of Honolulu (CCH), as to whether a Certified Shoreline (Survey) is required as listed under 1.10 Listing of Required Government Permits and Approvals for the proposed project.

3. <u>Rooftop Height Exemption</u>
The Final SEIS shall consult and confirm with the DPP for the rooftop height exemption given that the maximum 350-foot allowable height of the AMB Tower will exclude permitted rooftop structures for mechanical appurtenances and utilitarian and architectural features. Please note that these building elements may be exempted only if the director finds they do not obstruct any significant views which are to be preserved, protected and enhanced and are consistent with the intent and objectives of the Waikīkī special district.

4. <u>Public/Private Redevelopment in Waikīkī</u>
OPSD suggests that in the Final SEIS, the equivalent information listed in Section 4.13.1 Interrelationships and Cumulative Environmental Impacts of the Draft SEIS, assess potential incremental impacts that may result from the proposed action with a table and a location map of past, present and reasonably foreseeable future public and private redevelopments in Waikīkī under a temporal and spatial scope.

5. <u>Traffic Impacts from Driveway Enhancement</u>
OPSD recommends that the Final SEIS discuss and illustrate how the existing driveway will enhance connection at the Village by allowing vehicles going to the Coral Ballroom parking garage to avoid Ala Moana Boulevard. The driveway improvements are intended to minimize traffic impacts on this busy throughfare, as stated in Section 3.3.6, page 3-30, Landscaping and Open Space Summary of the Draft SEIS.

If you have any questions or concerns of this response letter, please contact Joshua Hekekia of our office at (808) 587-2845.

Sincerely,

Scott J. Glenn,
Director

City and County of Honolulu

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

December 28, 2022

Mr. Jeffrey Overton
Group 70 International, Inc. dba. G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Your Letter Dated November 21, 2022 Requesting Comments on the Draft Supplemental Environmental Impact Statement for the Hilton Hawaiian Village, Village Master Plan Improvements, AMB Tower off Ala Moana Boulevard and Kalia Road, Tax Map Key; 2-6-009:004, 005, 006, 007, 009, and 013

Thank you for your letter regarding the proposed 515-unit AMB Tower project.

The existing water system is currently adequate to accommodate the proposed development. However, please be advised that the existing Honolulu water system capacity has been reduced due to the shut-down of the Halawa Shaft pumping station as a proactive measure to prevent fuel contamination from the Navy's Red Hill Bulk Storage Tank fuel releases. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval, pending evaluation of the water system conditions at that time on a first-come first-served basis. The Board of Water Supply (BWS) reserves the right to change any position or information stated herein up until the final approval of the building permit application.

We continue to request 10% voluntary water conservation of all customers until new sources are completed and require water conservation measures in all new developments. If water consumption significantly increases, progressively restrictive conservation measures may be required to avoid low water pressures and disruptions of water service.

Presently, there is no moratorium on the issuance of new and additional water services. Water distributed via the BWS water systems remains safe for consumption. The BWS is closely monitoring water usage and will keep the public informed with the latest findings. Please visit our website at www.boardofwatersupply.com and www.protectoahuwater.org for the latest updates and water conservation tips.

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. Prior to BWS approval of water availability, the developer is required to submit a Water Conservation and Reuse Plan for the Hilton Hawaiian Village development for BWS review and approval.

High-rise buildings with booster pumps will be required to install water hammer arrestors or expansion tanks to reduce pressure spikes and potential main breaks in our water system.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our approval, 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 Barry Usagawa, Water Resources Division at (808) 748-5900.

Very truly yours,

Ervin Kamata

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

DEPARTMENT OF COMMUNITY SERVICES
CITY AND COUNTY OF HONOLULU
925 DILLINGHAM BOULEVARD, SUITE 200•HONOLULU, HAWAII 96817
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RICK BLANGIARDI
MAYOR

ANTON C. KRUCKY
DIRECTOR

AEDWARD LOS BANOS
DEPUTY DIRECTOR

November 28, 2022

Group 70 International, Inc. dba G70
111 South King Street, Suite 170
Honolulu, Hawaiʻi 96813
Attn: Jeffrey Overton, Principal Planner

Dear Mr. Overton:

SUBJECT: DRAFT Supplemental Environmental Impact Statement
Hilton Hawaiian Village AMB Tower
TMK: (1) 2-6-009:004, 005, 006, 007 (por.), 009 (por.),
and 013 (por.), Waikīkī, Honolulu, Oʻahu, Hawaiʻi

Thank you for notifying us about the availability of a Draft Supplemental Environmental Impact Statement (SEIS) for the Hilton Hawaiian Village AMB Tower project.

Our review indicates that the proposed project is located approximately three blocks from a property on Ena Road that the Department of Community Services leases out for the provision of special needs housing. We ask that this project take into consideration the health, safety, accessibility, and long-term wellbeing of people living nearby and/or involved with activities in the surrounding neighborhood.

Thank you for providing us the opportunity to comment on this matter.

Sincerely,

Anton C. Krucky
Director

G70

OCS/Admin
22710

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

November 21, 2022

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
Tax Map Key (TMK): (1) 2-6-009: 004, 005, 006, 007 (por.), 009 (por.), and 013 (por.)
(Waikīkī, O'ahu, Hawai'i)

Dear Participant:

On behalf of the Applicants, Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Inc., G70 is notifying you of the availability of the Draft Supplemental Environmental Impact Statement (SEIS) for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project located in Waikīkī, Island of O'ahu, Hawai'i.

The Draft SEIS document can be downloaded from the Office of Planning and Sustainable Development, Environmental Review Program website on November 23, 2022 at this link: https://files.hawaii.gov/dbedt/erp/Doc_Library/2022-11-23-OA-DSEIS-Hilton-Hawaiian-Village-AMB-Tower.pdf. Please note that an error message may be received if the link is used prior to this date.

Please provide comments via email, fax, or U.S. Mail. The 45-day public comment period begins on November 23, 2022, and ends on January 9, 2023. Please submit your comments to:

Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813
Attn: Jeffrey Overton, Principal Planner
Email: ambtower@g70.design
Fax: (808) 523-5866

Thank you for your participation in the environmental review process.

Sincerely,
Group 70 International, Inc., dba G70

Jeffrey Overton, AICP, LEED AP
Principal Planner

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

RICK BLANGIARDI
MAYOR

HAKU MILLES, P.E.
DIRECTOR DESIGNATE

BRYAN GALLAGHER, P.E.
ACTING DEPUTY DIRECTOR

December 20, 2022

SENT VIA EMAIL

Mr. Jeffrey Overton, AICP, LEED AP
Principal Planner
ambtower@g70.design

Dear Mr. Overton:

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village - Village Master Plan Improvements,
AMB Tower
Tax Map Key (TMK): (1) 2-6-009:004, 005, 006, 007 (por.),
009 (por.), and 013 (por)
(Waikiki, Oahu, Hawaii)

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any further questions, please contact me at (808) 768-8481.

Sincerely,

for Haku Milles, P.E., LEED AP
Director Designate

HM:krn (892615)

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

RICK BLANGIARDI
MAYOR

DAWN B. SZEWCZYK, P.E.
DIRECTOR AND CHIEF ENGINEER

WARREN K. MAMIZUKA
ACTING DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 23-81

February 3, 2023

Group 70 International, Inc., dba G70
Attention: Mr. Jeffrey Overton, AICP, LEED AP
111 S. King Street, Suite 170
Honolulu, HI 96813

Dear Mr. Overton:

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower
TMK: 2-6-009:004, 005, 006, 007 (POR), 009 (POR), and 0013 (POR)

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

We have no comments at this time, as we do not have any facilities or easements on the subject properties. Please note that Ala Moana Boulevard is under the jurisdiction of the State of Hawai'i, Department of Transportation, Highways Division.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at (808) 768-3697.

Sincerely,

for Dawn B. Szewczyk, P.E.
Director and Chief Engineer

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.honolulu.gov/dpp

RICK BLANGIARDI
MAYOR

DAWN TAKEUCHI APUNA
DIRECTOR DESIGNATE

JIRO SUMADA
DEPUTY DIRECTOR

January 9, 2023

2021/ED-15(LM)

Mr. Jeff Overton
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Draft Supplemental Environmental Impact Statement (SEIS)
Chapter 343, Hawaii Revised Statutes,
Title 11, Chapter 200, Hawaii Administrative Rules
Chapter 25, Revised Ordinances of Honolulu
Hilton Hawaiian Village - Village Master Plan Improvements AMB Tower
2005 Kalia Road - Waikiki
Tax Map Keys 2-6-009: 004, 005, 006, 007, 009 and 013

This responds to your request for comments regarding the SEIS for the Hilton Hawaiian Village addition of the Ala Moana Boulevard Tower Project. Comments from the Department of Planning and Permitting (DPP) include:

A. Site Development Division, Civil Engineering Branch

1. Section 4.8.1, Drainage. Compliance with the prevailing Rules Relating to Water Quality and Storm Drainage Standards will be verified during review of grading/construction plans.

B. Site Development Division, Subdivision Branch

1. Section 4.4.3, Flood Hazards. As part of the City's climate adaptation strategy, and participation in the Community Rating System of the National flood Insurance Program, the DPP will be establishing a freeboard requirement of one foot above the base flood elevation for new and substantially improved buildings in the special flood hazard area.

Please note that the Project will eventually be subject to a minimum flood elevation requirement of 8.0 feet (instead of 7.0 feet).

C. Site Development Division, Traffic Review Branch

1. Section 4.7, Roadways and Circulation. A time line or phasing plan of the anticipated dates to obtain major building permit(s) for demolition/construction work, including the projected date of occupancy, shall be prepared by the Applicant in a format acceptable to the Department. The time line should identify when the construction management plan (CMP), the traffic management plan (TMP) and updates/revisions, if any, to the traffic impact report (TIR) dated April 2022 will be submitted for review and approval. Typically, the CMP should be submitted for review and approval prior to the issuance of demolition/building permits for major construction work. The TMP or subsequent updates should be submitted and approved prior to the issuance of the (temporary) certificate of occupancy. The TIR, including supplemental studies or subsequent updates, should be submitted and approved prior to the commencement of each major phase of work, as required. A new TIR may be required if there is a significant change to the scope or timing of the major work items contained in the initial report.

   A construction management plan (CMP) should identify the type, frequency and routing of heavy trucks and construction related vehicles. Every effort shall be made to minimize impacts from these vehicles and related construction activities. The CMP should identify and limit vehicular activity related to construction to periods outside of the peak periods of traffic, utilizing alternate routes for heavy trucks, provisions for either on-site or off-site staging areas for construction related workers and vehicles to limit the use of on-street parking around the project site and other mitigation measures related to traffic and potential neighborhood impacts. Preliminary or conceptual traffic control plans should also be included in the CMP. The applicant should document the condition of roadways prior to the start of construction activities and provide remedial measures, as necessary, such as restriping, road resurfacing and/or reconstruction if the condition of the roadways has deteriorated as a result of the related construction activities.

   The TMP shall include traffic demand management (TDM) strategies to minimize the amount of vehicular trips for daily activities. TDM strategies could include carpooling and ride sharing programs, transit, bicycle and pedestrian incentives and other similar TDM measures. The TMP should address the parking, porte-cochere and loading/trash pick-up operations. A post TMP will be required approximately one year after the issuance of the certificate of occupancy to validate the relative effectiveness of the various strategies identified in the initial report.

2. Section 4.7.2, Multi-Modal Facilities. All internal walkways shall direct pedestrians to the corner of street intersections to minimize the potential for unintended mid-block crossings. A pedestrian circulation plan should also be included to provide accessibility and connectivity to the surrounding public sidewalks. Bicycle parking or bike racks shall be provided within this project and shall be located in a safe and convenient location.

3. Section 4.7.3, Access and parking. A vehicular circulation plan should be provided for all aspects of the Project including, valet patterns, self-park, and loading. Should there be an increase in the use of Rainbow Drive, the Kalia Road/Rainbow Drive intersection should be analyzed and included in the TIR. Provide a discussion of the proposed valet operations (i.e., where/how will valet service operate and how will they get to/from the drop-off/pick-up areas.

4. Continue to work with SDOT regarding any impacts to Ala Moana Boulevard and Kahanamoku Street and any of its intersections and access points.

D. <u>Land Use Permits Division, Urban Design Branch</u>

1. The proposed Project will require a Special Management Area Use Permit, and Special District (SD) Permit Major for Planned Development-Resort Amendment. The SD Permit should provide more discussion and details as to how the Project reflects a Hawaiian Sense of Place, generally supports the other objectives of the Waikiki Special District, and complies with the design guidelines of the District.

Should you have any further questions on this matter, please contact Laura Mo, of our Urban Design Branch, at (808) 768-8025 or via email at laura.mo@honolulu.gov.

Very truly yours,

for Dawn Takeuchi Apuna
Director Designate

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
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RICK BLANGIARDI
MAYOR

J. ROGER MORTON
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP 11/22-867123

January 13, 2023

MEMORANDUM

TO: Dawn Takeuchi Apuna, Director Designate
Department of Planning and Permitting

ATTENTION: Alex Beatty, Planner
Land Use Permits Division

FROM: J. Roger Morton, Director
Department of Transportation Services

SUBJECT: Hilton Hawaiian Village Ala Moana Boulevard Tower Draft Supplemental Environmental Impact Statement

Thank you for the opportunity to provide written comments regarding the Hilton Hawaiian Village Ala Moana Boulevard Tower Draft Supplemental Environmental Impact Statement (DSEIS). We have the following comments.

1. Transit Improvements.

    i. The applicant shall construct a bus stop with transit amenities (shelter, seating, trash can, etc.) and associated infrastructure, either as an on-site pull-in/pull-out area or fronting the Project site on Ala Moana Boulevard. Contact the Department of Transportation Services – Transportation Mobility Division at TheBusStop@honolulu.gov for project coordination, bus stop location, and shelter specifications.

    ii. The developer, management entity, or owners' association shall adopt (i.e., be responsible for litter removal, cleaning and maintenance of bus stop shelter, benches and floor area) any existing or future bus stops fronting the Project site at no cost to the City.

2. Traffic Impact Report (TIR).

    i. The applicant shall revise the TIR to include the intersection at Ala Moana Boulevard and Kalakaua Boulevard; as the traffic signal progression beyond the Ena Road/Kalia Road intersection will likely affect the Level of Service E on the Ena and Kalia Road approaches to Ala Moana Boulevard during the AM and PM peak hours (as shown on DSEIS, Table 4.4, Page 4-48).

3. Transportation Demand Management (TDM) Strategies. The applicant must develop and submit a TDM Strategy to DTS, incorporating the following elements:

    i. Page 19 of the City's Transportation Impact Assessment (TIA) Guide requires sponsors of projects that generate 100 or more net new a.m. or p.m. peak period vehicle trips and contain ongoing operational strategies to submit an annual TDM compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City and County of Honolulu. The annual report should document the status and effectiveness of the transportation improvements including the actual vehicle trip reduction. The TIA Guide can be found at http://www4.honolulu.gov/docushare/dsweb/View/Collection-7723.

    ii. The DTS supports adding fewer parking stalls than calculated by the *Institute of Transportation Engineers' Parking Generation Manual*, and recommends the TDM strategies described on Pages 20-22 of the City's TIA Guide, including, but not limited to: providing subsidized transit passes to employees; informing staff and visitors of vanpool and car share programs to promote alternate modes of transportation; and parking cash out.

    iii. Inclusion of a bikeshare station area and/or designated drop zone, as a bus stop is present along the property frontage, as per the City and County of Honolulu's TIA Guide, Sections 4.1 and 4.2.

    iv. Applicant shall consider inclusion of car share spaces, consistent with the requirement for buildings within downtown with at least 50 units, as per the City and County of Honolulu's TIA Guide, Sections 4.1 and 4.2.

4. Parking.

   i. The DTS requires a Shared Parking Analysis, based on the Urban Land Institute Shared Parking model, and a shared parking strategy. The analysis should include a qualitative description of how the applicant will monitor and manage opportunities for shared parking between the various users (guests, visitors and employees) of the Project building and the existing parking structure.

Should you have any questions, please contact Greg Tsugawa, of my staff, at (808) 768-6683.

cc: Jeffrey Overton, Project Manager
G70

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

RICK BLANGIARDI
MAYOR

SHELDON K. HAO
FIRE CHIEF

JASON SAMALA
DEPUTY FIRE CHIEF

December 12, 2022

Mr. Jeffrey Overton, AICP, LEED AP
Principal Planner
G70 International, Inc.
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Draft Supplemental Environmental Impact Statement
Hilton Hawaiian Village - Village Master Plan Improvements, AMB Tower
Honolulu, Hawaii 96815
Tax Map Key: 2-6-009: 004, 005, 006, 007 (por.), 009 (por.) and 013 (por.)

In response to your letter received on November 23, 2022 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 (46 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; 2018 Edition, Sections 18.2.3.2.2 and 18.2.3.2.2.1, as amended.)

   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; 2018 Edition, Section 18.2.3.2.1.)

2. Fire department access roads shall be in accordance with NFPA 1; 2018 Edition, Section 18.2.3.

3. An approved water supply capable of supplying the required fire flow for fire protection shall be provided to all premises upon which facilities, buildings, or portions of buildings are hereafter constructed or moved into the jurisdiction. The approved water supply shall be in accordance with NFPA 1; 2018 Edition, Sections 18.3 and 18.4.

4. Submit civil drawings to the City and County of Honolulu's Department of Planning and Permitting and route them to the HFD for review and approval.

5. The abovementioned provisions are required by the HFD. This project may necessitate that additional requirements to be met as determined by other agencies.

Should you have questions, please contact Acting Battalion Chief Kendall Ching of our Fire Prevention Bureau at 808-723-7154 or kching3@honolulu.gov.

Sincerely,

CRAIG UCHIMURA
Acting Assistant Chief

CU/MD:bh

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

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

RICK BLANGIARDI
MAYOR

ARTHUR J. LOGAN
CHIEF

KEITH K. HORIKAWA
RADE K. VANIC
DEPUTY CHIEFS

OUR REFERENCE EO-GK

December 15, 2022

SENT VIA EMAIL

Mr. Jeffrey Overton
ambtower@g70.design

Dear Mr. Overton:

This is in response to your letter of November 21, 2022, requesting comments on the Draft Supplemental Environmental Impact Statement for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower project in Waikiki.

The Honolulu Police Department (HPD) has reviewed the project and anticipates short-term impacts in the area of the project due to the possible ingress and egress of construction vehicles, equipment, deliveries, and ongoing construction during the project. The HPD recommends that adequate notification be made to the Waikiki Neighborhood Board, businesses, and residents as that area is heavily populated with visitors and residents alike.

If there are any questions, please call Major Randall Platt of District 6 (Waikiki) at (808) 723-3339.

Thank you for the opportunity to review this project.

Sincerely,

Glenn Hayashi

GLENN HAYASHI
Assistant Chief of Police
Support Services Bureau

WAIKIKI NEIGHBORHOOD BOARD NO. 09

c/o NEIGHBORHOOD COMMISSION OFFICE •
TEL: (808) 768-3710 INTERNET: www1.honolulu.gov/nco

09 January 2023

Office of Planning and Sustainable Development
Environmental Review Program
235 South Beretania Street, Room 702
Honolulu, HI 96813
Attn: Mary Alice Evans, Director

Group 70 International, Inc.
Attn: Jeff Overton, AICP, LEED AP
111 S. King Street, Suite 170
Honolulu, HI 96813

Re: Draft Supplemental Environmental Impact Statement for the Hilton Hawaiian Village – Village Master Plan Improvements, AMB Tower - Review and Comments from the Waikiki Neighborhood Board

The Waikiki Neighborhood Board is in receipt of the above-referenced document regarding the HHV AMB Tower master plan development.

While our Board has previously commented on the merits and various anticipated impacts from this project during the environmental review and public input phase, we remain focused on the aspects of this project that will enhance the quality of life for and safety of the Waikiki residential community.

At this gateway to Waikiki, we look for this project, through compliance with zoning regulations, land use and sustainability policies, to enhance the public realm with an aesthetically pleasing, pedestrian-safe space that adds value to the neighborhood as a sensible, sustainable, and resilient development.

Waikiki is the economic engine for the State of Hawaii. The residential community of Waikiki is unique to the state in that it shares space with an even larger transient lodging population. As our community changes and upgrades to meet the demands of tourism, consideration of the residential community must be of foremost concern.

This development has an anticipated project schedule of 30 months. During the construction, please ensure all permit requirements are strictly met related to construction hours, street closure notifications and noise. This area contains a high density of residences and construction impacts are intensified in these areas.

Again, thank you for engaging with the Waikiki community and we wish you success with your project.

Sincerely,

Michael V. Brown

Michael V. Brown, ASLA
Waikiki Neighborhood Board
Development Review

Organizations

WAIKĪKĪ IMPROVEMENT ASSOCIATION

February 8, 2023

Ms. Mary Alice Evans,
Director State of Hawaiʻi Office of Planning and Sustainable Development Environmental Review Program
235 South Beretania Street, Room 702 Honolulu, Hawaiʻi 96813

Re: WIA Conceptually Supports Hilton Hawaiian Village's Proposed Ala Moana Boulevard Tower

Aloha May Alice,

The Waikīkī Improvement Association conceptually supports Parks Hotels & Resorts' proposed Ala Moana Boulevard (AMB) Tower project.

Upon receiving a briefing on the AMB Tower at our December 14, 2022 meeting, the WIA Board voted unanimously to support the project in concept as it aligns with our mission to improve, enrich and beautify Waikīkī for the benefit of residents and visitors alike.

We look forward to receiving further updates about the AMB Tower as it moves through the permitting process.

Mahalo nui,

Rick Egged
President, Waikīkī Improvement Association

2250 Kalākaua Avenue, Suite 315 Honolulu, HI 96815 Ph: 808.923.1094 ~ Fax: 808.923.2622 ~ email: mail@waikikiimprovement.com

Waikīkī Transportation Management Association Special Improvement District

Making Waikīkī better
…one curb at a time.

January 6, 2023

Mr. Alex Beatty
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: Hilton Hawaiian Village – Village Master Plan Improvements
Ala Moana Boulevard Tower Draft SEIS Comments

Dear Mr. Beatty,

The Waikīkī Transportation Management Association ("WTMA") has reviewed the Hilton Hawaiian Village – Village Master Plan Improvements Ala Moana Boulevard Tower ("the Project") Draft Supplemental Environmental Impact Statement ("SEIS") submitted by the Hilton Hawaiian Village Beach Resort & Spa, Park Ala Moana LLC, and SMK, Ink. ("the Applicant") and would like to offer the following comments:

1. The Project's Draft SEIS Section 3.3.7.1, Vehicle Circulation, states *"Primary vehicular access to the Project will be provided via a new porte cochere along Ala Moana Boulevard served by two one-way driveways*." Draft SEIS Figures 3.17 to 3.21 offer renderings depicting this configuration that, if realized, would permanently prohibit the possibility of constructing the trolley stop previously discussed as a mitigation to the impacts upon historic street curb usage in this area. This historic commercial vehicle curb usage, and past efforts by Hilton Hawaiian Village to mitigate the loss of commercial vehicle curb utilization, should be addressed in the Final SEIS. This historical review should go back to the "*Hilton Waikīkīan Site Traffic Impact Study*" and include all subsequent technical reports and related correspondence with the approving or governing public agencies on this matter.

2. The Project's Draft SEIS, Section 3.3.8.2, Off-street Loading, refers to ROH, Section 21-6. The Draft SEIS successfully addresses all of the specifications of this ROH section. However, this ROH section provides requirements for commercial freight vehicles only, not passenger commercial vehicles. In the past, off-street loading for commercial vehicles at Hilton Hawaiian Village has included substantial numbers of both freight and passenger commercial vehicles. Often, the ability to access the Hilton Hawaiian Village campus, or the current land uses on the property to be added to the Hilton Hawaiian Village campus, has been so impeded that commercial vehicles have sought alternative means to conduct their business. Some of these alternative means include commercial passenger vehicles using Ala Moana Boulevard curb space to pick up or drop off visitors staying at the Hilton Hawaiian Village. Other alternative means have included freight commercial vehicles using Ala Moana Boulevard curb space to perform freight loading operations. It would be beneficial if the Applicant would voluntarily address the historical off-street loading operations for all commercial vehicles, the curb utilization of Ala Moana Boulevard by commercial vehicles, and how those past circumstances deemed to be undesirable will be addressed. This information would be valuable in providing for a complete Project Final SEIS.

Mr. Alex Beatty
City and County of Honolulu
Department of Planning and Permitting

3. Hilton representatives indicated the City and County of Honolulu ("the City") received a payment from Hilton in 2014, or around that time, in lieu of the inability by Hilton to construct a trolley stop at the location now identified in the Draft SEIS as the primary access to the Project. Hilton and their representatives made every effort to construct the trolly stop. It was designed and submitted to the State Department of Transportation ("SDOT") for approval. The SDOT required a Use and Occupancy Agreement ("Agreement") eventually judged to be more appropriately executed by the City or those using the trolley stop. The Agreement would need to include responsibilities for maintenance, operations, and liability for the trolley stop. The City agreed to take responsibility for the construction of the trolley stop and coordinate with SDOT if Hilton would pay the City for the trolley stop construction in advance. At least one trolley stop user agreed to execute the required SDOT Agreement. Hilton made the payment to the City, but the City never used those funds to construct the trolley stop. It would be beneficial to confirm the accuracy and understandings reached during those discussions, what payment occurred, and how the Final SEIS will take into consideration any past obligations by any of the parties involved.
4. If it is confirmed that a payment was made by a Hilton entity or its agent to the City for the purpose of constructing a trolley stop by the City at the location along Ala Moana Boulevard now being pre-empted by the Project; then, as part of the City's approval of the Project's Final SEIS, and in advance of that approval, the City should return such payment to Hilton.
5. If the City returns the payment to the Hilton, it is requested that the payment amount be voluntarily applied to the purposes originally intended. However, since the construction of a trolley stop at the original location may not be possible, other options will be necessary. If Hilton is unable or unwilling to accept the return of the funds from the City, the WTMA is willing to accept them and apply them to solving the problems associated with the need for the trolley stop which still exists. WTMA has proposals warranting further investigation.

If the Applicant agrees that official responses are not required in conjunction with the Final SEIS, but concurs the issues raised have merit and would like to discuss them further, the WTMA is glad to do so. All of the WTMA's comments are offered in the spirit of making the Hilton Hawaiian Village – Village Master Plan Improvements – the best they can be.

Sincerely yours,

Rick Egged, President
Waikīkī Transportation Management Association

Cc: WTMA Board of Directors
Hilton Hawaiian Village Beach Resorts & Spa
G70, Jeff Overton

Utilities

Noelle Besa Wright

From: Michael Harley <Michael.Harley@hawaiiantel.com>
Sent: Monday, December 19, 2022 7:21 AM
To: 219009-01 AMB Tower Park Hotels
Subject: Draft Supplemental Environmental Impact Statement - Hilton Hawaiian Village

Aloha Jeffrey Overton,

My name is Michael Harley with the Hawaiian Telcom Engineering department. I have reviewed plans for draft supplemental impact statement – Hilton Hawaiian Village. Everything looks good and you may proceed with the proposed plan.

Thank you and please reach out if anything else is needed going forward.

Mahalo!

Michael Harley
Strategic Fiber Network Engineer
Hawaiian Telcom
C: (808) 501-4299
Michael.Harley@hawaiiantel.com

Individuals

Noelle Besa Wright

From:	Barbara S <barbara.tuulenbird@gmail.com>
Sent:	Tuesday, November 29, 2022 2:18 AM
To:	219009-01 AMB Tower Park Hotels
Subject:	Proposed new tower at HHV-AMB
Follow Up Flag:	Follow up
Flag Status:	Flagged

I am still opposed to this new tower.

I am an owner in Lagoon Tower. I picked HHV because of it's location and the beach. The beach gets more crowded every year without a new tower being added to the property. The homeless who "stay" on the beach don't help. Who wants to be near them. Lines are longer in the stores and restaurants. Rent the existing empty retail space first before creating new. If I was in certain rooms in Kalia Tower or the Grand Waikikian, I would be upset that the view I paid for will now be blocked.

The only reason for this is corporate greed. It does nothing to enhance my Hawaiian experience. I spend good money to come to Hawaii every year and this really upsets me. The addition of the Grand Islander was bad enough.

I know I'm wasting my time because this tower is probably a done deal anyway.

Sincerely,
Barbara L Snyder
450 Eleventh St
Schenectady, NY 12306
518-339-4244
barbara.tuulenbird@gmail.com

Appendix B

Archaeological Inventory Survey (AIS) Report for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013

Cultural Surveys Hawaiʻi, Inc.

September 2022

Draft

Archaeological Inventory Survey Report for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013

Prepared for
G70

On Behalf of
Park Ala Moana LLC,
Hilton Hawaiian Village Beach Resort & Spa,
and
SMK, Inc.

Prepared by
Gina M. Farley, M.A.,
Jesse Davis, B.A.,
Allison Hummel, M.Sc.,
and
Matt McDermott, M.A.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: WAIKIKI 308)

September 2022

O‘ahu Island	Maui Island	Hawai‘i Island	Kaua‘i Island
P.O. Box 1114	1860 Main Street	399 Hualani St.	2970 Kele St.
Kailua, HI 96734	Wailuku, HI 96793	Suite 124	Suite 114
Ph: (808) 262-9972	Ph: (808) 242-9882	Hilo, HI 96720	Līhu‘e, HI 96766
Fax: (808) 262-4950	Fax: (808) 244-1994	Ph. (866) 956-6478	Ph. (808) 245-9374

Management Summary

Reference	Archaeological Inventory Survey Report for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013 (Farley et al. 2022)
Date	September 2022
Project Numbers	Cultural Surveys Hawaiʻi, Inc. (CSH) Job Code: WAIKIKI 308 Hawaiʻi Cultural Resource Information System (HICRIS) Project No.: 2017PR24629
Investigation Permit Number	CSH completed the archaeological inventory survey (AIS) fieldwork under archaeological fieldwork permit number 22-02, issued by the Hawaiʻi State Historic Preservation Division (SHPD) per Hawaiʻi Administrative Rules (HAR) §13-282.
Agencies	SHPD, City and County of Honolulu (City) Department of Planning and Permitting (DPP)
Project Area Location	The project area comprises three full parcels, TMKs: [1] 2-6-009:004, 005, and 006, and adjacent portions of three additional parcels, TMKs: [1] 2-6-009:007, 009, and 013, located along Ala Moana Boulevard at the northern boundary of the Hilton Hawaiian Village (HHV) campus, in Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu. The project area is bounded to the north by Ala Moana Boulevard, to the southeast by HHV's Kālia Tower, to the southwest by HHV's parking structure, and to the west by the Hilton Grand Vacations' Grand Waikikian Honolulu Tower. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Area Land Jurisdiction	HHV plans to develop a new resort tower, the Ala Moana Boulevard (AMB) Tower, largely within TMKs: [1] 2-6-009:004–006. These three parcels are currently privately owned and will remain privately owned. Parcel 004 is owned by Park Ala Moana LLC and leased by SMK, Inc., while Parcels 005 and 006 are owned by SMK, Inc. The portions of adjacent TMKs: [1] 2-6-009:007, 009, and 013 within the project area are part of the HHV campus and are privately owned by Hilton Hawaiian Village LLC.
Project Proponents	Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc.
Project Funding	Private, Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc.

Project Description and Related Ground Disturbance	Construction of a new resort tower will involve the demolition of existing buildings and structures, structural footing installation, utility installation, and landscaping. Surface grading may be required for roadway improvements and parking area installation. As is common with urban redevelopment projects, project construction may extend into adjacent sidewalks and streets, for example for utility connections.
Project Acreage	The project area comprises 0.742 acre (0.3 hectare).
Historic Preservation Regulatory Context	As a privately funded project on private land, the proposed project is subject to historic preservation review under Hawaiʻi Revised Statutes (HRS) §6E-42 and HAR §13-284. 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). Project redevelopment will require a Special Management Area (SMA) permit (pursuant to HRS §205A) and a PD-R permit pursuant to the Honolulu Land Use Ordinance (LUO) and Waikiki Special Design District pursuant to the LUO. In addition, the project proponents are preparing a Supplemental Environmental Impact Statement (SEIS), pursuant to HRS §343, including an SEIS Notice of Preparation prepared by G70 dated September 2021. Although not formally submitted to or reviewed by the SHPD, an archaeological literature review and field inspection report (LRFI) for the current project was prepared by CSH (McDermott 2017) to facilitate consultation with the SHPD. The determination of an AIS as the next step in the project's historic preservation review process resulted from this consultation. At a meeting between CSH (Matt McDermott) and SHPD (Susan Lebo and Kimi Matsushima), it was discussed that an AIS testing strategy would be submitted to the SHPD, and that the results of geotechnical boring conducted prior to the AIS would be included in the AIS report. An initial AIS testing strategy (Shideler et al. 2021) was electronically submitted to the SHPD on 14 January 2022. Subsequently, the testing strategy was revised based on consultation with Waikīkī cultural descendants, and an updated testing strategy (Shideler et al. 2022) was electronically submitted to the SHPD on 3 March 2022. The updated testing strategy was reviewed and accepted by the SHPD via HICRIS (Project No. 2017PR24629) on 7 March 2022 (see Appendix A). This AIS investigation fulfills the requirements of HAR §13-276 and was conducted to identify, document, and assess significance of any archaeological historic properties. This document is intended to support the proposed project's historic preservation review under HRS §6E-42 and HAR §13-284. It is also intended to support any project-related historic preservation consultation with consulting parties, such as state

	and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. The identification and treatment of human skeletal remains discovered during this AIS investigation complied with Hawaiʻi State burial law (HRS §6E-43 and HAR §13-300).
Architectural Historic Properties	According to the City and County of Honolulu Department of Budget and Fiscal Services Real Property Assessment Division website, the buildings within Parcel 004 (Waikīkī Mini Shops, 1831 Ala Moana Boulevard) were built in 1941, with an "effective year built" of 2000, indicating they have been significantly altered. The building within Parcel 005 (Budget Rent-a-Car, 1835 Ala Moana Boulevard) was built in 1968, with an "effective year built" of 1968. The building within Parcel 006 (Kobe Steakhouse, 1841 Ala Moana Boulevard) was built in 1964, with an "effective year built" of 1977. Similar to the buildings within Parcel 004, this effective year built indicates the Kobe Steakhouse building has been significantly altered since it was initially constructed. The SHPD Architecture Branch requested Reconnaissance Level Survey (RLS) architectural studies for the buildings in Parcels 004–006. The RLS studies were accepted in an SHPD review dated 29 January 2018 (LOG NOS.: 2017.02584, 2017.02585, and 2017.02586; DOC. NO.: 1801TGM16; see Appendix B). The buildings in Parcels 004–006 were designated as State Inventory of Historic Places (SIHP) #s 50-80-14-8190, 50-80-14-8189, and 50-80-14-8188, respectively. However, the review concluded "that all of the buildings are not eligible for listing on the Hawaiʻi and National Registers of Historic Places. The buildings are not significant under any National Register criteria and they do not contain historic integrity due to numerous changes to character defining features."
Fieldwork Effort	Boring for environmental testing was conducted on 19 February 2022, prior to the commencement of AIS testing, under the supervision of archaeologist Jesse Davis, B.A. The AIS testing was conducted between 21 March and 4 April 2022 by archaeologists Sara Blahut, M.A., Jesse Davis, B.A., Gina Farley, M.A., Ryan Harismendy, B.A., Allison Hummel, M.Sc., Thomas Martel III, B.A., Katherine Placher, Ph.D., Phoenix Puʻu, B.A., and Alison Welser, M.A., under the general supervision of Principal Investigator Matt McDermott, M.A. In addition, this report also includes the results of geotechnical boring conducted on 17, 19, and 29 July 2017, under the supervision of archaeologists Nifae Hunkin, B.A., and Timothy Zapor, B.A. In total, this work required approximately 47 person-days to complete.

Consultation	Consultation with SHPD regarding this project was initiated on 27 April 2017 with a project meeting at the SHPD offices in Kapolei. At this meeting, the SHPD relayed that an AIS would be needed for this project as part of its historic preservation review. On 20 October 2021, a meeting was held (via Zoom) with CSH, the project proponents, and previously recognized cultural descendants of Waikīkī. Kawika McKeague of G70 relayed that the AIS testing strategy would be developed in consultation with the SHPD and the descendants. On 4 December 2021, a meeting was held (via Zoom) with CSH, the project proponents, and members of the Norman ‘Ohana (previously recognized cultural descendants of Waikīkī) to discuss the proposed AIS testing strategy. At that time, the proposed testing strategy included eight test excavations; no excavations were proposed within the former Kobe Steakhouse (Parcel 006) due to potential environmental, health, and safety concerns. Keala Norman suggested testing could be conducted safely within the former Kobe Steakhouse through appropriate precautionary measures. Kawika McKeague of G70 agreed he would discuss the potential environmental, health, and safety issues with the project team to see what AIS testing would be possible within the former Kobe Steakhouse. Also on 4 December 2021, a meeting was held (via Zoom) with CSH, the project proponents, and previously recognized cultural descendants of Waikīkī Thomas Shirai, Bill Haole, Manuel Kuloloia, and members of the Caceres ‘Ohana. The proposed AIS testing strategy (at that point comprising eight excavations, with none proposed for Parcel 006 [former Kobe Steakhouse]) was discussed. The cultural descendants did not express any questions or concerns regarding the proposed testing strategy. At the 12 January 2022 monthly meeting of the O‘ahu Island Burial Council (OIBC), the proposed AIS testing strategy was presented (via Zoom). The only questions raised were to confirm the project team’s commitment to completing the ninth testing location within the former Kobe Steakhouse (Parcel 006). On 30 March 2022, human skeletal remains (SIHP # 50-80-14-9156) were identified during excavation of AIS Test Excavation 4 (T-4). The SHPD was informed the same day via phone call (Matt McDermott of CSH to Regina Hilo of SHPD) and via email (Matt McDermott of CSH to Regina Hilo, Susan Lebo, Deidra Moore, and Samantha Hemenway of SHPD). At the 13 April 2022 monthly meeting of the OIBC, the preliminary results of the AIS were presented, and the next steps in the project’s

	historic preservation review process were discussed. There were no comments or questions raised. On 26 April 2022, a letter from Gina Farley of CSH to Sylvia Hussey of the Office of Hawaiian Affairs (OHA) was transmitted via email (to OHACompliance@OHA.org). The letter requested consultation regarding the results of the AIS and asked that OHA respond with any questions, comments, or concerns, particularly regarding the significance assessment and forthcoming burial treatment plan (BTP) for the previously identified Native Hawaiian burial site (SIHP # -9156). On 17 May 2022, a follow-up email was sent from Gina Farley of CSH to OHACompliance@OHA.org. Once again, the email requested that OHA reply with any questions, comments, or concerns regarding the results of the AIS. No response has been received to date.
Archaeological Historic Properties Identified and Historic Property Significance	Three archaeological historic properties were documented during the AIS: SIHP #s 50-80-14-2870, 50-80-14-9156, and 50-80-14-9157. SIHP #s -9156 and -9157 are newly identified, while SIHP # -2870 is a previously identified historic property that was further documented during the current study. They are described below: **SIHP # 50-80-14-2870** comprises historical cultural layers with associated features and human remains. It was initially identified by Neller (1980) and subsequently documented by Hurlbett et al. (1992), Tulchin at el. (2011), Yucha and Hammatt (2014), Sroat et al. (2019), and Krause et al. (2022). During the current study, 19 features associated with SIHP # -2870 were identified in four test excavations (T-5, T-6, T-8, and T-9). SIHP # -2870 was assessed by Hurlbett et al. (1992) as significant under State of Hawaiʻi historic property significance Criterion d, per HAR §13-284-6. Sroat et al. (2019) additionally assessed SIHP # -2870 as significant under State of Hawaiʻi historic property significance Criterion e, per HAR §13-284-6. SIHP # -2870 retains integrity of location, design, materials, workmanship, and feeling. **SIHP # 50-80-14-9156** comprises four small bone fragments originating within a near-surface fill deposit within T-4. Two of the bone fragments were identified as human cranial fragments. The remaining two were too small to be identified but were treated as human. In consultation with SHPD, the remains are reasonably believed to be Native Hawaiian. Temporary burial treatment comprises preservation in place within T-4. Long-term burial treatment will be detailed in a forthcoming BTP. SIHP # -9156 retains integrity of materials and is assessed as significant under State of Hawaiʻi historic property significance Criteria d and e, per HAR §13-284-6.

	SIHP # 50-80-14-9157 comprises buried historical infrastructure remnants identified in four test excavations (T-3, T-4, T-8, and T-9). They comprise seven buried asphalt layers (Features 1–7) and a prepared surface (Feature 8) and are associated with mid-twentieth century development of the project area. SIHP # -9157 retains integrity of location and materials and is assessed as significant under State of Hawaiʻi historic property significance Criterion d, per HAR §13-284-6.
Project Effect and Mitigation Commitments	Pursuant to HAR §13-284-7, the results of this AIS investigation support a project effect determination of "Effect, with agreed upon mitigation commitments." Based on the AIS results and in consultation with the SHPD, the agreed upon mitigation commitments are archaeological data recovery in the form of archaeological monitoring for SIHP #s -2870 and -9157 and burial treatment for SIHP # -9156. Archaeological monitoring will be conducted in accordance with an archaeological monitoring plan meeting the requirements of HAR §13-279-4.

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Section 1 Introduction

1.1 Project Background

At the request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc., Cultural Surveys Hawaiʻi, Inc. (CSH) has prepared this archaeological inventory survey (AIS) report for the Ala Moana Boulevard (AMB) Tower Project, Hilton Hawaiian Village (HHV) Campus, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu, TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013. The 0.742-acre (0.3-hectare) project area is bounded to the north by Ala Moana Boulevard, to the southeast by HHV's Kālia Tower, to the southwest by HHV's parking structure, and to the west by the Hilton Grand Vacations' Grand Waikikian Honolulu Tower. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and 2020 and 2013 aerial photographs (Figure 3 and Figure 4, respectively).

HHV plans to develop a new resort tower, the AMB Tower. Construction of the new resort tower will involve the demolition of existing buildings and structures, structural footing installation, utility installation, and landscaping. Surface grading may be required for roadway improvements and parking area installation. As is common with urban redevelopment projects, project construction may extend into adjacent sidewalks and streets, for example for utility connections.

1.2 Historic Preservation Regulatory Context and Document Purpose

As a privately funded project on private lands, the proposed project is subject to historic preservation review under Hawaiʻi Revised Statutes (HRS) §6E-42 and Hawaiʻi Administrative Rules (HAR) §13-284. 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). Project redevelopment will require a Special Management Area (SMA) permit (pursuant to HRS §205A) and a PD-R permit pursuant to the Honolulu Land Use Ordinance (LUO) and Waikiki Special Design District pursuant to the LUO. In addition, the project proponents are preparing a Supplemental Environmental Impact Statement (SEIS), pursuant to HRS §343, including an SEIS Notice of Preparation prepared by G70 dated September 2021.

Although not formally submitted to or reviewed by the Hawaiʻi State Historic Preservation Division (SHPD), an archaeological literature review and field inspection report (LRFI) for the current project was prepared by CSH (McDermott 2017) to facilitate consultation with the SHPD. The determination of an AIS as the next step in the project's historic preservation review process resulted from this consultation.

At a meeting between CSH (Matt McDermott) and SHPD (Susan Lebo and Kimi Matsushima), it was discussed that an AIS testing strategy would be submitted to the SHPD, and that the results of geotechnical boring conducted prior to the AIS would be included in the AIS report.

An initial AIS testing strategy (Shideler et al. 2021) was electronically submitted to the SHPD on 14 January 2022. Subsequently, the testing strategy was revised based on consultation with Waikīkī cultural descendants, and an updated testing strategy (Shideler et al. 2022) was

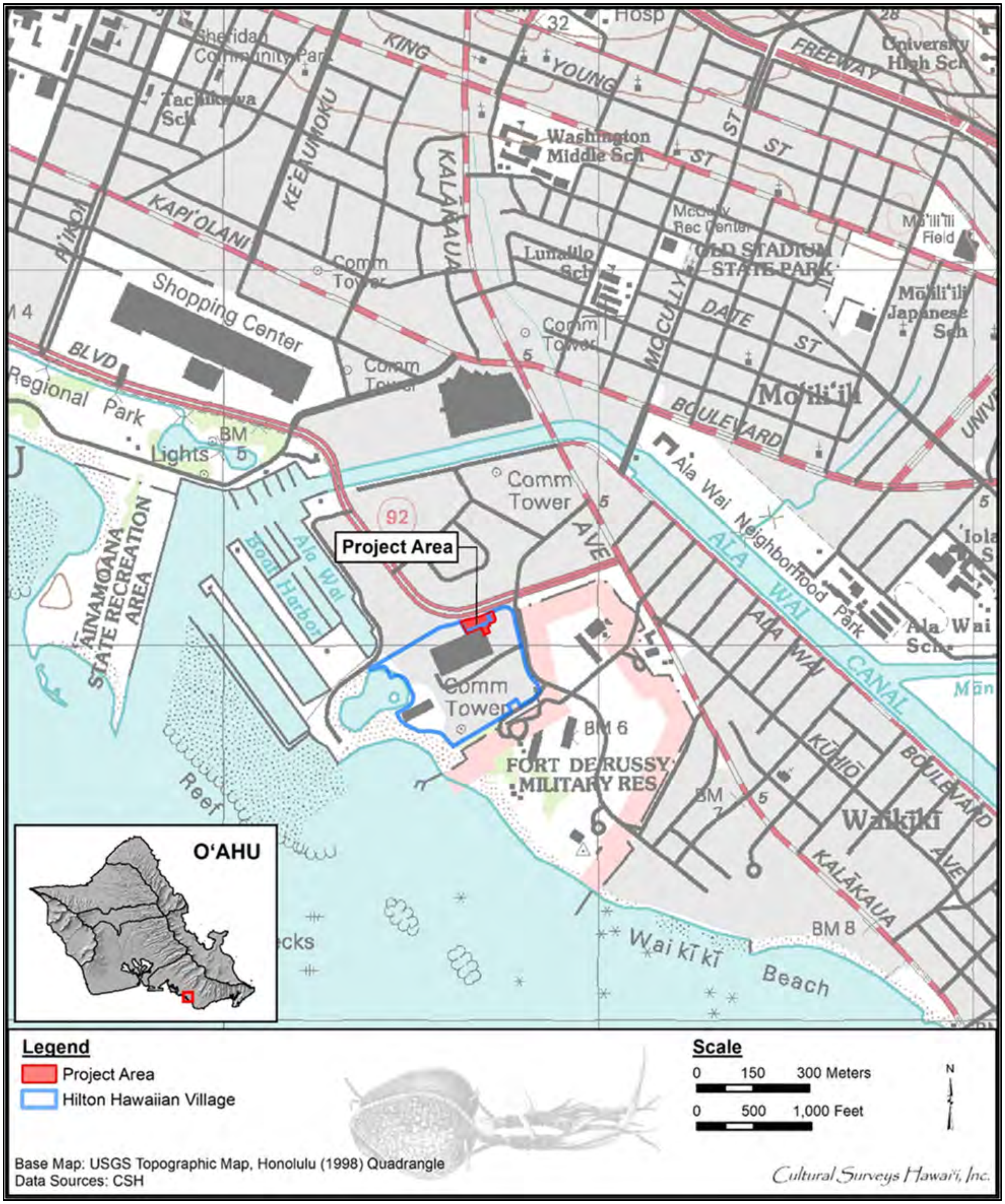


Figure 1. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle showing the project area in relation to the HHV campus

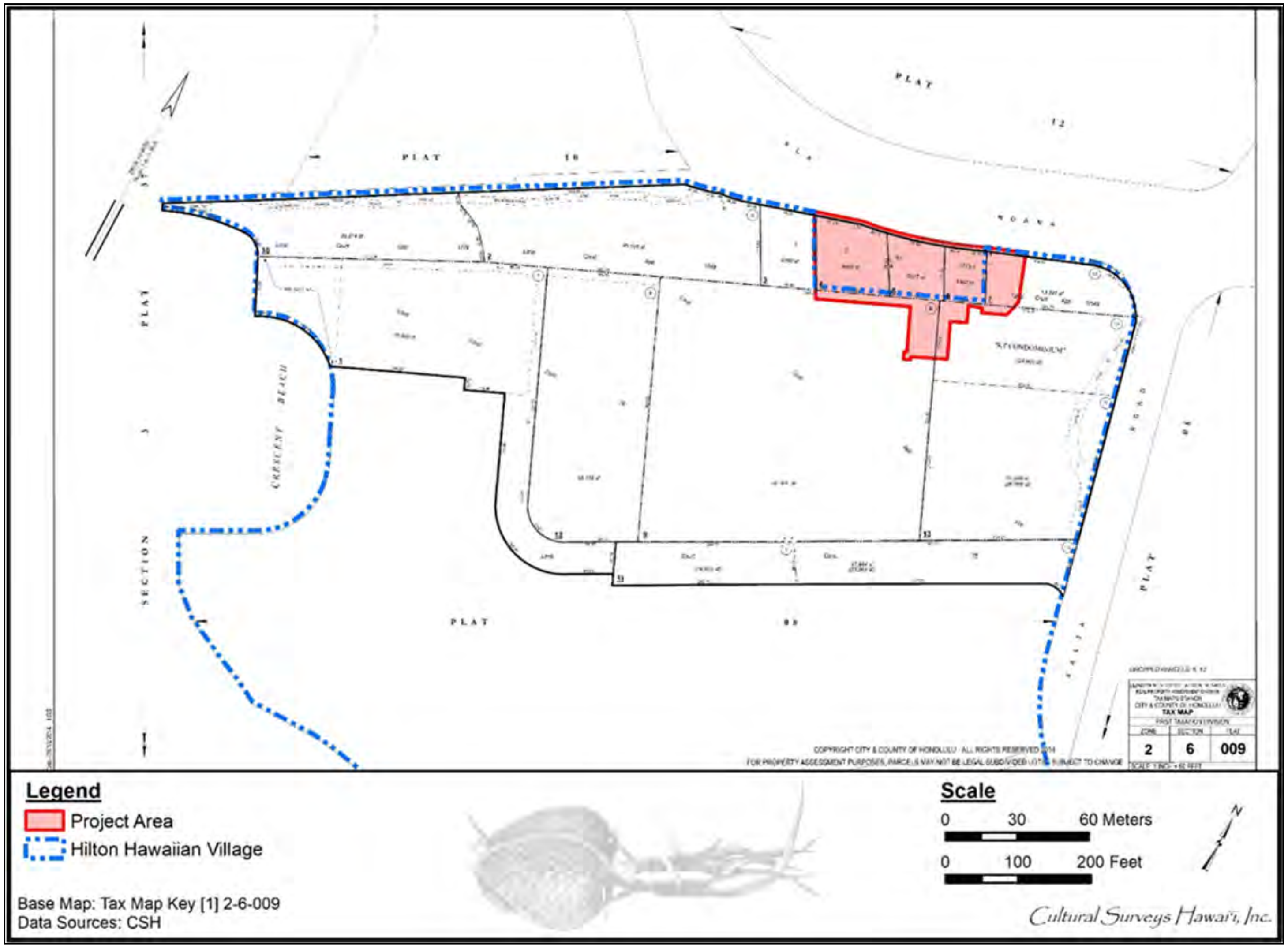


Figure 2. Tax Map Key (TMK): [1] 2-6-009 showing the project area in relation to the HHV campus (Hawai‘i TMK Service 2014)

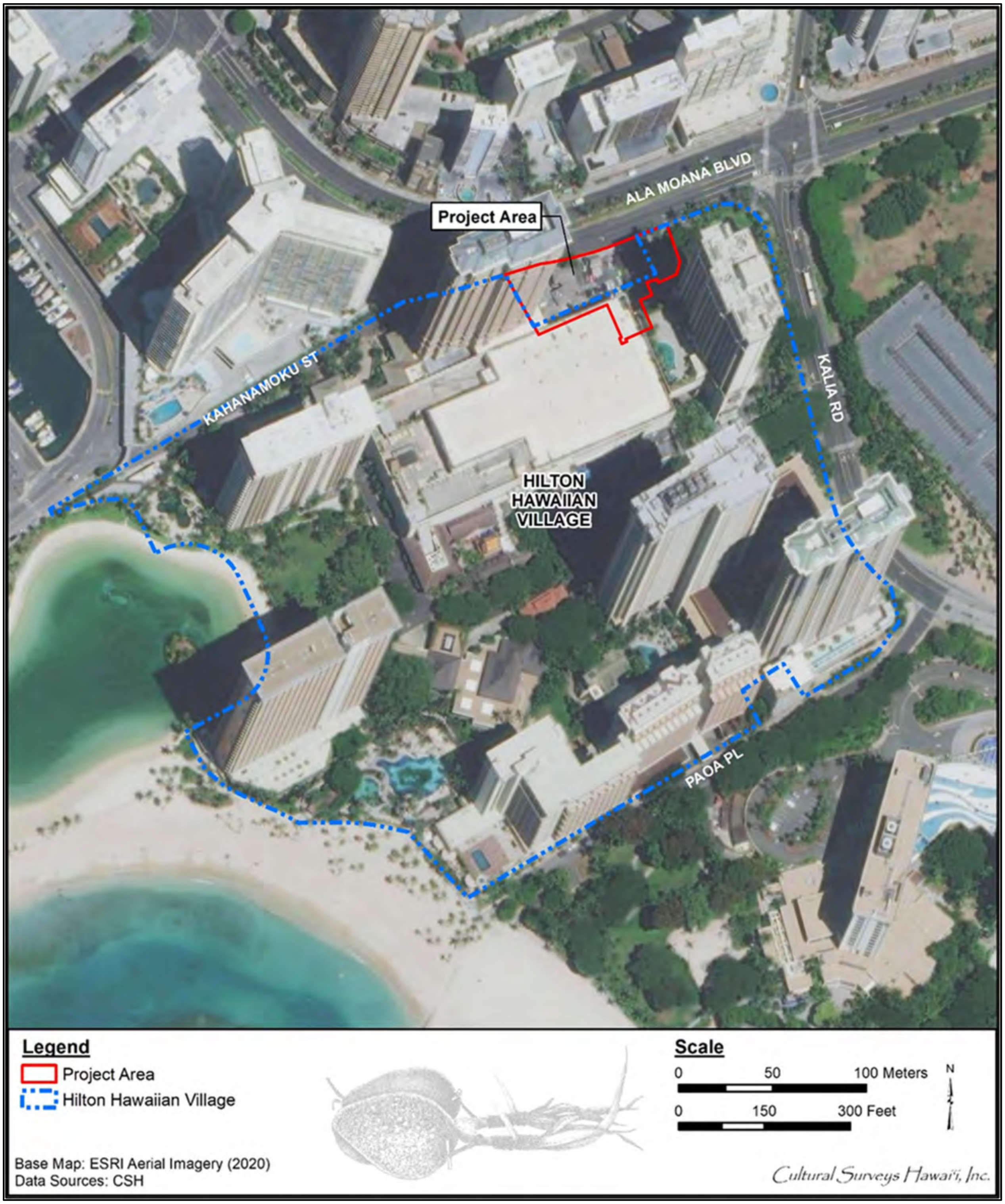


Figure 3. 2020 ESRI aerial imagery showing the project area in relation to the HHV campus

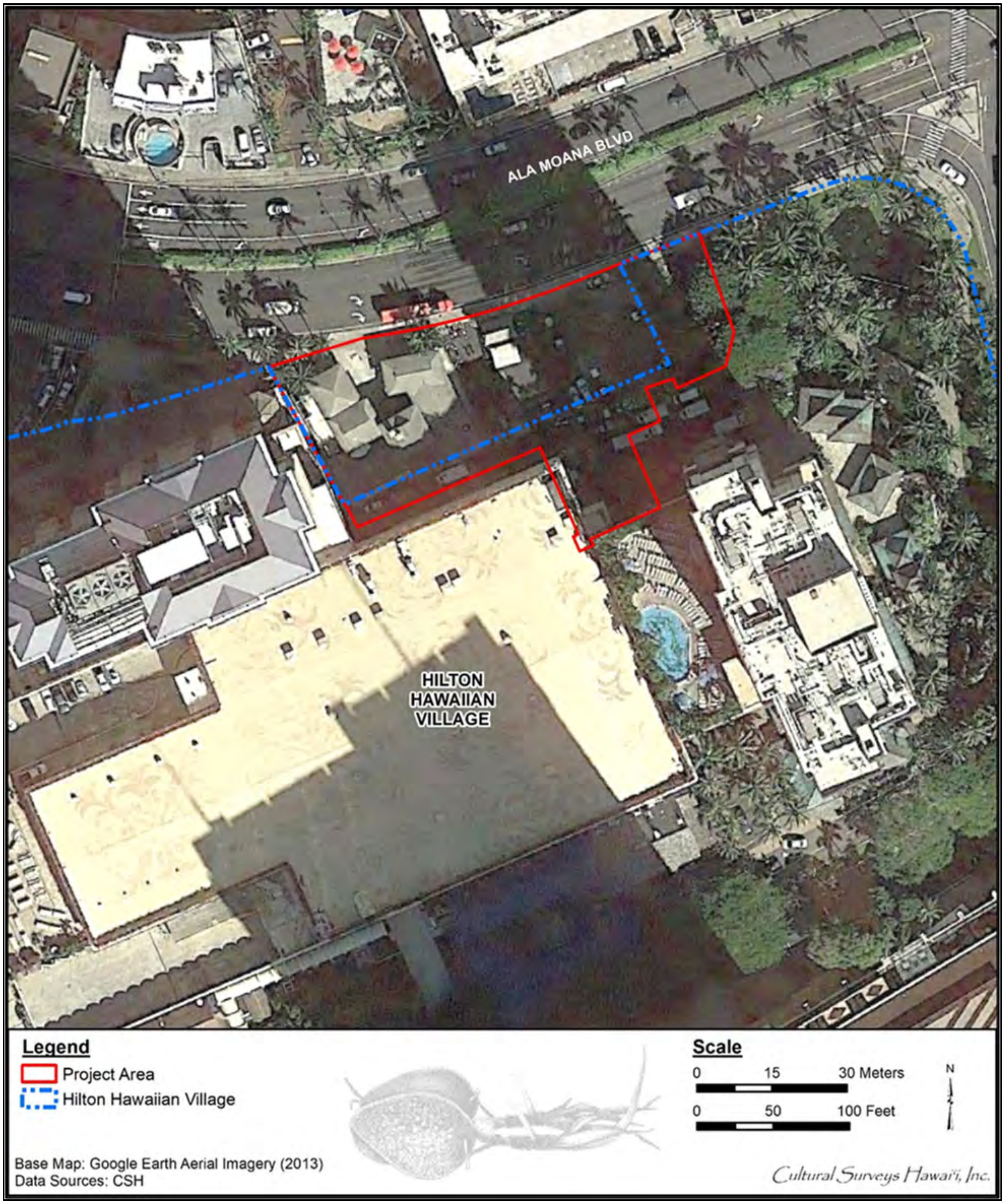


Figure 4. 2013 Google Earth aerial imagery showing a close-up of the project area in relation to the HHV campus

electronically submitted to the SHPD on 3 March 2022. The updated testing strategy was reviewed and accepted by the SHPD via the Hawai‘i Cultural Resource Information System (HICRIS) (Project No. 2017PR24629) on 7 March 2022 (see Appendix A).

This AIS investigation fulfills the requirements of HAR §13-276 and was conducted to identify, document, and assess significance of any archaeological historic properties. This document is intended to support the proposed project's historic preservation review under HRS §6E-42 and HAR §13-284. It is also intended to support any project-related historic preservation consultation with consulting parties, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups.

The identification and treatment of human skeletal remains during this AIS investigation complied with Hawai‘i State burial law (HRS §6E-43 and HAR §13-300).

1.2.1 Architectural Historic Properties

According to the City and County of Honolulu Department of Budget and Fiscal Services Real Property Assessment Division website, the buildings within Parcel 004 (Waikīkī Mini Shops, 1831 Ala Moana Boulevard) were built in 1941, with an "effective year built" of 2000, indicating they have been significantly altered. This is supported by 1987 building renovation plans (Figure 5), which show the renovation of the three previous buildings in the current layout.

The building within Parcel 005 (Budget Rent-a-Car, 1835 Ala Moana Boulevard) was built in 1968, with an "effective year built" of 1968. The building within Parcel 006 (Kobe Steakhouse, 1841 Ala Moana Boulevard) was built in 1964, with an "effective year built" of 1977. Similar to the buildings within Parcel 004, this effective year built indicates the Kobe Steakhouse building has been significantly altered since its initial construction.

The SHPD Architecture Branch requested Reconnaissance Level Survey (RLS) architectural studies for the buildings in Parcels 004–006. The RLS studies were accepted in an SHPD review dated 29 January 2018 (LOG NOS.: 2017.02584, 2017.02585, and 2017.02586; DOC. NO.: 1801TGM16; see Appendix B). The buildings in Parcels 004–006 were designated as State Inventory of Historic Places (SIHP) #s 50-80-14-8190, 50-80-14-8189, and 50-80-14-8188, respectively. However, the review concluded "that all of the buildings are not eligible for listing on the Hawai‘i and National Registers of Historic Places. The buildings are not significant under any National Register criteria and they do not contain historic integrity due to numerous changes to character defining features."

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is situated along the southeastern coast of O‘ahu. Part of the Honolulu leeward coastal plain, this area is stratified with late-Pleistocene coral reef substrate overlain with calcareous marine beach sand, terrigenous sediments, and/or stream-fed alluvial deposits (Armstrong 1973:36). The modern Honolulu shoreline configuration is primarily the result of three factors: the rising sea level following the end of the Pleistocene (Stearns 1978); the 1.5–2.0-m highstand of the sea during the mid- to late-Holocene; and pre- and post-Contact human landscape modification. Historical progradation of the shoreline adjacent to the current project area is shown in Figure 6.

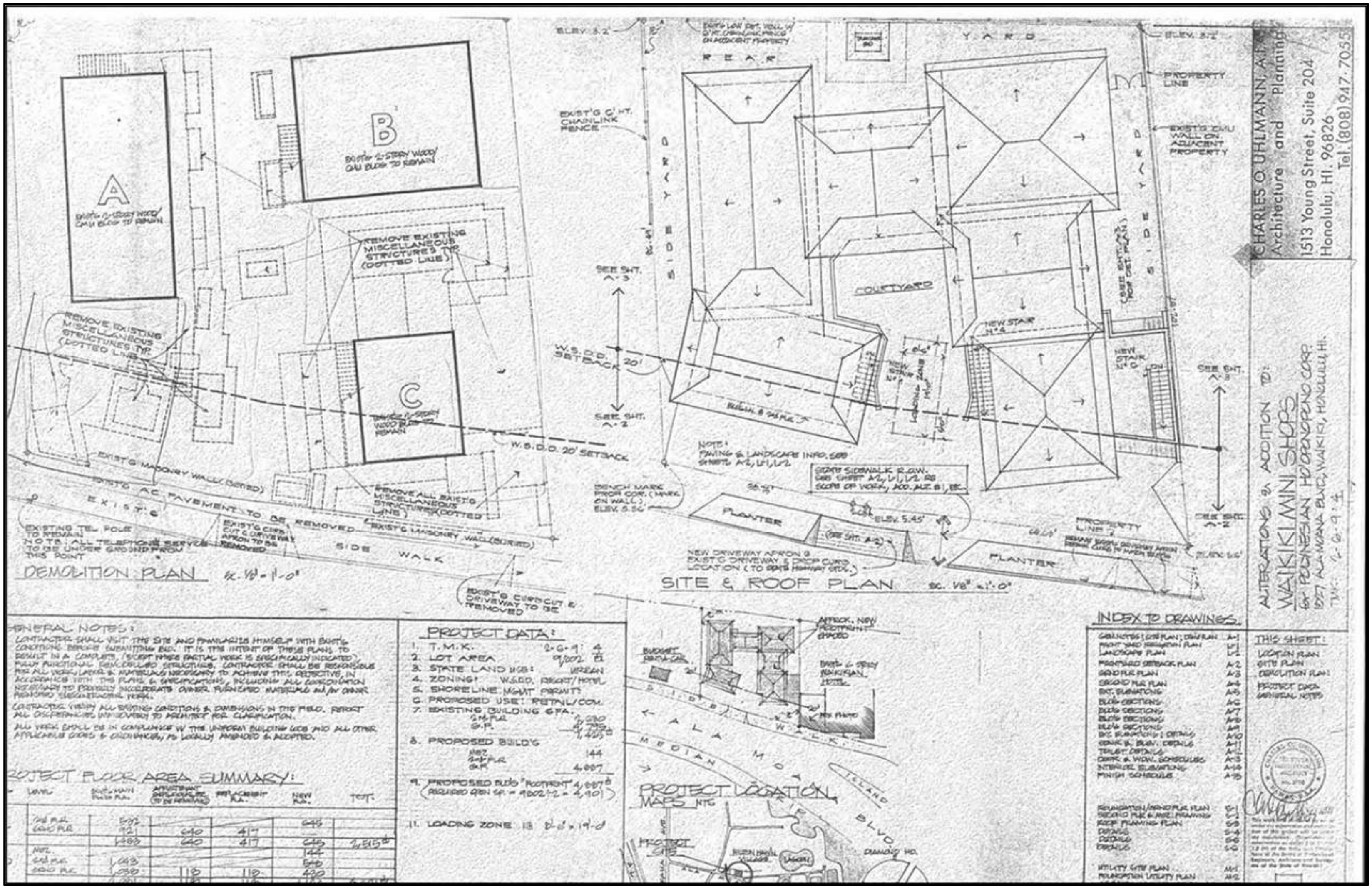


Figure 5. 1987 demolition plan for Parcel 004, showing the three buildings (labeled A–C, on left) that were renovated into the present layout of the Waikīkī Mini Shops (on right) (figure provided by G70)

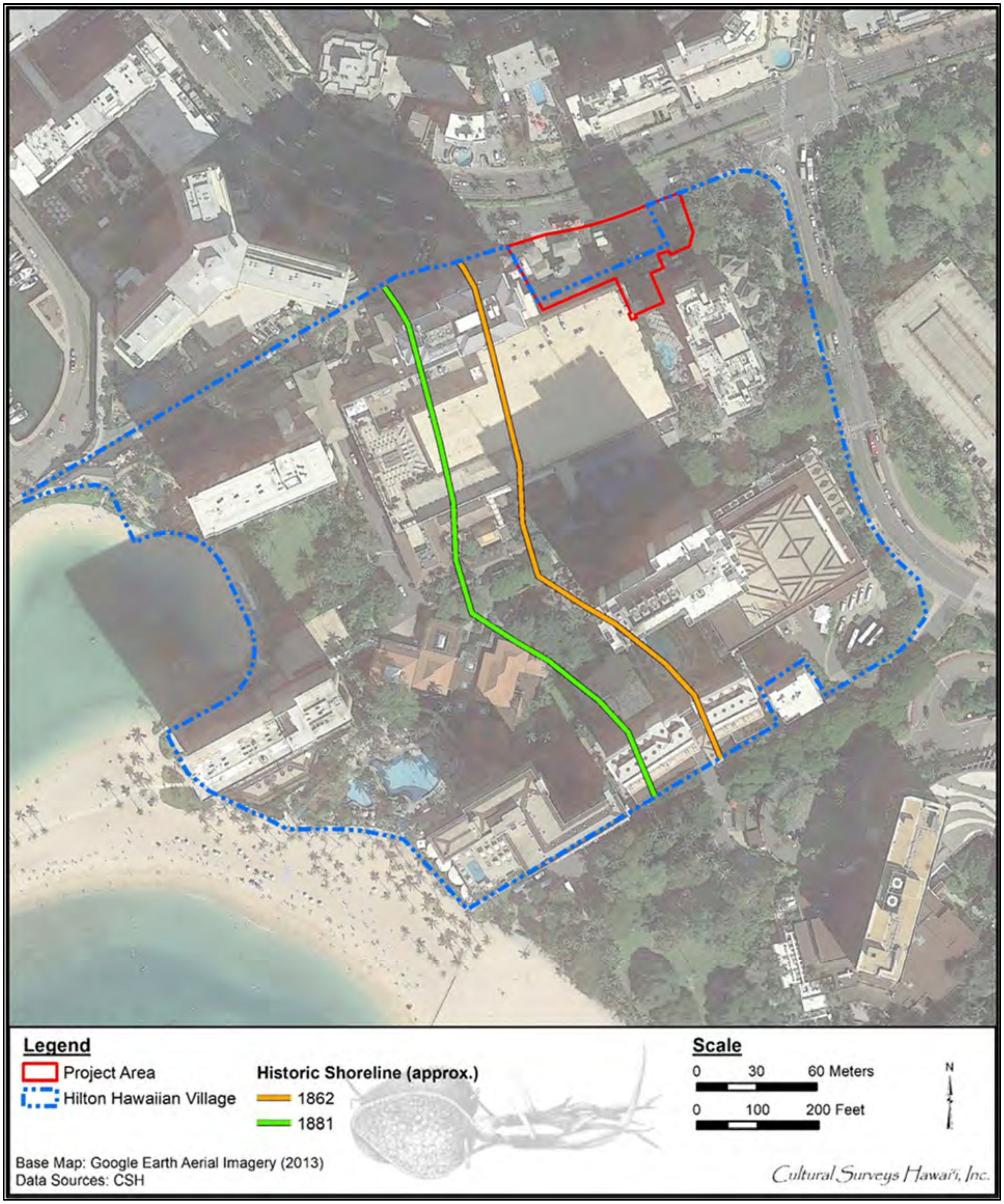


Figure 6. 2013 Google Earth aerial imagery of the project area and HHV campus in relation to the historical progradation of the adjacent Waikīkī shoreline

The marshland of Waikīkī was watered from streams in the Makiki, Mānoa, and Pālolo valleys and from springs in Mānoa (Punahou and Kānewai). Before the construction of the Ala Wai Canal in the 1920s, the Mānoa and Pālolo streams did not merge until deep within Waikīkī. They joined near Hamohamo (now an area *mauka* [inland] of the Kapahulu Library) and then divided into three new streams: Kuekaunahi, ‘Āpuakēhau, and Pi‘inaio (Figure 7). Pi‘inaio Stream was northwest-adjacent to the current project area and entered the sea just to the west. Hence, prior to the stream being filled in with the construction of the Ala Wai Canal between 1921 and 1927, the shifting Pi‘inaio *kahawai* (stream) and *muliwai* (stream mouth), as well as the changing shoreline, likely made the project area a hydrologically active location.

The project area is relatively flat and is 1 m (3 feet [ft]) above mean sea level (AMSL). It is approximately 200 m (656 ft) inland of the Hilton lagoon. Rainfall in this area averages 665 mm (26 inches) annually (Giambelluca et al. 2013). The average temperature is 23.74º C (74.7º F) (Giambelluca et al. 2014). According to the U.S. Department of Agriculture (USDA) soil survey geographic database (SSURGO) and data gathered by Foote et al. (1972), soils within the project area consist of Jaucas sand, 0 to 15% slopes (JaC) (Figure 8):

> Jaucas Sand. This series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean […] developed in wind and water deposited sand from coral and seashells […] used for pasture, sugarcane, truck crops, alfalfa, recreational areas, wildlife habitat, and urban development. [Foote et al. 1972:48]

1.3.2 Built Environment

The project area and its vicinity are developed with high- and low-rise buildings and concrete- and asphalt-paved roads, walkways, and parking areas (see Figure 3). Within the project area, there are one- and two-story restaurant and commercial buildings. Landscaped trees and hedges are also present (see Figure 4). Current land use for each project area parcel is summarized below:

- Parcel 004: Waikīkī Mini Shops (ABC Store, Lucky Shop, and KPop Donuts Hawaii on ground floor; additional shops and restaurants on second floor)
- Parcel 005: Paradise Rent-a-Car
- Parcel 006: Kobe Steakhouse (vacant)
- Portions of Parcels 007, 009, and 013: adjacent landscaped and paved areas, part of the HHV Campus

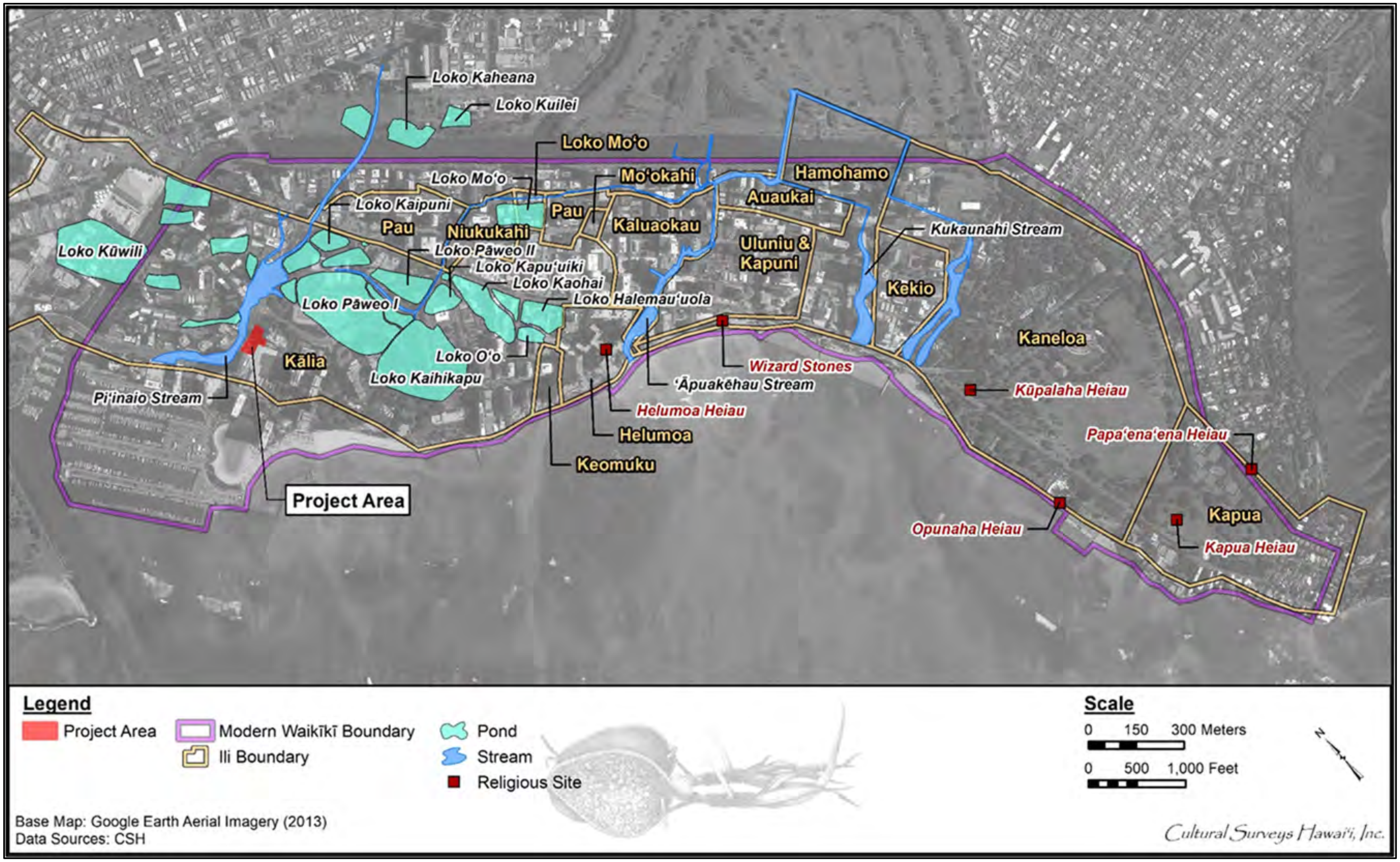


Figure 7. 2013 Google Earth aerial imagery of Waikīkī with overlay of significant place names including *‘ili* (land divisions), fishponds, and streams; the project area is along the margins of the former Pi‘inaio Stream

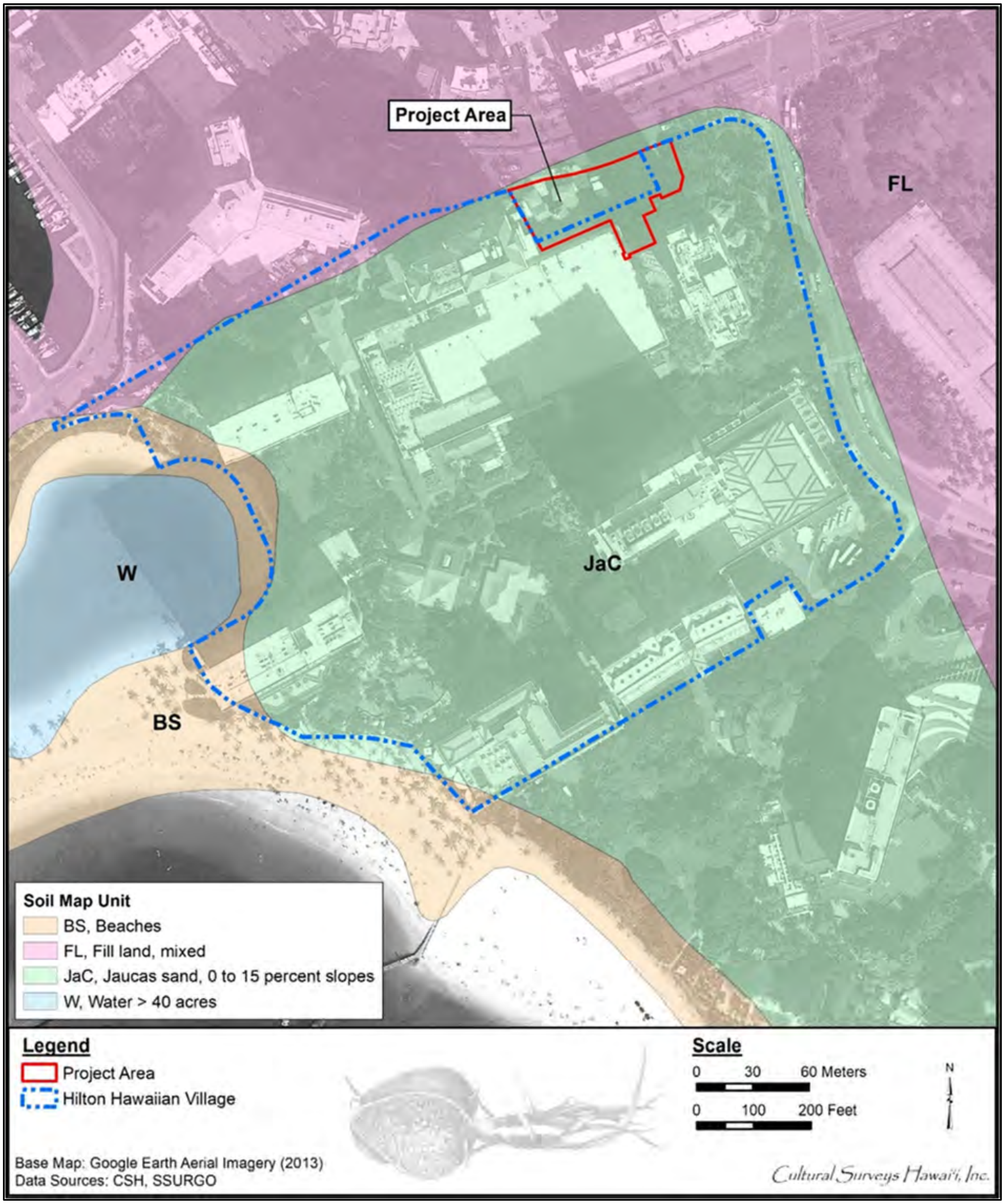


Figure 8. 2013 Google Earth aerial imagery with overlay of *Soil Survey of the Islands of Kauai*, *Oahu*, *Maui*, *Molokai*, *and Lanai*, *State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA/SSURGO 2001)

Section 2 Methods

2.1 Field Methods

CSH completed the fieldwork component of this AIS under archaeological permit number 22-02, issued by the SHPD pursuant to HAR §13-282. Boring for environmental testing was conducted on 19 February 2022, prior to the commencement of AIS testing, under the supervision of archaeologist Jesse Davis, B.A. The AIS testing was conducted between 21 March and 4 April 2022 by archaeologists Sara Blahut, M.A., Jesse Davis, B.A., Gina Farley, M.A., Ryan Harismendy, B.A., Allison Hummel, M.Sc., Thomas Martel III, B.A., Katherine Placher, Ph.D., Phoenix Pu‘u, B.A., and Alison Welser, M.A., under the general supervision of Principal Investigator Matt McDermott, M.A. In addition, this report also includes the results of geotechnical boring conducted on 17, 19, and 29 July 2017, under the supervision of archaeologists Nifae Hunkin, B.A., and Timothy Zapor, B.A. In total, this work required approximately 47 person-days to complete.

As the project area is fully developed, and no potential surface archaeological historic properties were identified during multiple prior field inspections by CSH, the AIS investigation focused on subsurface testing. Hence, AIS fieldwork included GPS data collection and subsurface testing. In addition, cultural monitoring was conducted by Moehonua Cultural Monitoring Services.

2.1.1 GPS Data Collection

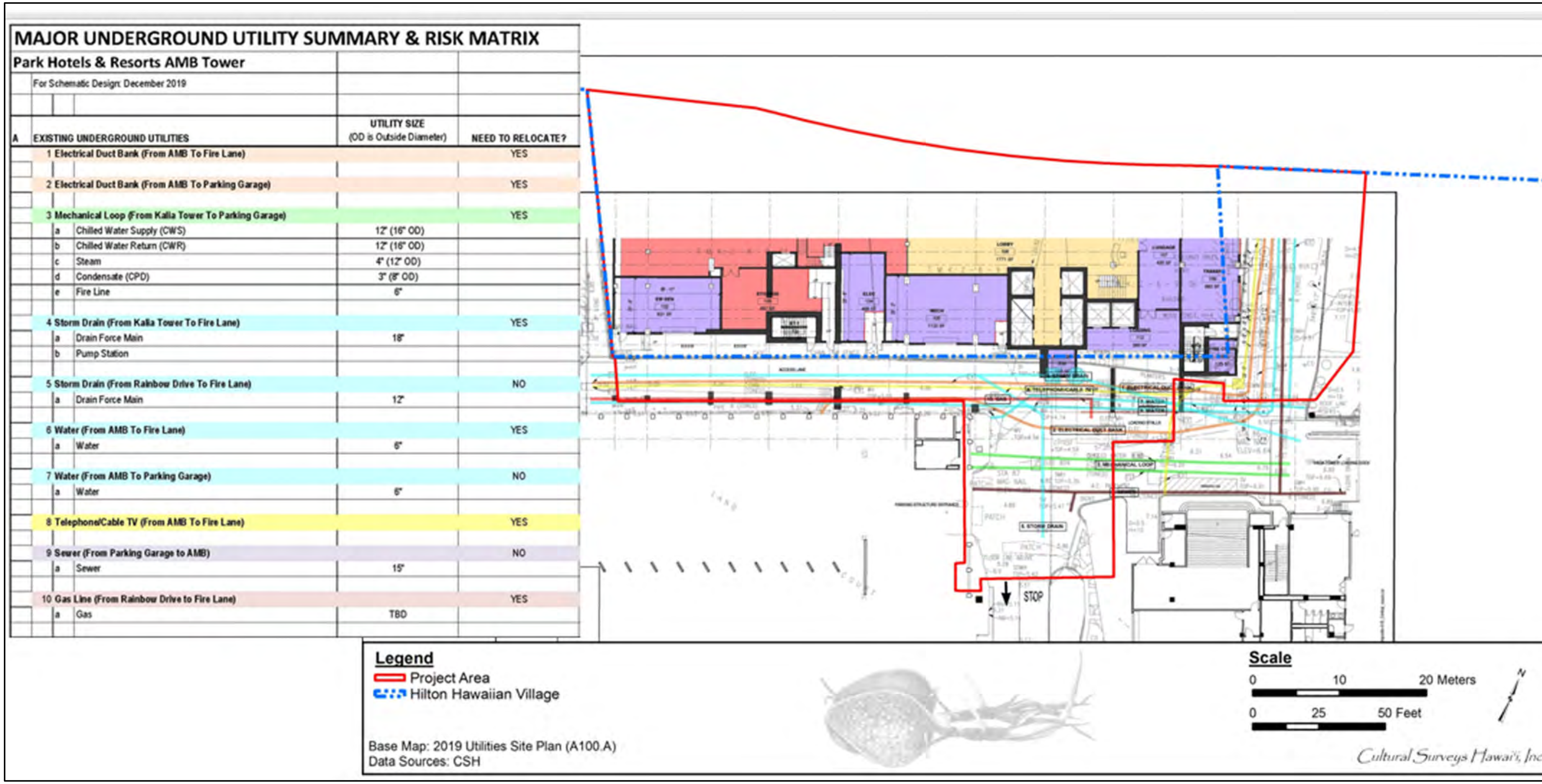
The locations of the eight exterior test excavations, T-1 through T-8, and the location of the human skeletal remains identified in T-4 (SIHP # 50-80-14-9156) were recorded using a Trimble GeoExplorer GeoXH 6000 Series GPS unit with real-time differential correction. These units provide sub-meter horizontal accuracy in the field. GPS field data was post-processed, and GPS location information was converted into GIS shape files using Trimble’s Pathfinder Office software, version 5.9, and graphically displayed using ESRI’s ArcMap 10.7. CSH utilizes the NAD 83 HARN datum and UTM Zone 4N coordinate system. The location of the single interior test excavation, T-9, where the Trimble device could not be utilized, was recorded with a plan map using the tape and compass method.

2.1.2 Subsurface Testing

2.1.2.1 Testing Strategy

The initial (December 2021) proposed AIS testing strategy included eight machine-assisted test excavations, generally 6 m long and 0.6 m wide. Most (T-1 and T-3 through T-7) were within the proposed building footprint in Parcels 004 and 005, within the tower core area. No testing was initially proposed within the former Kobe Steakhouse (Parcel 006) due to potential environmental, health, and safety concerns (i.e., no running water or electricity, poor ventilation, and abundance of mold).

The placement of test excavations in the Diamond Head (southeast) and *mauka* (northeast) portions of the project area was limited, as these are intensive existing utility corridors (Figure 9). However, there appeared to be areas potentially without utilities at the *mauka* (T-8) and Diamond Head (T-2) edges of the project area (Figure 10). These areas had been tested previously, with two long excavations conducted under archaeological monitoring by Hurlbett et al. (1992) and Putzi



MAJOR UNDERGROUND UTILITY SUMMARY & RISK MATRIX

Park Hotels & Resorts AMB Tower

For Schematic Design: December 2019

A	EXISTING UNDERGROUND UTILITIES	UTILITY SIZE (OD is Outside Diameter)	NEED TO RELOCATE?
	1 Electrical Duct Bank (From AMB To Fire Lane)		YES
	2 Electrical Duct Bank (From AMB To Parking Garage)		YES
	3 Mechanical Loop (From Kalia Tower To Parking Garage)		YES
a	Chilled Water Supply (CWS)	12" (16" OD)	
b	Chilled Water Return (CWR)	12" (16" OD)	
c	Steam	4" (12" OD)	
d	Condensate (CPD)	3" (8" OD)	
e	Fire Line	6"	
	4 Storm Drain (From Kalia Tower To Fire Lane)		YES
a	Drain Force Main	18"	
b	Pump Station		
	5 Storm Drain (From Rainbow Drive To Fire Lane)		NO
a	Drain Force Main	12"	
	6 Water (From AMB To Fire Lane)		YES
a	Water	6"	
	7 Water (From AMB To Parking Garage)		NO
a	Water	6"	
	8 Telephone/Cable TV (From AMB To Fire Lane)		YES
	9 Sewer (From Parking Garage to AMB)		NO
a	Sewer	15"	
	10 Gas Line (From Rainbow Drive to Fire Lane)		YES
a	Gas	TBD	

Figure 9. 2019 Utilities Site Plan (A100.A) supplied by G70, indicating the intensity of prior ground disturbance associated with utility corridors *mauka* and Diamond Head of Parcels 004, 005, and 006 (including excavations for installation of gas, sewer, electrical duct bank, water, storm drain, television, and telephone cables), making these areas problematic for AIS testing

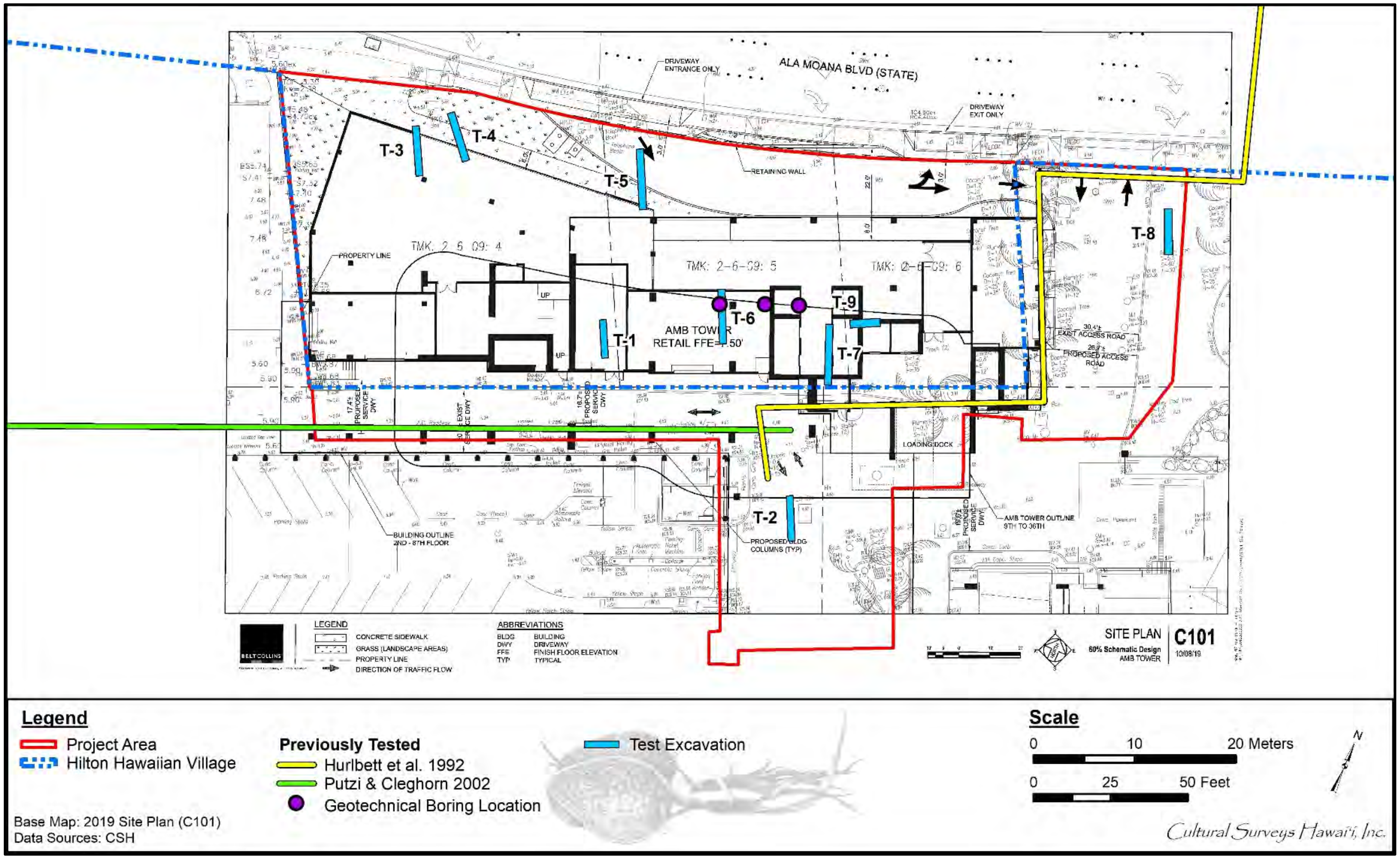


Figure 10. 2019 Site Plan (C101) supplied by G70 with overlay of AIS test excavations T-1 through T-9 (blue rectangles), three geotechnical borings conducted in 2017 (purple circles), and excavations previously documented under archaeological monitoring by Hurlbett et al. (1992) and Putzi and Cleghorn (2002) (yellow and green lines, respectively)

and Cleghorn (2002), thereby providing additional subsurface testing data for these locations (see Section 3.2: Previous Archaeological Research).

The AIS testing strategy was updated following consultation meetings with Native Hawaiian cultural descendants of Waikīkī held on 4 December 2021, via Zoom (see Section 6: Consultation). Some descendants requested that a ninth test excavation, located within the former Kobe Steakhouse (Parcel 006), be added. The AIS testing strategy was revised accordingly, with the following caveat—that the project team would work to assess the potential environmental, health, and safety concerns and create an action plan that would allow for completion of the proposed T-9 within the Kobe Steakhouse building.

This testing strategy also took into consideration specific areas proposed for ground disturbance. T-7 in Parcel 005 intersects with a planned elevator core area (see Figure 10), and T-9 intersects with another elevator core area that is largely within Parcel 006 (former Kobe Steakhouse). However, the final selection of test excavation locations was informed by utility identification through toning and Hawaii One Call.

On 1 March 2022, CSH received the results of environmental testing at the locations of T-1 through T-8, which indicated soil contamination throughout much of the project area. The location of the interior excavation, T-9, could not be tested as the boring machine was too large to enter the building. Hence, out of an abundance of caution and due to the visible mold within the building, this location was also presumed to be contaminated. As a result of this soil contamination, CSH personnel were required to wear personal protective equipment (PPE), including Tyvek suits and half-face respirators, during excavation of five of the nine test excavations (T-1, T-3, T-4, T-5, and T-9) (Figure 11 through Figure 13). The modified excavation and sample collection methodologies employed for these five test excavations are described in detail below.

2.1.2.2 Excavation Methods

The subsurface testing program was machine-assisted and included nine test excavations (Figure 14). Linear trenches measuring approximately 6 m (20 ft) long and 0.7 m (2 ft) wide were planned; however, the lengths of most test excavations (all except T-5 and T-7) had to be shortened due to the presence of subsurface utilities detected by toning and Hawaii One Call, as well as above-ground infrastructure (Figure 15 through Figure 17). Hence, the lengths of the completed test excavations ranged between 3 m (T-9; Figure 18) and 6 m (T-5 and T-7).

Excavation generally proceeded until the water table was reached. In one test excavation, T-1, the water table was not reached due to extensive subsurface utility infrastructure preventing full excavation. Similarly, in T-3 and T-4, the water table was reached only in part of the trench due to the presence of subsurface infrastructure. The below methodology was employed for all test excavations. Methods specific to test excavations with soil contamination (i.e., requiring PPE) and without contamination (i.e., not requiring PPE) are discussed in Sections 2.1.2.2.2 and 2.1.2.2.1, respectively.

CSH archaeologists digitally recorded field data and excavation activities using Apple iPad Minis and the doForms app from doForms, Inc. DoForms was used to generate all standard archaeological forms including photograph logs, sample collection records, historic property forms, feature record forms, and stratigraphy forms. The iPad Minis were also used to take

Figure 11. Excavation of T-1, showing archaeologists and mini-excavator operator in Tyvek suits and half-mask respirators, view to northeast; note also the confined space due to existing above-ground infrastructure, as well as the pink, red, and green spray paint indicating subsurface utilities

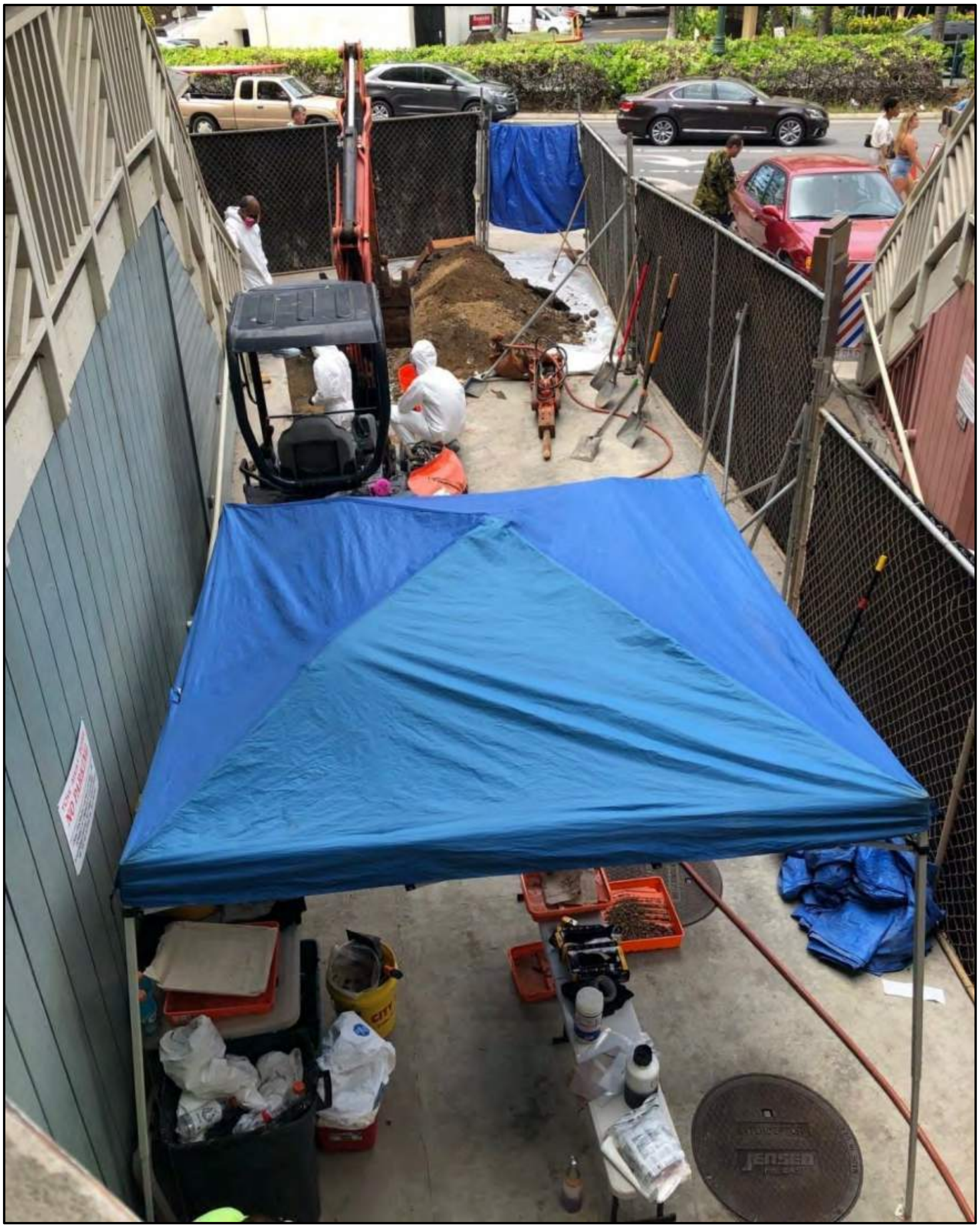


Figure 12. Overview of T-3, excavated in full PPE, view to northwest; note the “hot zone” where PPE is required to be worn in and around the trench and spoils pile (top) and the “warm zone” where PPE was donned and doffed and in-field analysis of screened samples, artifacts, and faunal remains was conducted (under blue tent; note the orange trays containing samples); fencing with black mesh provided dust control and privacy from pedestrians and vehicles along Ala Moana Boulevard (in background)

Figure 13. Overview of T-5, excavated in full PPE, view to west; note the “hot zone” where PPE is required to be worn in and around the trench and spoils pile (center), the “warm zone” where PPE was donned and doffed and in-field analysis of samples was conducted (left, under tent), and the “cool zone” where personnel could rest and rehydrate (right); fencing with black mesh provided dust control and privacy from pedestrians and vehicles along Ala Moana Boulevard (in background)

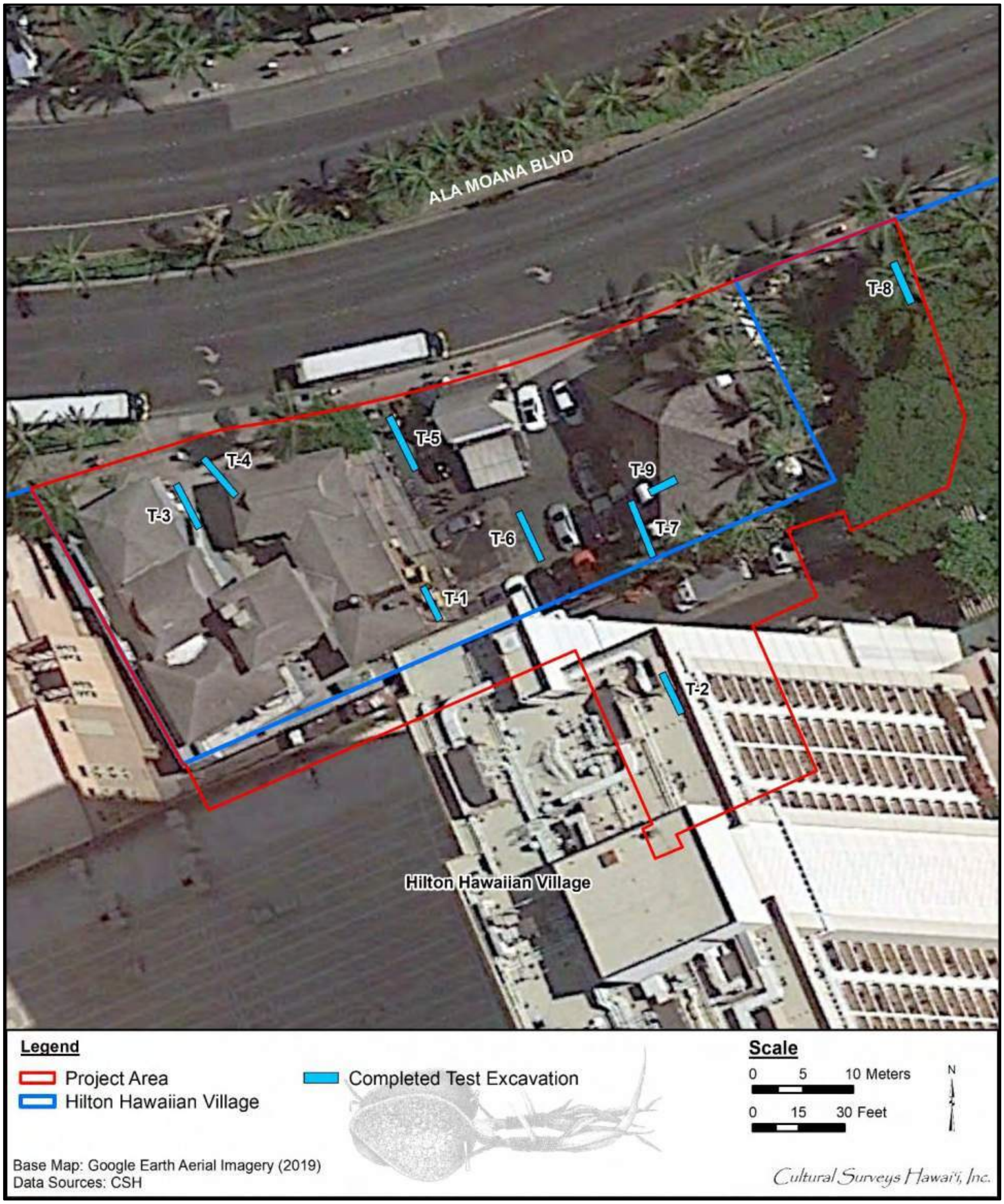


Figure 14. 2019 Google Earth aerial imagery with overlay of test excavations T-1 through T-9

Figure 15. Subsurface utilities (green, pink, and orange spray paint) in the planned location of T-1, view to northeast

Figure 16. Subsurface utilities (pink, red, and yellow spray paint) surrounding the planned location of T-2 (white dashed line)

Figure 17. Subsurface utilities (orange, green, and red spray paint) in the planned location of T-3 (dashed white line), view to east

Figure 18. Excavation of T-9 inside the former Kobe Steakhouse building, showing the confined space and use of PPE, view to north; note the plastic sheeting covering the walls and floor for additional protection from mold

photographs of the general project area and in-progress work, recording on-the-job procedures, personnel, work conditions, and the area's natural and built environment.

At least one stratigraphic profile of each test excavation was drawn and photographed; when features were identified in multiple excavation walls, more than one profile was recorded. A photographic scale and/or north arrow were included in all profile and plan view photographs. The observed deposits were described using standard USDA soil description observations/terminology (USDA Soil Science Division Staff 2017). Descriptions include Munsell color (Munsell 2000); texture; consistence; structure; plasticity; cementation; origin; descriptions of any inclusions, such as cultural material and/or roots; lower boundary distinctness and topography; and other general observations. Where stratigraphic anomalies or potential cultural deposits were exposed, these were carefully represented on test excavation profiles and/or plan maps.

When potential historic properties were identified, they were documented as detailed above. Additional documentation of the potential historic properties included size, horizontal extent, descriptions of features, presence and/or absence of surface and subsurface remains, and information that can contribute to assessments of integrity, function, age, and significance. The boundaries of the historic properties are limited to the observed and documented extents.

2.1.2.2.1 Methodology for Excavations Not Requiring PPE

At the four test excavations where PPE was not required (T-2, T-6, T-7, and T-8), hand excavation was conducted through all buried A horizon and natural sand deposits. A 5-gallon (5-gal) sample of the buried A horizon was field-screened through 1/8-inch wire mesh, and the screened sample was collected. Excavation then proceeded in thin scrapes with a flat shovel to the interface between the A horizon and the underlying sand. This interface was cleaned and inspected for potential features. All features were photographed with a scale and north arrow, and a plan map was drawn. The features were excavated, and the material was field-screened; the screened sample was collected. Note that for large pit features, no more than 5 gals of material were excavated and screened. In addition, features were only excavated as deeply into the sidewall as could be done safely without risking destabilizing the wall. Excavation then continued in thin shovel scrapes to the water table.

All artifacts and vertebrate faunal remains were collected. No invertebrate faunal remains were identified or collected apart from within screened samples.

2.1.2.2.2 Methodology for Excavations Requiring PPE

Per the SHPD-accepted AIS testing strategy (Shideler et al. 2022), modified methodology for the five test excavations requiring PPE (T-1, T-3, T-4, T-5, and T-9) included machine excavation through buried A horizon and natural sand deposits; hand excavation was not conducted due to safety concerns regarding the increased risk of dehydration and heat exhaustion while wearing PPE. In these five test excavations, a mini-excavator slowly excavated through A horizon and natural sand deposits, with scrapes approximately 4 inches deep, under close archaeological supervision. Machine excavation was halted at the upper boundary of the buried A horizon so a 5-gal sample could be excavated from the trench floor. Machine excavation then continued to the interface between the buried A horizon and the underlying sand. At this point, machine excavation halted again, and the archaeologists scraped the interface clean to inspect it for potential features. Features were documented as described in Section 2.1.2.2.1 above.

No material was collected from these five excavations in order to avoid introducing harmful contaminants into the CSH laboratory. Samples from buried A horizons and potential features were excavated and field-screened as described in Section 2.1.2.2.1 above; however, in lieu of collection, the samples were sorted and analyzed by CSH laboratory personnel in the field (see Figure 12 and Figure 19). Vertebrate faunal analysis was conducted by CSH osteologists Allison Hummel, M.Sc., and Alison Welser, M.A., who have training in faunal analysis. Artifact and screened sample analysis was conducted by CSH laboratory personnel Ryan Harismendy, B.A., and Allison Hummel, M.Sc.

The sorted materials were photographed with a scale against a black or white background, as appropriate for maximum visibility, and described by the laboratory personnel (Figure 20). Per the SHPD-accepted AIS testing strategy (Shideler et al. 2022), photographs were taken of the front/top and back/bottom sides of the materials and included a close-up. Additional artifacts and vertebrate faunal bone hand-collected from the excavations and the spoils pile were photographed and described in the same manner as the screened samples (Figure 21 and Figure 22). Post-analysis, the materials from each excavation were placed in a plastic sample bag, labeled with the AIS test excavation information, and reburied approximately 30 cmbs at one end of the excavation; this was done in order to avoid confusion during any future archaeological monitoring, when the materials could be encountered again.

2.2 Laboratory Methods

Materials collected during AIS fieldwork were identified and catalogued at CSH's laboratory facilities on Oʻahu. Analysis of collected materials was undertaken using the laboratory techniques described in the following subsections. Materials were washed, sorted, measured, weighed, described, and/or photographed.

For materials photographed and analyzed in the field in lieu of collection (from T-3, T-4, T-5, and T-9, where the soil was contaminated), additional analysis of the photographs and recorded data was conducted by Allison Hummel, M.Sc., and Ryan Harismendy, B.A., at CSH's facilities on Oʻahu. This included researching diagnostic (dateable or identifiable) attributes of artifacts.

2.2.1 Bulk and Screened Sample Analysis

Samples collected from potential cultural strata and features within two test excavations, T-6 and T-8, were examined within the CSH laboratory to aid in characterizing the cultural content and chronology of these deposits. Most samples were collected and screened in the field; a few were collected as bulk samples. All samples were labeled with provenience information, and the volume of each sample was recorded so that comparisons could be made among samples. Samples screened in the field utilized 1/8-inch wire mesh to remove the sedimentary matrix from the cultural content (faunal, floral, and artifactual remains). In the laboratory, bulk samples were screened through 1/8-inch wire mesh, and wet-screening of samples was performed as necessary. As applicable, the cultural material was washed, sorted, measured, weighed, described, photographed, identified, and catalogued. Artifacts and faunal remains were analyzed as described in Sections 2.2.2 and 2.2.3, respectively. Results of analysis are presented in Section 4.4: Bulk and Screened Sample Analysis.

Figure 19. Screened sample from T-9, prior to in-field sorting and analysis

Figure 20. Sorted materials from the sample in Figure 19 above

Figure 21. Uncollected plastic artifacts from T-4, showing back (left) and front (right) sides

Figure 22. Uncollected faunal bone from T-5, showing front (left) and back (right) sides

2.2.2 Artifact Analysis

Analysis of collected artifacts was conducted by Allison Hummel, M.Sc., and Ryan Harismendy, B.A. Artifacts were cleaned, sorted, inventoried, measured, weighed, and described. Diagnostic artifacts were discussed by type, and a representative sample of artifacts was photographed. The artifacts were identified and described using resources from Bureau of Land Management/Society for Historical Archaeology (BLM/SHA) 2021, Florida Museum of Natural History 2020, and Maryland Archaeological Conservation Laboratory 2018, as well as digital and print resources relevant to individual artifact manufacture and histories.

Artifacts were assessed for type, material, origin, and date. Country of origin was identified where possible. Some artifacts lacked the diagnostic characteristics necessary to identify specific country of origin and were identified only as Euro-American, indicating origin from countries in North America or Europe (most likely the United States or England). Origin was only identified more specifically than by country in the case of artifacts that could be positively identified as having originated or been made specifically for use in Hawaiʻi.

For dating purposes, artifacts were assessed to determine date of manufacture first and foremost. Where applicable, manufacture date ranges were modified by available information regarding dates of import of certain materials and immigration of ethnic groups to Hawaiʻi. Notable dates frequently used in this capacity are 1850, the date of increased import of goods to support the influx of missionaries; 1852, the date of the first immigration of Chinese workers; and 1868, the date of the first immigration of Japanese workers. However, date ranges may be very wide due to a lack of diagnostic characteristics needed to narrow the range. Additionally, it is not expected that artifacts were always consumed and discarded immediately; many types of artifacts would have had long periods of use between manufacture and deposition. Detailed discussions of *terminus ante quem* and *terminus post quem* limits for dates of deposition of specific artifacts, features, historic properties, and stratigraphic layers are presented in Section 4.2.3: Test Excavations; a summary is also presented in Section 5.2.6: Artifact Summary and Discussion.

Analyzed materials were tabulated and are presented in Section 5.2: Artifact Analysis.

2.2.3 Faunal Analysis

Analysis of collected faunal materials focused on species identification and evidence of food consumption. Invertebrate remains were identified to the lowest possible taxa, weighed, and analyzed. Common shells were identified and analyzed using an in-house comparative collection. Non-human vertebrate skeletal material was identified to the lowest possible taxa and analyzed using an in-house comparative collection. This analysis was conducted by CSH osteologist, Allison Hummel, M.Sc., who has training in faunal analysis. The material was weighed in grams and cataloged according to provenience. As invertebrate faunal remains were identified solely within bulk and screened samples, the results of invertebrate faunal analysis are presented in Section 5.1: Bulk and Screened Samples. The results of vertebrate faunal analysis are presented in Section 5.3: Vertebrate Faunal Analysis.

2.3 Disposition of Collections

Materials collected during the current AIS (excluding human remains and grave goods) will remain temporarily curated at the CSH office on Oʻahu. CSH will arrange with the landowner regarding the disposition of this material. Should the landowner request different archiving of material, an archive location will be determined in consultation with the SHPD. All data generated during the course of the AIS are stored at the CSH offices.

2.4 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawaiʻi at Mānoa, the Hawaiʻi State Archives, the Mission Houses Museum Library, the Hawaiʻi Public Library, and the Bishop Museum Archives; study of historical photographs at the Hawaiʻi State Archives and the Bishop Museum Archives; and study of historical maps at the Survey Office of the Department Accounting and General Services. Historical maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ʻAina database (Waihona ʻAina 2022).

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

Section 3 Background Research

3.1 Traditional and Historical Background

3.1.1 Pre-Contact to Early Post-Contact

By the time of Europeans' arrival in the Hawaiian Islands in the late eighteenth century, Waikīkī had long been a center of population and political power on O‘ahu. According to Martha Beckwith (1940:383), by the end of the fourteenth century, Waikīkī had become "the ruling seat of the chiefs of O‘ahu." George Kanahele relates that the ruling chief Ma‘ilikūkāhi made the following decision:

> […] to move his capital from ‘Ewa to Waikīkī around 1400. As a result, for the next 400 years—and until Honolulu became the trading center of the Kingdom of Hawai‘i in the early 1800s—Waikīkī remained one of the main political and economic centers of O‘ahu. [Kanahele 1995:62]

Ma‘ilikūkāhi was known as a kind chief and was greatly loved by his subjects, who enjoyed prosperity and peace under his reign. Ma‘ilikūkāhi won the respect and loyalty of his people due to "his exceedingly great concern for the prosperity of the kingdom" (Kamakau 1992:55).

Kanahele (1995:134) notes the continuity in royal residences, stating "The royal residences were generally located in the same areas that all of Waikīkī's ancient chiefs had located their residences for hundreds of years." Kanahele (1995:134–135) goes on to explain that "[t]hree features were common to royal locations in Waikīkī. They were situated (1) near the beach, (2) next to a stream or *‘auwai* (canal), and (3) among a grove of cocoanut [*sic*] or *kou* trees."

Hibbard and Franzen note the following:

> When old Hawaiians refer to O‘ahu they recall, ‘ke one ‘ai ali‘i o Kākuhihewa', or the chief-consuming sands of Kakuhikewa. Kakuhihewa was a famous ali‘i (chief) who ruled O‘ahu during the late 1500s. He lived at Ulukou, Waikiki on the spot now occupied by the Moana Hotel. His reign was marked by great prosperity during which all the invading chiefs from other islands were defeated. The sands at Ulukou were known as chief-eating sands because of the strength of this great chief. Kakuhikewa's Waikiki came to epitomize the golden era of aboriginal Hawaiian history and is mentioned frequently in traditional Hawaiian chants as well as contemporary song. Five generations before Kakuhihewa's birth, circa 1450, Ma‘ilikukahi first established Waikiki as the government center for the island of O‘ahu. From this time until 1809, when Kamehameha I moved his court to Honolulu, Waikiki was the seat of power for O‘ahu. Originally Waikiki encompassed a larger area than the section we are familiar with today. [Hibbard and Franzen 1986:2]

The preeminence of Waikīkī continued into the eighteenth century, when Kamehameha decided to reside there after winning control of O‘ahu by defeating the island's chief, Kalanikūpule. The nineteenth century Hawaiian historian John Papa ‘Ī‘ī, a member of the *ali‘i* (chiefly class), described the king's Waikīkī residence as follows:

> Kamehameha's houses were at Puaaliilii, makai of the old road [now Kalakaua Avenue], and extended as far as the west side of the sands of ʻApuakehau [Stream]. Within it was Helumoa where Kaʻahumanu mā [Kaʻahumanu's people] went to while away the time. The king built a stone house there, enclosed by a fence […] [ʻĪʻī 1959:17]

ʻĪʻī further noted that the "place had long been a residence of chiefs. It is said that it had been Kekuapoi's home, through her husband Kahahana, since the time of Kahekili" (ʻĪʻī 1959:17). The main trail into Waikīkī was *makai* (seaward) of present-day Ala Moana Boulevard/Kalākaua Avenue, adjacent to the current project area (Figure 23).

However, chiefly residences were only one element of a complex of features that characterized Waikīkī up to the time of Western Contact. Beginning in the fifteenth century, Hawaiians constructed a vast system of irrigated taro fields that extended across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. This field system—an impressive engineering design traditionally attributed to the chief Kalamakua—took advantage of the streams descending from Makiki, Mānoa, and Pālolo valleys that also provided ample fresh water for Hawaiians living in the *ahupuaʻa* (traditional land division). Water was also available from springs in nearby Mōʻiliʻili and Punahou. Closer to the Waikīkī shoreline, houses, ponded taro fields, coconut groves, and fishponds dotted the landscape, as shown on early historic maps (see Figure 23 through Figure 25). Located near the mouth of Piʻinaio Stream, the traditional Hawaiian fishpond complexes of Paweo and Kaipuni were approximately 150 m to the northeast and east, respectively, of the current project area. Likely constructed in the pre-Contact period, these fishponds were used into the later 1800s before being systematically filled in with the development of the U.S. Army's Fort DeRussy in the early 1900s.

A sizeable population developed amidst this Hawaiian-engineered abundance. Captain George Vancouver, arriving at "Whyteete" in 1792, captured something of this profusion in his journals:

> On shores, the villages appeared numerous, large, and in good repair; and the surrounding country pleasingly interspersed with deep, though not extensive valleys; which, with the plains near the sea-side, presented a high degree of cultivation and fertility.
>
> [Our] guides led us to the northward through the village, to an exceedingly well-made causeway, about twelve feet broad, with a ditch on each side. This opened our view to a spacious plain, which, in the immediate vicinity of the village, had the appearance of the open common fields in England; but, on advancing, the major part appeared to be divided into fields of irregular shape and figure, which were separated from each other by low stone walls, and were in a very high state of cultivation. These several portions of land were planted with the eddo or taro root, in different stages of inundation; none being perfectly dry, and some from three to six or seven inches under water. The causeway led us near a mile from the beach, at the end of which was the water we were in quest of. It was a rivulet five or six feet wide, and about two or three feet deep, well banked up, and nearly motionless; some small rills only, finding a passage through the dams that checked the sluggish stream, by which a constant supply was afforded to the taro plantations.

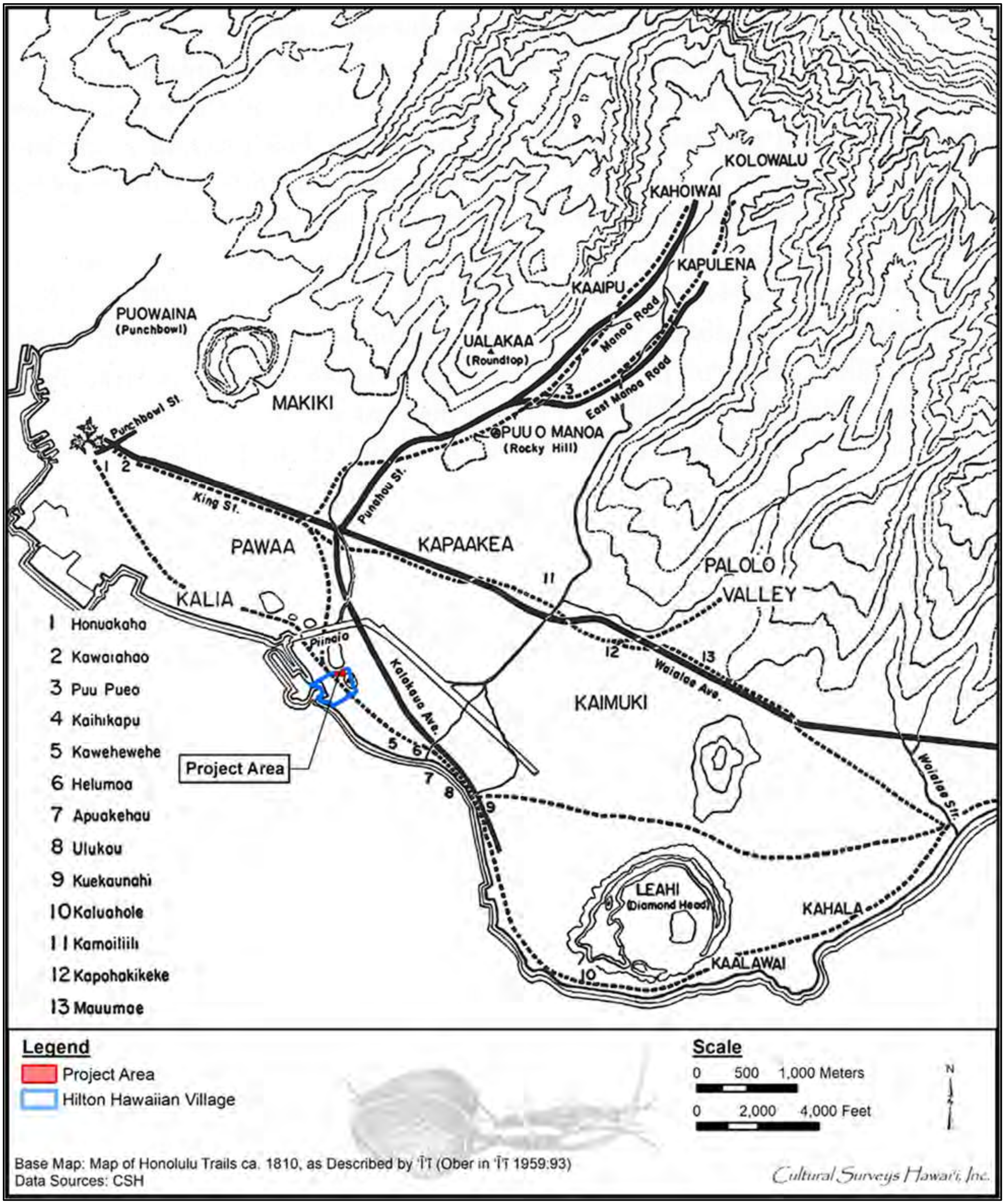


Figure 23. Map of the trails of O‘ahu ca. 1810, Waikīkī area, based on the recollections of nineteenth-century Hawaiian historian John Papa ‘Ī‘ī (1959:93, map by Gerald Ober); the project area is along the ‘Ewa/Diamond Head coastal trail that connected Kālia with Waikīkī proper

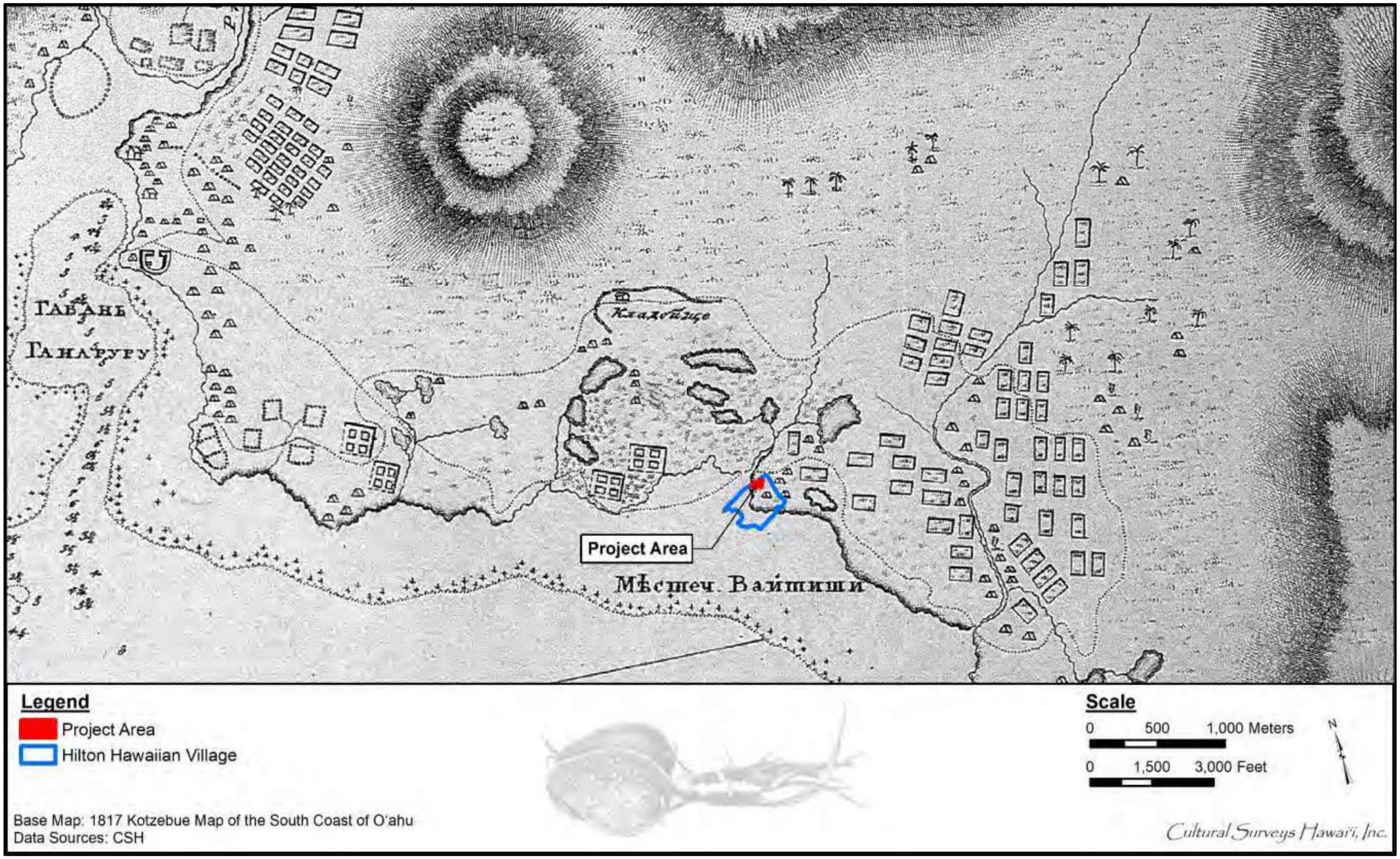


Figure 24. Portion of 1817 map by Otto von Kotzebue (reprinted in Fitzpatrick 1986:48–49) showing a schematic of fishponds, taro *lo‘i* (rectangles), residences (small trapezoids), and salt pans (grid squares) in Honolulu and Waikīkī; note the shoreline at this time is adjacent to the project area

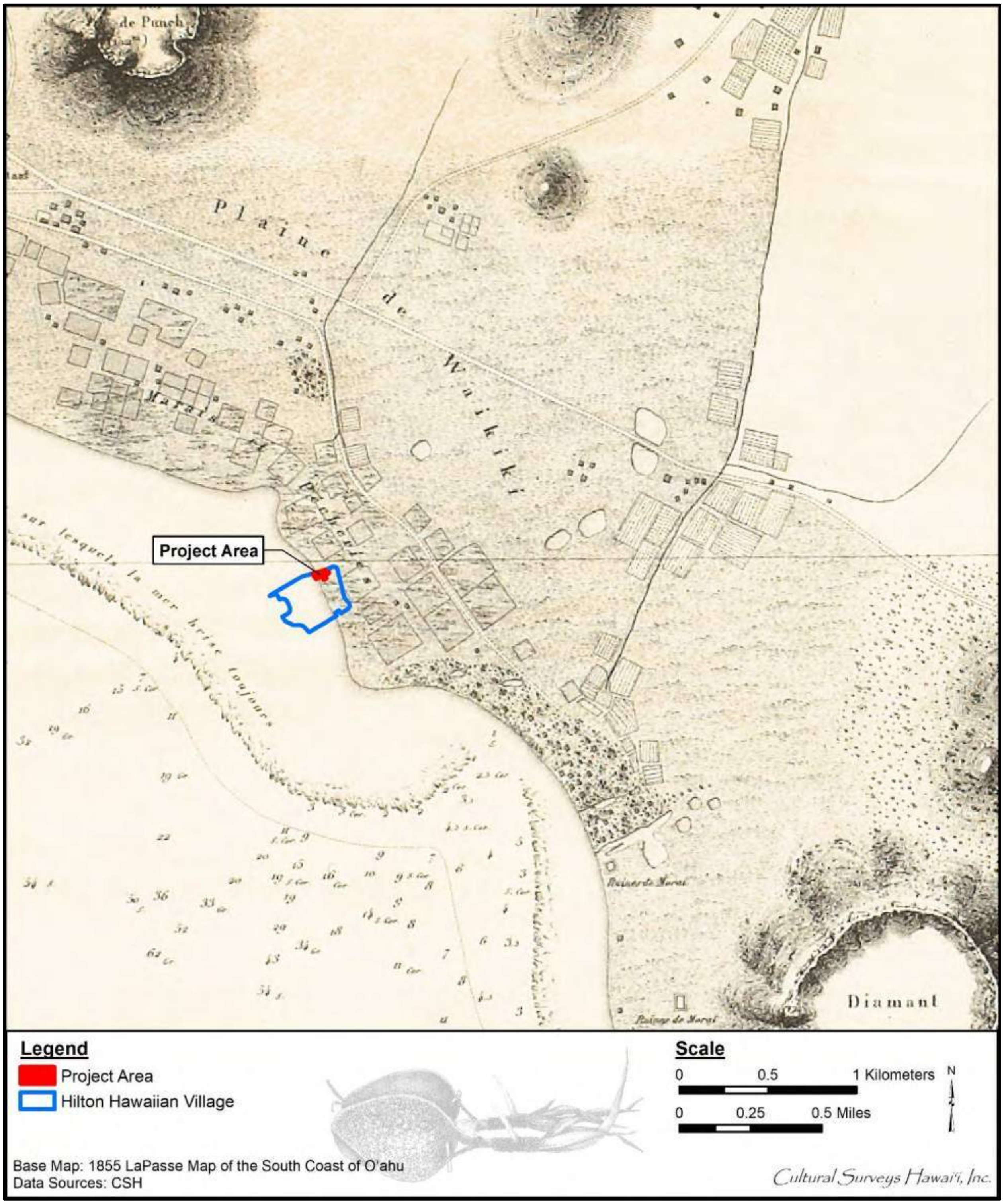


Figure 25. Portion of an 1855 map of the south coast of O‘ahu by M. de LaPasse of the *Eurydice*, showing the project area in relation to fishponds (“Pecheries”)

> [We] found the plain in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind […] The sides of the hills, which were at some distance, seemed rocky and barren; the intermediate vallies, which were all inhabited, produced some large trees, and made a pleasing appearance. The plain, however, if we may judge from the labour bestowed on their cultivation, seemed to afford the principal proportion of the different vegetable productions on which the inhabitants depend for their subsistence. [Vancouver 1798:161–164]

Further details of the exuberance of Hawaiian life and land use in the *ahupuaʻa* of Waikīkī are given by Archibald Menzies, a naturalist accompanying Vancouver's 1792 expedition:

> The verge of the shore was planted with a large grove of cocoanut [*sic*] palms, affording a delightful shade to the scattered habitations of the natives. Some of those near the beach were raised a few feet from the ground upon a kind of stage, so as to admit the surf to wash underneath them. We pursued a pleasing path back to the plantation, which was nearly level and very extensive, and laid out with great neatness into little fields planted with taro, yams, sweet potatoes and the cloth plant. These, in many cases, were divided by little banks on which grew the sugar cane and a species of Draecena without the aid of much cultivation, and the whole was watered in a most ingenious manner by dividing the general stream into little aqueducts leading in various directions so as to be able to supply the most distant fields at pleasure, and the soil seemed to repay the labour and industry of these people by the luxuriancy of its productions. Here and there we met with ponds of considerable size, and besides being well stocked with fish, they swarmed with water fowl of various kinds such as ducks, coots, water hens, bitterns, plovers and curlews. [Menzies 1920:23–24]

These early Euro-American contacts, while providing the first western documentation of Waikīkī, also disrupted its traditional role as a center of chiefly and agricultural activities on southeastern Oʻahu. Because the only sheltered harbor on Oʻahu was found in the *ahupuaʻa* of Honolulu, trade with visiting foreign vessels gradually centered there; increasing numbers of Hawaiians left their traditional environments to move to Honolulu. The shift in preeminence is illustrated by the fact that Kamehameha moved his residence from Waikīkī to Honolulu. Indeed, by 1828 Levi Chamberlain described a journey into Waikīkī as follows:

> Our path led us along the borders of extensive plats of marshy ground, having raised banks on one or more sides, and which were once filled with water, and replenished abundantly with esculent fish; but now overgrown with tall rushes waving in the wind. The land all around for several miles has the appearance of having once been under cultivation. I entered into conversation with the natives respecting this present neglected state. They ascribed it to the decrease of population.
> [Chamberlain 1957:26]

The depopulation of Waikīkī can be attributed not only to the attractions of Honolulu (where, by the 1820s, the population was estimated at 6,000 to 7,000) but also tragically to the European diseases that had devastating effects upon the Hawaiian population.

3.1.2 Nineteenth Century

Despite the depopulation of Waikīkī, the *ahupua‘a* continued to sustain Hawaiians living traditionally into the mid-nineteenth century. 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 (Hawaiian government), the *ali‘i*, and their land managers (*konohiki*) received their land titles. Subsequently in the Māhele, Land Commission Awards (LCAs) for *kuleana* parcels were awarded to commoners and others who could prove residency on and use of the parcels they claimed (Figure 26).

Most of the project area was part of LCA 1775:1, awarded to Paoa in 1853, for a *pāhale*, or house lot (see Figure 26 and Figure 27). This was the ancestral homesite of the maternal side of the family of Duke Paoa Kahinu Mokoe Hulikohola Kahanamoku (24 August 1890–22 January 1968), a Native Hawaiian competition swimmer who won six Olympic medals, including three gold medals. He was also the foremost surfer who popularized surfing to the world and was known as Hawai‘i's “Ambassador of Aloha.” In later years, Duke was elected as sheriff of Waikīkī, serving 13 consecutive terms.

Additionally, a portion of the project area is within Land Grant 3162 (mis-labeled as Grant 3167 on the 1881 Bishop map) to H.A. Widemann (spelled Widdemann on the 1881 Bishop map) and later (1890) to John Ena (see Figure 26 and Figure 28). Ena served on the Privy Council of both King Kalākaua and Queen Lili‘uokalani. An 1897 map shows buildings/structures within Ena's land; however, these are all outside the current project area.

As the nineteenth century progressed, Waikīkī became a popular site among foreigners—mostly American—who had settled on O‘ahu. An 1865 article in the *Pacific Commercial Advertiser* mentions a small community that had developed along the beach. The area continued to be popular with *ali‘i*, and several notables had residences there. A visitor to O‘ahu in 1873 described Waikīkī as “a hamlet of plain cottages, whither the people of Honolulu go to revel in bathing clothes, mosquitoes, and solitude, at odd times of the year” (Bliss 1873:195–196).

Other developments during the second half of the nineteenth century, a prelude to changes that would dramatically alter the Waikīkī landscape during the twentieth century, are well documented by Nakamura (1979:19–50), Hibbard and Franzen (1986:8–46), Kanahele (1995:131–155), and Grant (1996:8–34). These changes include the improvement of the road connecting Waikīkī to Honolulu (the route of the present Kalākaua Avenue); the building of a tram line between the two areas; and the opening of Kapi‘olani Park in 1877. Traditional land uses in Waikīkī were abandoned or modified. By the end of the nineteenth century, most of the fishponds that had previously proliferated had been neglected and allowed to deteriorate. The remaining taro fields were planted with rice to supply the growing numbers of immigrant laborers from China and Japan, as well as for shipment to the west coast of the United States.

3.1.3 Twentieth Century to Present

During the first decade of the twentieth century, the U.S. War Department acquired more than 70 acres in the Kālia portion of Waikīkī for the establishment of a military reservation called Fort DeRussy, named in honor of Brigadier General R.E. DeRussy of the Army Corps of Engineers. Hibbard and Franzen summarize activities at Fort DeRussy below:

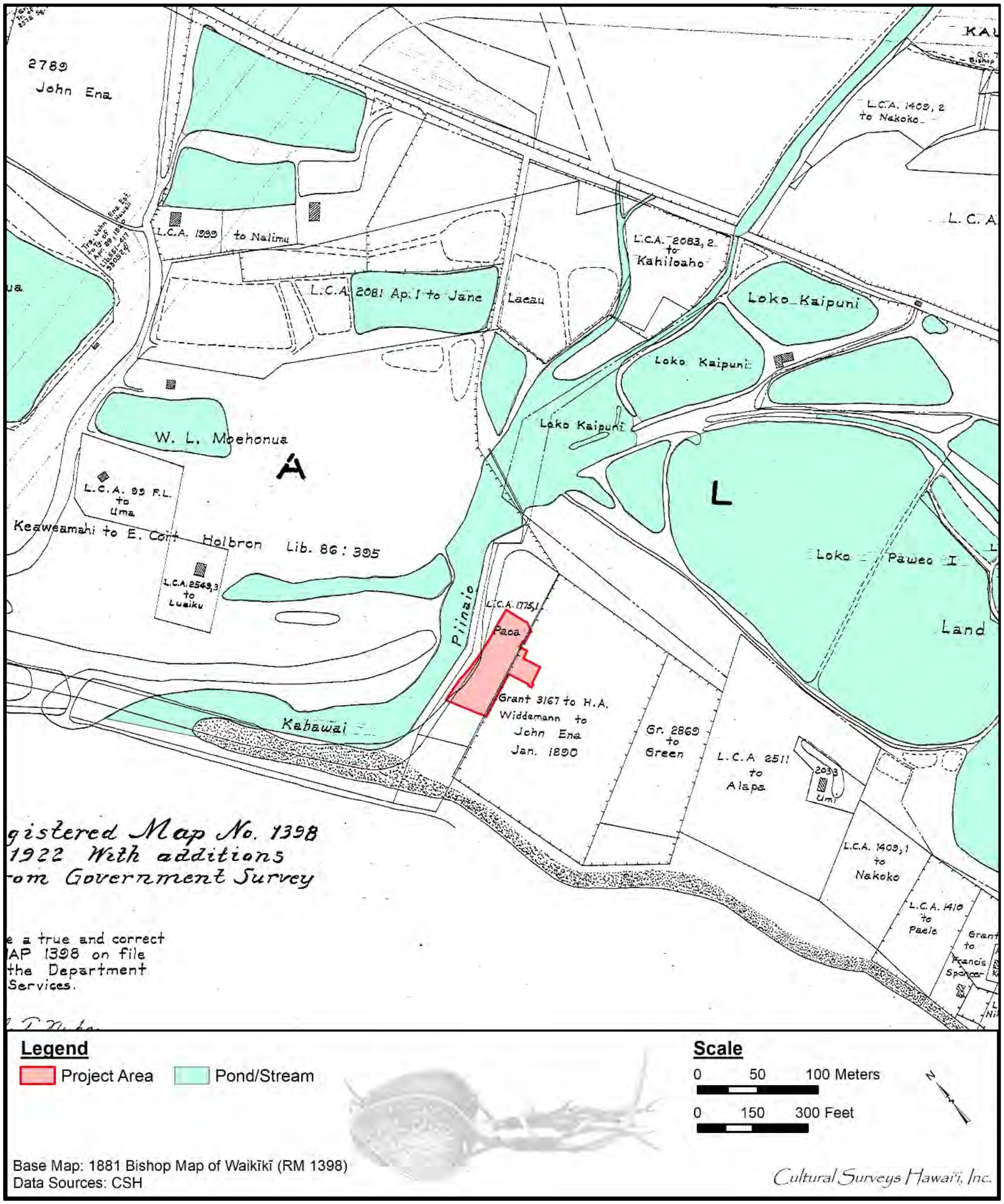
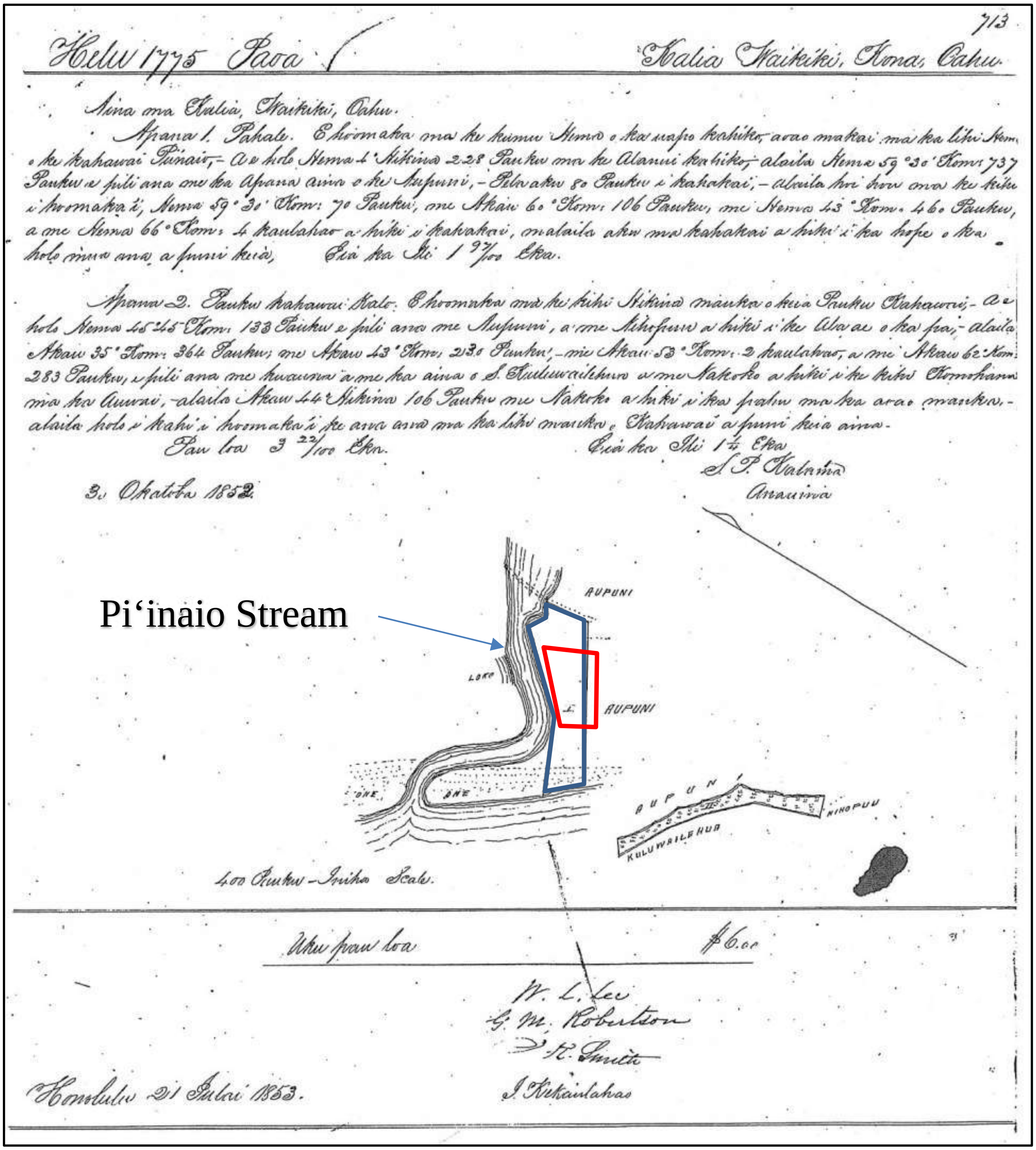


Figure 26. Portion of an 1881 map of Waikīkī (RM 1398) by S.E. Bishop showing the locations of LCAs, land grants, ponds, and streams; the project area is just south of Piʻinaio Stream and is mainly within LCA 1775 ʻĀpana (lot) 1 to Paoa



713

Helu 1775 Paoa Kalia Waikiki, Kona, Oahu.

Aina ma Kalia, Waikiki, Oahu.

Apana 1. Pahale. E hoomaka ma ke kumu Hema o ka uapo kahiko, aoao makai ma ka lihi Hem o ke kahawai Piinaio, - a e holo Hema 4° Hikina 228 Pauku ma ke Alanui kahiko, - alaila Hema 59° 30' Kom: 737 Pauku e pili ana me ka Apana aina o ke Aupuni, - Pela aku 80 Pauku i kahakai, - alaila hoi hou ma ke kihi i hoomaka ai, Hema 59° 30' Kom: 70 Pauku, me Akau 60° Kom: 106 Pauku, me Hema 43° Kom. 460 Pauku, a me Hema 66° Kom: 4 kaulahao a hiki i kahakai, malaila aku ma kahakai a hiki i ka hope o ka holo mua ana, a puni keia, Eia ka Ili 1 97/100 Eka.

Apana 2. Pauku kahawai Kalo. E hoomaka ma ke kihi Hikina mauka o keia Pauku Kahawai, - a e holo Hema 45° 45' Kom: 133 Pauku e pili ana me Aupuni, a me Nihopuu a hiki i ke Alaae o ka pa, - alaila Akau 35° Kom: 364 Pauku; me Akau 43° Kom: 230 Pauku; - me Akau 53° Kom: 2 kaulahao, a me Akau 62° Kom: 283 Pauku, e pili ana me kuauna a me ka aina o S. Kuluwailehua a me Nakoko a hiki i ke kihi Komohana ma ka Auwai, - alaila Akau 44° Hikina 106 Pauku me Nakoko a hiki i ka palu ma ka aoao mauka, - alaila holo i kahi i hoomaka'i ke ana ana ma ka lihi mauka o Kahawai a puni keia aina.

Pau loa 3 22/100 Eka. Eia ka Ili 1¼ Eka

S. P. Kalama
Anaaina

3. Okatoba 1852.

400 Pauku - Iniha Scale.

Uku pau loa $6.00

W. L. Lee
G. M. Robertson
J. H. Smith
J. Kekaulahao

Honolulu 21 Iulai 1853.

Figure 27. 1852 claim for LCA 1775 to Paoa (outlined in blue), with approximate project area boundaries outlined in red; note the close proximity of Piʻinaio Stream as it meets the sea.

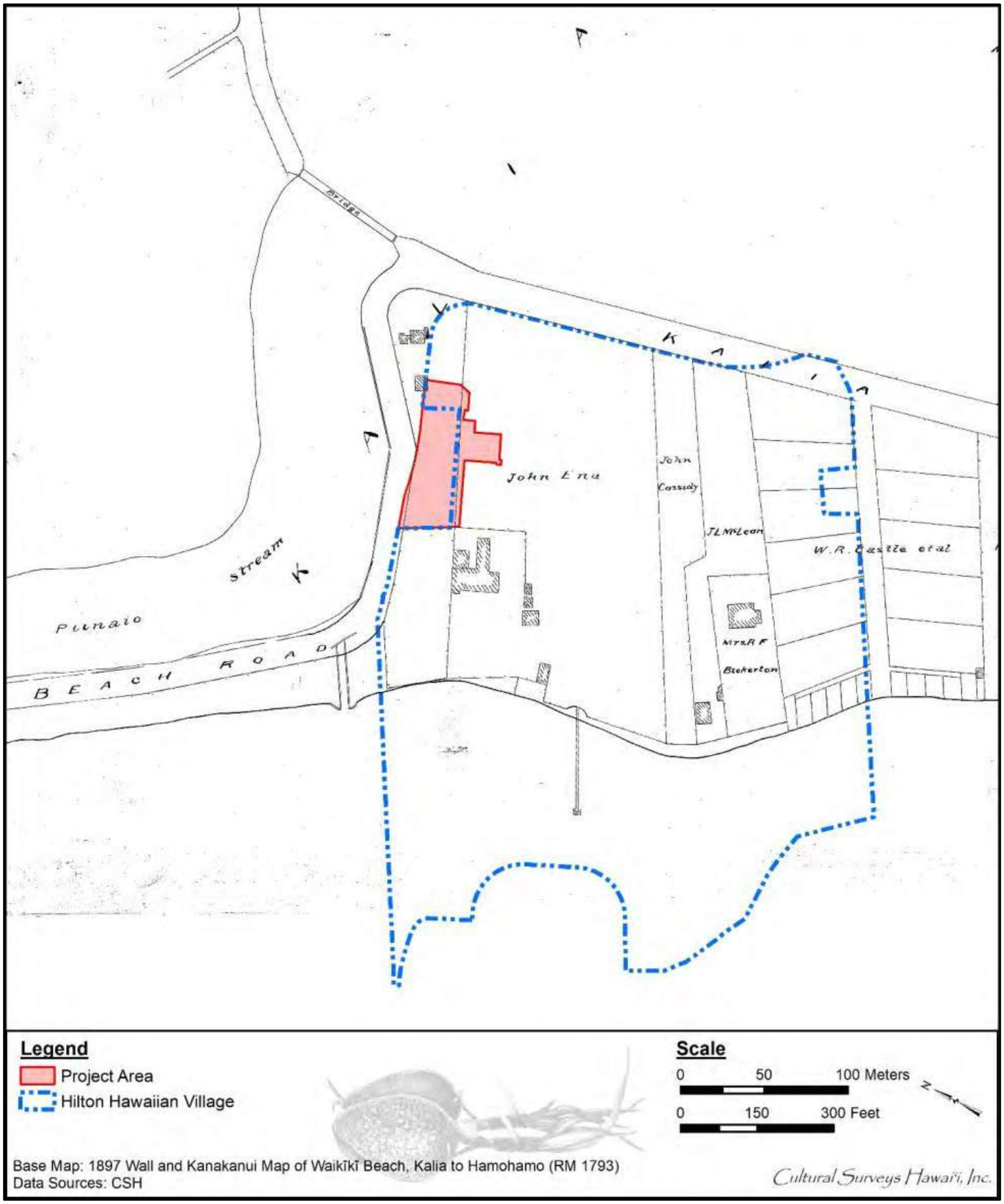


Figure 28. Portion of the 1897 Wall and Kanakanui map of Waikīkī Beach, Kālia to Hamohamo (RM 1793), showing LCAs and land grants within and in the vicinity the project area

> On 12 November 1908, a detachment of the 1st Battalion of Engineers from Fort Mason, California, occupied the new post […]
>
> Between 1909 and 1911 the engineers were primarily occupied with mapping the island of Oʻahu. At DeRussy other activities also had to be attended to—especially the filling of a portion of the fishponds which covered most of the Fort. This task fell to the Quartermaster Corps, and they accomplished it through the use of an hydraulic dredger which pumped fill from the ocean continuously for nearly a year in order to build up an area on which permanent structures could be built. Thus the Army began the transformation of Waikīkī from wetlands to solid ground. [Hibbard and Franzen 1986:79]

The traditional Hawaiian fishpond complexes of Paweo and Kaipuni, approximately 150 m northeast/east of the current project area, were filled in with the development of Fort DeRussy (Figure 29). By 1914 (Figure 30), there were western-style dwellings—likely bungalows—within Parcels 004, 005, and 006 of the current project area. A land court application map (Figure 31) indicates the owners of these dwellings to be Mary Simson, Kekai Kuihala Mahaulu, and Duke Kahanamoku, the Native Hawaiian Olympic swimmer and renowned surfer (discussed in Section 3.1.2 above). An apparent relative of Duke's on the maternal side of his family, Henry Paoa, is shown as the owner of the Parcel 007 portion of the project area; however, no buildings or structures are indicated.

During the 1920s, the Waikīkī landscape was transformed when construction of the Ala Wai Drainage Canal—begun in 1921 and completed in 1928—resulted in the draining and filling in of the remaining ponds and irrigated fields of Waikīkī. It was also at this time that Piʻinaio Stream, just north of the current project area, was filled. The canal was one element of a plan to urbanize Waikīkī and the surrounding districts:

> The [Honolulu city] planning commission began by submitting street layout plans for a Waikīkī reclamation district. In January 1922 a Waikīkī improvement commission resubmitted these plans to the board of supervisors, which, in turn, approved them a year later. From this grew a wider plan that eventually reached the Kapahulu, Mōʻiliʻili, and McCully districts, as well as lower Makiki and Mānoa.
>
> The standard plan for new neighborhoods, with allowances for local terrain, was to be that of a grid, with 80-foot-wide streets crossing 70-foot-wide avenues at right angles so as to leave blocks of house lots about 260 by 620 feet. Allowing for a 10-foot-wide sidewalk and a 10-foot right-of-way [alley] down the center of each block, there would be twenty house lots, each about 60 by 120 feet, in each block. [Johnson 1991:311]

By 1927 (Figure 32), two dwellings had been constructed within the southeastern portion of the current project area (Parcel 009 and 013). The four dwellings constructed within parcels 004–006 by 1914 (see discussion above) were still present at this time, although some appeared to have been renovated/enlarged.

Newly created land tracts following the Ala Wai Canal's construction spurred a rush to development in the 1930s (Figure 33). An article in the *Honolulu Star-Bulletin* in 1938 extolled the area's progress:

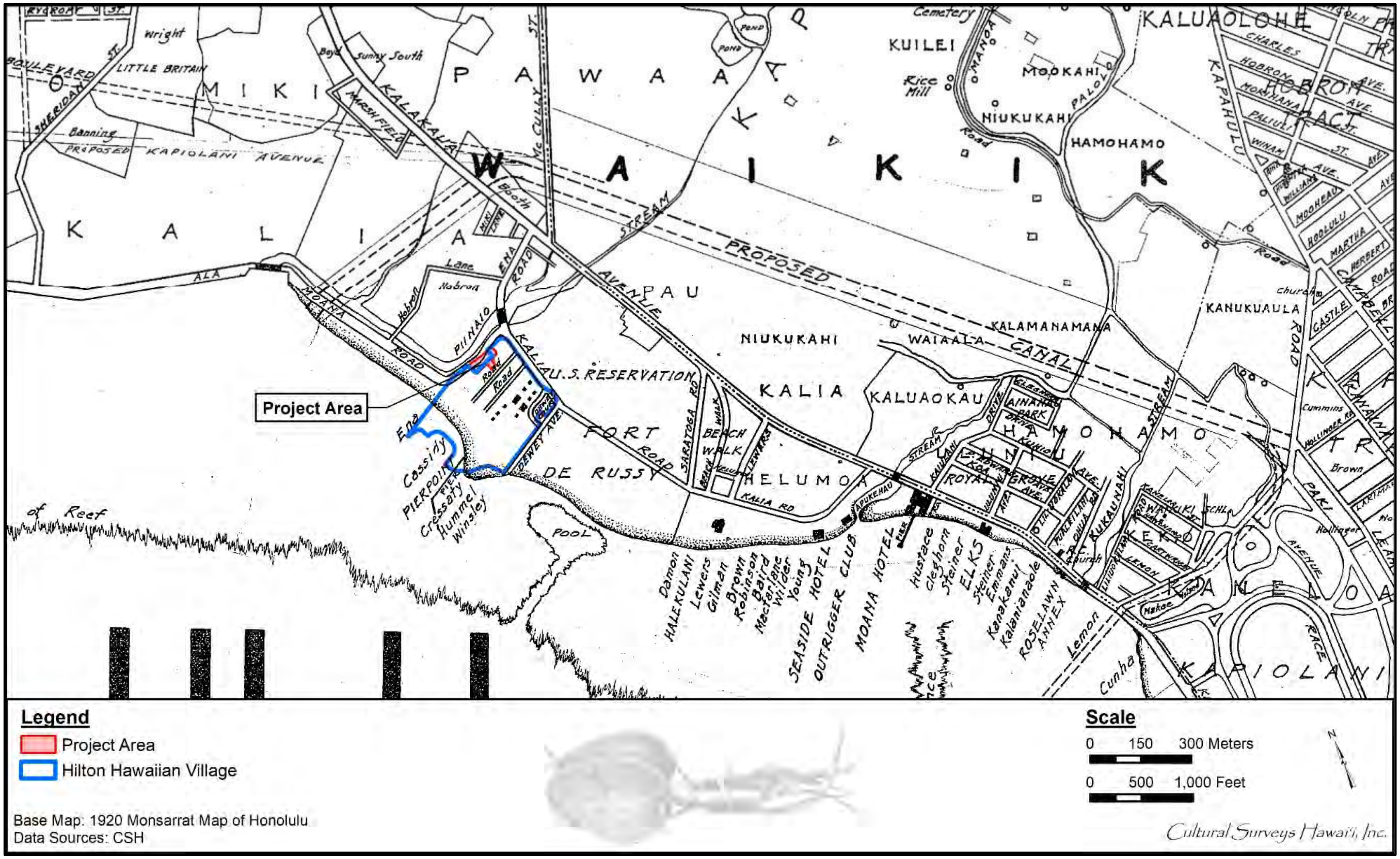


Figure 29. Portion of 1920 Monsarrat map of Honolulu showing the project area; note the advancing Waikīkī shoreline and that the Kaipuni and Paweo fishpond complexes have been filled in as part of Fort DeRussy; the proposed Ala Wai Canal alignment is indicated with dashed lines

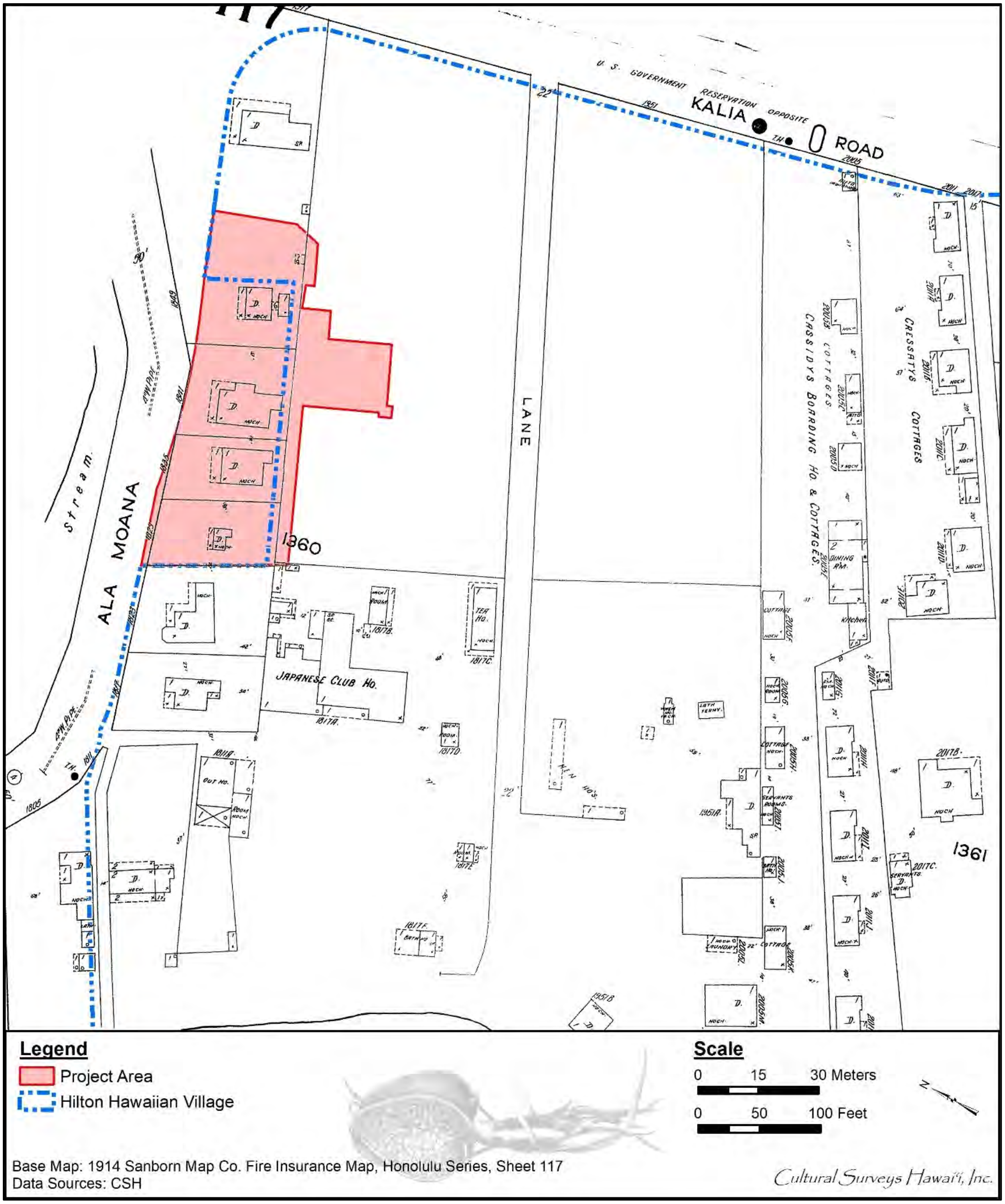


Figure 30. 1914 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 117, showing dwellings (“D”) within Parcels 004, 005, and 006 of the project area

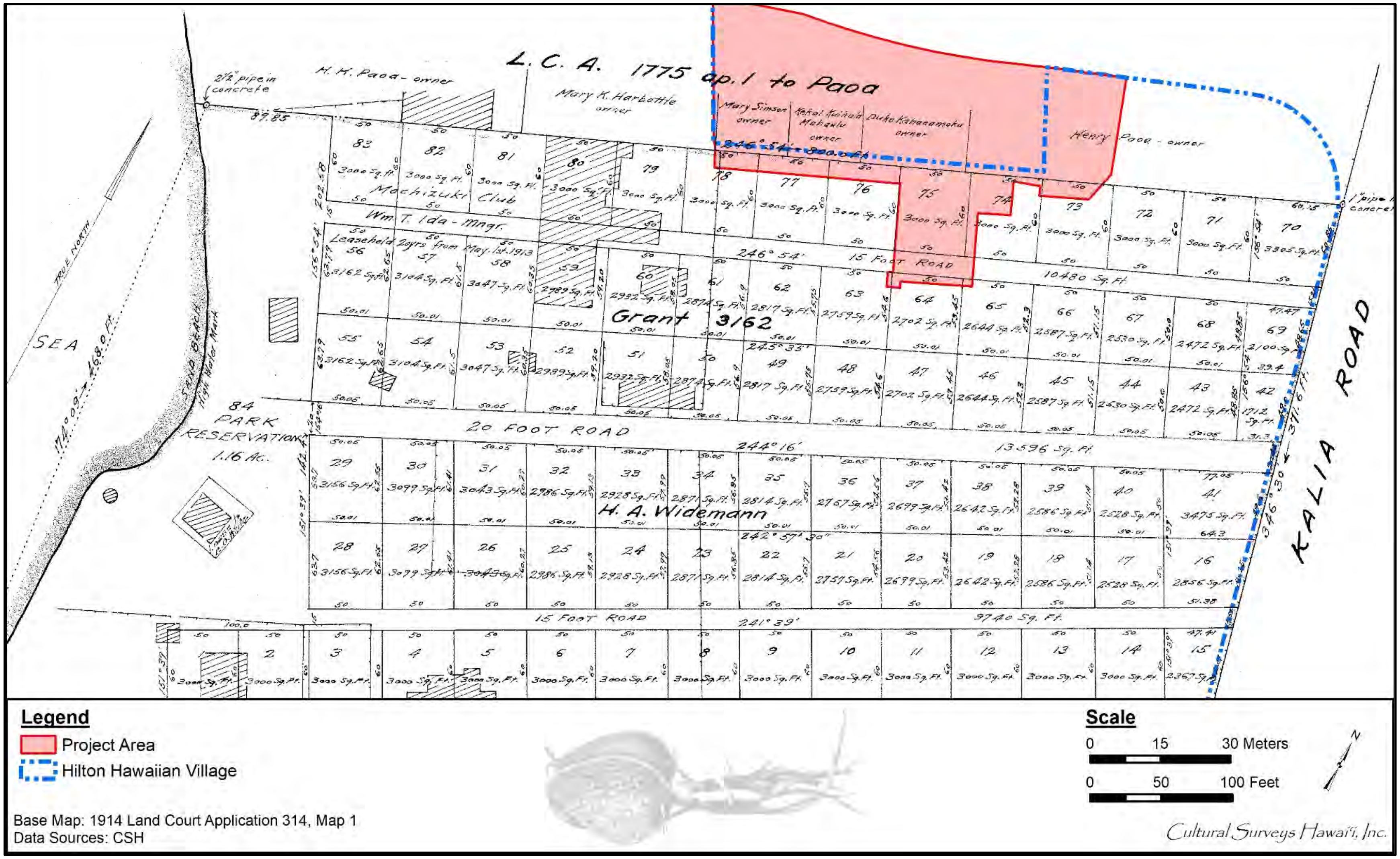


Figure 31. 1914 Land Court Application 314, Map 1, showing property owners within the project area; these included Mary Simson, Kekai Kuihala Mahaulu, Duke Kahanamoku, and Henry Paoa

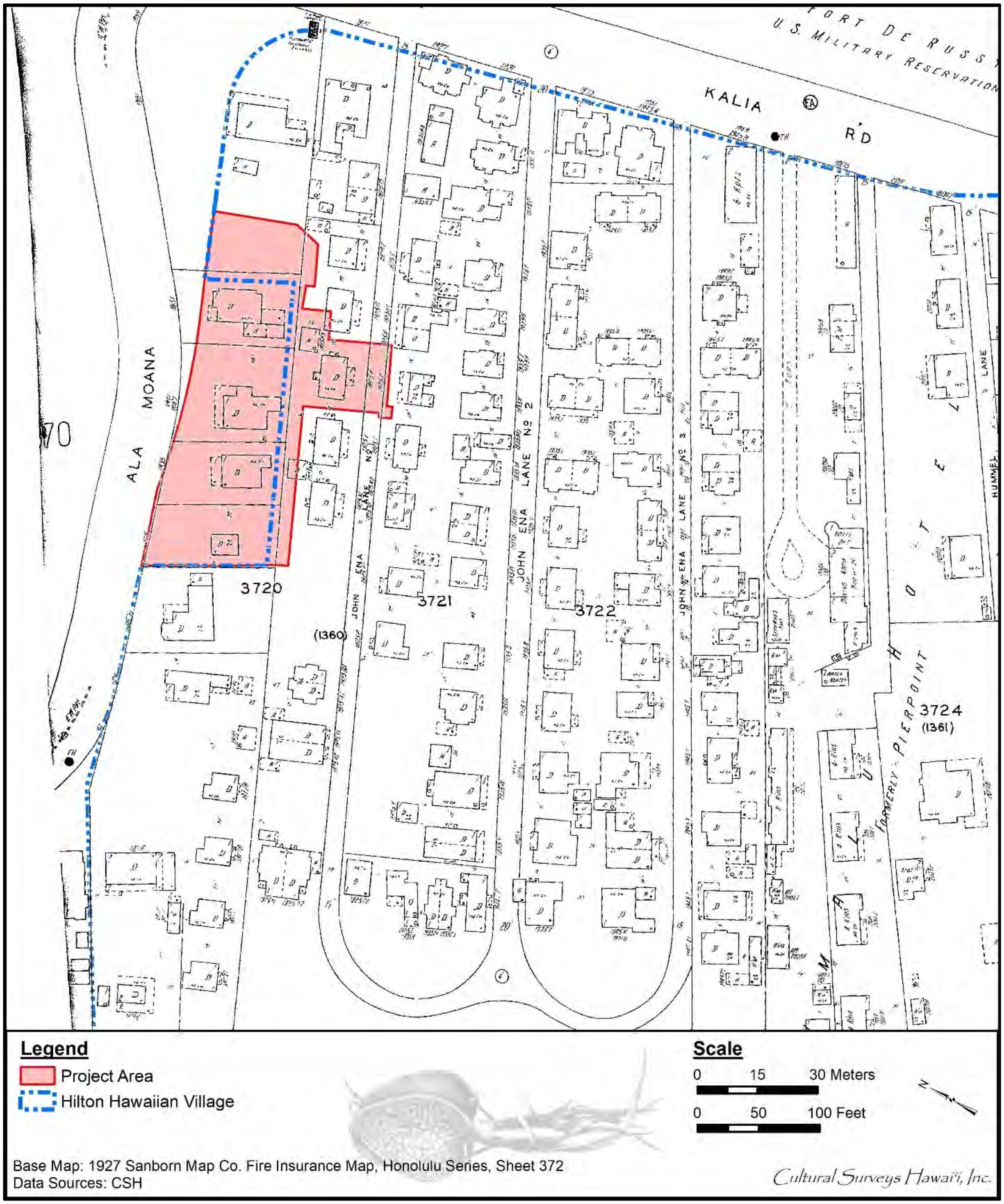


Figure 32. 1927 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 372, showing dwellings ("D") within Parcels 004–006 and 009

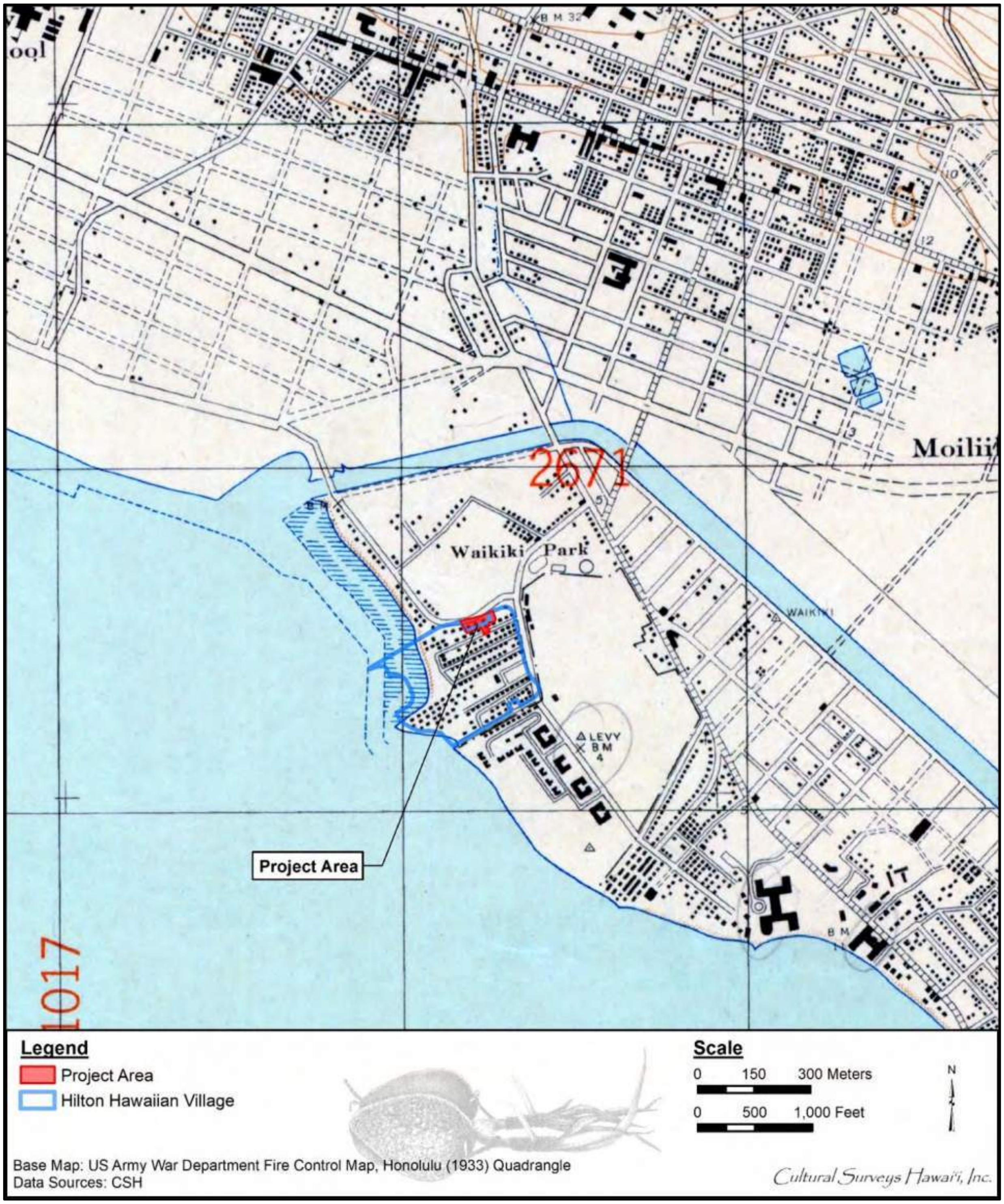


Figure 33. Portion of a 1933 U.S. Army War Department fire control map, Honolulu quadrangle, showing residential development within and surrounding the project area; note the Ala Wai Canal has been completed, and Pi'inaio Stream has been filled

> The expansion of apartment and private residence construction is no secret. Examination of building permits will show that more projects have been completed during the past year, and more are now underway in this area, than in any other section of the territory.
>
> These developments are being made by island residents who have recognized the fact that Waikīkī presents the unparalleled possibility for safe investment with excellent return. [Newton 1939:10]

The entrance of the United States into World War II following the Japanese bombing of Pearl Harbor on 7 December 1941 put on hold plans for the development of Waikīkī as a tourist destination. Until the war's end in 1945, the tourist trade was non-existent "since the Navy controlled travel to and from Hawaiʻi and did not allow pleasure trips" (Brown 1989:141). Brown describes the transformation of Waikīkī into a recreation area for military personnel:

> It was not the same Waikīkī as before the war, though; barbed wire barricades now lined its sands, and there were other changes too. Fort DeRussy became a huge recreation center, with a dance hall called Maluhia that attracted thousands of men at a time. The Moana Hotel continued to function, but many other establishments and private homes in the area were taken over by the military. [Brown 1989:141]

By the mid-1950s, there were more than 50 hotels from the Kālia area to the Diamond Head end of Kapiʻolani Park. However, the Waikīkī population was not limited to transient tourists and included 11,000 permanent residents living in 4,000 single-family dwellings and apartments in stucco or frame buildings. A 1950 Sanborn map (Figure 34) indicates dwellings within all project area parcels, as well as an apartment building within Parcel 004. A 1954 aerial photograph (Figure 35) appears to show the same buildings as the 1950 map.

However, all of the dwellings in the southeastern portion of the project area (within Parcels 009 and 013) and one of the dwellings in Parcel 007 had been demolished by 1956 (Figure 36). In addition, a duplex within Parcel 004 had been replaced with an apartment building. A resort called "Hawaiian Village," owned by Henry J. Kaiser, had been established southeast of the project area; Conrad Hilton would purchase this hotel in 1961. The three buildings within Parcel 004 were renovated into the current layout in the 1980s (see Figure 5).

By 1966 (Figure 37), the project area has been asphalt paved. The modern shoreline, including the Hilton lagoon, can be seen on a 1966 aerial photograph and a 1969 map (see Figure 37 and Figure 38). The Kobe Steakhouse building within Parcel 006 is also visible on the 1966 aerial photograph. The last decades of the twentieth century up to the present day saw the development of the HHV campus into its current configuration and the transition of land use within the project area from residential to commercial.

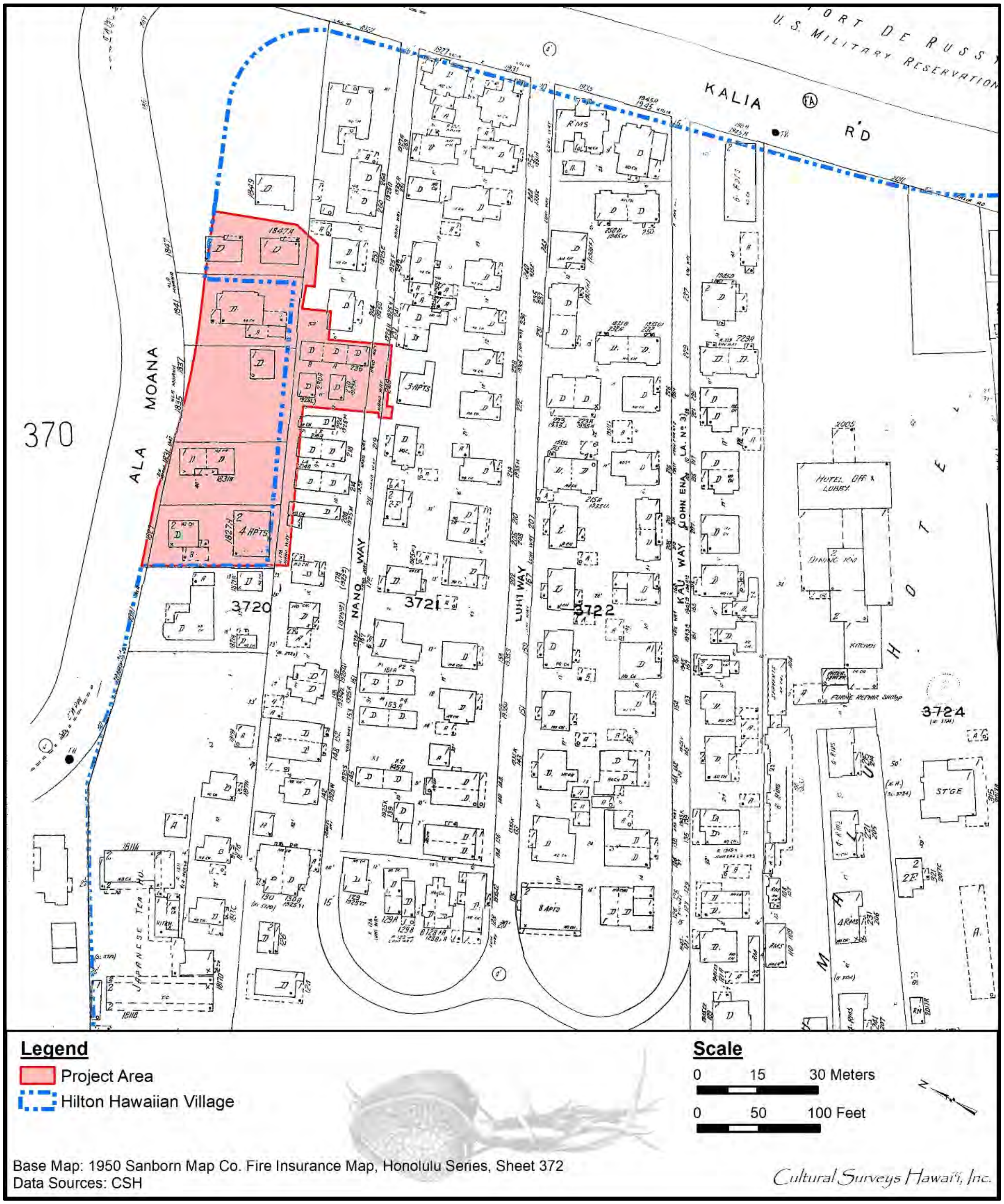


Figure 34. 1950 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 372, showing dwellings (“D”) and/or apartment buildings (“APTS”) within all project area parcels; some have adjacent garages or car ports (“A”)

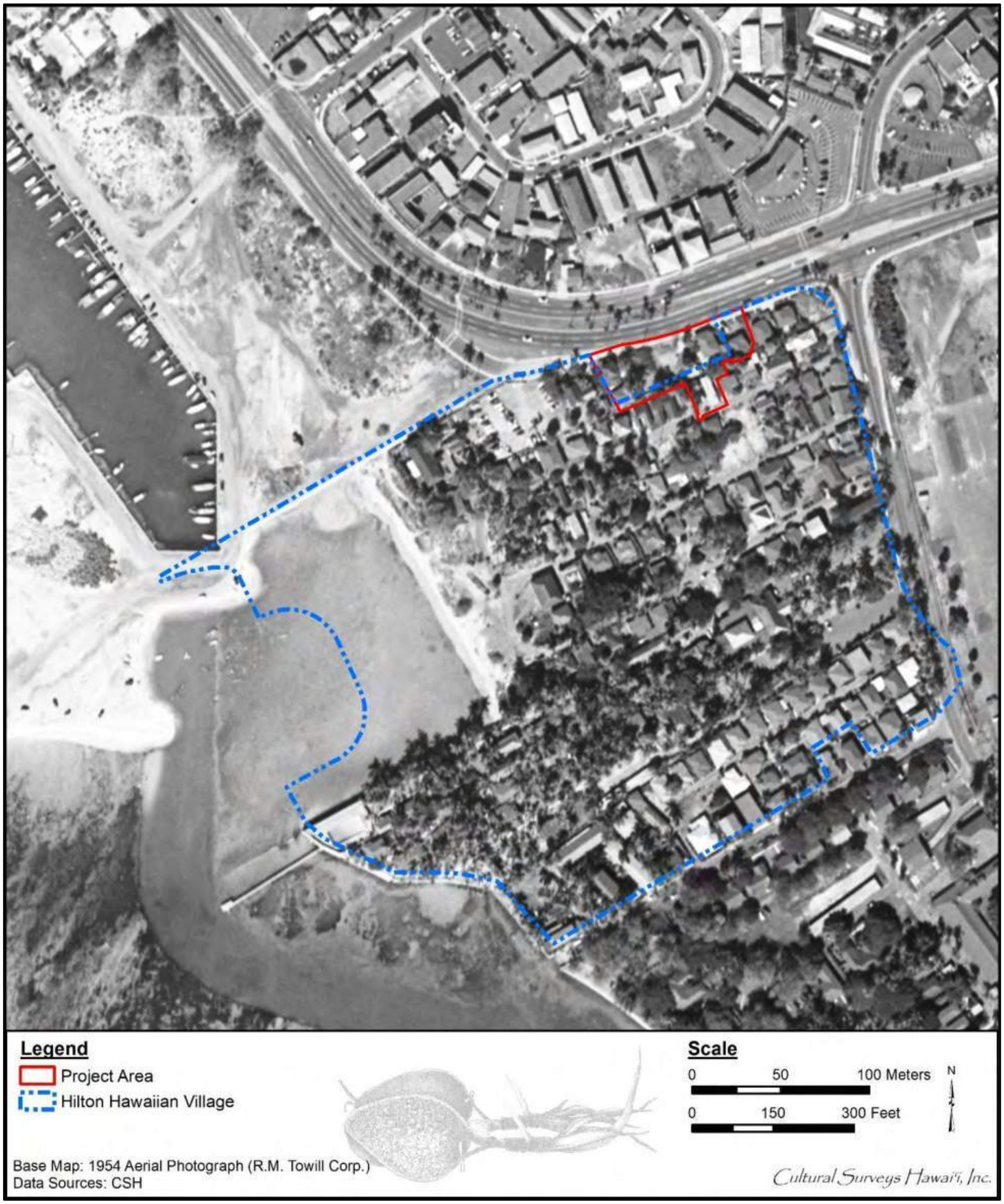


Figure 35. 1954 RM Towill aerial photograph of the project area; the buildings within the project area appear to be consistent with those shown on the 1950 Sanborn map (see Figure 34 above)

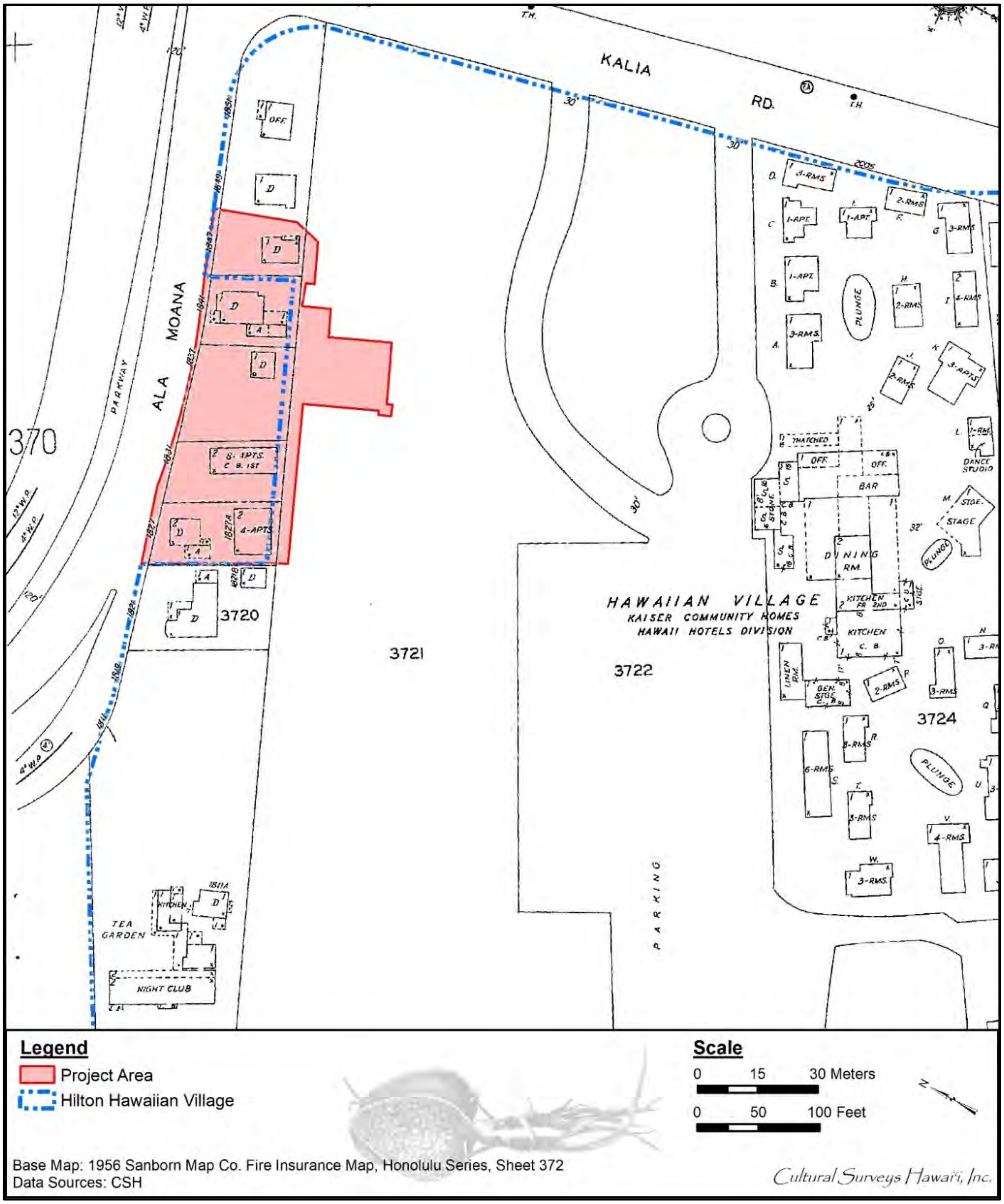


Figure 36. 1956 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 372, showing that all of the dwellings in the southeastern portion of the project area have been demolished; the "Hawaiian Village" hotel southeast of the project area would later be purchased by Conrad Hilton

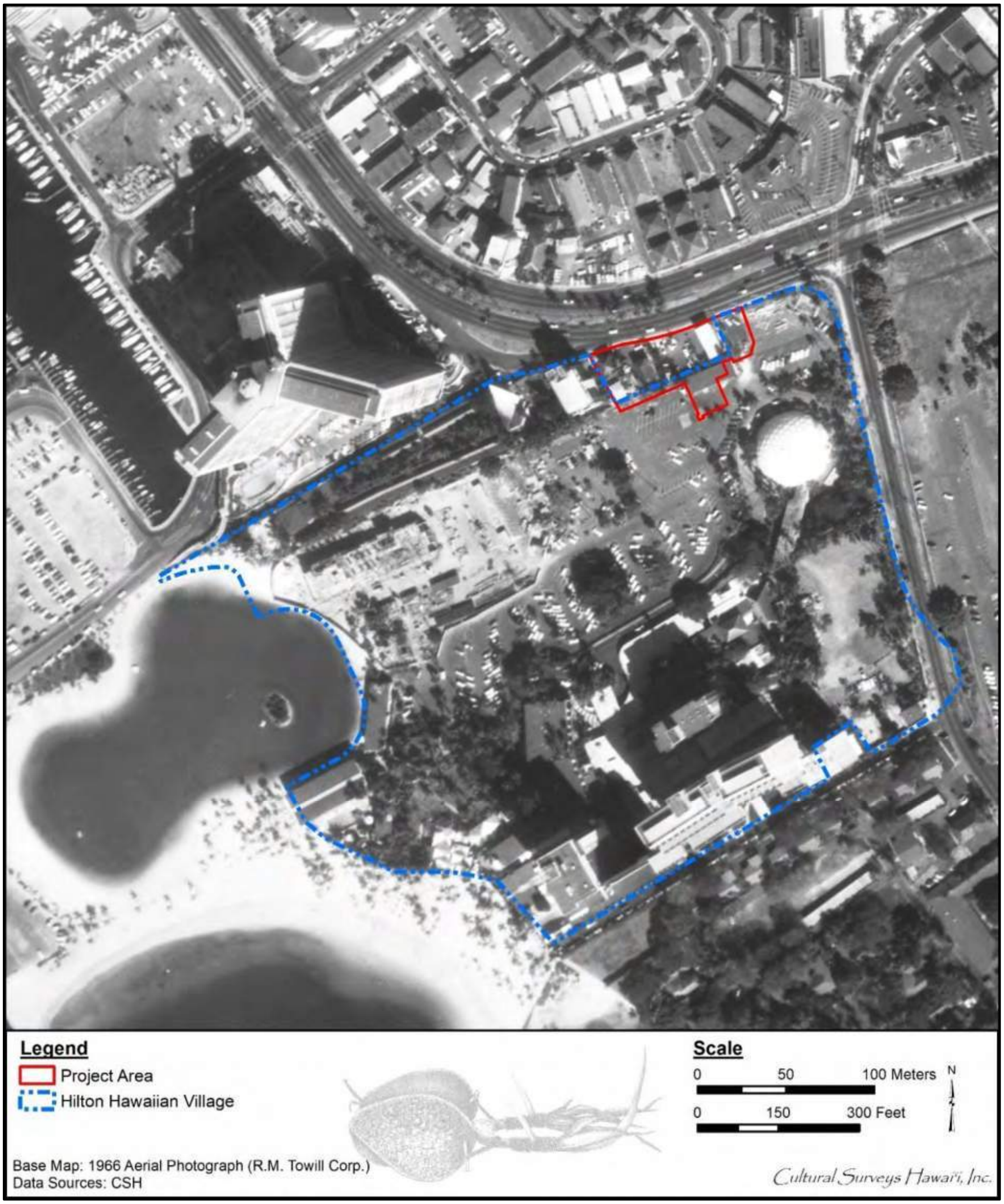


Figure 37. 1966 RM Towill aerial photograph showing the project area has been asphalt paved; note the modern shoreline, including Hilton Lagoon, is present

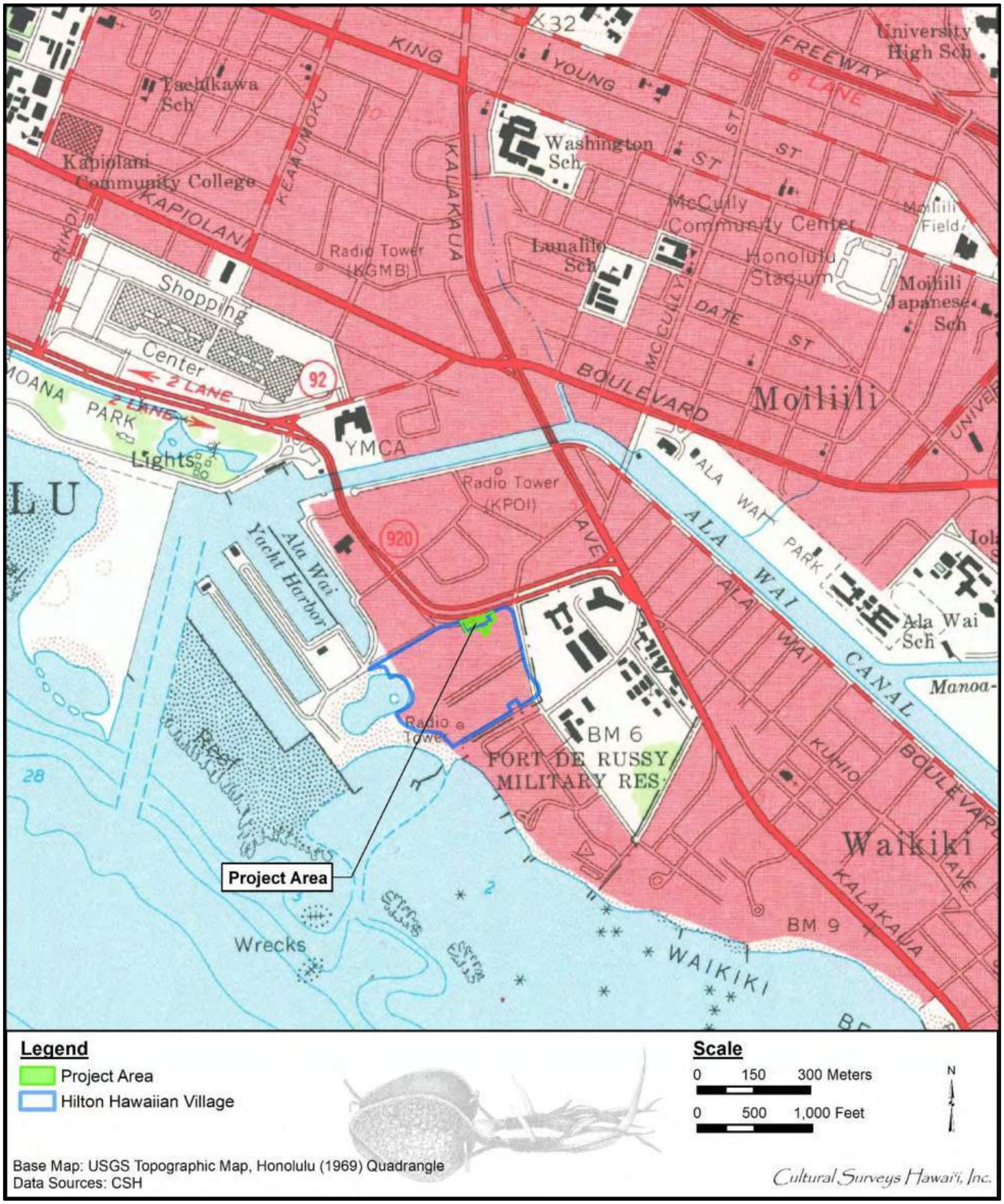


Figure 38. Portion of the 1969 Honolulu USGS topographic quadrangle showing the project area and modern shoreline

3.2 Previous Archaeological Research

No archaeological studies had been conducted within Parcels 004, 005, or 006 prior to a 2017 field inspection conducted by CSH as part of an LRFI for the current project (McDermott 2017). Subsequent to the field inspection, also in 2017, CSH conducted archaeological monitoring of geotechnical boring within Parcel 005; the results are presented in Section 4.3: Geotechnical Boring. Additional field inspections for the current project's AIS testing strategy were conducted by CSH in 2020 and 2021 (Shideler et al. 2022). No archaeological historic properties were identified during the field inspections.

Corbin (2001) and Mooney et al. (2009) conducted studies immediately adjacent to Parcels 004, 005, and 006 outside the current project area. Portions of the Putzi and Cleghorn (2002) archaeological monitoring investigation were within the current project area, within portions of parcels 009 and 013. Additionally, the Sinoto (1977), Hurlbett et al. (1992), and Tulchin et al. (2011) investigations also extended into the current project area, within portions of parcels 007, 009, and 013. Two archaeological historic properties, SIHP # 50-80-14-2870 and SIHP # 50-80-14-6399, are partially within the current project area. SIHP # -2870, which comprises historical cultural layers with associated features and human remains, extends into the southeastern portion of the project area (see Hurlbett et al. 1992). SIHP # -6399, which comprises pit features and a latrine or privy, extends into the southwestern portion of the current project area (see Putzi and Cleghorn 2002).

Also relevant to the current discussion is an interview with Mr. Robert Paoa, who grew up in the *ahupuaʻa* of Waikīkī and the *ʻili* of Kālia, included in the current project's cultural impact assessment (Tanaka and Hammatt 2022 draft). Mr. Paoa relayed that during the widening of Ala Moana Boulevard in 1951, human remains were found by the road crew fronting the Paoa home (in the vicinity of Kobe Steakhouse; see Figure 31). According to Mr. Paoa, "the bones were reburied where they were found," suggesting they are within Ala Moana Boulevard, outside the current project area.

Previous archaeological studies within and in the vicinity of the project area are presented in Figure 39 and Table 1 and are described below in chronological order. Archaeological historic properties within and in the vicinity of the project area are presented in Figure 40.

3.2.1 Sinoto 1977

In 1977, Bishop Museum conducted an archaeological reconnaissance survey of the HHV campus. No surface historic properties were identified; however, it was noted that human burials and filled-in fishponds were likely present (Sinoto 1977:1). Thus, it was recommended that all excavations conducted within the survey area be monitored by an archaeologist.

3.2.2 Neller 1980

In 1980, three partial sets of human remains were inadvertently discovered during construction activities for the new Tapa Tower building near the east corner of the HHV campus (Neller 1980). All three sets had been disturbed by construction activities and were removed from their primary burial context before SHPD archaeologists could document the stratigraphic proveniences. The remains were reasonably believed to be Native Hawaiian, interred post-1850 based on a reconstruction of historic shorelines. They were designated as SIHP # -2870 Burials 1 through 3.

Figure 39. 2013 Google Earth aerial imagery with overlay of previous archaeological studies within and in the vicinity of the project area

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

Reference	Type of Study	Location	Results (SIHP # 50-80-14-****)
Sinoto 1977	Archaeological reconnaissance survey	SE corner of HHV campus	No historic properties identified
Neller 1980	Inadvertent discovery report	SE corner of HHV campus,	Documented SIHP # -2870 Burials 1–3, historic Native Hawaiian burials, and Feas. 1–3, filled pits, trenches, and/or ditch
Hurlbett et al. 1992	Archaeological monitoring	Portions of HHV campus	Documented 15 features of SIHP # -2870, including 11 historic pits
Carlson et al. 1994	Burial report	Former Kālia Rd alignment, Fort DeRussy,	Documented SIHP # -4570 Fea. 8, 27–34 individuals in a common pit
Denham and Pantaleo 1997	Archaeological monitoring	Fort DeRussy, Kālia Rd	Documented SIHP # -4574, fishpond deposits (Loko Paweo I), three historic trash pits, and two human burials; SIHP # -4570, a historic trash pit, four fire pits, an ash lens, and an unknown number of human burials; and SIHP # -4966, traditional Hawaiian features and burials (MNI = 5) in the DH portion of Fort DeRussy; note SIHP # -4966 is outside area shown in Figure 40
Corbin 2001	Archaeological inventory survey	NW portion of HHV campus	No historic properties identified
Putzi and Cleghorn 2002	Archaeological monitoring	North portion of HHV campus and Ala Moana Blvd	Documented five features designated as SIHP # -6399: a pit of indeterminate function, two post-Contact refuse pits, a latrine or refuse pit, and a fire pit; three of the features are within current project area
Jourdane and Dye 2006	Archaeological monitoring	Best Bridal Wedding Chapel, HHV campus	No historic properties identified
O’Hare et al. 2006	Archaeological inventory survey	Block bounded by Kaioʻo Dr and Hobron Ln	Documented SIHP # -6848, fire pit

Reference	Type of Study	Location	Results (SIHP # 50-80-14-****)
Mooney et al. 2009	Archaeological monitoring	East of Ala Wai Boat Harbor, present-day intersection of Holomoana and Kahanamoku streets	Documented SIHP # -7086, historic trash feature complex along north side of the HHV campus, and SIHP # -7087, disturbed human burial near the intersection of Kālia Rd and Ala Moana Blvd
Tulchin et al. 2011	Archaeological inventory survey	HHV campus	Documented SIHP # -2870 buried A horizon; no associated features identified
Yucha and McDermott 2013	Archaeological inventory survey	Kālia Rd, Fort DeRussy, and Fort DeRussy WasteWater Pump Station	No historic properties identified
Yucha and Hammatt 2014	Archaeological inventory survey	HHV Grand Islander	Documented SIHP # -4570 Fea. 12, partial human burial; SIHP # -7676 Feas. A–C, three areas of disturbed human skeletal remains; and SIHP # -2870 Fea. 4, pit feature
Krause et al. 2015	Archaeological monitoring	HHV Rainbow Tower Connector	No historic properties identified
McDermott 2017	Archaeological literature review and field inspection	Portion of current project area, TMKs: [1] 2-6-009:004–006	No surface archaeological historic properties identified; anticipated need for an AIS for current project
Sroat et al. 2019 (draft)	Archaeological monitoring	HHV Grand Islander	Documented SIHP # -2870 Feas. 8–26, including four inadvertent discoveries of human skeletal remains
Krause et al. 2022	Archaeological monitoring	HHV campus	Documented SIHP # -2870 Fea. 5, bottle concentration, and Fea. 6, trash pit
Shideler et al. 2022	Archaeological inventory survey testing strategy	Current project area	No surface archaeological historic properties identified; described testing strategy for current AIS of nine test excavations comprising one interior and eight exterior trenches

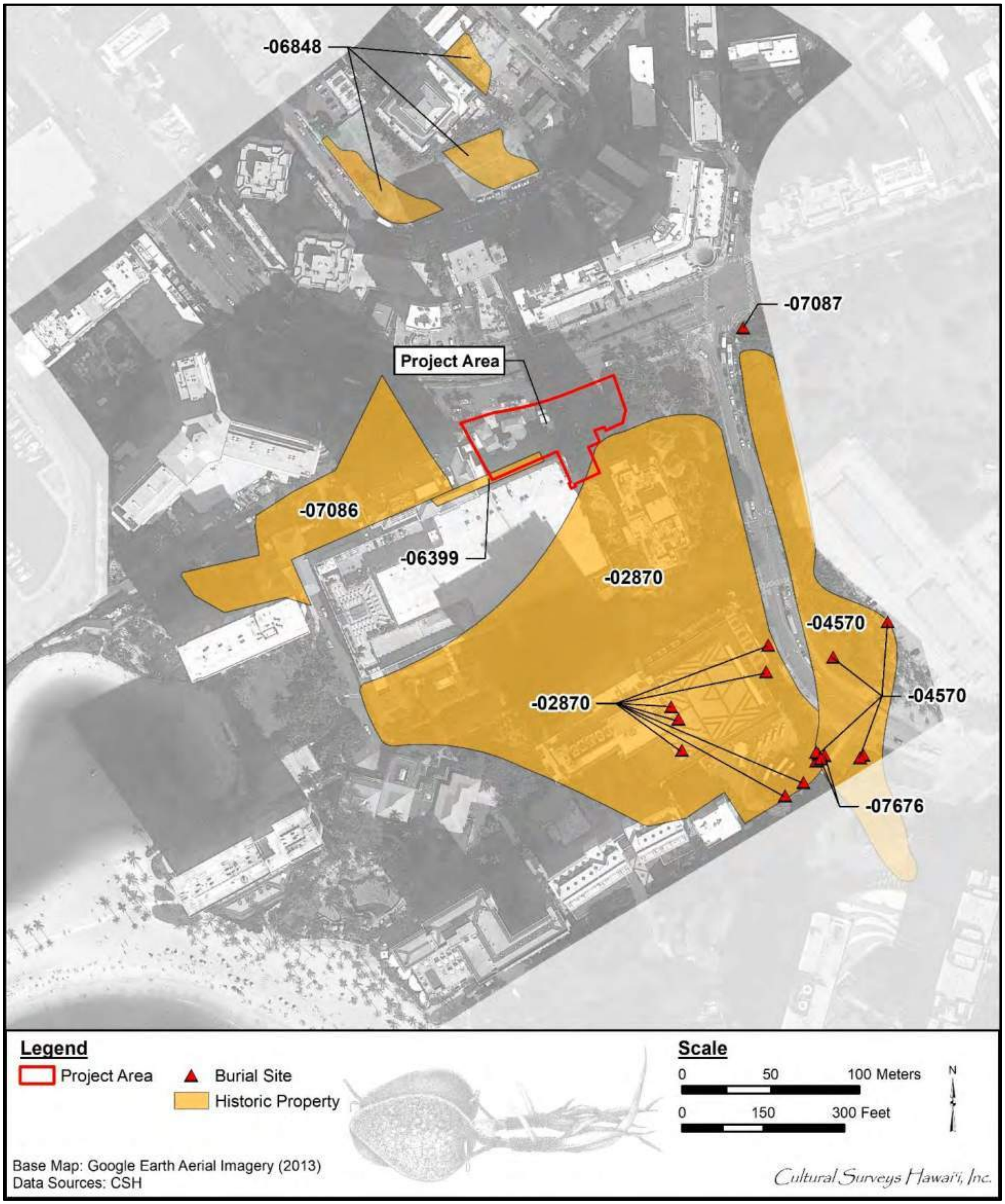


Figure 40. 2013 Google Earth aerial imagery with overlay of historic properties within and in the vicinity of the project area

In addition to the human remains, three features pre-dating the construction of the Ala Wai Canal were also identified and designated as SIHP # -2870 Features 1 through 3. Feature 1 is a filled pit, trench, or ditch. A coffee bean sinker for an octopus lure found in the immediate vicinity likely came from within Feature 1. The sinker was constructed of pink granite, an imported material that dates this traditional Hawaiian artifact to the post-Contact period. Features 2 and 3 are filled pits or trenches of indeterminate function. Feature 3 contained bottle glass and porcelain fragments dating to the 1800s.

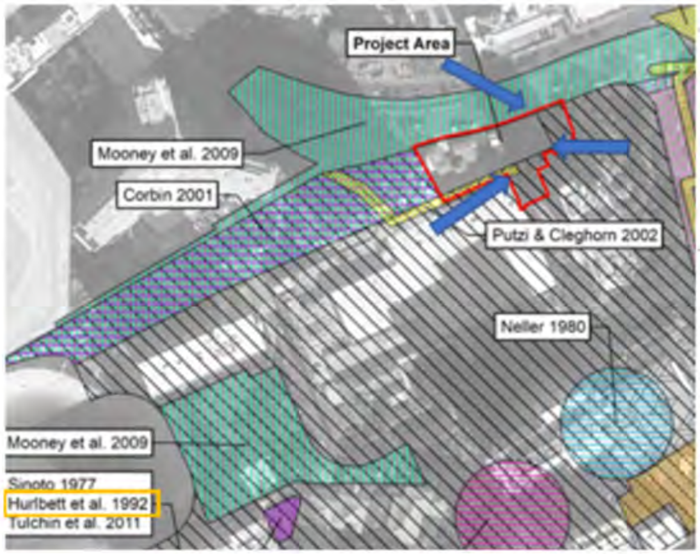
3.2.3 Hurlbett et al. 1992

Between 1985 and 1987, Paul H. Rosendahl, Inc. (PHRI) conducted archaeological monitoring for mechanical loop excavations at the HHV campus (Hurlbett et al. 1992). An excavation within Area 1, designated as Trench A, was within the eastern boundary of the current project area (Figure 41). The stratigraphy within Trench A indicated to Hurlbett et al. (1992:11) that "this portion of the project area has been greatly altered by modern construction, with disturbance extending to the maximum depth [approximately 1 m below surface] in all sections."

Although no historic properties were documented in Trench A, within the current project area, 15 archaeological features were identified during the course of monitoring. The features were designated as part of SIHP # -2870, previously identified by Neller (1980). Note the interpolated boundaries of SIHP # -2870 extend into the southeastern portion of the current project area. The features, designated as Horizontal Features (HF) 1 through 12 and 14 through 16 (HF-13, identified in the field, was later excluded as a feature) are discussed below:

> Twelve of the features (Nos. 1-5, 8, 10-12, 14-16) were pits excavated into the sterile sand layer. HFs-6 and -7 were identified as trenches, based on their cross-sections, while HF-9 was a large historic trench containing cultural debris and fill.
>
> Of the 12 horizontal features identified as pits, nine were excavated from the surface of the sterile sand layer, indicating that this layer was a living surface at some point in the past. The remaining three features (HFs -2, -3, and -15) were excavated from the surface of a stratigraphically more recent layer into the sterile sand layer. Based on the presence of historic debris, HFs 1-5, -8, -10, -11, and 14-16 were interpreted as historic trash pits. In four of these pits, the inclusion of charcoal concentrations or ash lenses suggests that the trash was burned prior to burial. The contents of HF-15 suggest that it was most likely a refuse pile created during recent construction. The functions of pit HF-12 and the three trenches (HFs -6, -7, and -9) remain unclear […]
>
> In general, the artifact assemblage represents the byproducts of activities pursued by affluent foreigners and Hawaiian residents living in the project area during the late nineteenth and early twentieth centuries. Most of the artifacts in the assemblage are items relating to food or beverage consumption (bottles, jars, ceramic and glass serving vessels, metal utensils, etc.) […] [Hurlbett et al. 1992:18, 32–33]

A total of 3,819 artifacts were collected from the study area. All artifacts, with the exception of those collected from the archaeological features, were collected from disturbed deposits. No traditional Hawaiian artifacts were identified.



Trench A extended 120.0 m, had a maximum width of 0.5 m, and reached a maximum depth of 1.0 m below surface. Examination of the trench cross section indicates that this portion of the project area has been greatly altered by modern construction, with disturbance extending to the maximum trench depth in all sections. A typical profile of the trench (Figure A-1, Appendix A; B-1, B-2) includes four stratigraphic layers, each of which represents a modern deposit, overlying a basal layer composed of concrete. Artifactual material derived from the trench included porcelain, ceramics, glasswares, shell, plastic, nails, roofing tiles, and a beer can.

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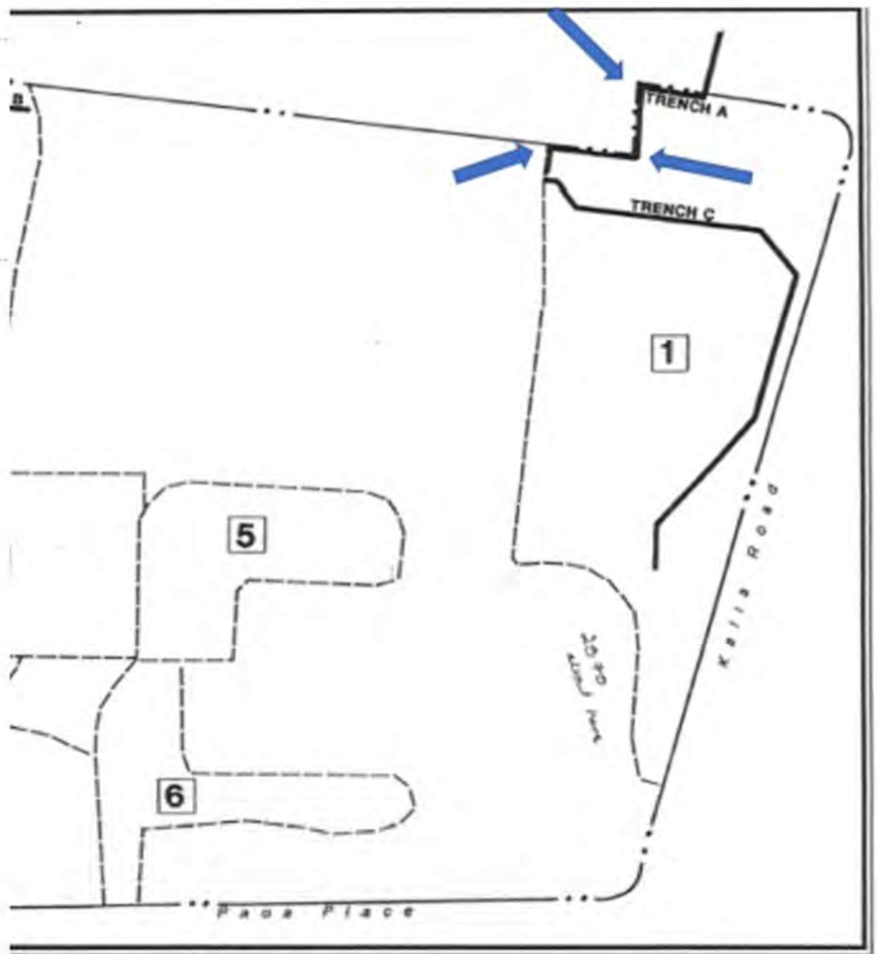


Figure 3. MONITORING AREAS

Figure 41. Location of Hurlbett et al. (1992) Trench A (image on right), in relation to the current project area (image on left); documentation of Trench A (text above) indicates the eastern portion of the current project area has been greatly altered by modern construction, with only historic artifacts observed in these disturbed deposits (Hurlbett et al. 1992:10–11)

3.2.4 Carlson et al. 1994; Denham and Pantaleo 1997

In 1993, Biosystems Analysis conducted archaeological monitoring along the Kālia Road Realignment project at Fort DeRussy Military Reservation. Inadvertent discoveries of human skeletal remains were reported by Biosystems Analysis in 1994 (Carlson et al. 1994), while the results of archaeological monitoring were reported by Garcia and Associates nearly four years later (Denham and Pantaleo 1997).

Of note in the Carlson et al. (1994) study is Burial Area 6, approximately 20 m east of the east corner of the HHV campus, just southeast of the intersection of Paoa Place and Kālia Road. Burial Area 6 included between 27 and 34 individuals in a common pit, interpreted as a hasty, mass interment that "may well represent the remains of Hawaiian warriors who died in one of the battles of the interisland wars of conquest which occurred during the reign of King Kamehameha I" (Carlson et al. 1994:70). Burial Area 6 was subsequently designated as SIHP # -4570 Feature 8 by Denham and Pantaleo (1997).

Given the passage of time and the different companies involved, it is perhaps no surprise that the data provided by Denham and Pantaleo (1997) is incomplete. However, it is clear the descriptions of "burial" designations in Denham and Pantaleo (1997) correspond with the locations provided by Carlson et al. (1994). During archaeological monitoring, ten subsurface features and nine human burials/burial areas were documented. These were grouped into three historic properties in the Denham and Pantaleo (1997) report: SIHP # -4570, SIHP # -4574, and SIHP # -4966. SIHP # -4570, closest to the present project area, is described below.

SIHP # -4570 consists of a historic trash pit, four fire pits, an ash lens, and an unknown number of human burials (in six distinct features) identified within Jaucas sand. As mentioned above, SIHP # -4570 Feature 8 (Burial Area 6) was the focus of the Carlson et al. (1994) study. No information is provided by Denham and Pantaleo (1997) regarding SIHP # -4570 Feature 7 (Burials 3 and 4), but they are indicated *mauka* of the HHV campus across Kālia Road. SIHP # -4570 Feature 9 (Burial 8), a pre- or early post-Contact burial preserved in place, was described by Denham and Pantaleo (1997:36) as "just west of the newly constructed entrance driveway to the Hilton Hawaiian Village." SIHP # -4570 Feature 10 (Burial 9) is another pre- or early post-Contact burial preserved in place "across from Feature 4570:9" (Denham and Pantaleo 1997:38). SIHP # -4570 Feature 11 (Burial 10) is also a pre- or early post-Contact burial preserved in place, with no locational information other than "in the west face of the trench" (Denham and Pantaleo 1997:38). SIHP # -4570 Feature 12 (Burial 11) was a partial burial preserved in place, "exposed in the south profile of a drain box excavation in the center of old Kālia Road (presently the landscaped area between the new Paoa Place extension and the driveway for the Hilton Hawaiian Hotel)" (Denham and Pantaleo 1997:38). This appears to be west of the Kālia Road/Paoa Place intersection, immediately adjacent to HHV-owned lands.

3.2.5 Corbin 2001

In 2001, PHRI conducted an AIS for the northern strip of the HHV campus. The investigation consisted of 21 backhoe trenches. In general, the stratigraphic sequence consisted of the asphalt surface and imported fill (i.e., clay loam and crushed coral fill) overlying disturbed Jaucas sand. The observed disturbance was a result of prior development of the area (i.e., installation of subsurface utilities and prior building demolition and construction). No historic properties were identified. The stratigraphic profile presented in Figure 42 and Figure 43, in the immediate vicinity

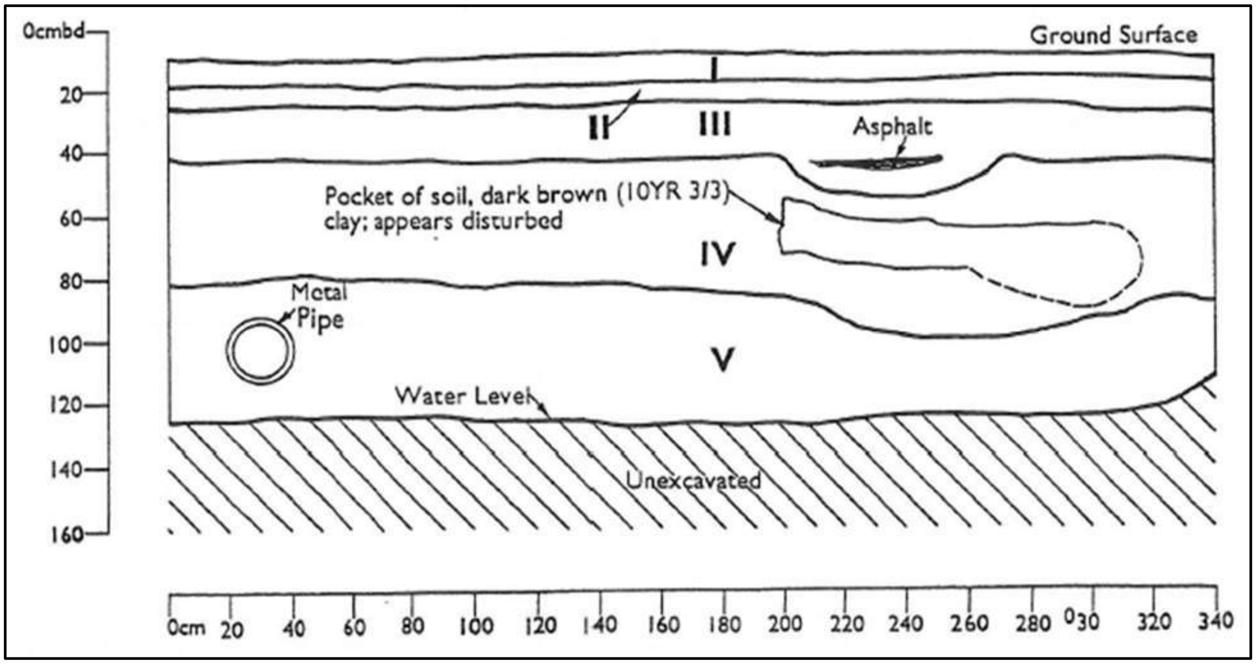


Figure 42. Profile drawing from Corbin (2001:13) showing stratigraphy in the immediate vicinity of the current project area (stratigraphic layers are described in Figure 43 below); note the relatively high water table

Layer I Asphalt paving on parking lot, no cultural materials
Layer II Dark black (10YR 4/1) gravel below asphalt paving, no cultural materials
Layer III White (10YR 8/1) crushed limestone fill, no cultural materials
Layer IV Light brownish gray (10YR 6/2) sand; mixed and marbled, no cultural materials
Layer V Pale yellow (2.5YR 7/3) sand; loose sand above water level; sterile

Figure 43. Stratigraphic description of the profile drawing presented in Figure 42, above (from Corbin 2001:13)

of the current project area, shows the relatively high water table in this area, documented approximately 120 cm (4 ft) below surface.

3.2.6 Putzi and Cleghorn 2002

From October 2000 to June 2001, Pacific Legacy, Inc., under subcontract to PHRI, conducted archaeological monitoring for sewer connections associated with improvements to the HHV campus (Putzi and Cleghorn 2002). Monitored excavations included a force drain line within the northern portion of the HHV campus and a 24-inch sewer relief line along Ala Moana Boulevard and Kalākaua Avenue. The drain line consisted of a trench approximately 140 m long, which was partially within the current project area. Five features were identified within the trench and designated as SIHP # -6399. Feature 1 is a pit of indeterminate function; Features 2 and 5 are post-Contact refuse pits; Feature 3 is a latrine or refuse pit; and Feature 4 is a fire pit. All of the pit features originate within a dark sand layer, interpreted as fill associated with land reclamation, and terminate in the underlying Jaucas sand. Features 1–3 are within the current project area; a photograph and stratigraphic profile are provided in Figure 44 through Figure 47.

3.2.7 Jourdane and Dye 2006

In 2006, T.S. Dye & Colleagues, Archaeologists, Inc. conducted archaeological monitoring for the construction of the Best Bridal Wedding Chapel at the HHV campus (Jourdane and Dye 2006). Monitoring was conducted for two pit excavations and two exploratory trenches. Two additional pits had been excavated previously and were assessed prior to backfilling. Both of the pits were in areas of previously disturbed fill and contained pipes, conduits, and building foundations (Jourdane and Dye 2006:14). Documented stratigraphy of the west and northwest pits consisted of fill deposits associated with previous development of the area overlying sand (Jourdane and Dye 2006:15). Excavation of Exploratory Trench 1 was halted when a drain line was encountered at 30 cmbs. Exploratory Trench 2 was in a landscaped area; stratigraphy consisted of crushed coral fill to the base of excavation (BOE) at 125 cmbs. No historic properties were identified.

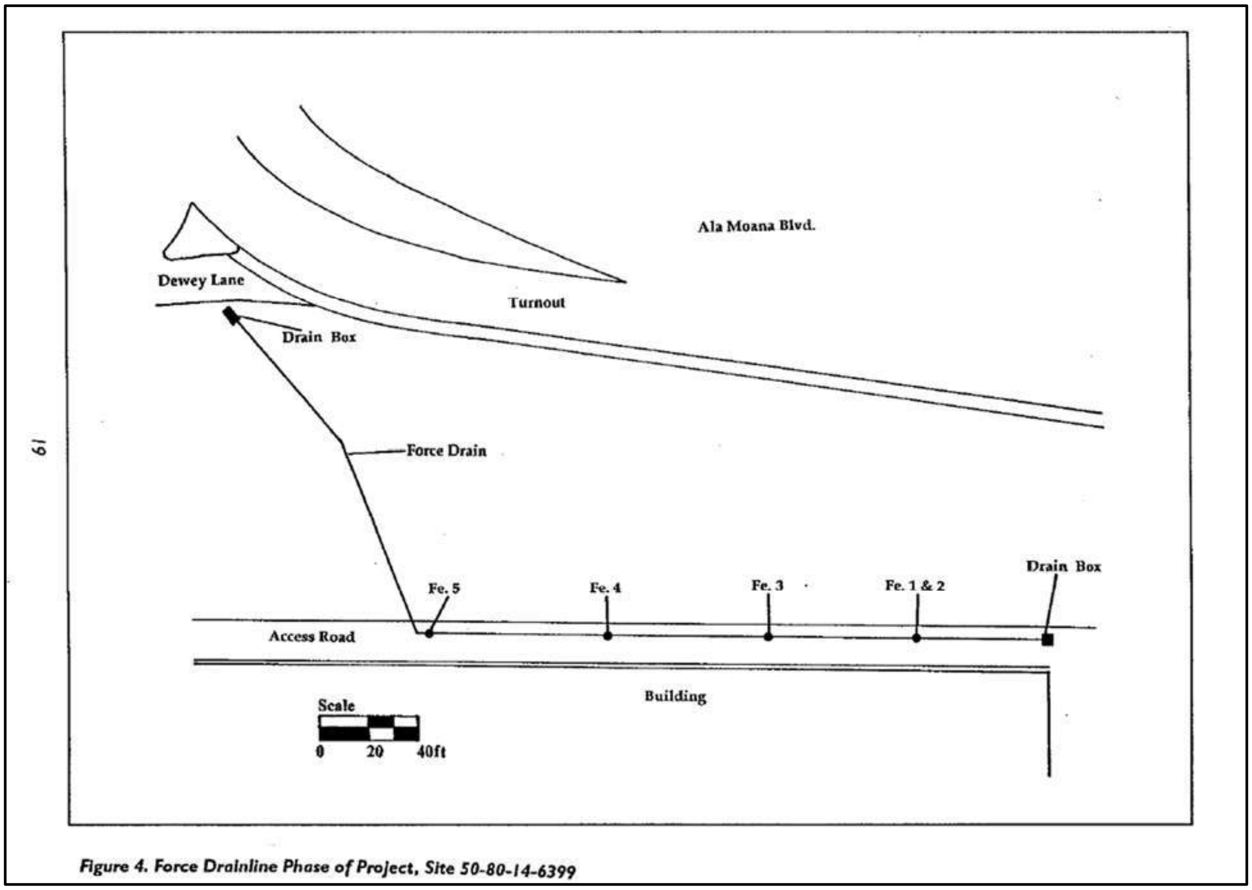
3.2.8 O'Hare et al. 2006

In 2005 and 2006, CSH conducted an AIS for the Kaioʻo Multifamily Condominium project (O'Hare et al. 2006). The AIS included 20 backhoe test excavations. SIHP # -6848, a fire pit, was identified. Radiocarbon dating analysis of charcoal from SIHP # -6848 yielded a date of AD 1470–1660. O'Hare et al. (2006:58) indicate the fire pit was contemporaneous with a buried A horizon but was not associated with a cultural layer per se, leading them to conclude this area "was used for temporary habitation, possibly to collect resources or to conduct other short-term activities."

3.2.9 Mooney et al. 2009

Between 2005 and 2008, Pacific Legacy, Inc. conducted archaeological monitoring for the HHV Grand Waikikian Development project, including the construction of a new Grand Waikikian Tower, improvements to the Rainbow Tower loading dock and Lagoon Tower entrance, and excavations for utilities (Mooney et al. 2009). Two historic properties, SIHP #s -7086 and -7087, were identified. They are described below.

SIHP # -7086 is a large historic trash complex consisting of 42 features that extend into the *makai* portion of the elbow turn of Ala Moana Boulevard, approximately 25 m west of the current project area (Figure 48). The features include two demolition/burn layers, three bottle dumps, a



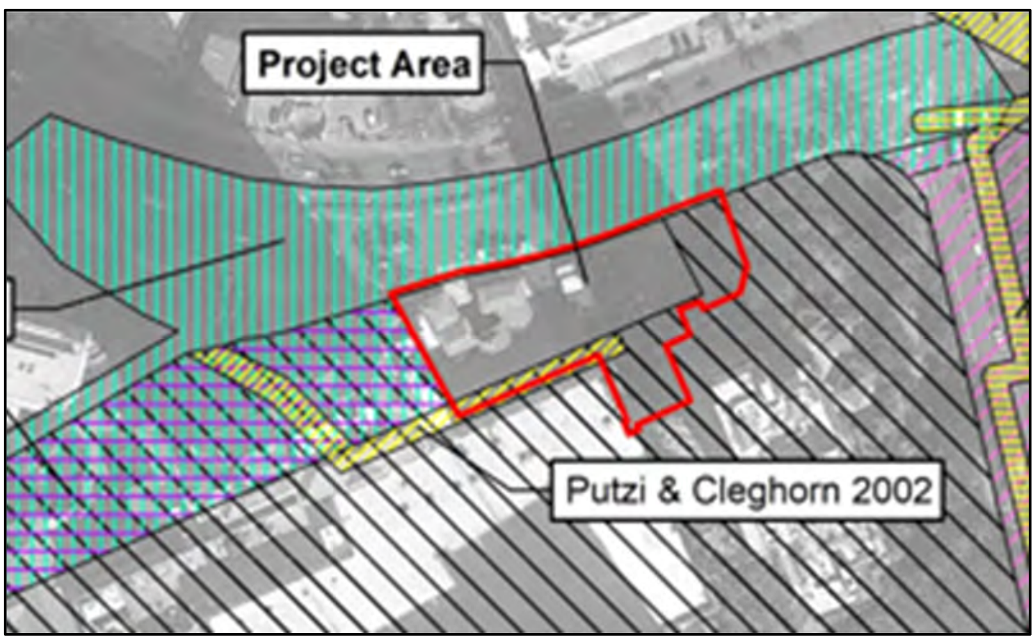


Figure 44. Figure from Putzi and Cleghorn (2002:19, above) showing documented historical features of SIHP # -6399, with location of this investigation in relation to the current project area (below); Features 1–3 are within the current project area

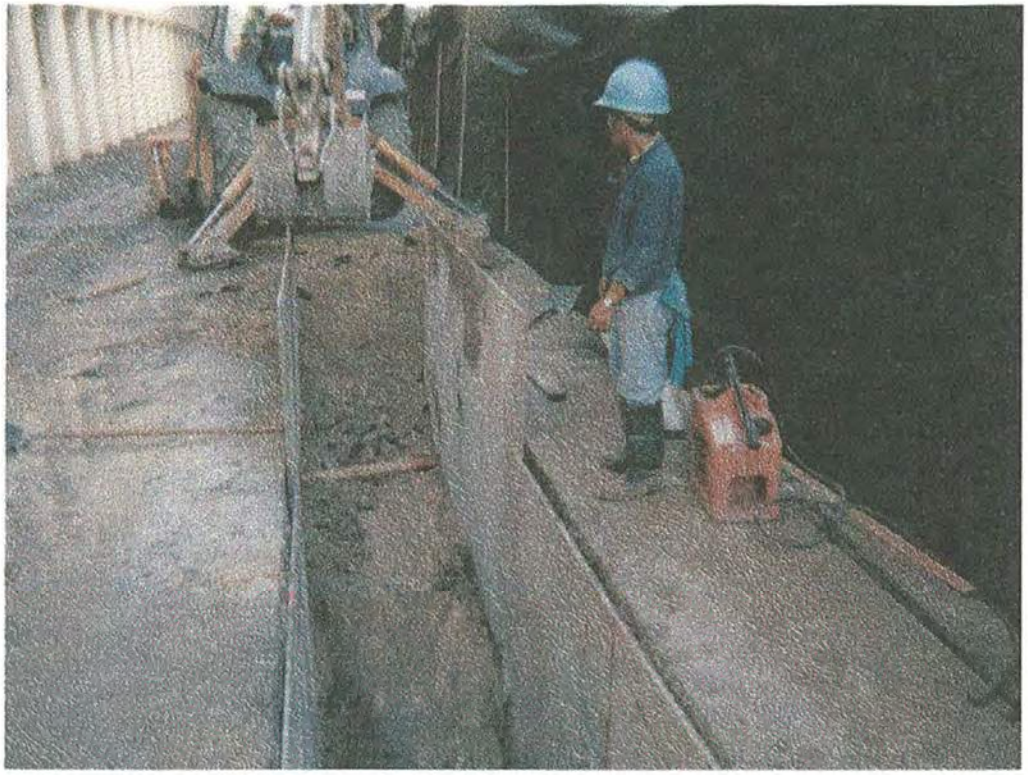


Figure 7. Work in Progress Along Force Drainline, View To West

Figure 45. Photograph from Putzi and Cleghorn (2002:22) showing the force drain line excavation within the current project area, where SIHP # -6399 Features 1–3 were documented, view to west

Table 1. Stratigraphy Adjacent to Features 1 and 2

Layer I	0-10 cm below surface	Asphalt
Layer II	10-30 cm below surface	Red gravel fill
Layer III	30-70 cm below surface	Mottled sand and gravel fill
Layer IV	70-100 cm below surface	Dark grayish brown sand fill
Layer V	100-160 cm below surface	Yellow tan intact sand
Layer VI	160-200 cm below surface	Grey moist intact sand
Layer VII	200-230 cm below surface	Coral shelf
Layer VIII	230-280 cm below surface	Gley, to base of excavation

Figure 46. Description of the stratigraphy documented in the force drain line at the location of SIHP # -6399 Features 1 and 2 (Putzi and Cleghorn 2002:24), illustrated in Figure 47 below

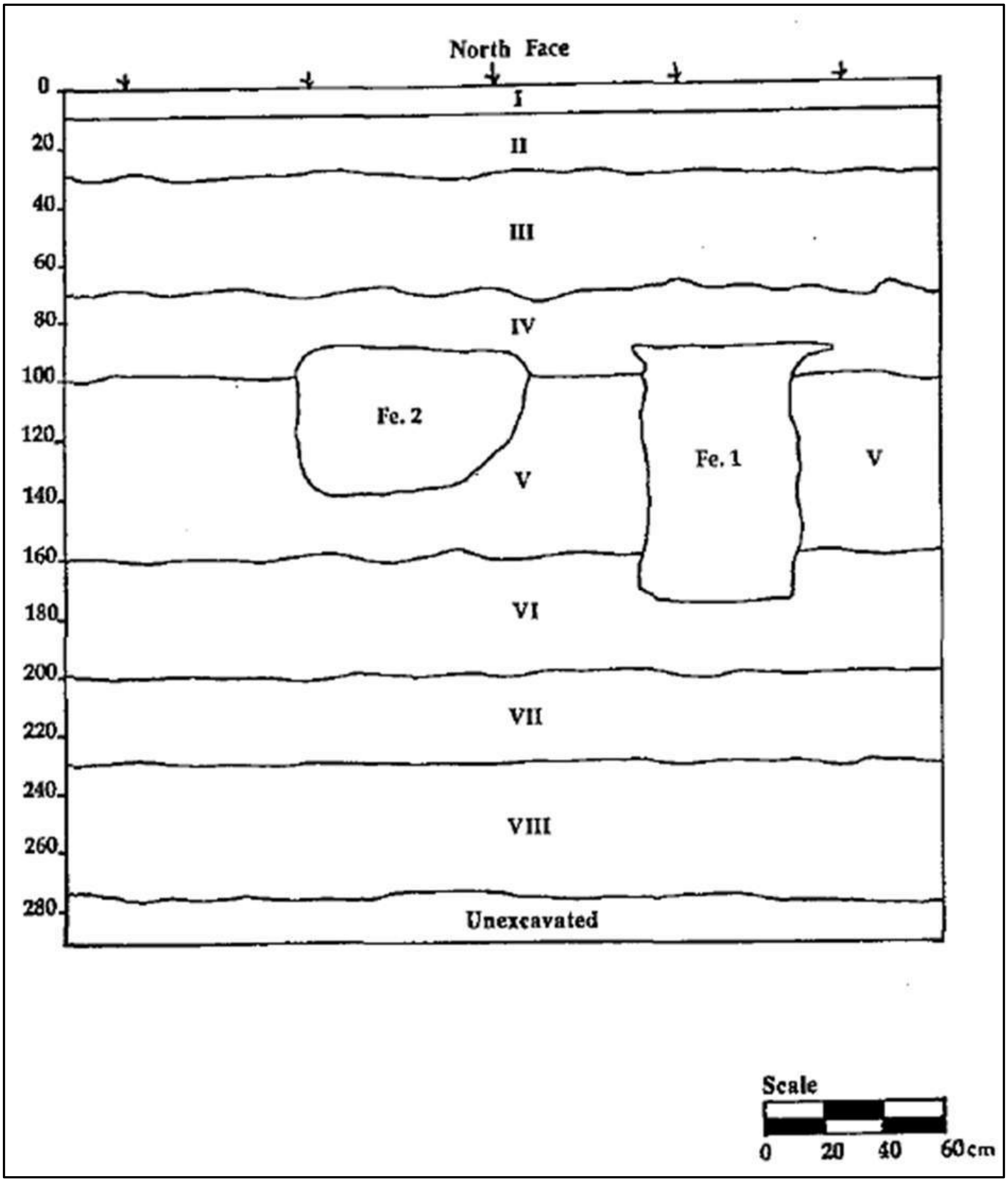
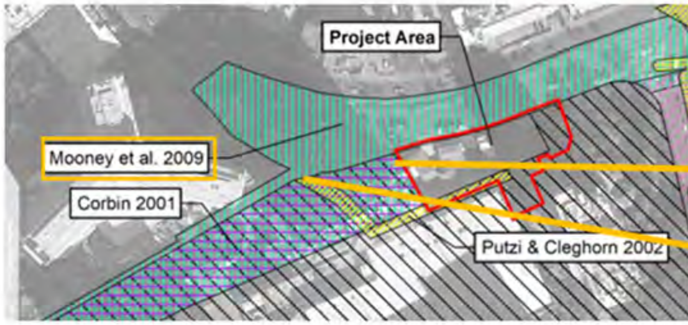


Figure 47. Profile drawing from Putzi and Cleghorn (2002:23) showing SIHP # -6399 Features 1 and 2, documented within the current project area; strata are described in Figure 46 above



The first site (50-80-14-7086) , a Historic trash feature complex, consisted of 42 features found over a three year period, including architectural demolition/burn layers (n=2), bottle dumps (n=3), a partial pig skeleton buried in clean beach sand (n=1), stone structure remnants (n=2), pit/trenches (n=2), trash layers (n=6), trash pits (n=16), disturbed trash pits (n=6), trash/burn layers (n=4), and a large, contiguous trash layer or scatter (n=1). Datable features ranged in age, predominantly dating from mid-1800 to mid-1900. The grand majority of features were found in clean Aeolian sand at depths ranging from 0.25 m to 3 m below surface. This site area is roughly 2 acres and polygonal in shape, with a boundary defined by the outermost features. Nearly 800 artifacts were collected as a representative sample of the features. Numerous trash pit features contained predominantly Historic East Asian ceramic assemblages, possibly linking them to the Japanese Tea House of the early 1900s.

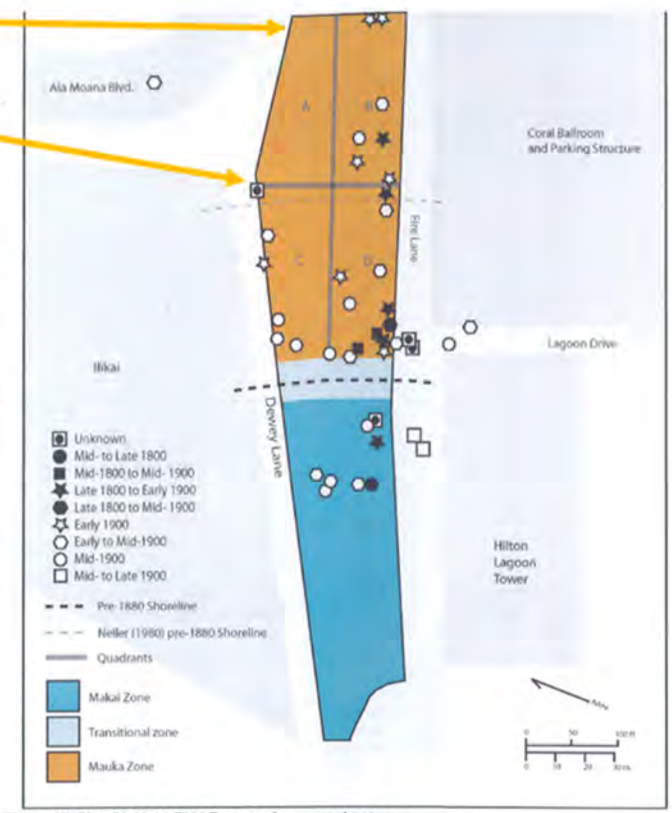


Figure 37. Site 50-80-14-7086 Features by approximate age.

Figure 48. Figure and text from Mooney et al. (2009:i, 49), with location of this investigation in relation to the current project area; note the large number of historic (mid-1800s through mid-1900s) features (image on right—the features of SIHP # -7086) documented and the absence of traditional Hawaiian artifacts and features

partial pig skeleton within beach sand, two remnant stone structures, two pits/trenches, six trash layers, 16 trash pits, six disturbed trash pits, four trash/burn layers, and a large contiguous trash layer or scatter. A total of 800 artifacts dating from the mid-1800s through mid-1900s were collected. Many of the features contain East Asian ceramic fragments, which Mooney et al. (2009) interpret as being associated with the Japanese Tea House of the early 1900s.

SIHP # -7087 is a previously disturbed human burial consisting of a near complete cranium and cranial fragments, reasonably believed to be Native Hawaiian (Mooney et al. 2009:26). The burial was identified outside the HHV campus on the *mauka* side of the intersection of Ala Moana Boulevard and Kālia Road. The remains were reinterred and sealed in the utility trench near the original location of the inadvertent discovery. No stratigraphic profile was recorded, and the stratigraphic provenience of the remains was not reported.

3.2.10 Tulchin et al. 2011

In 2010, CSH conducted an AIS for the HHV Master Plan Improvements project (Tulchin et al. 2011). Subsurface test excavations consisted of 20 linear trenches, clustered primarily in the southeast corner of the bus depot lot and along Rainbow Drive. In general, the stratigraphy consisted of the resort infrastructure-related ground surface overlying a series of relatively thick, often compacted fill layers; a discontinuous, previously disturbed, historic A horizon (SIHP # -2870); and previously disturbed marine sand to the water table. SIHP # -2870 was previously documented by Neller (1980) and Hurlbett et al. (1992); the interpolated boundaries of SIHP # -2870 extend into the southeastern portion of the current project area.

The SIHP # -2870 A horizon was documented in eight of the 20 test excavations. Bulk samples from the A horizon yielded historic and modern debris. Tulchin et al. (2011) interpret the A horizon as the remnant of a stable, historic land surface significantly disturbed by modern development.

3.2.11 Yucha and McDermott 2013

In 2012, CSH conducted an AIS for the proposed Kālia-Fort DeRussy Wastewater System Improvements project (Yucha and McDermott 2013). The project entailed improvements along Kālia Road and on Fort DeRussy lands adjacent to Ala Moana Boulevard and Kalākaua Avenue and at the Fort DeRussy WasteWater Pump Station. The AIS consisted of a pedestrian inspection, documentation of seven geotechnical bores, a limited ground penetrating radar (GPR) survey, and limited subsurface testing at the corner of Kālia Road and Paoa Place. An exploratory test trench covering a 28-sq-m area in the landscaping near the HHV bus depot driveway was pre-excavated along a section of the proposed sewer line alignment. This was excavated to determine the exact location of a previously identified historic property, a partial human burial designated as SIHP # -4570 Feature 12 (Burial 11). This burial was inadvertently discovered during archaeological monitoring for the Kālia Road realignment project (Carlson et al. 1994, Denham and Pantaleo 1997; see Section 3.2.4). The stratigraphy of the test excavation consisted of several fill layers overlying natural Jaucas sand; SIHP # -4570 Feature 12 was not encountered. The location was heavily disturbed due to previous construction activities, as indicated by the presence of utility jackets and abandoned utility lines throughout the excavation. The testing confirmed this section of the project would have “no adverse effect” on SIHP # -4570 Feature 12.

3.2.12 Yucha and Hammatt 2014

In 2014, CSH conducted a supplemental AIS for the HHV Grand Islander project (Yucha and Hammatt 2014). The purpose of the study was to determine the exact location of a previously identified historic property, a partial human burial designated as SIHP # -4570 Feature 12. The study also included the pre-excavation of a proposed Hawaiian Electric Company (HECO) electrical line and vault for the project that extended through this archaeologically sensitive area. The study was successful in identifying SIHP # -4570 Feature 12. In addition, three areas of disturbed human skeletal remains were documented and designated as SIHP # -7676 Features A–C. A small pit feature of indeterminate function was designated as SIHP # -2870 Feature 4. The pit feature contained two *pipipi* (*Nerita picea*) shells, charcoal, and a *kukui* (*Aleurites moluccana*) shell. SIHP # -2870 was previously documented by Neller (1980), Hurlbett et al. (1992), and Tulchin et al. (2011); its interpolated boundaries extend into the current project area.

3.2.13 Krause et al. 2015

In 2014, CSH conducted archaeological monitoring for the HHV Rainbow Tower Connector project, at the base of the northeast side of the Rainbow Tower (Krause et al. 2015). The project involved one excavation, a trench for a drainage pipe that extended to 100 cmbs. Stratigraphy comprised a single stratum of fill to BOE, and no historic properties were identified.

3.2.14 McDermott 2017

In 2017, CSH conducted an LRFI for the current project; at that time, the project area included only Parcels 004, 005, and 006. Although no surface archaeological historic properties were identified during the field inspection, it was determined based on background research that subsurface historic properties may be present. Hence, an AIS was identified as the next step in the historic preservation review process.

3.2.15 Sroat et al. 2019

Between 2014 and 2017, CSH conducted archaeological monitoring for the HHV Grand Islander project (Sroat et al. 2019). The monitoring program implemented the relocation and interim burial treatment for SIHP # -7676 Features A–C and SIHP # -4570 Feature 12. In addition, 19 features associated with SIHP # -2870 were identified and designated as Features 8–26. They comprise a trash pit, a trash concentration, a possible fire pit, four pits of indeterminate function, four buried surfaces (crushed coral and oil-rolled basalt gravel surfaces), two basalt structural remnants (possible walls), two abandoned residential utility lines with associated trenches, and four inadvertent discoveries of human skeletal remains. In addition, several isolated, hand-hewn basalt stones and a cowrie (*leho*) octopus lure were documented within sandy fill deposits and believed to represent displaced artifacts associated with SIHP # -2870. The human remains were disinterred and reinterred within a burial preserve near the east corner of the study area. SIHP # -2870 was previously documented by Neller (1980), Hurlbett et al. (1992), Tulchin et al. (2011), and Yucha and Hammatt (2014); its interpolated boundaries extend into the current project area.

3.2.16 Krause et al. 2022

In 2015, CSH conducted archaeological monitoring for the proposed Master Plan Improvements project, a redevelopment project of the existing HHV Resort complex (Krause et al. 2022). The renovations covered under the monitoring program were divided into two main areas, Project Area 1 and Project Area 2. Project Area 1 consisted of improvements to the Tapa Pool and terrace. Project Area 2 consisted of the construction of a new Louis Vuitton store along Rainbow Drive. In general, the documented stratigraphy was consistent with the results of the project's AIS (Tulchin et al. 2011). The stratigraphy consisted of the developed land surface, multiple fill layers, a buried A horizon (SIHP # -2870), and Jaucas sand. In many areas, the upper boundary of the Jaucas sand appeared disturbed, attributed to modern building construction and utility installation.

Within Project Area 1, the buried A horizon (SIHP # -2870) had largely been removed due to mass soil/sediment removal in preparation for construction of the pool area. In the southwest corner of Project Area 2, a buried asphalt surface was documented and interpreted as likely related to a former roadway; however, no SIHP number was assigned. Two historic refuse features were identified within Project Area 2 and designated as SIHP # -2870 Features 5 and 6. SIHP # -2870 Feature 5 consists of a concentration of glass bottles, with the majority dating to the 1930s and 1940s. SIHP # -2870 Feature 6 consists of a trash pit containing glass bottles and bottle fragments and a ceramic sherd dating between the mid-1800s and mid-1900s. SIHP # -2870 was previously documented by Neller (1980), Hurlbett et al. (1992), Tulchin et al. (2011), Yucha and Hammatt (2014), and Sroat et al. (2019); its interpolated boundaries extend into the current project area.

3.2.17 Shideler et al. 2022

In 2022, CSH submitted to the SHPD an AIS testing strategy for the current investigation (Shideler et al. 2022). This testing strategy was based on the results of background research, multiple field inspections, and consultation with recognized Native Hawaiian descendants of Waikīkī. Although no surface archaeological historic properties were identified during the field inspections, background research indicated historic properties have been identified within and adjacent to the project area. However, the study notes the following:

> Historical maps show that prior to the 1920s construction of the Ala Wai Canal, the project area was adjacent to what was likely the shifting seaward-most portions of Piʻinaio Stream as it met the prograding shoreline at Kālia. Results of prior archaeological investigations within and immediately adjacent to the project area show abundant remnants of past historical land use, including artifacts and features from the 1850s through the 1950s, but do not document evidence of traditional Hawaiian land use—with no traditional Hawaiian features, artifacts, or burials identified. The potentially dynamic hydrological environment along Piʻinaio Stream, where the drainage shifted periodically based on flow rates and changing shoreline conditions, may at least partially explain this lack of evidence for older traditional Hawaiian land use. The results of prior archaeological investigations in the vicinity also show the project area and its immediate vicinity have been subject to prior ground disturbance related to twentieth century development. [Shideler et al. 2022:11]

3.3 Background Summary and Predictive Model

Located near the mouth of Piʻinaio Stream, the traditional Hawaiian fishpond complexes of Paweo and Kaipuni were approximately 150 m northeast and east of the project area, respectively. Likely constructed in the pre-Contact period, these fishponds were used into the later 1800s before being filled in with the development of the U.S. Army's Fort DeRussy in the early 1900s. The project area was adjacent to what was likely the shifting seaward-most portions of Piʻinaio Stream as it met the prograding shoreline at Kālia. Piʻinaio Stream was filled in with the construction of the Ala Wai Canal between 1921 and 1927. By the early 1900s, there were western-style dwellings (likely bungalows) in the project area, one of which was owned by famed Native Hawaiian Olympian and surfer Duke Kahanamoku. Into the 1950s, the buildings within the project area were one- and two-story dwellings, some labeled as apartments. The later 1950s through the 1980s saw the development of the HHV campus. During this period, land use within the project area changed from residential to commercial.

The results of prior archaeological investigations within and adjacent to the project area show abundant remnants of past historical land use, including artifacts and features from the mid-1800s through the mid-1900s. Two previously identified historic properties are partially within the current project area: SIHP #s -2870 and -6399. SIHP # -2870 comprises historical cultural layers with associated features and human remains; its interpolated boundaries extend into the southeastern portion of the current project area. SIHP # -6399 comprises five features, three of which are within the southern portion of the current project area; these comprise a pit of indeterminate function, a post-Contact refuse pit, and a latrine or refuse pit.

Notably, these prior studies have not documented evidence of traditional Hawaiian land use. The potentially dynamic hydrological environment along Piʻinaio Stream, where the drainage shifted periodically based on flow rates and changing shoreline conditions, may at least partially explain the lack of evidence for traditional Hawaiian land use. The results of prior archaeological investigations also show the project area and its immediate vicinity have been subject to prior ground disturbance related to twentieth century development. Accordingly, the current AIS provided an opportunity to better assess the presence of archaeological deposits within the project area—whether there is evidence of traditional Hawaiian and/or historical land use preserved within this fully developed, and potentially heavily disturbed, project area. This may include additional documentation of SIHP # -2870 and/or SIHP # -6399.

Section 4 Results of Fieldwork

Boring for environmental testing was conducted under the supervision of an archaeologist on 17 and 18 February 2022, prior to the commencement of AIS testing. These results are presented in Section 4.1 below. The AIS testing was conducted between 21 March and 4 April 2022. The testing results are presented in Section 4.2. In addition, this report also includes the results of geotechnical boring conducted under the supervision of an archaeologist on 17, 19, and 29 July 2017. These results are presented in Section 4.3.

4.1 Boring for Environmental Testing

Boring for environmental testing was conducted at the planned locations of the eight exterior test excavations, T-1 through T-8. Nineteen bores, each measuring 10 cm in diameter, were conducted. Three bores each were conducted at the locations of T-2, T-5, and T-8. Two bores each were conducted at the locations of T-1, T-3, T-4, T-6, and T-7. At a single location, T-1, subsurface obstacles prevented boring from reaching the depth necessary for cores to be extracted. The depth of most of the extracted cores was approximately 90 cmbs, while the depth at T-2 was 120 cmbs.

The water table was not encountered at any location, and no cultural materials were identified within the extracted cores. Jaucas sand was identified at T-2 through T-6 and T-8. A buried A horizon was identified atop the sand at T-3 through T-5 and T-8. The cores at T-7 consist of fill material to BOE. The observed stratigraphy within the cores from T-2 through T-8 is summarized below. Note the surface asphalt/concrete at T-2 through T-7 was removed prior to the extraction of cores—only T-8 is in a landscaped area. Hence, 0 cmbs in the T-2 through T-7 cores is immediately below the asphalt/concrete surface.

T-2: gravelly (basalt) clay loam fill (0–30 cmbs), very gravelly loamy sand (crushed coral) fill (30–90 cmbs), Jaucas sand (90–120 cmbs) (Figure 49 and Figure 50)

T-3: gravelly (basalt and coral) sandy clay loam fill (0–60 cmbs), sandy loam A horizon (60–70 cmbs), Jaucas sand (70–90 cmbs) (Figure 51 and Figure 52)

T-4: very gravelly (basalt) clay loam fill (0–40 cmbs), very gravelly sand (crushed coral) fill (40–55 cmbs), loamy sand A horizon (55–65 cmbs), Jaucas sand (65–90 cmbs) (Figure 53 and Figure 54)

T-5: very gravelly (basalt) clay loam fill (0-30 cmbs), sandy loam A horizon (30–40 cmbs), Jaucas sand (40–90 cmbs) (Figure 55 and Figure 56)

T-6: very gravelly (basalt) clay loam fill (0–36 cmbs), Jaucas sand (36–90 cmbs) (Figure 57 and Figure 58)

T-7: very gravelly (basalt) clay loam fill (0–90 cmbs) (Figure 59 and Figure 60)

T-8: gravelly (basalt) clay loam fill (0–66 cmbs), loamy sand A horizon (66–73 cmbs), Jaucas sand (73–93 cmbs) (Figure 61 and Figure 62)

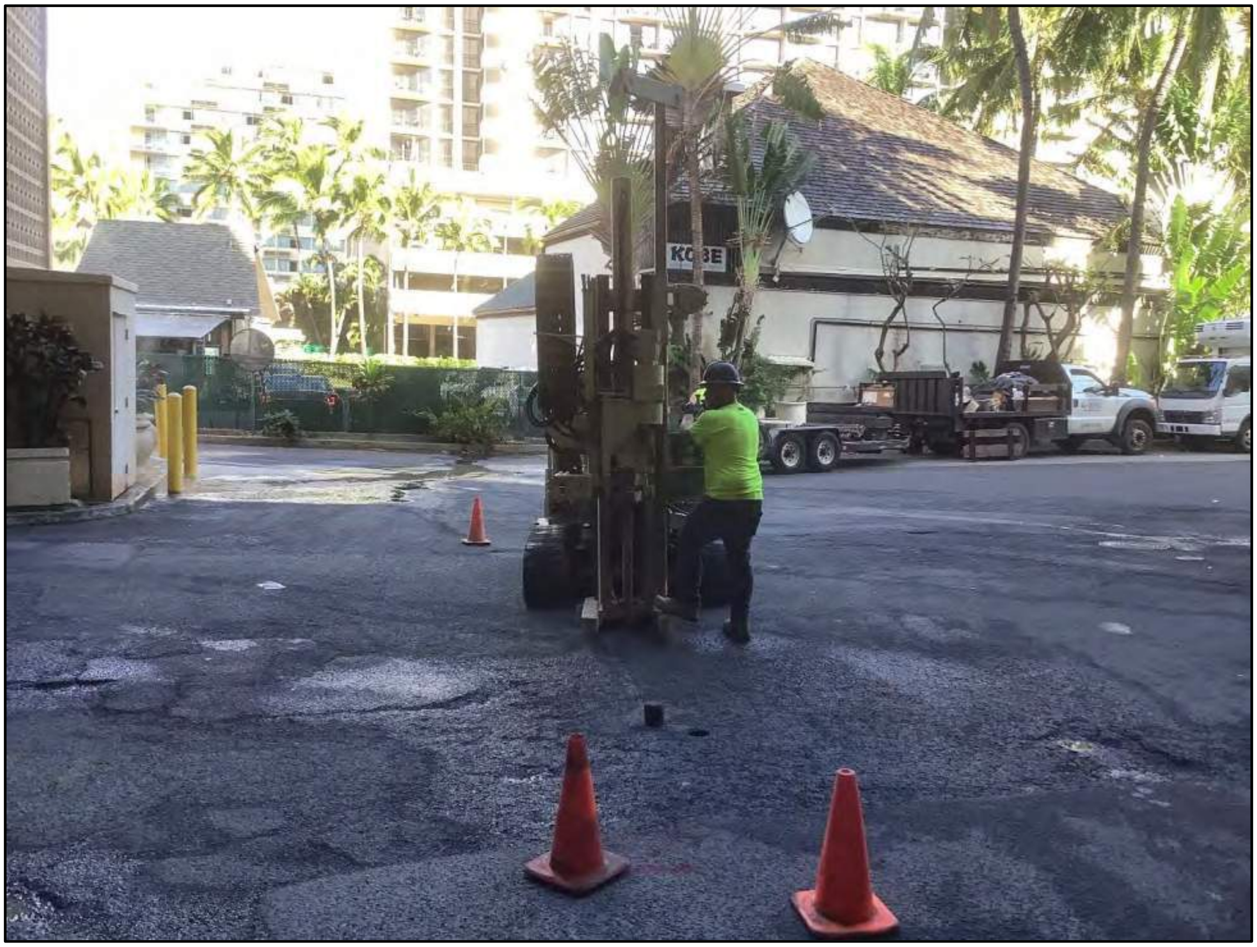


Figure 49. Boring at T-2, view to northwest; HHV parking garage on left, Kobe Steakhouse building in background

Figure 50. T-2 core

Figure 51. Boring at T-3, view to southwest; ABC store in background, Ala Moana Boulevard on right

Figure 52. T-3 core

Figure 53. Boring at T-4, view to southwest; ABC store on left, Ala Moana Boulevard on right

Figure 54. T-4 core

Figure 55. Boring at T-5, view to northwest; Paradise Rent-a-Car building on right, Ala Moana Boulevard in background

Figure 56. T-5 core

Figure 57. Boring at T-6, view to east; HHV campus in background, Kobe Steakhouse building on left

Figure 58. T-6 core

Figure 59. Boring at T-7, view to northeast; Kobe Steakhouse building in background

Figure 60. T-7 core

Figure 61. Boring at T-8, view to northwest; Ala Moana Boulevard in background

Figure 62. T-8 core

4.2 Subsurface Testing Results

AIS testing consisted of nine test excavations comprising eight exterior excavations (T-1 through T-8) and one interior excavation (T-9, inside the former Kobe Steakhouse building) (Figure 63). Below are summaries of the archaeological historic properties and stratigraphy documented during the AIS, followed by a detailed description of each test excavation.

4.2.1 Historic Properties Identified

Three archaeological historic properties were documented during the AIS: SIHP #s -2870, -9156, and -9157 (see Figure 63). SIHP # -2870 was documented during several previous archaeological studies, while SIHP #s -9156 and -9157 are newly identified. They are described below.

SIHP # -2870 comprises historical cultural layers with associated features and human remains. It was initially identified by Neller (1980) and subsequently documented by Hurlbett et al. (1992), Tulchin at el. (2011), Yucha and Hammatt (2014), Sroat et al. (2019), and Krause et al. (2022). During the current study, 19 features (Features 27–45) associated with SIHP # -2870 were identified in four test excavations (T-5, T-6, T-8, and T-9). These features comprise post molds, a bird burial, charcoal lenses, and pits of indeterminate function. Most (n=14) originate within a buried A horizon atop Jaucas sand (Stratum IIa in T-5 and T-8; Stratum IIb in T-6 and T-9) . Four features originate within a fill deposit overlying the A horizon (T-8 Stratum Ig). A single feature was documented at the truncated upper boundary of the A horizon (T-6 Stratum IIa/Feature 29).

SIHP # -9156 comprises four small bone fragments originating within a near-surface fill deposit (Stratum Id) within T-4. Two of the bone fragments were identified as human cranial fragments. The remaining two were too small to be identified but were treated as human. In consultation with SHPD, the remains are reasonably believed to be Native Hawaiian. Temporary burial treatment comprised preservation in place within T-4. Long-term burial treatment will be detailed in a forthcoming burial treatment plan (BTP).

SIHP # -9157 comprises buried historical infrastructure remnants identified in four test excavations (T-3, T-4, T-8, and T-9). These include seven buried asphalt layers (Features 1–7) and a prepared surface (Feature 8). A review of historical maps and aerial photographs, as well as analysis of artifacts from underlying deposits indicate these are associated with mid-twentieth century development of the project area.

4.2.2 Summary of Stratigraphy

Stratigraphy within the project area is designated using a Roman numeration system (e.g., Strata I, II, III), with substrata designated using an alphabetic system (e.g., Strata Ia, Ib, Ic). Although the alphabetic substrata designations within the Roman numeral designations may vary among test excavations, the Roman numeral stratigraphic designations correlate across the project area, so that stratigraphic patterns can be clearly documented and discussed.

It should be noted that the level of ground surface is not consistent within the project area. T-2, T-4, T-9 are approximately at street level, as is the northwestern portion of T-3 (the southeastern portion slopes down to 15 cm below street level). T-5 through T-7 are approximately 30 cm below street level, and T-1 is 40 cm below street level. T-8 is 20–25 cm above street level. Depths within

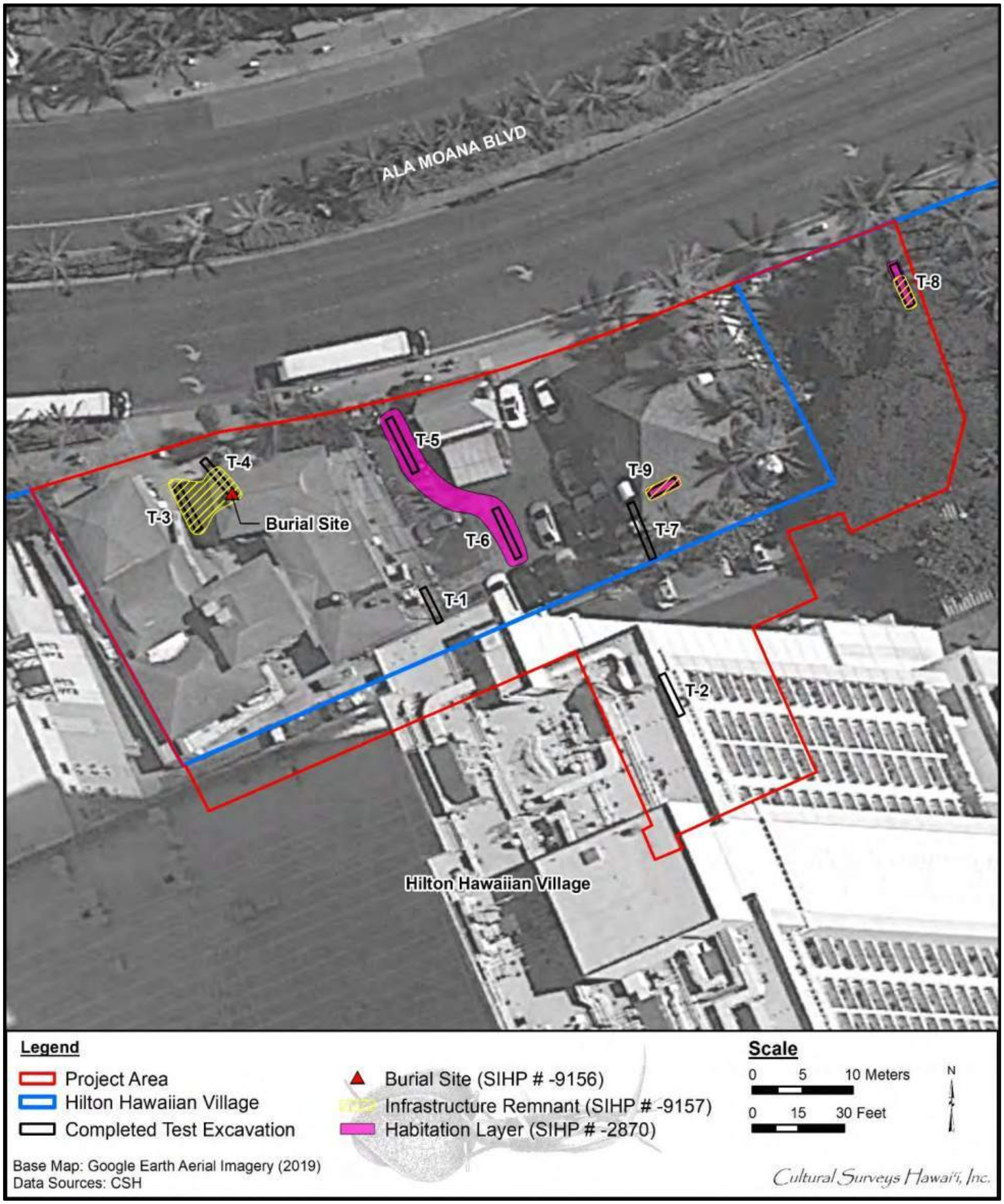


Figure 63. 2019 Google Earth aerial imagery with overlay of completed test excavations and historic properties identified

most of the excavations are reported in cmbs; only T-3 and T-8 are reported in cm below datum (cmbd), due to the ground surface not being level.

The water table was encountered in eight of the nine test excavations—all except T-1, where abundant subsurface utility infrastructure prevented full excavation. Accounting for the differences in ground surface level discussed above, the water table within the project area was encountered between 145 and 189 cm below street level. The BOE of the test excavations ranged between 148 and 193 cm below street level, except for in T-1, which was not fully excavated (BOE of 112 cm below street level).

The documented stratigraphy was consistent with previous documentation within and in the immediate vicinity of the project area. It generally comprises the current land surface, one or more fill deposits, a buried loamy sand A horizon, and Jaucas sand (Table 2). The surface consists of the concrete walkway at T-1, T-3, and T-4; the asphalt parking/driving surface at T-2 and T-5 through T-7; the landscaped lawn at T-8; and the concrete floor of Kobe Steakhouse at T-9. The underlying fill deposits include both imported fills and fills composed of locally available sandy material, including A horizon material and/or Jaucas sand. Some of the fills contain historical to modern artifacts and debris including ceramic, glass, brick, asphalt, concrete, metal, plastic, and faunal bone. Notably, some of the fill layers are interpreted as buried surfaces; seven buried asphalt surfaces and one prepared surface consisting of three thin, compacted fill layers are designated as SIHP # -9157 Features 1–7 and 8, respectively. One fill deposit within T-8 (Stratum Ig) has associated pit features and is designated as part of SIHP # -2870. In addition, disarticulated human skeletal remains were identified in a near-surface fill deposit in T-4 (Stratum Id) and are designated as SIHP # -9156.

As documented during prior archaeological studies, the buried A horizon is discontinuous and disturbed, often with a truncated upper boundary. It contains scattered historical artifacts and debris including ceramic, glass, brick, concrete, metal, plastic, and vertebrate and invertebrate faunal remains. Where cultural features were identified as originating within the A horizon, the layer is designated as part of SIHP # -2870. Also consistent with prior documentation, the A horizon was generally found to be more intact and with a greater density and variety of associated features in the *mauka* portion of the project area.

A detailed description of each test excavation is presented in Section 4.2.3 below.

Table 2. Stratigraphic designations

Stratum	Description
I	The current land surface and underlying fill deposits; includes buried infrastructure remnants (SIHP # -9157), disarticulated human skeletal remains within fill (SIHP # -9156), and a culturally enriched fill deposit (part of SIHP # -2870)
II	Buried A horizon (part of SIHP # -2870 when associated features are present) and Jaucas sand

4.2.3 Test Excavations

4.2.3.1 Test Excavation 1 (T-1)

Test Excavation 1 (T-1) is an exterior test excavation in the paved area at the *mauka/*Diamond Head (east) corner of KPop Donuts Hawaii, at 1831 Ala Moana Boulevard (Figure 64). Due to the presence of above-ground infrastructure and multiple subsurface utilities identified by toning and Hawaii One Call, the trench could only be placed in a narrow area with limited access for a mini-excavator, limiting the length of the trench (see Figure 64). The trench is oriented northwest-southeast and is 3.8 m in length by 0.67 m in width. It has a maximum depth of 72 cmbs; the water table was not encountered. Note this location is approximately 40 cm below the level of Ala Moana Boulevard, and this excavation was conducted in full PPE.

Subsurface utility infrastructure encountered during excavation limited the depth of excavation. The infrastructure comprises a concrete jacket extending along the northeast sidewall at a depth of 20 cmbs and a plastic sump pump line in the south corner of the trench at 22 cmbs (Figure 65 and Figure 66). The sump pump line is active and likely extends along the southwest sidewall. A pothole approximately 30 cm in diameter was hand-excavated to a depth of 72 cmbs, between the jacket and the sump pump line, to expose and document the underlying stratigraphy.

The documented stratigraphy comprises the concrete surface (Stratum Ia), very gravelly (basalt) sandy loam fill (Stratum Ib), a gravelly (basalt) sandy loam A horizon (Stratum IIa), and Jacuas sand (Stratum IIb) (Figure 69, Figure 67, and Table 3). Stratum Ib is composed of a mixture of imported material and locally available sandy material, including A horizon material. The sump pump line and utility jacket are both within Stratum Ib, with the jacket founded atop the Stratum IIa A horizon, which appeared to be disturbed. No artifacts, faunal material, or historic properties were identified in T-1.

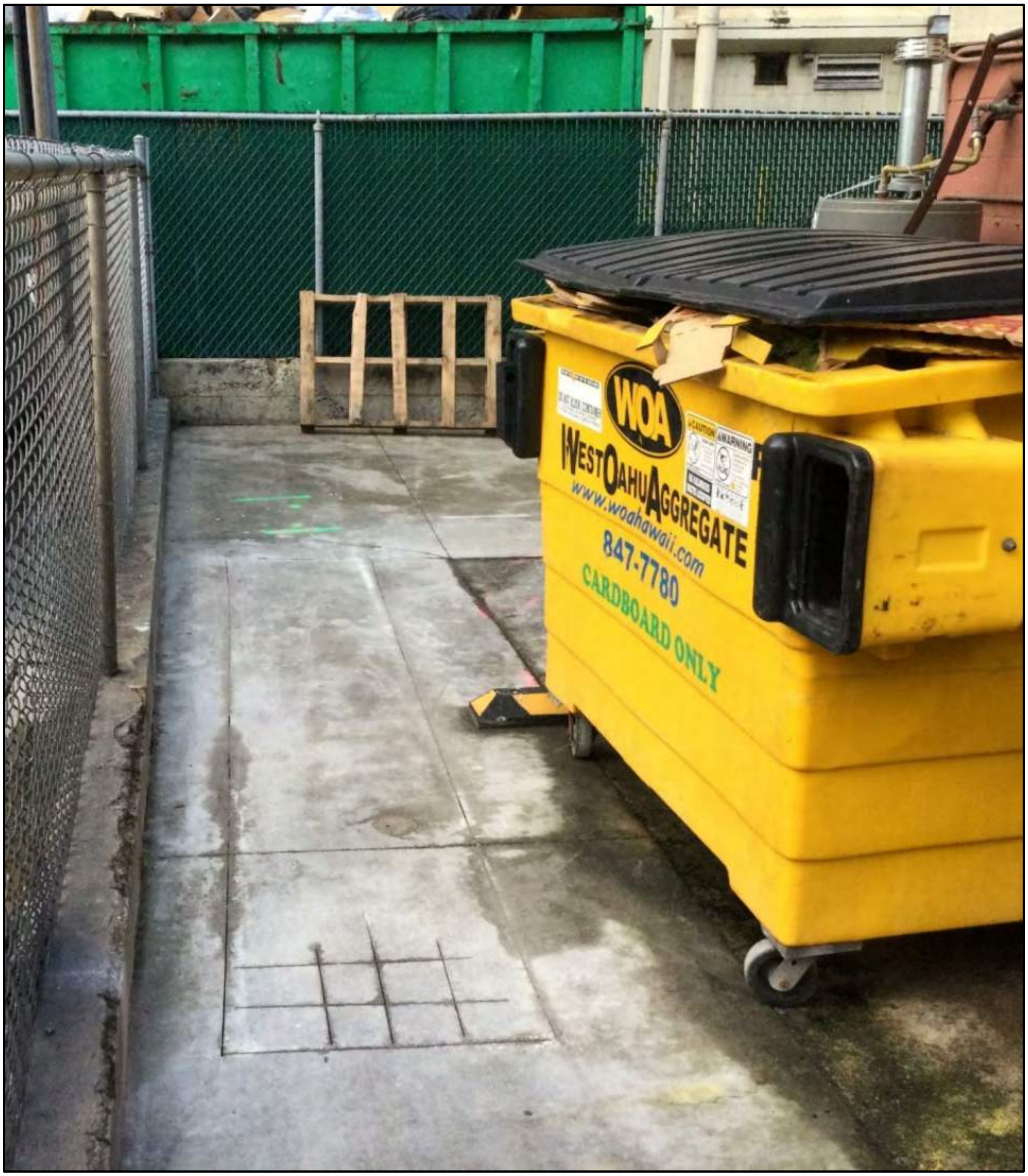


Figure 64. Location of T-1 (sawcut rectangle) at the east corner of KPop Donuts Hawaii (building on right), view to southeast; note the narrow space and the green and pink spray paint indicating subsurface utilities

Figure 65. Plan view of T-1 showing a concrete utility jacket along the northeast sidewall (top), a plastic sump pump line at the south corner (bottom right), and a pothole excavated between the two (center/right)

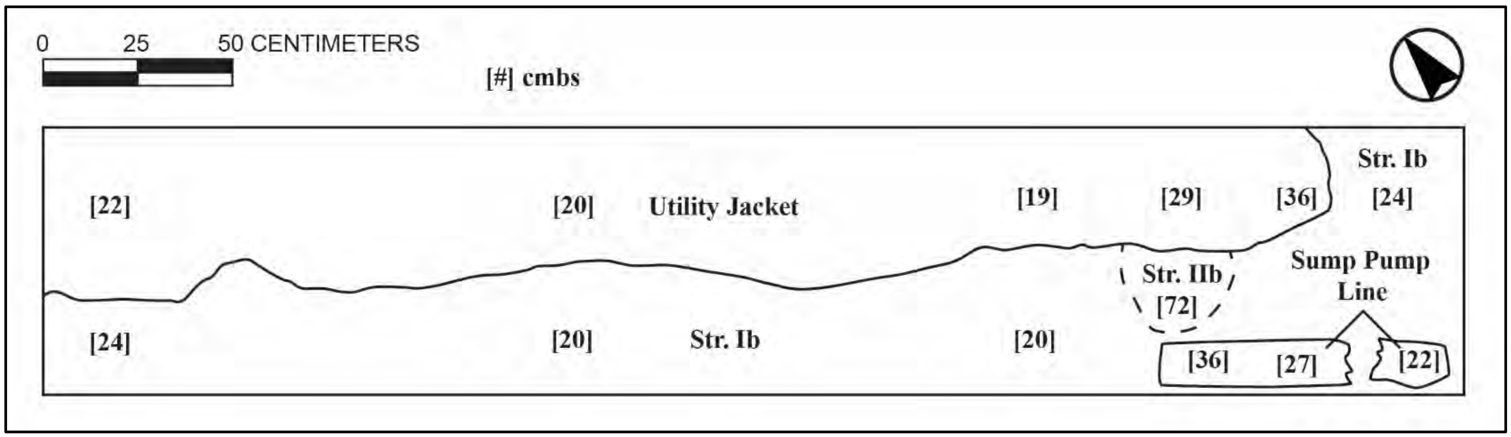


Figure 66. T-1 plan map; dashed area is excavated pothole

Figure 67. T-1 pothole, northeast wall (profiled), view to northeast; note the stratigraphy underlying the concrete jacket is difficult to discern due to the shadow cast by the jacket; see Figure 68 below for a better view of the stratigraphy

Figure 68. T-1 pothole, northwest wall, view to northwest; concrete jacket on right, plastic sump pump line on left

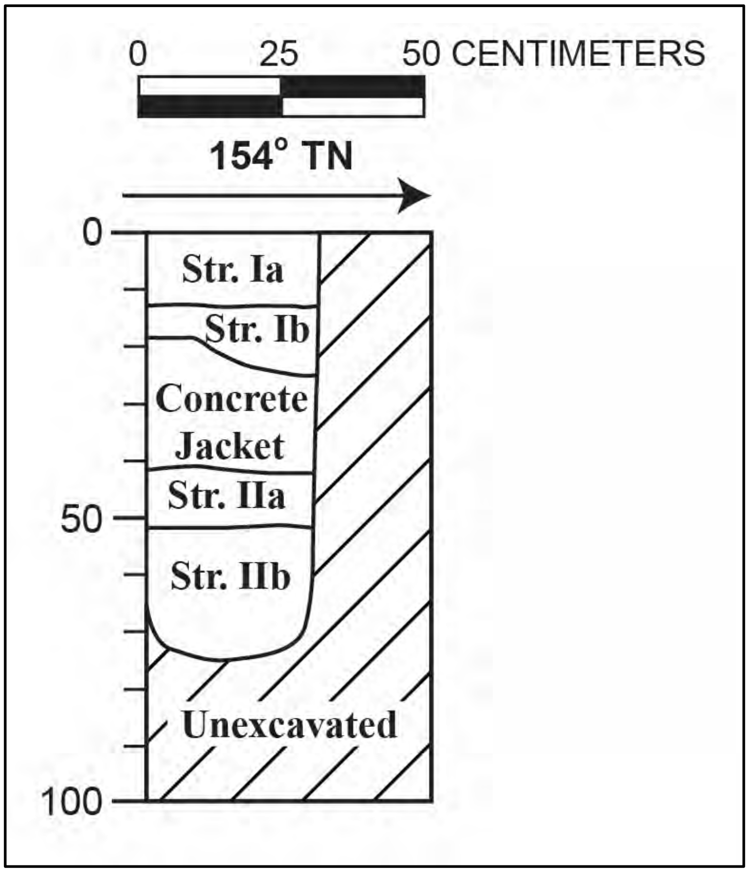


Figure 69. Profile of T-1 pothole, northeast wall

Table 3. T-1 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–14	Concrete; current ground surface
Ib	13–43	Fill; 10YR 3/2, very dark grayish brown; very gravelly sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, smooth lower boundary; no roots observed; fill containing basalt gravel, a plastic sump pump line, and a concrete utility jacket
IIa	42–52	Natural; 10YR 3/4, dark yellowish brown; gravelly sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, smooth lower boundary; no roots observed; disturbed A horizon containing basalt gravel
IIb	51–72 (BOE)	Natural; 10YR 6/4, light yellowish brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

4.2.3.2 Test Excavation 2 (T-2)

Test Excavation 2 (T-2) is an exterior test excavation in front of (i.e., *mauka* of) the entrance to the HHV Ali‘i Tower parking garage (Figure 70). Placement of this test excavation was limited by the presence of utility boxes, subsurface utilities identified through toning and Hawaii One Call (Figure 71), and the proximity of the parking garage entrance, taxi lane, and delivery truck access lane. Hence, T-2 was shortened from the standard dimensions to accommodate these factors. The trench is oriented northwest-southeast and is 4.5 m in length by 0.7 m in width. It has a maximum depth of 153 cmbs, with the water table encountered at 150 cmbs.

The documented stratigraphy comprises the current asphalt road surface (Stratum Ia), extremely gravelly sandy loam basalt base course (Stratum Ib), gravelly sandy loam mixed crushed coral fill (Stratum Ic), gravelly (basalt) sandy loam fill (Stratum Id), gravelly loamy sand mixed crushed coral fill (Stratum Ie), sand fill (Stratum If), and Jaucas sand (Stratum II) (Figure 72, Figure 73, and Table 4).

Stratum Ic contains a 4-cm diameter metal utility pipe, asphalt fragments, sawcut cow bone, and slag. The cow bone and slag (Acc. # 1) were collected. In addition, a glass bottle fragment (Acc. # 2) and ceramic fragment (Acc. # 3) were collected from Stratum Ie from spoils. Embossing on the bottle glass (Acc. # 2) indicates it was manufactured between 1852 and the 1930s; hence, Stratum Ie was deposited post-1852.

A 24-inch sewer line was identified in the north corner of the trench within Stratum If, which comprises redeposited Jaucas sand (sourced from Stratum II). No cultural materials or features were identified in the basal Stratum II Jaucas sand.

Figure 70. Location of T-2 (saw-cut rectangle), view to southeast; HHV Ali‘i tower parking garage entrance on right, taxi lane on left, utility box in foreground

Figure 71. Planned location of T-2 (dashed white line), showing subsurface utilities detected by toning (yellow and red spray paint), view to southeast; taxi lane on left, parking garage on right

Figure 72. T-2 northeast sidewall, view to northeast; note 4-cm diameter metal utility pipe in Stratum Ic (indicated with blue arrow) and 24-inch sewer line in Stratum If (indicated with red arrow)

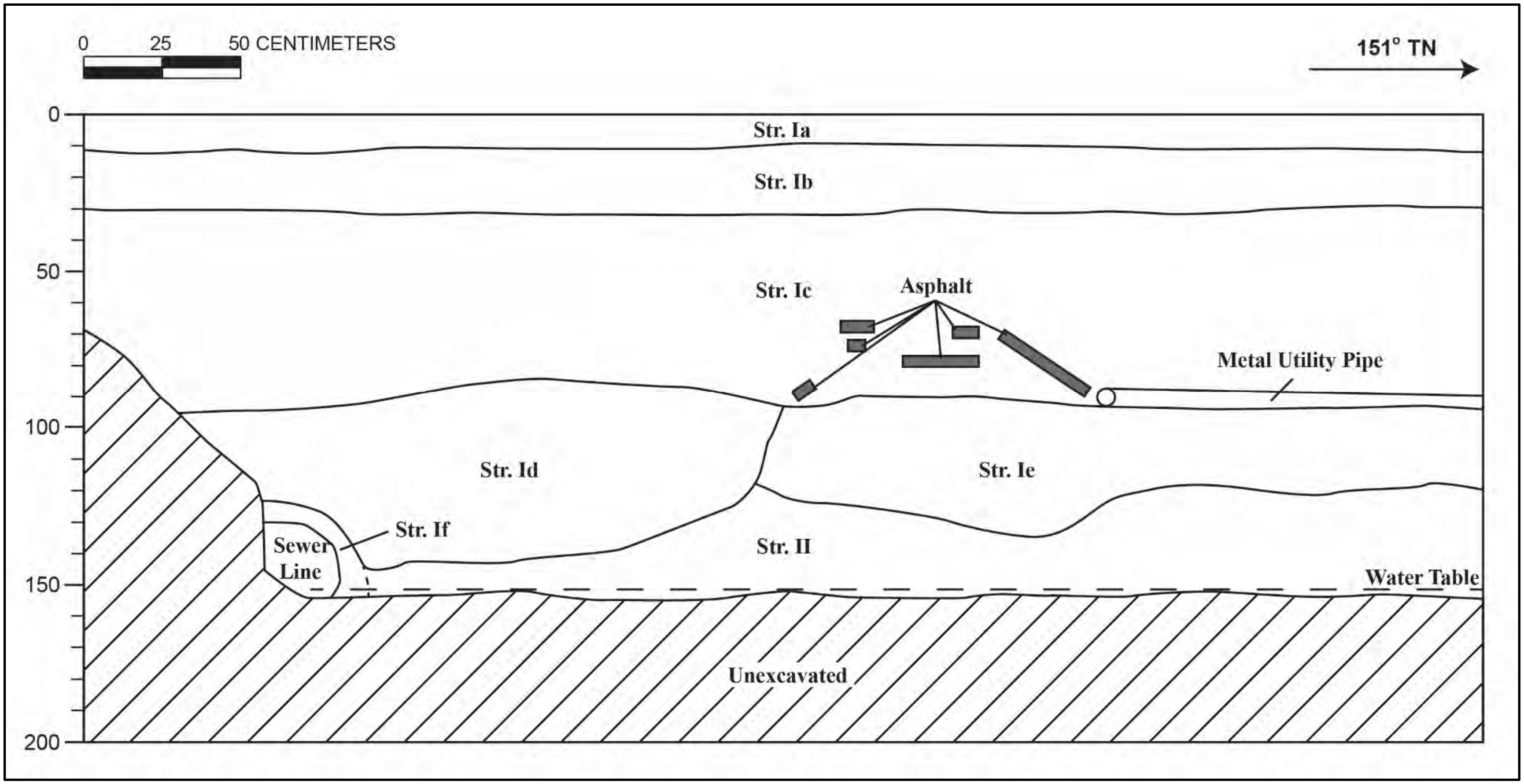


Figure 73. Profile of T-2 northeast sidewall

Table 4. T-2 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–12	Asphalt; current road surface
Ib	10–32	Fill; 10YR 3/1, very dark gray; extremely gravelly sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; terrigenous origin; abrupt, smooth lower boundary; no roots observed; basalt gravel base course supporting the overlying road surface
Ic	30–94	Fill; 10YR 6/3, pale brown; gravelly sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, smooth lower boundary; no roots observed; mixed crushed coral fill containing asphalt fragments, faunal bone, slag (Acc. # 1), and a metal utility pipe
Id	85–143	Fill; 10YR 4/3, brown; gravelly sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; no roots observed; contains basalt gravel
Ie	90–137	Fill; 10YR 5/4, yellowish brown; gravelly loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; no roots observed; mixed crushed coral fill containing bottle glass (Acc. # 2) and ceramic (Acc. # 3)
If	123–153 (BOE)	Fill; 10YR 8/4, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; redeposited Jaucas sand surrounding a sewer line
II	118–153 (BOE)	Natural; 10YR 8/4, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

4.2.3.3 Test Excavation 3 (T-3)

Test Excavation 3 (T-3) is an exterior test excavation *mauka* (northeast) of the ABC store at 1831 Ala Moana Boulevard (Figure 74). The placement and length of T-3 were limited by the presence of manholes, subsurface utilities identified through toning and Hawaii One Call, the proximity of the building, and the need for pedestrian access (see Figure 74). The northwestern portion of the trench is at street level, while the southeastern portion slopes down to 15 cm below street level. All subsurface measurements were taken from street level and are reported in cmbd. The trench is oriented northwest-southeast and is 4.95 m in length by 0.7 m in width. It has a maximum depth of 177 cmbd, with the water table encountered at 173 cmbd. Note this excavation was conducted in full PPE.

Full excavation of the northwestern portion of the trench was prevented by the presence of a concrete utility jacket in the west corner at 19 cmbd and a buried asphalt layer partially embedded with concrete at 75 cmbd (Stratum Id/SIHP # -9157 Feature 2, discussed below). As the portion of Stratum Id/Feature 2 reinforced with concrete extends into the southwest sidewall, it was not possible to remove the layer without destabilizing the trench. Hence, the northwestern portion of the trench was not excavated beyond the upper boundary of Stratum Id.

The documented stratigraphy comprises the current concrete surface (Stratum Ia), very gravelly (basalt) loamy sand fill (Stratum Ib), an asphalt layer (Stratum Ic; SIHP # -9157 Feature 1), an asphalt layer partially embedded with concrete (Stratum Id; SIHP # -9157 Feature 2), a loamy sand A horizon (Stratum IIa), and Jaucas sand (Stratum IIb) (Figure 75 through Figure 77 and Table 5). Stratum Ib is composed of imported and locally available sandy material and contains concrete fragments, potentially historical to modern artifacts, large mammal bone, and a concrete utility jacket at the west corner of the trench. The large mammal bone and artifacts from the spoils pile were photographed and analyzed by CSH laboratory personnel in the field. The artifacts comprise two plastic bottles (Acc. #s 59 and 66), a plastic paint brush handle (Acc. # 60), a plastic sunglasses lens (Acc. # 61), a plastic matchbook cover (Acc. # 62), metal nails and/or bolts (Acc. #s 63 and 67), flat glass (Acc. # 64), an aluminum can (Acc. # 65), plastic six-pack rings (Acc. # 68), a Kodak photograph (Acc. # 69), bottle glass (Acc. # 70), a plastic package (Acc. # 71), a polyethylene bag (Acc. # 72), a plastic lipstick tube (Acc. # 73), a plastic drinking straw (Acc. # 74), and a porcelain fragment (Acc. # 75). The matchbook cover (Acc. # 62) dates post-1976, indicating Stratum Ib was deposited post-1976.

Stratum Ib is underlain by two buried asphalt layers, Strata Ic and Id. These are designated as SIHP # -9157 Features 1 and 2, respectively, and are described below.

SIHP # -9157 Feature 1 (Stratum Ic) is the upper (i.e., younger) of two buried asphalt layers within T-3 (see Figure 75 through Figure 78). Prior to being removed by the excavator, it extended across the entire excavation, except for the west corner of the trench where a concrete utility jacket was located. Stratum Ic was documented between 44 and 76 cmbd and ranges from 5–15 cm thick. Portions appear to have been previously disturbed. The exposed portion of the feature is 4.95 m long by 0.7 m wide, giving it a horizontal extent of 3.47 sq m; however, it appears to extend beyond all four excavations walls. In the southeastern portion of the trench, Stratum Ic/Feature 1 overlies the Stratum IIa buried A horizon. In the northwestern portion of the trench, it overlies the Stratum Id buried asphalt layer (SIHP # -9157 Feature 2, discussed below). Aerial photographs

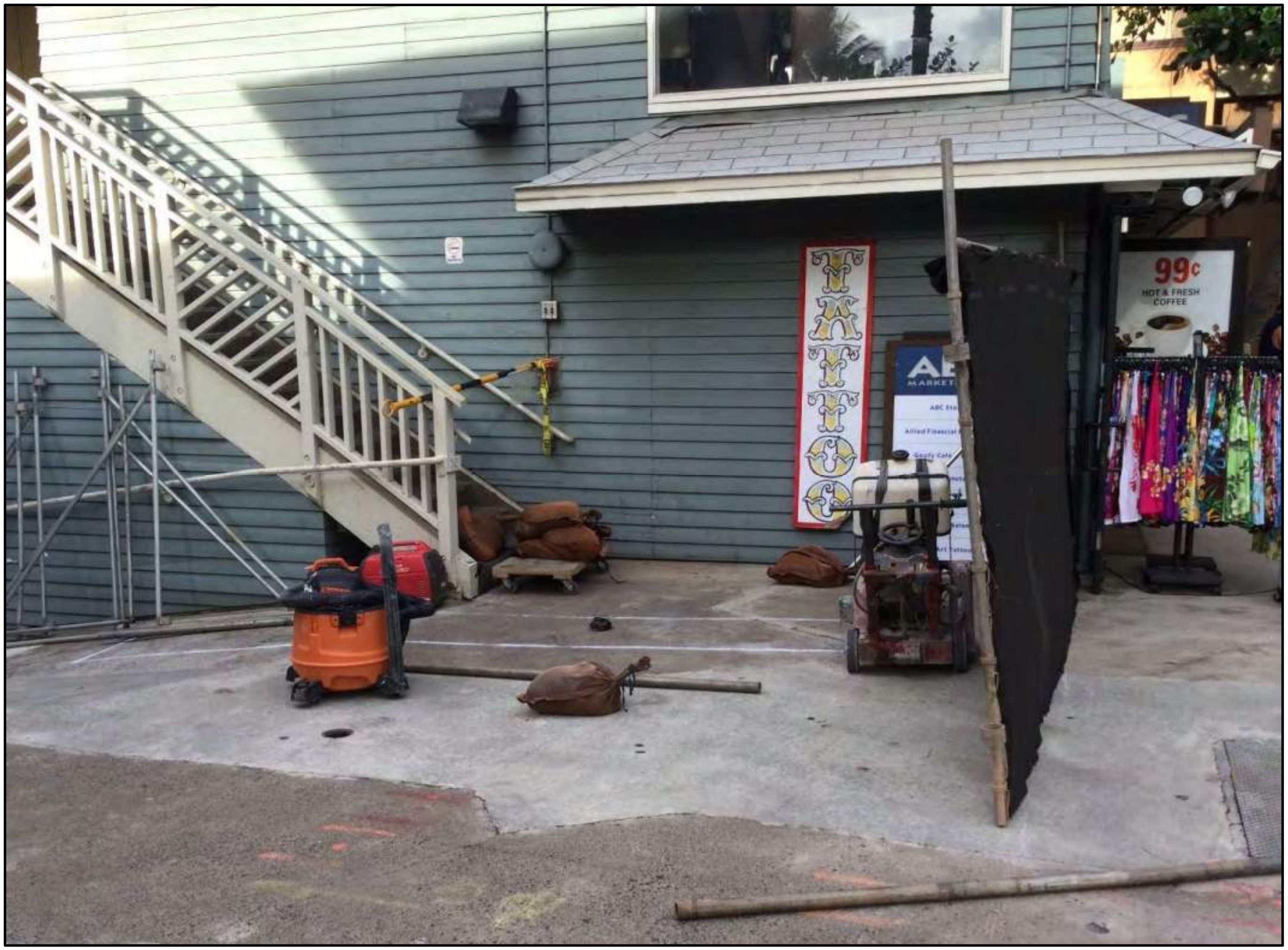


Figure 74. Location of T-3 by the ABC store (in background), with the Ala Moana Boulevard sidewalk on right, view to southwest; note the space limitations created by the existing building, pedestrian accessways, and subsurface utilities (orange and red spray paint)

Figure 75. Overview of T-3 southwest sidewall, view to west, showing a concrete utility jacket in the west corner (upper left, indicated with red arrow) and two buried asphalt layers (SIHP # -9157 Features 1 and 2, indicated with blue and green arrows, respectively); note Stratum Ic/Feature 1 had been mostly removed by the excavator prior to the photo being taken

Figure 76. Close-up profile view of the southeast end of T-3 southwest sidewall, view to southwest; Stratum Ic/SIHP # -9157 Feature 1, the upper of two buried asphalt layers, is indicated with a red arrow

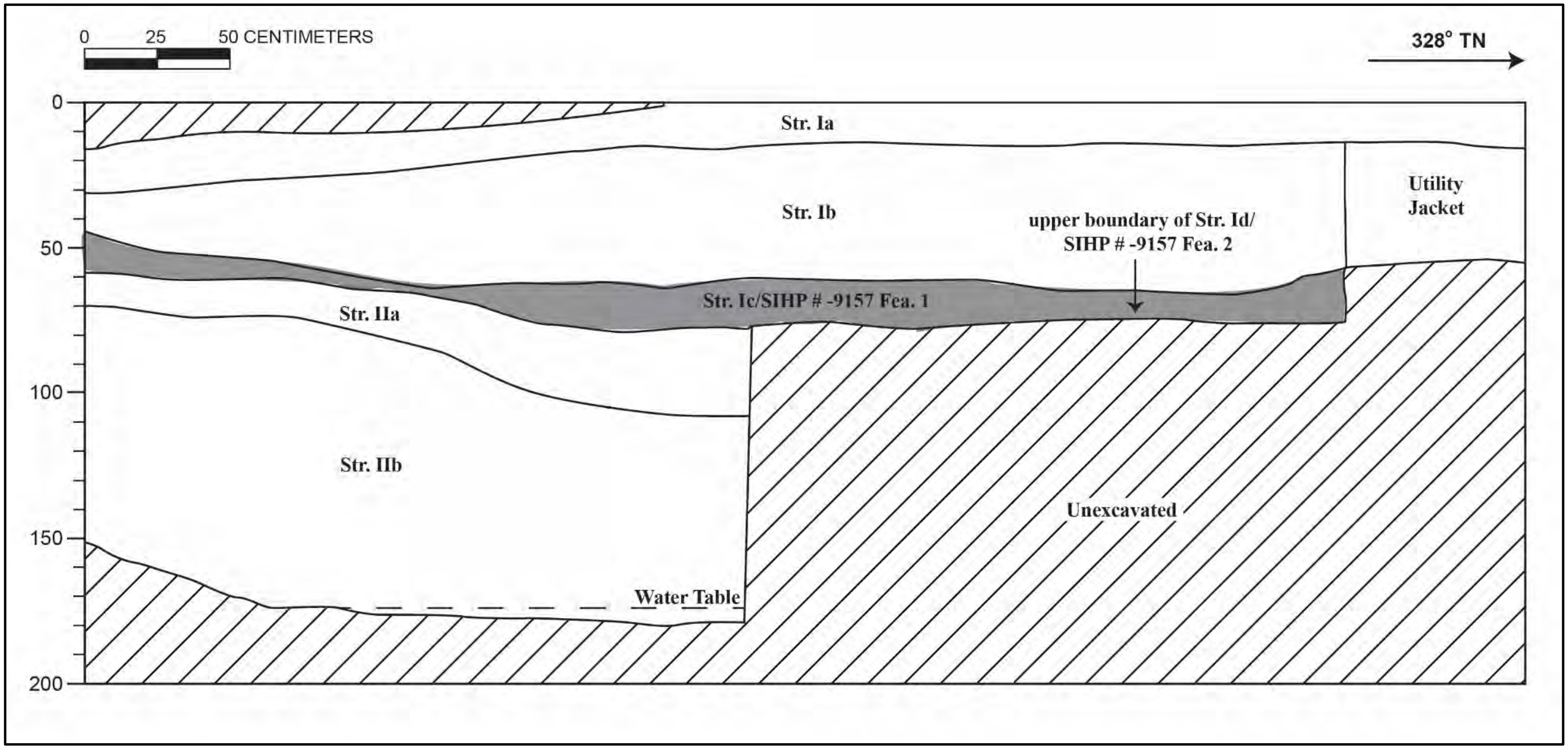


Figure 77. Profile of T-3 southwest sidewall

Table 5. T-3 stratigraphic description; note the bottom depth for Stratum Id was measured within the sediment/soil bench

Stratum	**Depth (cmbd)**	**Description**
Ia	0–31	Concrete; current walkway surface
Ib	15–65	Fill; 10YR 4/2, dark grayish brown; very gravelly loamy sand; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; fill containing locally available sandy material, basalt gravel, concrete fragments, faunal bone, a concrete utility jacket, plastic (Acc. #s 59, 60–62, 66, 68, and 71–74), metal nails and/or bolts (Acc. #s 63 and 67), flat glass (Acc. # 64), an aluminum can (Acc. # 65), a Kodak photograph (Acc. # 69), bottle glass (Acc. # 70), and porcelain (Acc. # 75)
Ic/SIHP # -9157 Fea. 1	44–76	Asphalt; buried surface
Id/SIHP # -9157 Fea. 2	75–95	Asphalt; buried surface, partially embedded with concrete
IIa	58–108	Natural; 7.5YR 4/2, brown; loamy sand; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; no roots observed; truncated and disturbed A horizon containing marine shell, sea urchin, non-marine shell, faunal bone, charcoal, chewing gum (Acc. # 94), a pencil graphite fragment (Acc. # 95), glass (Acc. # 96), ceramic (Acc. # 76), a shell button (Acc. # 77), and metal (Acc. # 97)
IIb	70–177 (BOE)	Natural; 10YR 6/3, pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

Figure 78. Plan view of T-3 at 19–65 cmbd, showing a concrete utility jacket in the west corner of the trench (bottom right) and the upper of two buried asphalt layers (Stratum Ic; SIHP # -9157 Feature 1) across the remainder of the trench

Figure 79. Plan view of T-3 at 19–112 cmbd, showing the concrete utility jacket at the west corner of the trench (bottom left); the portion of the Stratum Ic/SIHP # -9157 Feature 1 buried asphalt layer remaining after most of it was removed by the excavator (top left); and Stratum Id/SIHP # -9157 Feature 2, buried asphalt layer partially embedded with concrete, in the northwestern portion of the trench (center) atop the soil/sediment bench

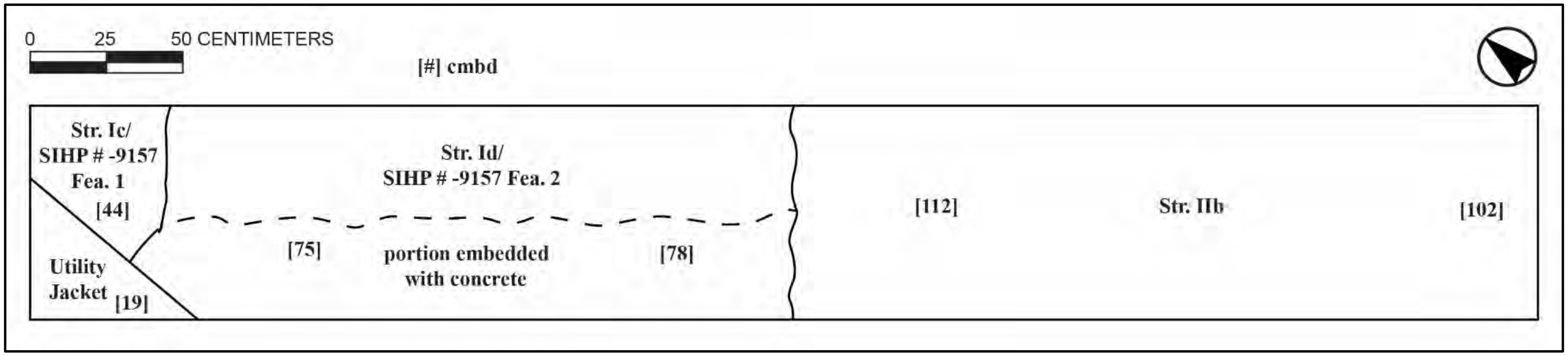


Figure 80. Plan map of T-3 at 19–112 cmbd

(see Figure 35 and Figure 37) indicate the location of T-3 was paved with asphalt sometime between 1954 and 1966, suggesting Stratum Ic/Feature 1 was deposited post-1954. It was buried by the Stratum Ib fill post-1976 (see discussion above).

SIHP # -9157 Feature 2 (Stratum Id) is the lower (i.e., older) of two buried asphalt surfaces within T-3 (see Figure 75, Figure 77, Figure 79, and Figure 80). It is present only in the northwestern portion of the trench, where it truncates the upper boundary of the Stratum IIa buried A horizon. Stratum Id/Feature 2 was documented between 75 and 95 cmbd and is 17 cm thick (based on observed thickness within the soil/sediment bench). The *makai* (southwest) portion of the feature is embedded with concrete, which may have functioned as curbing. The exposed portion of the feature is approximately 2 m long by 0.7 m wide, giving it a horizontal extent of 1.4 sq m; however, it appears to extend beyond the southwestern, northeastern, and northwestern boundaries of the excavation. Stratum Id/Feature 2 underlies and therefore pre-dates the Stratum Ic/Feature 1 asphalt layer. Aerial photographs (see Figure 35 and Figure 37) indicate the location of T-3 was paved with asphalt sometime between 1954 and 1966, suggesting Stratum Id/Feature 2 dates to that time period. This is consistent with the dating of the overlying Stratum Ib fill to post-1976 (see discussion above).

The Stratum IIa A horizon appears to be both truncated and disturbed by the overlying asphalt layers (Strata Ic and Id; SIHP # -9157 Features 1 and 2). No features were identified in Stratum IIa, which was exposed only in the southeastern portion of the trench. A 5-gal sample of Stratum IIa excavated from the trench floor, from 77–87 cmbd, was wet-screened, and the screened sample was photographed and analyzed in the field by CSH laboratory personnel. The sample contains marine shell (*Ctena bella*, Hipponicidae, *N. picea*), sea urchin (Echinoidea), non-marine shell (unknown species), fish (Osteichthyes) bone, small mammal or bird bone, charcoal, chewing gum (Acc. # 94), a pencil graphite fragment (Acc. # 95), colorless glass fragments (Acc. # 96), and a ferrous metal fragment (Acc. # 97). In addition, medium mammal bone was identified within Stratum IIa within the trench floor, and a ceramic fragment (Acc. # 76) and shell button (Acc. # 77) were identified in the spoils pile. The pencil graphite fragment (Acc. # 95) dates post-1876. Based on aerial photographs (see Figure 35 and Figure 37), Stratum IIa was buried by asphalt paving sometime between 1954 and 1966.

No cultural materials or features were identified in the basal Stratum IIb Jaucas sand.

4.2.3.4 Test Excavation 4 (T-4)

Test Excavation 4 (T-4) is an exterior test excavation by the stairwell at the west corner of Lucky Shop at 1831 Ala Moana Boulevard, approximately 3 m northeast of T-3 (Figure 81). As with nearby T-3, the placement and length of T-4 were limited by subsurface utilities identified through toning and Hawaii One Call, the existing building, and pedestrian access. T-4 is oriented northwest-southeast and is 5 m in length by 0.73 m in width. It has a maximum depth of 183 cmbs, with the water table encountered at 181 cmbs. A copper water line pipe was encountered in the central portion of the trench, extending diagonally (north-south) through the trench at 82 cmbs (Figure 82). This prevented further excavation of the central portion of the trench, which was benched. Excavation to the water table proceeded at the southeast and northwest ends on either side of the central bench. A second metal utility pipe was encountered at 110 cmbs just ʻEwa (northwest) of the central bench, extending northeast-southwest through the width of the trench (Figure 83); however, the excavator was able to undermine this pipe, and excavation was not impeded. Note this excavation was conducted in full PPE, and the excavation was not entered at BOE due to the confined spaces created by the central bench and sidewall collapse.

The documented stratigraphy comprises the concrete walkway surface (Stratum Ia), gravelly (basalt and coral) sandy loam fill (Stratum Ib), extremely gravelly sand basalt base course (Stratum Ic), gravelly (basalt) loamy sand fill (Stratum Id) containing disarticulated human skeletal remains (SIHP # -9156), a buried asphalt layer (Stratum Ie; SIHP # -9157 Feature 3), very gravelly sandy clay loam basalt base course (Stratum If; SIHP # -9157 Feature 3), extremely gravelly sand crushed coral base course (Stratum Ig; SIHP # -9157 Feature 3), a second buried asphalt layer (Stratum Ih; SIHP # -9157 Feature 4), extremely gravelly sandy loam crushed coral base course (Stratum Ii; SIHP # -9157 Feature 4), a third buried asphalt layer (Stratum Ij; SIHP # -9157 Feature 5), a loamy sand utility trench (Stratum Ik), a loamy sand A horizon (Stratum IIa), and Jaucas sand (Stratum IIb) (Figure 84 through Figure 88 and Table 6).

Stratum Ib is a large, mottled fill deposit composed of a mixture of Strata Ic–Ij, IIa, and IIb. It is intrusive through, and therefore post-dates, those strata. As Stratum Ic was deposited post-1986, based on analysis of associated artifacts (see below discussion), Stratum Ib represents modern disturbance that occurred post-1986. Stratum Ib contains medium and large mammal bone, concrete and asphalt fragments, basalt and coral gravel, and a bottle glass fragment (Acc. # 78). These materials were from the spoils pile and were photographed and analyzed by CSH laboratory personnel in the field; they lack the diagnostic attributes necessary to provide a more specific date for the deposit.

The Stratum Ic base course contains a metal shelving bracket (Acc. # 81), sawcut faunal bone (large mammal and cow [*Bos taurus*]), a plastic Pennzoil bottle (Acc. # 79), a plastic toy shovel (Acc. # 80), and a bottle glass fragment (Acc. # 82). These materials were from the spoils pile and were photographed and analyzed by CSH laboratory personnel in the field. The Pennzoil bottle (Acc. # 79) dates post-1986, indicating Stratum Ic was deposited post-1986.

The Stratum Id fill is composed of a mixture of locally available sandy material and imported material and appears to correlate with T-3 Stratum Ib. Stratum Id contains asphalt fragments, brick (Acc. # 83), a metal flooring strip (Acc. # 84), plastic fragments (Acc. #s 85 and 86), and a plastic fork (Acc. # 87). These materials were from the spoils pile; all except the asphalt were photographed and analyzed by CSH laboratory personnel in the field. The plastic fork (Acc. # 87)

Figure 81. Location of T-4 (re-paved), view to southeast; Lucky Shop on left, T-3 on right (under vehicles)

Figure 82. Plan view of the southeastern half of T-4 at 48–82 cmbs, showing Stratum Ie/SIHP # -9157 Feature 3 (uppermost of three buried asphalt surfaces, beneath north arrow) and a copper water line extending diagonally through the center of the trench (indicated with red arrow)

Figure 83. Plan view of the northwestern half of T-4 at approximately 145 cmbs, showing a metal utility pipe bisecting the trench at 110 cmbs (indicated with red arrow)

Figure 84. Profile view of the northwest end of the T-4 northeast sidewall at approximately 145 cmbs, view to east

Figure 85. Profile view of the northwest end of the T-4 northeast sidewall at BOE, view to north

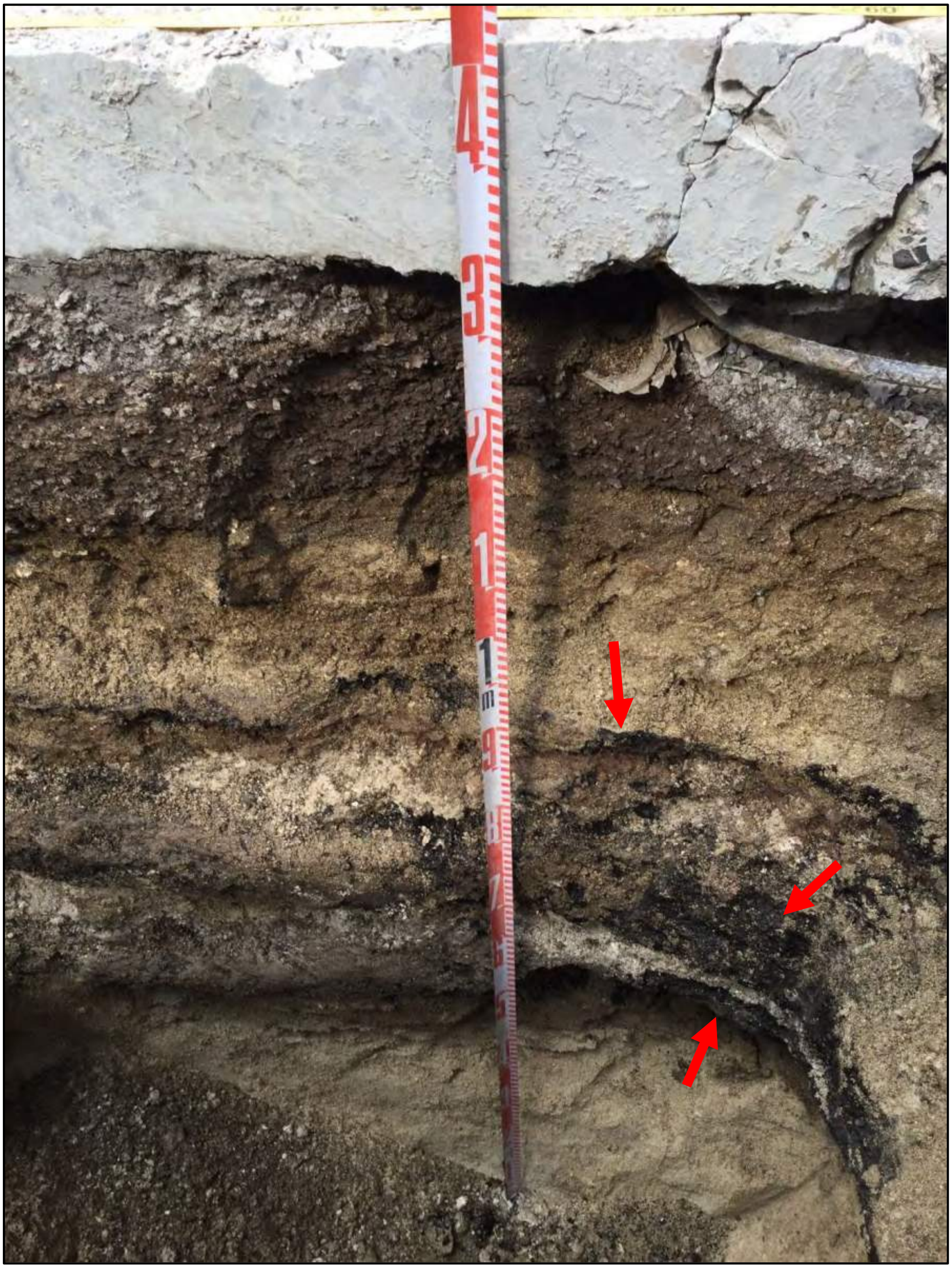


Figure 86. Profile view of the southeast end of the T-4 northeast sidewall at approximately 145 cmbs, showing SIHP # -9157 Features 3–5 (Strata Ie–Ij, buried asphalt layers and associated base course; asphalt layers indicated with red arrows), view to northeast

Figure 87. Plan view of the southeast end of T-4 at BOE, showing the water table and collapse of the southwest wall (left)

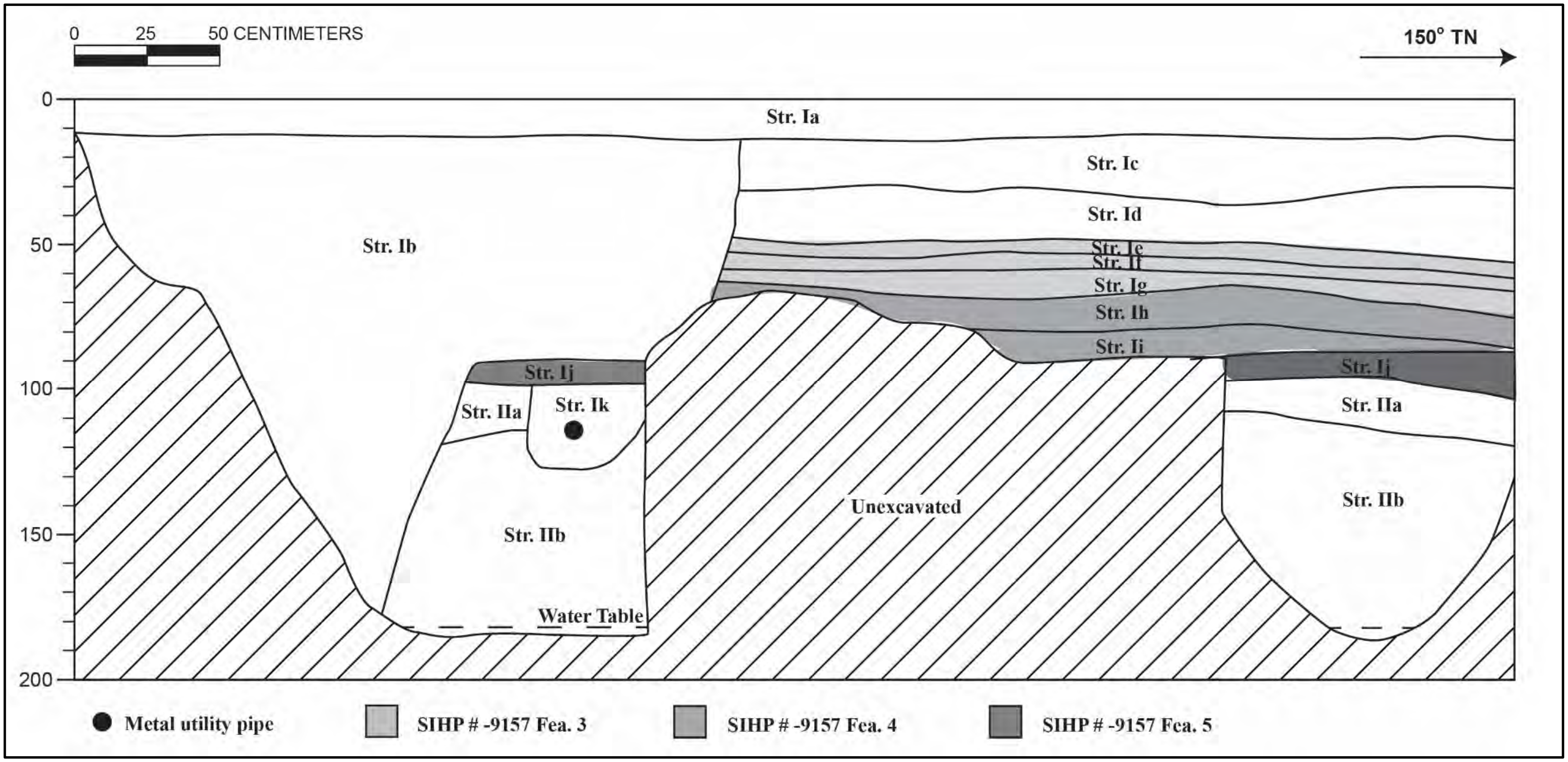


Figure 88. T-4 northeast wall profile, showing SIHP # -9157 Features 3–5, buried asphalt layers and associated base course; note the copper water line in the center of the trench is not depicted, as it had been backfilled prior to the profile being recorded

Table 6. T-4 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–13	Concrete; current walkway surface
Ib	12–178 (BOE)	Fill; 10YR 5/2, grayish brown; gravelly sandy loam; weak, medium, granular structure; moist, friable consistence; slightly plastic; no cementation; mixed origin; no roots observed; lower boundary not observed; mottled mixture of Str. Ib through IIb containing concrete and asphalt fragments, basalt and coral gravel, faunal bone, and a bottle glass fragment (Acc. # 78)
Ic	12–37	Fill; 10YR 3/1, very dark gray; extremely gravelly sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; no roots observed; basalt gravel base course containing metal (Acc. # 81), sawcut faunal bone, plastic (Acc. #s 79 and 80), and glass (Acc. # 82)
Id	30–55	Fill; 10YR 5/2, grayish brown; gravelly loamy sand; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; fill composed of imported and locally available sandy material containing basalt gravel, asphalt fragments, brick (Acc. # 83), metal (Acc. # 84), plastic (Acc. #s 85–87), and disarticulated human skeletal remains (SIHP # -9156)
	30–55	SIHP # -9156; disarticulated human skeletal remains
Ie/SIHP # -9157 Fea. 3	48–60	Asphalt; buried surface
If/SIHP # -9157 Fea. 3	53–64	Fill; 10YR 3/3, dark brown; very gravelly sandy clay loam; moderate, medium, granular structure; moist, friable consistence; slightly plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; basalt gravel base course associated with the Str. Ie asphalt surface
Ig/SIHP # -9157 Fea. 3	57–73	Fill; 10YR 7/2, light gray; extremely gravelly sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; abrupt, broken lower boundary; no roots observed; crushed coral base course associated with the Str. Ie asphalt surface
Ih/SIHP # -9157 Fea. 4	63–85	Asphalt; buried surface

Stratum	Depth (cmbs)	Description
Ii/SIHP # -9157 Fea. 4	76–90	Fill; 10YR 6/3, pale brown; extremely gravelly sandy loam; weak, medium, granular structure; moist, friable consistence; non-plastic; no cementation; marine origin; abrupt, broken lower boundary; no roots observed; crushed coral base course associated with the Str. Ih asphalt surface
Ij/SIHP # -9157 Fea. 5	88–102	Asphalt; buried surface
Ik	97–126	Fill; 10YR 5/3, brown, mottled with 10YR 7/3, very pale brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; utility trench composed of a mixture of Str. IIa and IIb, containing a metal utility pipe
IIa	94–117	Natural; 10YR 5/3, brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; no roots observed; disturbed A horizon containing marine shell, faunal bone, fire-affected rock (FAR) (Acc. # 98), a ferrous metal nail or bolt (Acc. # 99), and a cupreous metal nail (Acc. # 100).
IIb	106–183 (BOE)	Natural; 10YR 7/3, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

dates post-1973, indicating Stratum Id was deposited post-1973. This is consistent with a deposition date of post-1986 for the overlying Stratum Ic, discussed above. It is also consistent with a deposition date of post-1976 for T-3 Stratum Ib, with which T-4 Stratum Id appears to correlate (see Section 4.2.3.3).

Stratum Id also contains disarticulated human skeletal remains. These were designated as SIHP # -9156 and are described below.

SIHP # -9156 comprises four small bone fragments originating within Stratum Id at the southeast end of T-4, between 30 and 55 cmbs. Three of the fragments were identified in the spoils pile, while the fourth was identified within slumped sediment within the trench. Osteologists Allison Hummel, M.Sc., and Sara Blahut, M.A., identified two of the bone fragments as human cranial fragments. The remaining two fragments were too small to be identified but were treated as human. The remains are in fair condition and represent less than 1% of an individual. Sex and age could not be determined but, in consultation with SHPD, the remains are reasonably believed to be Native Hawaiian. No evidence of a coffin or grave marker and no burial goods were identified. Temporary burial treatment measures were facilitated by the on-site cultural monitor from Moehonua Cultural Monitoring Services and included wrapping the four fragments in muslin and placing them in a paper bag. Upon completion of the excavation, the trench was backfilled to 43 cmbs (Figure 89). The bag containing the remains was placed in the southeast end of the trench and covered with plywood, soil/sediment, and caution tape (Figure 90); the trench was then paved with concrete.

Stratum Id is underlain by three buried asphalt layers (Strata Ie, Ih, and Ij). Two of these (Strata Ie and Ih) have one or more associated base course layers (Strata If, Ig, and Ii), while the third (Stratum Ij) is founded upon the Stratum IIa buried A horizon. These asphalt and base course layers were documented in the southeastern portion of the trench, within both sidewalls and the endwall; they were not documented at the northwestern end of the trench, where they appear to have been removed by the modern disturbance represented by Stratum Ib.

The asphalt layers and their associated base course layers are designated as SIHP # -9157 Features 3–5. Aerial photographs (see Figure 35 and Figure 37) indicate this location was paved with asphalt sometime between 1954 and 1966, indicating these layers were deposited no earlier than 1954. One or more of these layers may correlate with one or both of the buried asphalt layers (SIHP # -9157 Features 1 and 2) in nearby T-3. The dating of T-3 Stratum Ib, which appears to correlate with T-4 Stratum Id, indicates the uppermost asphalt layer was buried sometime after 1976. SIHP # -9157 Features 3–5 are described below.

SIHP # -9157 Feature 3 (Strata Ie–Ig) is the uppermost (i.e., youngest) of the three buried asphalt layers within T-4 (see Figure 82, Figure 86, and Figure 88). Feature 3 comprises an asphalt layer (Stratum Ie) with associated layers of basalt and crushed coral base course (Strata If and Ig, respectively). The Stratum Ie asphalt was documented between 48 and 60 cmbs and is approximately 5 cm thick. The Stratum If basalt base course was documented between 53 and 64 cmbs and is approximately 4 cm thick. The Stratum Ig crushed coral base course was documented between 57 and 73 cmbs and is 4–8 cm thick. The exposed portion of Feature 3 is approximately 2.3 m long by 0.73 m wide, giving it a horizontal extent of 1.68 sq m; however, it appears to extend beyond the southeast endwall and both sidewalls in the southeastern portion of the trench.

Figure 89. Plywood board covering the paper bag containing the SIHP # -9156 disarticulated human skeletal remains, which were reinterred at 43 cmbs near the southeast end of T-4, view to south

Figure 90. Plywood board covered with sediment/soil and caution tape prior to T-4 being paved with concrete, view to north

SIHP # -9157 Feature 4 (Strata Ih and Ii) is the second of three buried asphalt surfaces within T-4 (see Figure 86 and Figure 88). Feature 4 comprises an asphalt layer (Stratum Ih) with associated crushed coral base course (Stratum Ii). The Stratum Ih asphalt was documented between 63 and 85 cmbs and is approximately 12 cm thick. The Stratum Ii base course was documented between 76 and 90 cmbs and is 2–10 cm thick. The exposed portion of Feature 4 is approximately 2.3 m long by 0.73 m wide, giving it a horizontal extent of 1.68 sq m; however, it appears to extend beyond the southeast endwall and both sidewalls in the southeastern portion of the trench.

SIHP # -9157 Feature 5 (Stratum Ij) is the deepest (i.e., oldest) of the three buried asphalt surfaces within T-4 (see Figure 86 and Figure 88). Unlike the two upper asphalt surfaces (Features 3 and 4, discussed above), the Stratum Ij asphalt does not have an associated underlying base course layer; rather, it is founded directly atop the Stratum IIa A horizon. Stratum Ij/ Feature 5 was documented between 88 and 102 cmbs and is 7–12 cm thick. The exposed portion of Feature 5 is approximately 3.15 m long by 0.73 m wide, giving it a horizontal extent of 2.3 sq m; however, it appears to extend beyond the southeast endwall and both sidewalls in the southeastern portion of the trench. As aerial photographs (see Figure 35 and Figure 37) indicate, this location was asphalt-paved between 1954 and 1966, and this feature likely dates to that time period.

Diamond Head (southeast) of the central soil/sediment bench, the Stratum IIa A horizon directly underlies the Stratum Ij/SIHP # -9157 Feature 5 buried asphalt surface. ‘Ewa (northwest) of the central bench, Stratum IIa was mostly absent, apparently removed by the modern disturbance represented by Stratum Ib and by the Stratum Ik utility trench (see Figure 88). Stratum Ik was documented just northwest of the central bench, underlying the Stratum Ij/SIHP # -9157 Feature 5 buried asphalt surface in both sidewalls. Stratum Ik is intrusive through the Stratum IIa A horizon and terminates in the Stratum IIb Jaucas sand. Stratum Ik comprises a mixture of A horizon material and sand (i.e., a mixture of Strata IIa and IIb) and contains a metal utility pipe, which extends through the width of the trench (northeast-southwest) (see Figure 83 through Figure 85).

A 4-gal sample of the Stratum IIa A horizon, excavated from 100–110 cmbs within the trench floor in the southeastern portion of the trench, was wet-screened. The screened sample was photographed and analyzed in the field by CSH laboratory personnel. The sample includes marine shell (*Brachidontes crebristriatus*, Hipponicidae), small mammal or bird bone, FAR (Acc. # 98), a ferrous metal nail or bolt (Acc. # 99), and a cupreous metal nail (Acc. # 100). These materials indicate a post-Contact age but lack the diagnostic attributes to provide a specific date.

No cultural materials or features were identified in the basal Stratum IIb Jaucas sand.

4.2.3.5 Test Excavation 5 (T-5)

Test Excavation 5 (T-5) is an exterior test excavation in the west corner of the Paradise Rent-A-Car lot at 1835 Ala Moana Boulevard (Figure 91). The trench is oriented northwest-southeast and is 6 m in length by 0.73 m in width. It has a maximum depth of 118 cmbs, with the water table encountered at 115 cmbs. Note the ground surface in this location is approximately 30 cm below the level of Ala Moana Boulevard, and this excavation was conducted in full PPE.

The documented stratigraphy comprises the current asphalt parking surface (Stratum Ia), extremely gravelly (basalt) silty clay loam fill (Stratum Ib), a loamy sand A horizon (Stratum IIa; SIHP # -2870), and Jaucas sand (Stratum IIb) (Figure 92, Figure 93, and Table 7). Stratum Ib correlates with Stratum Ib in T-7 and Stratum Ic in T-6. Sawcut cow (*B. taurus*) and pig (*S. scrofa*) bone and a ceramic fragment (Acc. # 88) were recovered from the spoils pile during excavation of Stratum IIa. In addition, a 5-gal sample of Stratum IIa excavated from 45–49 cmbs within the trench floor was wet-screened. The screened sample and hand-collected materials were photographed and analyzed by CSH laboratory personnel in the field. The screened sample contains marine shell (*B. crebristriatus*, *Cellana*, Hipponicidae, *N. picea*, Strombidae), non-marine shell (unknown species), sea urchin (Echinoidea), crab shell (Brachyura), medium mammal bone (some burnt), small mammal bone, ferrous metal fragments (Acc. # 101), possible fabric fragments (Acc. # 102), a concrete fragment (Acc. # 103), fire-affected coral (FAC; Acc. # 104), an aqua glass fragment (Acc. # 105), and a bone button fragment (Acc. # 106). These materials indicate a post-Contact age but lack the diagnostic attributes to provide a specific date.

Two pit features were identified as originating within the Stratum IIa/SIHP # -2870 A horizon and terminating in the underlying Stratum IIb Jaucas sand. They are designated as SIHP # -2870 Features 27 and 28 and are described below.

SIHP # -2870 Feature 27 is a pit feature documented in the north corner of T-5 within the northeast sidewall, northwest endwall, and trench floor (see Figure 93 through Figure 95). It originates in Stratum IIa at 45 cmbs and terminates in Stratum IIb at 58 cmbs; note the base depth does not match the profile drawing, as the feature extends slightly deeper within the trench floor than within the sidewall. The feature is semi-circular in shape and measures 70 cm (northwest-southeast) by 50 cm (northeast-southwest) by 13 cm (top-bottom). A thin layer of charcoal was identified along the base of the feature in profile (see Figure 93 and Figure 95). However, no charcoal or FAR were observed within the feature's matrix, and the soil did not appear reddened; hence, it is not interpreted as a fire-related feature. The entire feature within the trench floor (4 gals) was excavated and wet-screened. The screened sample was photographed and analyzed by CSH laboratory personnel in the field. It contains basalt and coral gravel, marine shell (Hipponicidae, *N. picea*, Trochidae), non-marine shell (unknown species), sea urchin (Echinoidea), fish bone (Osteichthyes), medium mammal bone (some burnt), ferrous metal nails (Acc. # 107), aqua glass bottle fragments (Acc. # 108), colorless flat glass fragments (Acc # 109), and a blue glass seed bead (Acc. # 110). The function of this feature is indeterminate.

SIHP # -2870 Feature 28 is a pit feature identified in the central portion of the T-5 northeast sidewall (see Figure 92, Figure 93, and Figure 96); it was not identified in plan view. This basin-shaped feature originates in Stratum IIa at 44 cmbs and terminates in Stratum IIb at 70 cmbs. Due to significant collapse of the sidewall directly opposite the feature, it was deemed unsafe to excavate the feature from the wall. Visual inspection of the feature identified no cultural materials.

Figure 91. Location of T-5, view to northwest; Paradise Rent-A-Car building on right, Ala Moana Boulevard in background; note the red spray paint indicating a subsurface utility southwest of the trench

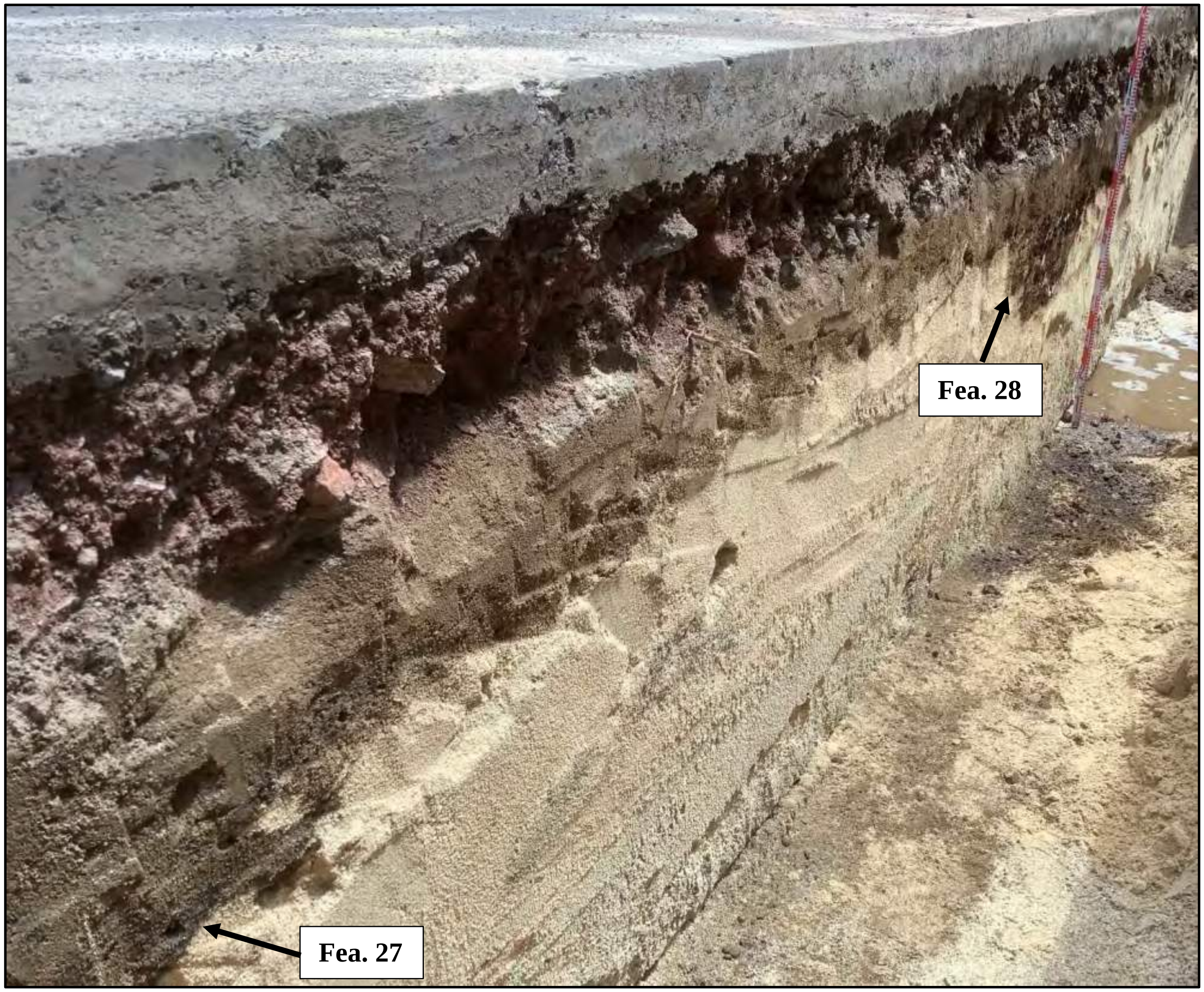


Figure 92. Profile view of T-5 northeast sidewall, view to east; SIHP # -2870 Features 27 and 28, pit features of indeterminate function, are visible

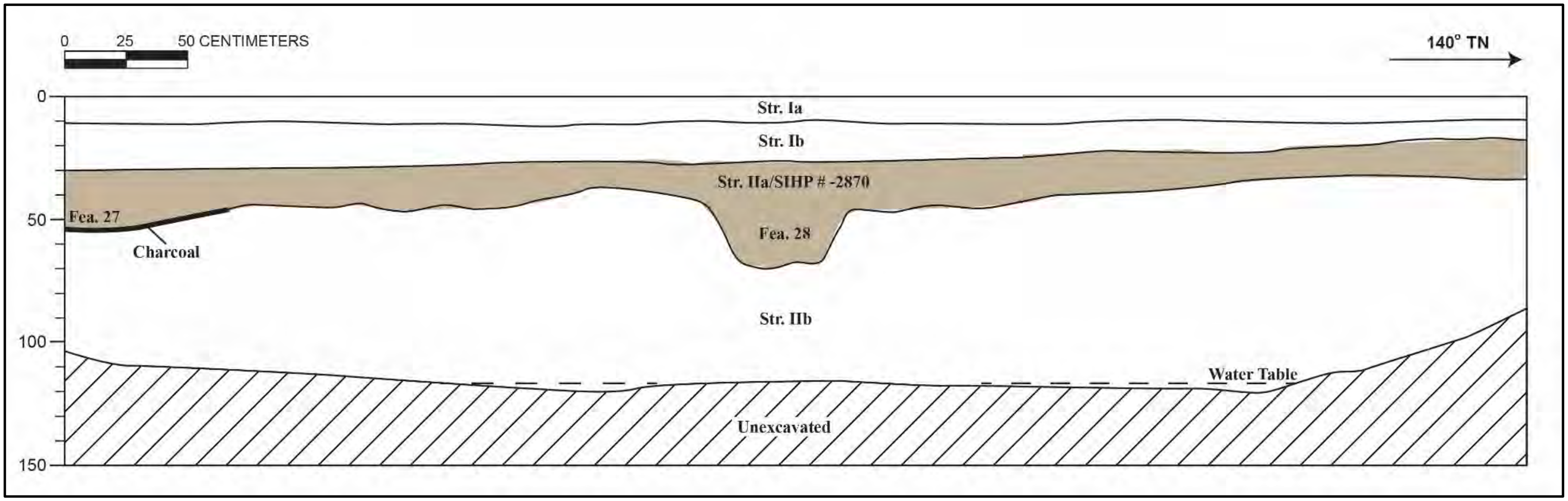


Figure 93. T-5 northeast wall profile

Table 7. T-5 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–12	Asphalt; current surface
Ib	10–30	Fill; 5YR 3/3, dark reddish brown; extremely gravelly silty clay loam; moderate, medium, granular structure; moist, friable consistence; plastic; no cementation; terrigenous origin; abrupt, smooth lower boundary; few fine to medium roots; imported fill containing basalt gravel
IIa/SIHP # -2870	17–46	Natural; 10YR 3/4, dark yellowish brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, irregular lower boundary; few fine to medium roots; A horizon containing marine shell, non-marine shell, sea urchin, crab shell, faunal bone (some burnt, some sawcut), metal (Acc. # 101), possible fabric (Acc. # 102), a concrete fragment (Acc. # 103), fire-affected coral (FAC) (Acc. # 104), glass (Acc. # 105), a bone button fragment (Acc. # 106), and two pit features (Feas. 27 and 28)
	45–58	Fea. 27; 10YR 3/1, very dark gray; gravelly loamy sand; pit feature of indeterminate function with a thin layer of charcoal along its base, containing basalt and coral gravel, marine shell, non-marine shell, sea urchin, faunal bone (some burnt), metal (Acc. # 107), a ceramic fragment (Acc. # 88), glass fragments (Acc. #s 108 and 109), and a glass seed bead (Acc. # 110)
	44–70	Fea. 28; 10YR 3/2, very dark grayish brown; gravelly loamy sand; pit feature of indeterminate function containing basalt gravel
IIb	32–118 (BOE)	Natural; 10YR 8/3, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

Figure 94. Plan view of the northwest end of T-5 at 48 cmbs showing SIHP # -2870 Feature 27, pit feature of indeterminate function

Figure 95. Close-up of the north corner of T-5 showing a profile view of SIHP # -2870 Feature 27, pit feature of indeterminate function, within the northeast sidewall and northwest endwall, view to north

Figure 96. Close-up of the central portion of T-5 northeast wall showing SIHP # -2870 Feature 28, pit feature of indeterminate function, view to east

Feature 28 measures 55 cm (northwest-southeast) by 26 cm (top-bottom). Its function is indeterminate.

No cultural materials were identified in the basal Stratum IIb Jaucas sand.

4.2.3.6 Test Excavation 6 (T-6)

Test Excavation 6 (T-6) is an exterior test excavation in the central-Diamond Head (southeast) portion of the Paradise Rent-A-Car lot at 1835 Ala Moana Boulevard (Figure 97). The length of T-6 was limited by a subsurface utility detected by toning at the southeast end of the planned trench location, as well as the need to maintain sufficient space for cars to drive northwest of the trench, as Paradise Rent-A-Car remained open for business during excavation (see Figure 97). The trench is oriented northwest-southeast and is 5.4 m in length by 0.7 m in width. It has a maximum depth of 122 cmbs, with the water table encountered at 118 cmbs. Like nearby T-5 and T-7, the ground surface in this location is approximately 30 cm below the level of Ala Moana Boulevard.

The documented stratigraphy comprises the current asphalt surface (Stratum Ia), extremely gravelly (basalt) sandy clay loam fill (Stratum Ib), extremely gravelly silty clay loam fill (Stratum Ic), a truncated pit feature (Stratum IIa; SIHP # -2870 Feature 29) at the truncated upper boundary of a loamy sand A horizon (Stratum IIb; SIHP # -2870), and Jaucas sand (Stratum IIc) (Figure 98, Figure 99, and Table 8). The Stratum Ib fill, which is intrusive into Strata Ic and IIb, contains concrete and asphalt fragments (not collected). Stratum Ic correlates with Stratum Ib in nearby T-5 and T-7.

Underlying Strata Ib and Ic in the east corner of the trench is a large area of disturbance that is intrusive through Strata IIb and IIc (Figure 100). This area comprises a mottled mixture of materials from Strata Ib–IIc within the northeast sidewall, southeast endwall, and trench floor, extending beyond the BOE. One pocket of A horizon material within the trench floor, between 60 and 70 cmbs, was initially documented as a possible feature before it was determined to be part of the disturbance (i.e., redeposited). Hence, it was excavated and wet-screened in the field, and the screened sample was collected. Although this is not an in situ feature, the materials within the sample likely originated within the Stratum IIb/SIHP # -2870 A horizon and can still provide potentially useful information. The sample contains an aqua glass bottle fragment (Acc. # 11), metal/slag (fragments too small to separate; Acc. # 12), charcoal, a basalt core (Acc. # 13), colorless glass bottle fragments (Acc. # 14), rusted ferrous metal objects (Acc. # 15), amber glass bottle fragments (Acc. # 16), large mammal bone (some burnt), marine shell (*B. crebristriatus*, *Cellana*, Cerithiidae, *C. bella*, Hipponicidae, *N. picea*, Turbinidae), basalt debitage (Acc. # 17), colorless glass fragments (Acc. # 18), small to medium mammal bone (some burnt), an olive glass bottle fragment (Acc. # 19), crab shell (Brachyura), fish bone (Osteichthyes; some burnt), sea urchin (Echinoidea), burnt *kukui* (*A moluccana*), and unidentified botanicals. In addition, a fire-affected basalt cobble with adhered ferrous metal fragment (Acc. # 4) was hand-collected from the deposit. The basalt debitage (Acc. # 17) and basalt core (Acc. # 13) are notable for being the only traditional-type artifacts identified during the AIS; however, based on the imported western materials within the sample, these traditional-type artifacts likely date to the post-Contact period.

Underlying Stratum Ib, within the southwest sidewall near the southeast end of the trench, is a pit feature that is intrusive into the Stratum IIb A horizon. As the upper boundaries of the pit feature and the A horizon both appear to be truncated, the feature is designated as Stratum IIa/SIHP # -2870 Feature 29. It is described below.

SIHP # -2870 Feature 29 is a pit feature documented near the southeast end of T-6 in the southwest sidewall (see Figure 99 through Figure 101); it was not identified in plan view. It is

Figure 97. Location of T-6, with Paradise Rent-A-Car building and Ala Moana Boulevard in background, view to northwest; note the pink spray paint indicating an electrical line just southeast of the trench

Figure 98. T-6 southwest sidewall, view to south

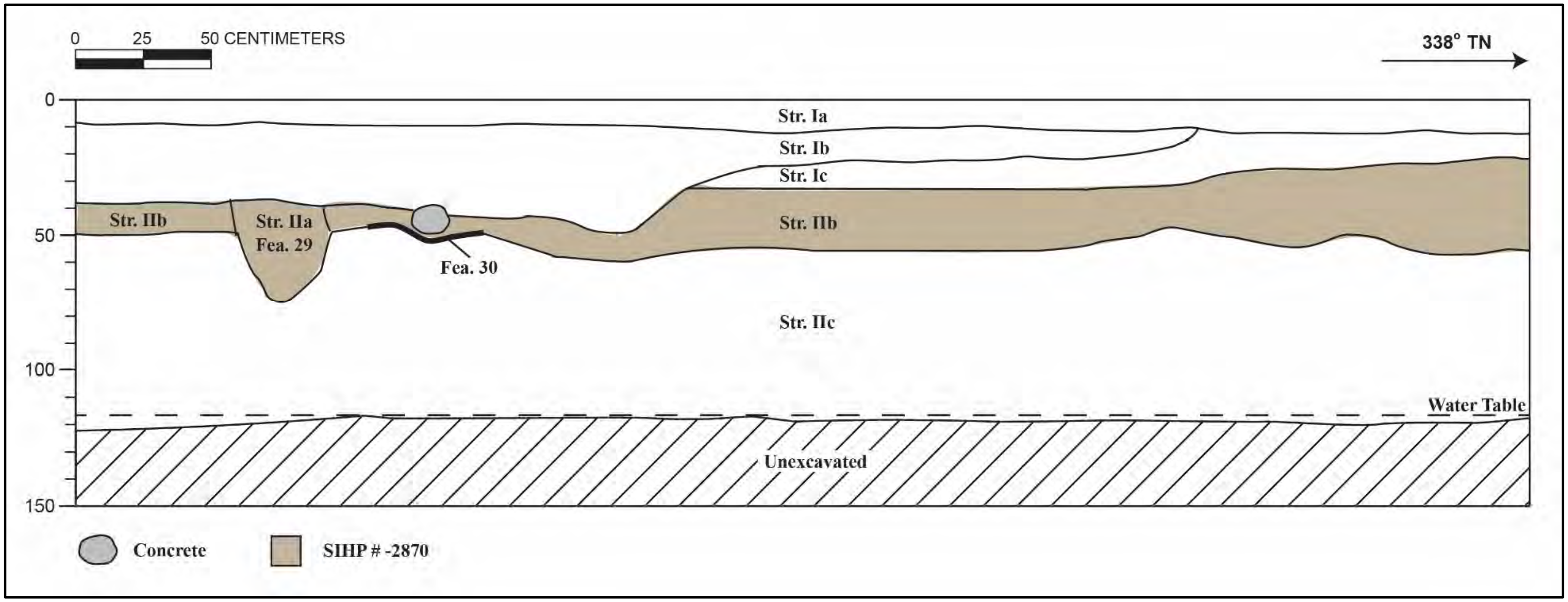


Figure 99. T-6 southwest wall profile

Table 8. T-6 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–11	Asphalt; current surface
Ib	8–49	Fill; 10YR 3/6, dark yellowish brown; extremely gravelly sandy clay loam; weak, fine, granular structure; moist, friable consistence; slightly plastic; no cementation; mixed origin; abrupt, broken lower boundary; few fine roots; imported fill containing basalt gravel
Ic	8–31	Fill; 2.5YR 2.5/3, dark reddish brown; extremely gravelly silty clay loam; moderate, medium, granular structure; moist, friable consistence; plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; few fine to medium roots; imported fill containing basalt gravel and asphalt and concrete fragments
IIa/SIHP # -2870	39–76	Fea. 29; 10YR 5/4, yellowish brown, mottled with 10YR 8/2, very pale brown; loamy sand; pit feature of indeterminate function with truncated upper boundary, contains marine shell, metal (Acc. #s 8 and 10), slag (Acc. # 9), faunal bone (some burnt), charcoal, crab shell, sea urchin, burnt *kukui*, and unidentified botanicals
IIb/SIHP # -2870	22–60	Natural; 10YR 5/4, yellowish brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; no roots observed; truncated A horizon containing slag (Acc. # 20), metal (Acc. # 21), marine shell, a bullet (Acc. # 22), faunal bone (some burnt, some sawcut), charcoal, a penny (Acc. # 23), glass (Acc. #s 24, 26, 28, and 30–32), plastic (Acc. #s 25 and 29), sea urchin, non-marine shell, ceramic (Acc. # 27), crab shell, and a charcoal lens (Fea. 30)
	47–53	Fea. 30; charcoal lens along the lower boundary of Str. IIb
IIc	48–122 (BOE)	Natural; 10YR 8/2, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; few fine to medium roots; Jaucas sand with gleyed lower portion

Figure 100. Southeast end of T-6 northeast sidewall, showing a large area of disturbance

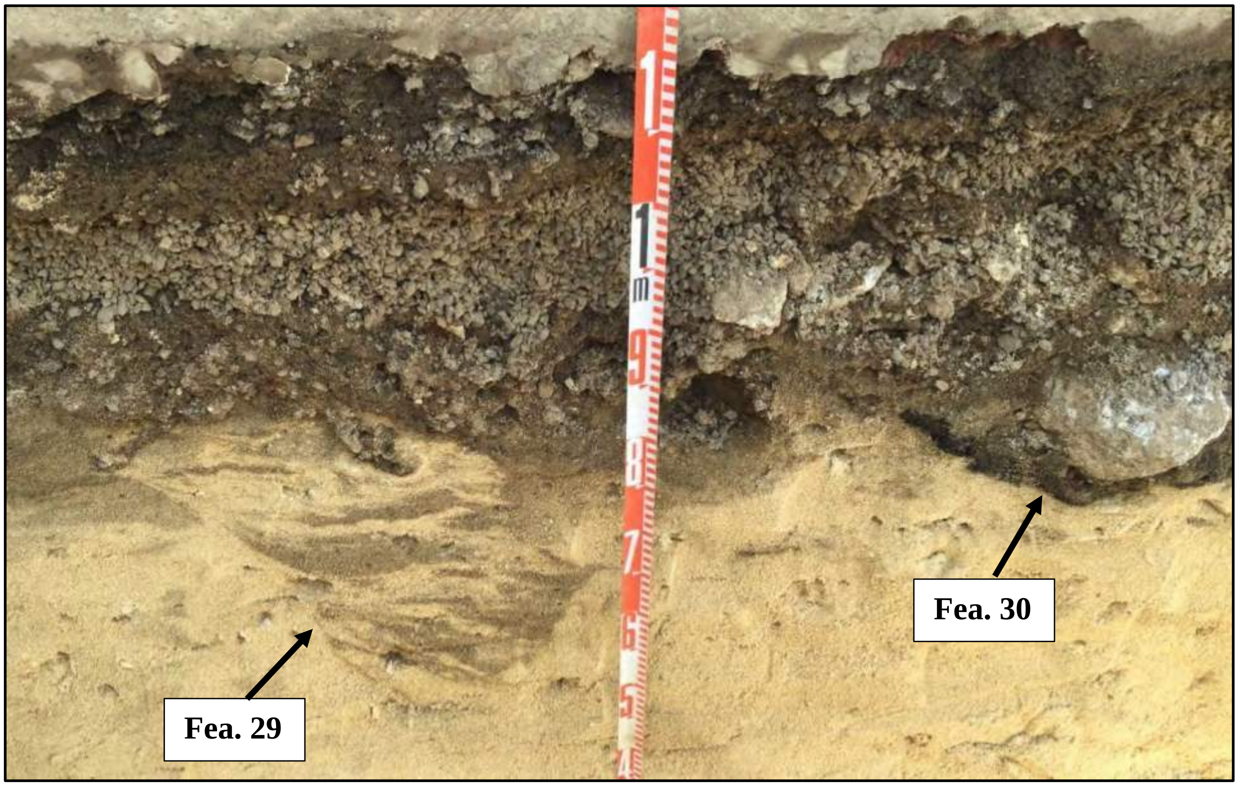


Figure 101. Southeast end of T-6 southwest sidewall showing Stratum IIa/SIHP # -2870 Feature 29, pit feature of indeterminate function, and Stratum IIb/SIHP # -2870 Feature 30, charcoal lens, view to southwest

intrusive into the Stratum IIb A horizon and terminates in the Stratum IIc Jaucas sand. This oblong feature was documented between 39 and 76 cmbs; its upper boundary, like the upper boundary of Stratum IIb, appears to be truncated. It measures 37 cm (top-bottom) by a maximum of 32 cm (northwest-southeast). The feature matrix comprises a mottled mixture of the Stratum IIb loamy sand A horizon and the Stratum IIc Jaucas sand. The feature extends at least 20 cm into the sidewall; it was not investigated fully into the sidewall to avoid destabilizing the wall. Approximately 75% of the feature (5 gals) was excavated from the sidewall and wet-screened in the field; the screened sample was collected. The sample contains marine shell (*B. crebristriatus*, *Cellana*, Cerithiidae, *Crepidula*, Hipponicidae, *N. picea*, Strombidae), rusted nails (Acc. # 8), metal/slag (fragments too small to separate; Acc. # 9), a metal decoration (Acc. # 10), fish bone (Osteichthyes), charcoal, small mammal bone, crab shell (Brachyura), medium to large mammal bone (burnt), sea urchin (Echinoidea), burnt *kukui* (*A. moluccana*), and unidentified botanicals. The function of this feature is indeterminate.

Both the upper and lower boundaries of the Stratum IIb/SIHP # -2870 A horizon are undulating, and the upper boundary is truncated by the overlying Strata Ib and Ic fills. A 5-gal sample of Stratum IIb was excavated from the trench floor, from 26–31 cmbs, and screened in the field; the screened sample was collected. The sample contains metal (Acc. # 21), slag (Acc. # 20), marine shell (Cerithiidae, *Crepidula*, *C. bella*, Hipponicidae, *N. picea*, Strombidae, Trochidae), a bullet (Acc. # 22), large mammal bone (some burnt, some sawcut), charcoal, a 1947 penny (Acc. # 23), an aqua glass fragment (Acc. # 24), a red plastic fragment (Acc. # 25), sea urchin (Echinoidea), small to medium mammal bone (some burnt), colorless glass fragments (Acc. # 26), non-marine shell (*Neripteron vespertinum*, *Neritina neglecta*), a whiteware fragment (Acc. # 27), a milk glass fragment (Acc. # 28), fish bone (Osteichthyes), crab shell (Brachyura), an orange plastic fragment (Acc. # 29), an amber glass fragment (Acc. # 30), olive glass fragments (Acc. # 31), and red glass fragments (Acc. # 32). Faunal bone from Stratum IIb (from spoils) was also collected and identified as pig (*S. scrofa*), bird (Aves), and sawcut cow (*B. taurus*) bone. In addition, a yellowware plate fragment and a milk glass jar fragment from Stratum IIb (from spoils) were photographed and described. The 1947 penny indicates mid-twentieth century use of, or disturbance to, the Stratum IIb/SIHP # -2870 A horizon. It also suggests Feature 29 dates post-1947.

A charcoal lens was identified along the lower boundary of Stratum IIb near the southeast end of the southwest sidewall and designated as SIHP # -2870 Feature 30; it is described below.

SIHP # -2870 Feature 30 is a charcoal lens documented near the southeast end of the T-6 southwest sidewall, approximately 15 cm northwest of SIHP # -2870 Feature 29; it was not documented in plan view. Feature 30 was documented between 47 and 53 cmbs, along the lower boundary of the Stratum IIb/SIHP # -2870 A horizon, and is approximately 3 cm thick (see Figure 98 and Figure 101). It measures 44 cm across (southeast-northwest). Overlying Feature 30, at the interface of the Stratum Ib fill and the Stratum IIb/SIHP # -2870 A horizon, is a piece of concrete approximately 15 cm in diameter. A sample of the Feature 30 charcoal was collected from the southwest sidewall, between 49 and 52 cmbs.

No cultural materials or features were identified in the basal Stratum IIc Jaucas sand; its lower portions were gleyed.

4.2.3.7 Test Excavation 7 (T-7)

Test Excavation 7 (T-7) is an exterior test excavation in the east corner of the Paradise Rent-A-Car lot at 1837 Ala Moana Boulevard (Figure 102). The trench is oriented northwest-southeast and is 6 m in length by 0.7 m in width. It has a maximum depth of 122 cmbs, with the water table encountered at 120 cmbs. As in nearby T-5 and T-6, this location is approximately 30 cm below the level of Ala Moana Boulevard.

The documented stratigraphy comprises the current asphalt parking surface (Stratum Ia), extremely gravelly (basalt) silty clay loam fill (Stratum Ib), extremely gravelly (basalt) sandy clay loam fill (Stratum Ic), basalt gravel fill containing no soil/sediment (Stratum Id), and Jaucas sand (Stratum II) (Figure 104 through Figure 106). Stratum Ib correlates with Stratum Ib in T-5 and Stratum Ic in T-6, although the layer is thicker in this trench. The Stratum II Jaucas sand was documented only in the southeast endwall (see Figure 105 and Figure 106), indicating the layer was removed during deposition of the Stratum Id fill in the remainder of the trench. The upper boundary of Stratum II appears disturbed, while its lower portion is gleyed. No historic properties were identified in T-7.

Figure 102. Location of T-7, view to west; Paradise Rent-A-Car building (right) and KPop Donuts Hawaii (left) in background; note the subsurface utility (pink spray paint) indicated northwest of the trench

Figure 103. Profile view of T-7 northeast sidewall and southeast endwall, view to east; note the disturbed Jaucas sand (Stratum II) in the southeast wall (see Figure 105 for a close-up of the southeast endwall)

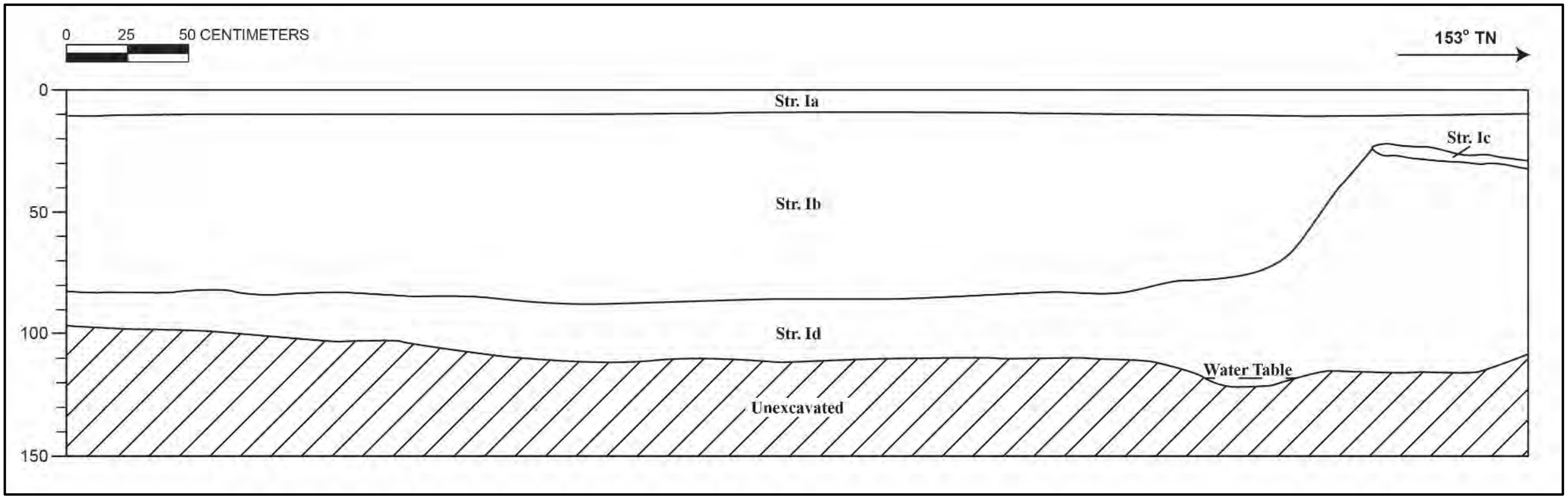


Figure 104. T-7 northeast wall profile

Figure 105. Profile view of T-7 southeast endwall, view to southeast

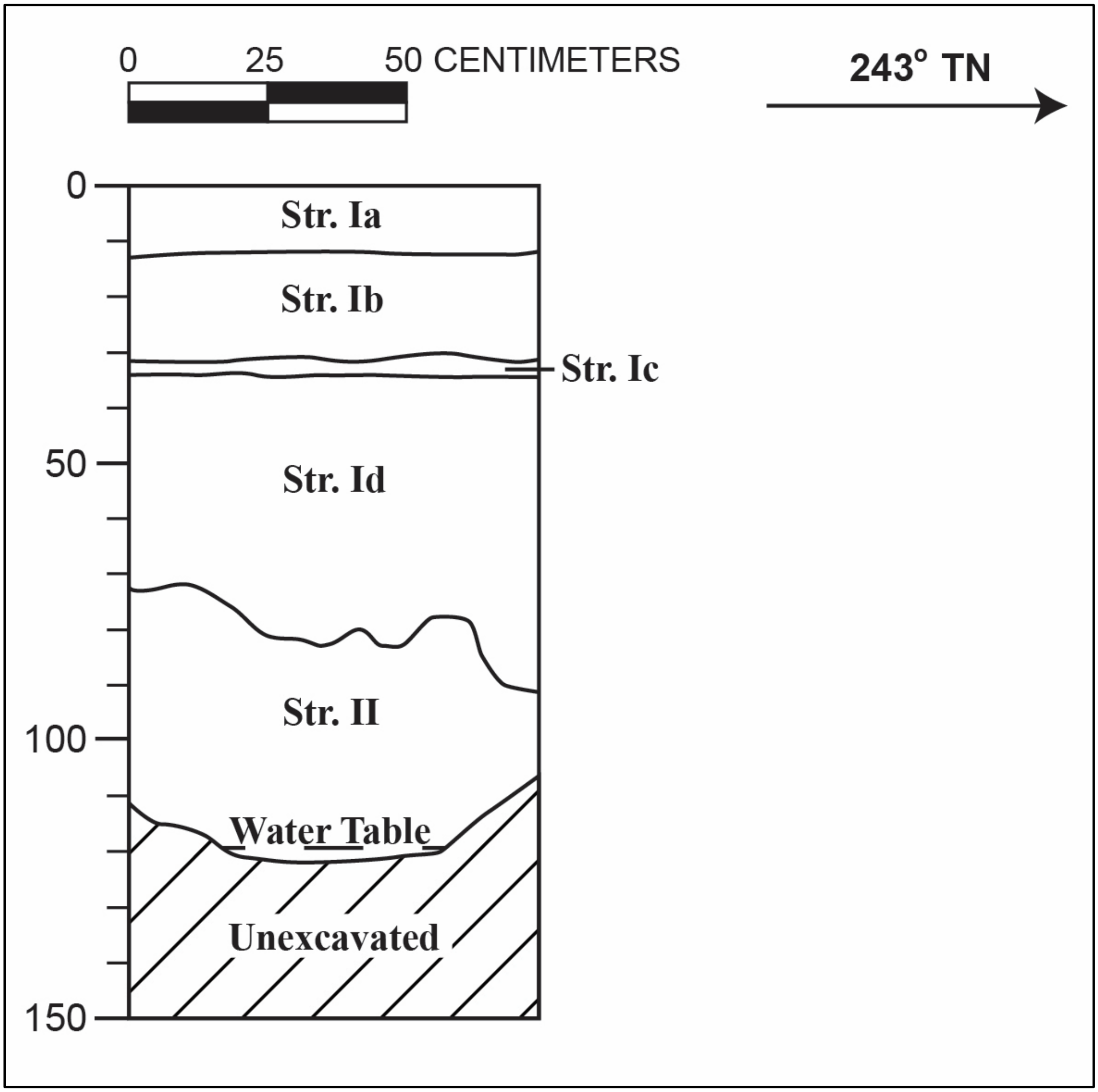


Figure 106. T-7 southeast endwall profile

Table 9. T-7 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–12	Asphalt; current surface
Ib	10–86	Fill; 2.5YR 2.5/3, dark reddish brown; extremely gravelly silty clay loam; moderate, medium, granular structure; moist, friable consistence; plastic; no cementation; terrigenous origin; abrupt, irregular lower boundary; few fine to medium roots; imported fill containing basalt gravel
Ic	23–33	Fill; 10YR 3/6, dark yellowish brown; extremely gravelly sandy clay loam; weak, fine, granular structure; moist, friable consistence; slightly plastic; no cementation; mixed origin; abrupt, broken lower boundary; few fine roots; imported fill containing basalt gravel
Id	24–122* (BOE)	Fill; basalt gravel; lower boundary not observed; few fine roots
II**	72–122 (BOE)	Natural; 10YR 8/2, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; few fine to medium roots; Jaucas sand with disturbed upper portion and gleyed lower portion

*Stratum Id lower boundary distinctness and depth as documented in the northeast sidewall; in the southeast endwall, the lower boundary is abrupt and irregular, with a maximum depth of 92 cmbs

**Stratum II was documented only in the southeast endwall

4.2.3.8 Test Excavation 8 (T-8)

Test Excavation 8 (T-8) is an exterior test excavation in the landscaped area just *mauka* (northeast) of the fire lane *mauka* of Kobe Steakhouse (Figure 107). The length of the trench was limited by subsurface utilities detected through toning at both ends of the planned trench location, as well as large trees in the immediate vicinity. Furthermore, at the beginning of excavation, a utility not detected by toning—a large PVC water line—was encountered at 65 cmbs within the *makai* (southwest) portion of the trench at its northwest end. As the water line appeared to extend along the entire length of the trench, the area was backfilled, and the trench was shifted approximately 60 cm *mauka* (northeast) (Figure 108). The excavated trench is oriented northwest-southeast and is 4.5 m in length by 0.8 m in width. It has a maximum depth of 218 cmbd, with the water table encountered at 214 cmbd. Note this landscaped area is approximately 15–20 cm above street level. As the process of excavating the trench caused disturbance to the ground surface, subsurface measurements were taken from a datum 25 cm above street level.

The documented stratigraphy comprises gravelly (basalt) silty clay loam landscaping fill (Stratum Ia), extremely gravelly (basalt) silt loam fill (Stratum Ib), very gravelly loamy sand mixed crushed coral fill (Stratum Ic), extremely gravelly (basalt) loamy sand fill (Stratum Id), a buried asphalt layer (Stratum Ie; SIHP # -9157 Feature 6), gravelly (basalt and coral) sandy loam fill (Stratum If), loamy sand fill with associated pit features (Stratum Ig; SIHP # -2870), silty clay loam fill (Stratum Ih), loamy sand fill (Stratum Ii), a loamy sand A horizon with associated pit features (Stratum IIa; SIHP # -2870), and Jaucas sand (Stratum IIb) (Figure 109 through Figure 123 and Table 10).

The Stratum Ie buried asphalt layer is designated as SIHP # -9157 Feature 6. It is described below.

SIHP # -9157 Feature 6 is a buried asphalt layer (Stratum Ie) documented in both sidewalls and the southeast endwall of T-8 (see Figure 109, Figure 110, Figure 113, Figure 114, Figure 117, Figure 121, Figure 123, and Figure 124); it was absent from the northwest end of the trench. The exposed portion of the feature is approximately 2.5 m long by 0.8 m wide, giving it a horizontal extent of 2 sq m. Stratum Ie/Feature 6 is approximately 10 cm thick and was documented between 47 and 65 cmbd. A review of aerial photographs indicates this location was asphalt-paved sometime between 1954 and 1966 (see Figure 35 and Figure 37), suggesting Stratum Ie/Feature 6 dates to that time period. However, asphalt fragments identified in the underlying Stratum If fill suggest Feature 6 does not represent the earliest paving of this location.

The Stratum If fill contains basalt and coral gravel, basalt cobbles, bricks and brick fragments (see Figure 118), asphalt fragments, and two metal utility pipes—an abandoned utility protruding from the northeast sidewall, and a potentially active utility extending across the width of the trench into both sidewalls (see Figure 113 and Figure 117). A brick (Acc. # 6) was collected from Stratum If within the northwest endwall, and a brick fragment (Acc. # 7) from Stratum If was collected from the spoils pile; both appear to be handmade. In addition, a fire-affected basalt cobble (Acc. # 5) from Stratum If was collected from the spoils pile. Cow (*B. taurus*) and small to medium mammal bone were also collected from the spoils pile; however, it is unclear from which fill deposit they originate.

Figure 107. Initial location of T-8 before it was shifted *mauka*, view to southeast; Ala Moana Boulevard in background

Figure 108. Excavated location of T-8 in relation to planned location (outlined in white), which was backfilled and abandoned shortly after excavation began due to the presence of a water line, view to northeast

Figure 109. Profile view of T-8 northeast sidewall and northwest endwall at approximately 140 cmbd, view to north; Stratum Ie/SIHP # -9157 Feature 6, buried asphalt layer, is indicated with a red arrow

Figure 110. Profile view of T-8 northeast sidewall and southeast endwall at approximately 140 cmbd, view to east; Stratum Ie/SIHP # -9157 Feature 6, buried asphalt layer, is indicated with a red arrow

Figure 111. Profile view of base of east corner of T-8, showing Stratum Ig/SIHP # -2870 Feature 31 and Stratum IIa/SIHP # -2870 Features 38, 45, and 40, view to east

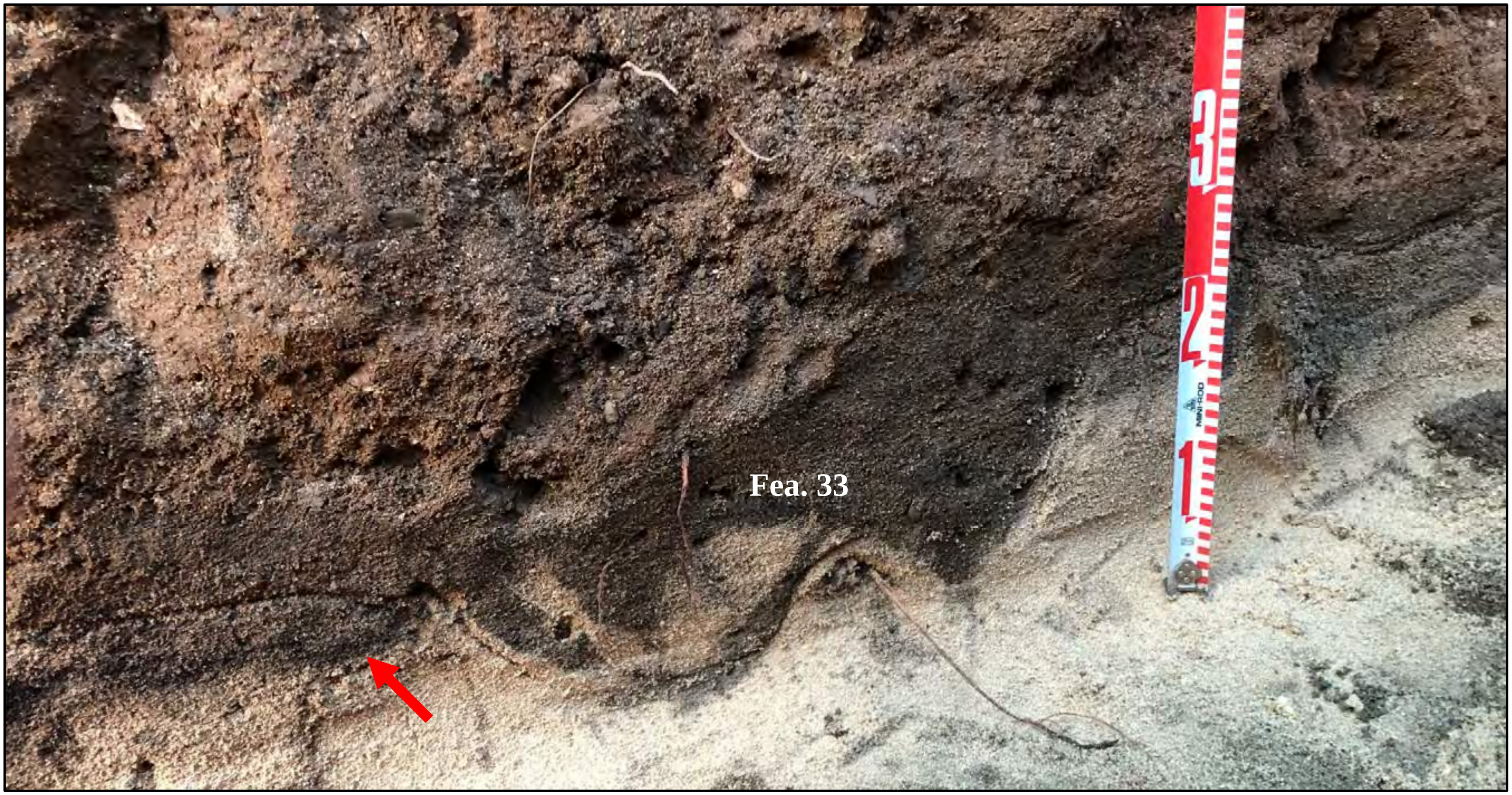


Figure 112. Close-up profile view of a portion of the T-8 northeast sidewall, showing Stratum Ig/SIHP # -2870 Feature 33 and Stratum IIa/SIHP # -2870 Feature 43 (charcoal lens, indicated with red arrow)

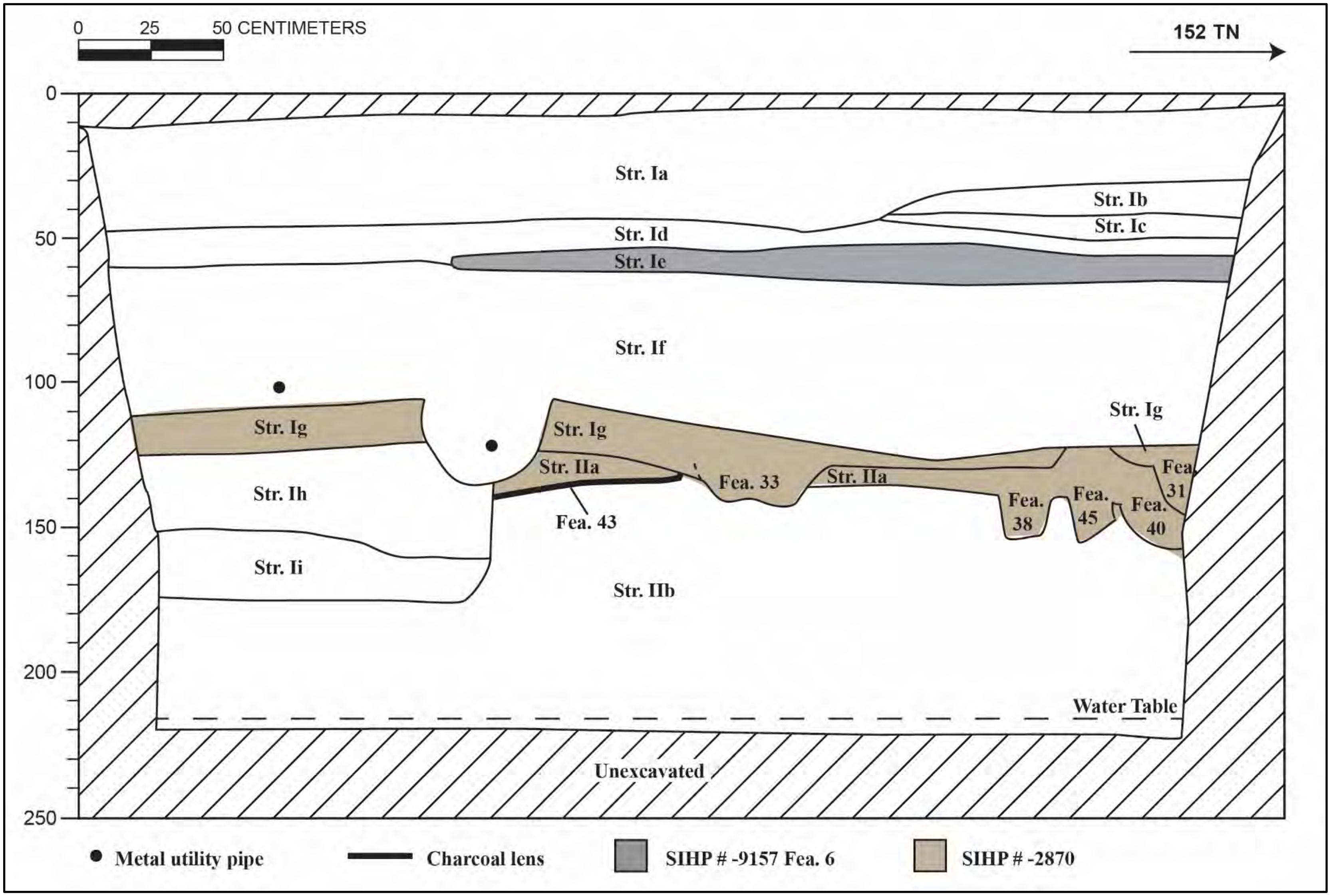


Figure 113. T-8 northeast wall profile

Figure 114. Profile view of T-8 southwest sidewall at approximately 140 cmbd, view to east; Stratum Ie/SIHP # -9157 Feature 6, buried asphalt layer, is indicated with a red arrow

Figure 115. Profile view of the base of T-8 southwest sidewall, showing Stratum IIa/SIHP # -2870 Feature 36, view to south

Figure 116. Profile view of T-8 west corner at approximately 170 cmbd, showing Stratum IIa/SIHP # -2870 Feature 32

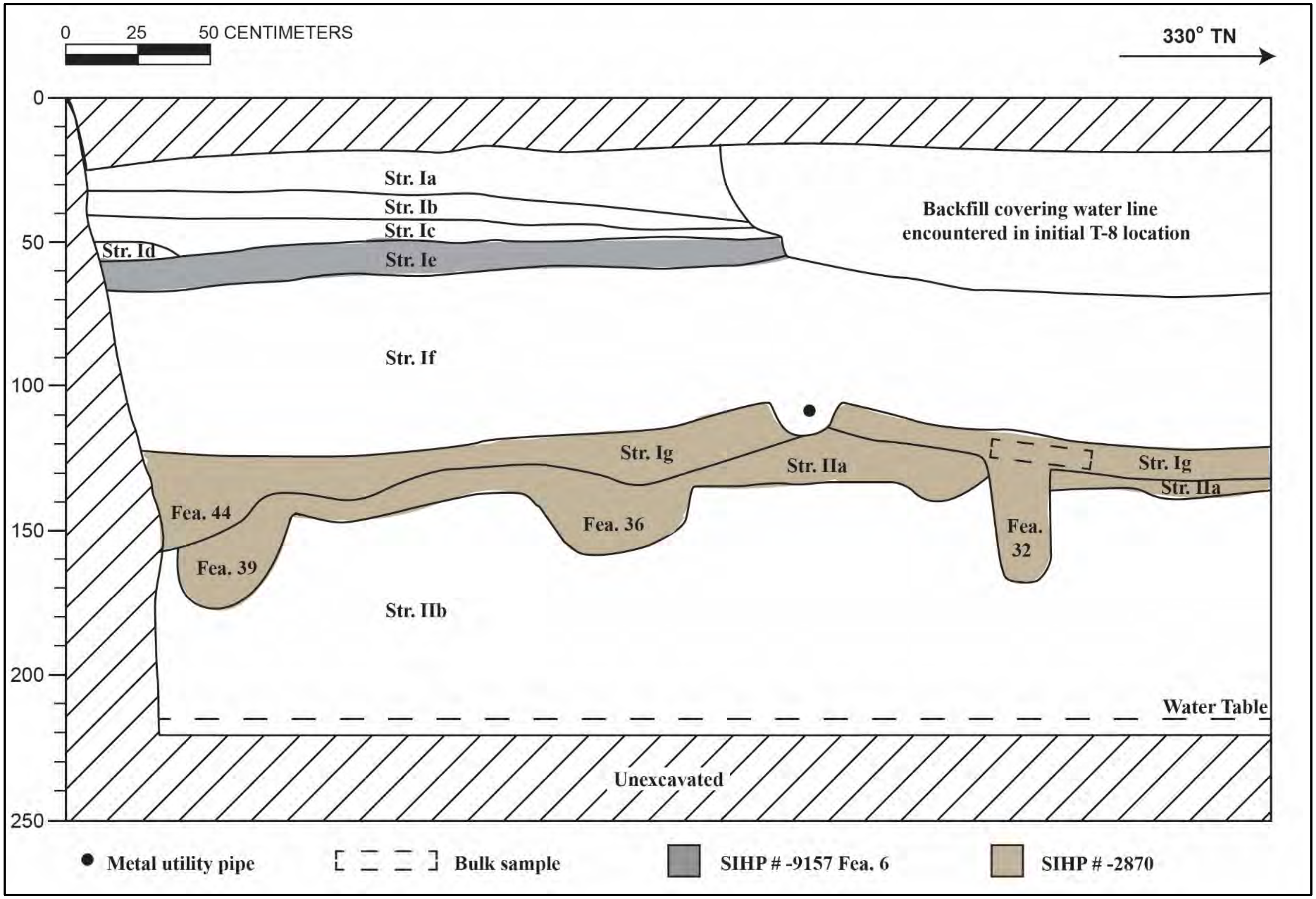


Figure 117. T-8 southwest wall profile

Figure 118. Profile view of T-8 northwest endwall at approximately 140 cmbd, view to northwest; note the brick within Stratum If

Figure 119. Profile view of the base of T-8 northwest endwall, showing Strata If–IIb, view to northwest

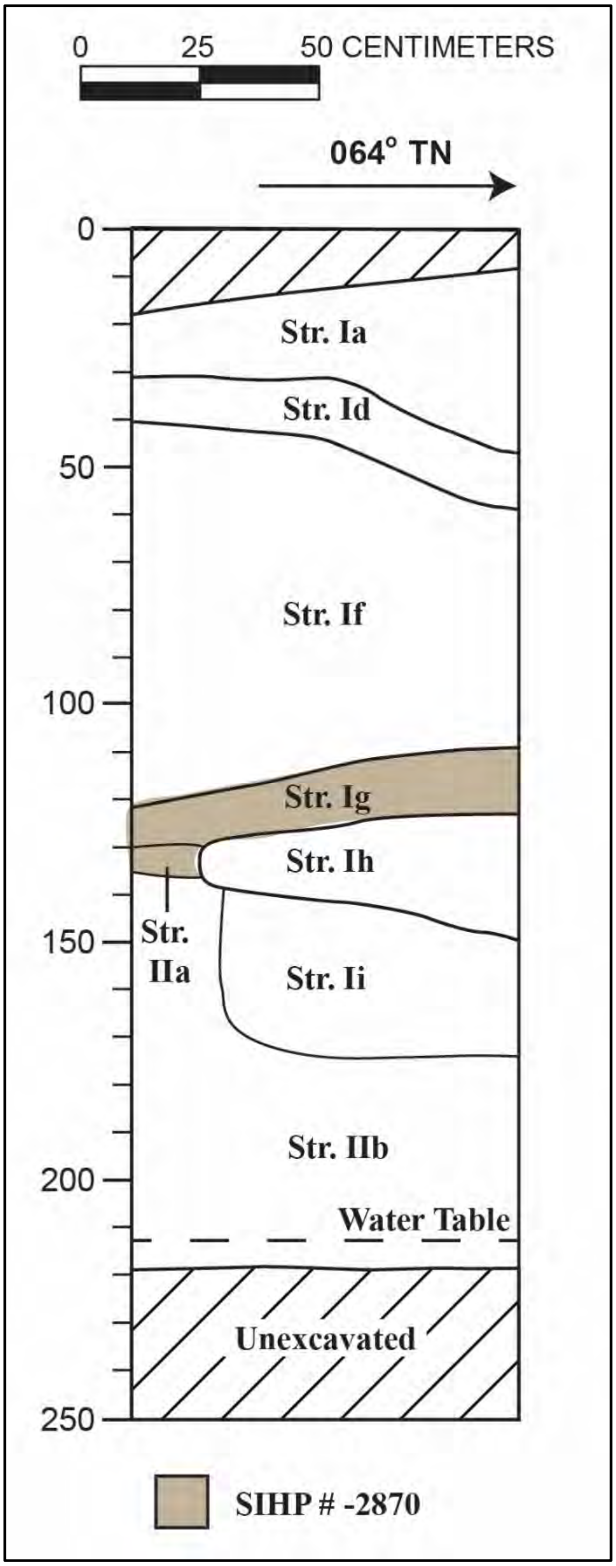


Figure 120. T-8 northwest wall profile

Figure 121. Profile view of T-8 southeast endwall at approximately 140 cmbd, view to southeast; Stratum Ie/SIHP # -9157 Feature 6, buried asphalt layer, is indicated with a red arrow

Figure 122. Profile view of the base of T-8 southeast endwall, showing Stratum Ig/SIHP # -2870 Features 31 and 44 and Stratum IIa/SIHP # -2870 Feature 40, view to southeast

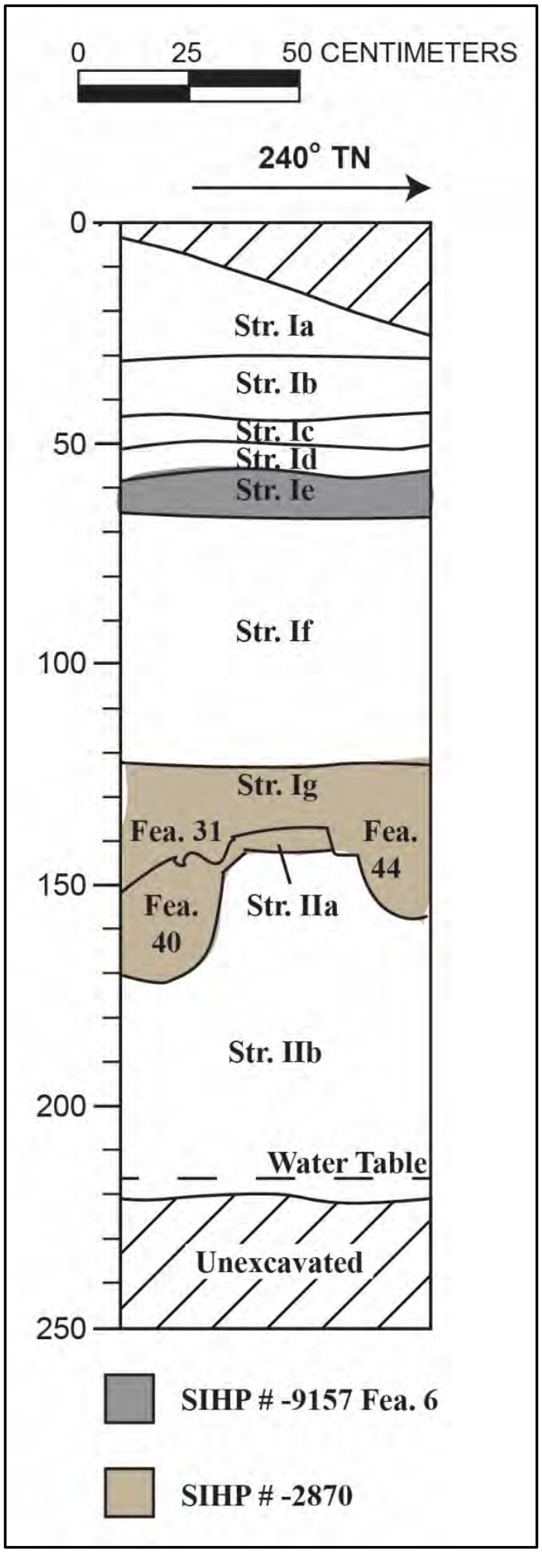


Figure 123. T-8 southeast endwall profile

Table 10. T-8 stratigraphic description

Stratum	Depth (cmbd)	Description
Ia	5–48	Fill; 7.5YR 3/2, dark brown; gravelly silty clay loam; moderate, fine, blocky structure; moist, friable consistence; plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; common fine to coarse roots; landscaping fill containing basalt gravel
Ib	30–45	Fill; 10YR 3/1, very dark gray; extremely gravelly silt loam; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; few medium roots; imported fill containing basalt gravel
Ic	40–50	Fill; 10YR 7/4, very pale brown; very gravelly loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; mixed crushed coral fill
Id	33–60	Fill; 10YR 3/1, very dark gray; extremely gravelly loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; no roots observed; imported fill containing basalt gravel
Ie/SIHP # -9157 Fea. 6	47–65	Asphalt; buried surface
If	60–125	Fill; 10YR 4/2, dark grayish brown; sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, irregular lower boundary; few fine roots; fill containing locally available sandy material, basalt and coral gravel, asphalt fragments, bricks and brick fragments (Acc. #s 6 and 7), FAR (Acc. # 5), and abandoned and potentially active utility pipes
Ig/SIHP # -2870	105–133	Fill; 10YR 3/3, dark brown; loamy sand; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; few fine roots; fill composed of locally available sandy material containing pit features (Feas. 31–33, and 44), marine shell, charcoal, faunal bone, unidentified botanicals, and crab shell
	132–152	Fea. 31; 10YR 3/3, dark brown; loamy sand; pit feature, interpreted as a bird burial, containing the skeletal remains of a bird and potentially marine shell, non-marine shell, metal, slag (Acc. # 33), fish bone, crab shell, sea urchin, and/or charcoal (material from Feas. 31 and 44 inadvertently screened together)

Stratum	Depth (cmbd)	Description
Ig/SIHP # -2870 cont.	128–192	Fea. 32; 10YR 3/3, dark brown; loamy sand; pit feature, likely post mold, containing metal, slag (Acc. # 34), marine shell, crab shell, charcoal, faunal bone (some burnt), sea urchin, and glass (Acc. # 35)
	128–143	Fea. 33; 10YR 3/3, dark brown; loamy sand; pit feature of indeterminate function containing metal, slag (Acc. # 36), glass (Acc. # 37), charcoal, and marine shell
	133–160	Fea. 44; 10YR 3/3, dark brown; loamy sand; pit feature of indeterminate function potentially containing marine shell, non-marine shell, metal, slag (Acc. # 33), faunal bone, crab shell, sea urchin, and/or charcoal (material from Feas. 31 and 44 inadvertently screened together)
Ih	120–160	Fill; 7.5YR 3/3/, dark brown; silty clay loam; moderate, medium, blocky structure; moist, friable consistence; plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; no roots observed; imported fill
Ii	148–172	Fill; 10YR 3/2, very dark grayish brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; fill composed of redeposited A horizon material containing marine shell, charcoal, non-marine shell, a brass button (Acc. # 39), sea urchin, crab shell, faunal bone (some burnt), glass fragments (Acc. #s 40 and 42), a pearl shell button (Acc. # 41), burnt *kukui*, slag (Acc. # 38), and a glass seed bead (Acc. # 43)
IIa/SIHP # -2870	115–138	Natural; 10YR 3/2, very dark grayish brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, broken lower boundary; few fine roots; truncated A horizon with associated features (Feas. 34–40, 43, and 45) containing marine shell, non-marine shell, charcoal, plastic (Acc. # 57), glass (Acc. # 58), crab shell, burnt *kukui*, sea urchin, and faunal bone
	137–173	Fea. 34; 10YR 3/2, very dark grayish brown; loamy sand; pit feature of indeterminate function containing marine shell, metal (Acc. # 44), non-marine shell, crab shell, charcoal, and faunal bone (some burnt)
	128–155	Fea. 35; 10YR 3/2, very dark grayish brown; loamy sand; pit feature of indeterminate function containing FAR (Acc. # 45), FAC (Acc. # 46), marine shell, non-marine shell, faunal bone, charcoal, sea urchin, and crab shell
	138–158	Fea. 36; 10YR 3/2, very dark grayish brown; loamy sand; pit feature of indeterminate function containing FAR (Acc. # 47), FAC (Acc. # 48), marine shell, non-marine shell, crab shell, charcoal, sea urchin, faunal bone, metal, and slag (Acc. # 49)

Stratum	Depth (cmbd)	Description
IIa/SIHP # -2870 cont.	141–150	Fea. 37; 10YR 3/2, very dark grayish brown; loamy sand; pit feature, likely post mold, containing marine shell, non-marine shell, and charcoal
	140–153	Fea. 38; 10YR 3/2, very dark grayish brown; loamy sand; pit feature of indeterminate function containing FAR (Acc. # 50), FAC (Acc. # 51), marine shell, non-marine shell, charcoal, faunal bone, and burnt *kukui*
	143–177	Fea. 39; 10YR 3/2, very dark grayish brown; loamy sand; pit feature of indeterminate function containing marine shell, faunal bone (some burnt), FAC (Acc. # 52), crab shell, charcoal, and glass (Acc. # 53)
	144–172	Fea. 40; 10YR 3/2, very dark grayish brown; loamy sand; pit feature of indeterminate function containing marine shell, non-marine shell, crab shell, faunal bone, copper wire (Acc. # 54), and slag (Acc. # 55)
	132–141	Fea. 43; charcoal lens
	138–156	Fea. 45; pit feature of indeterminate function
IIb	130–220 (BOE)	Natural; 10YR 6/3, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

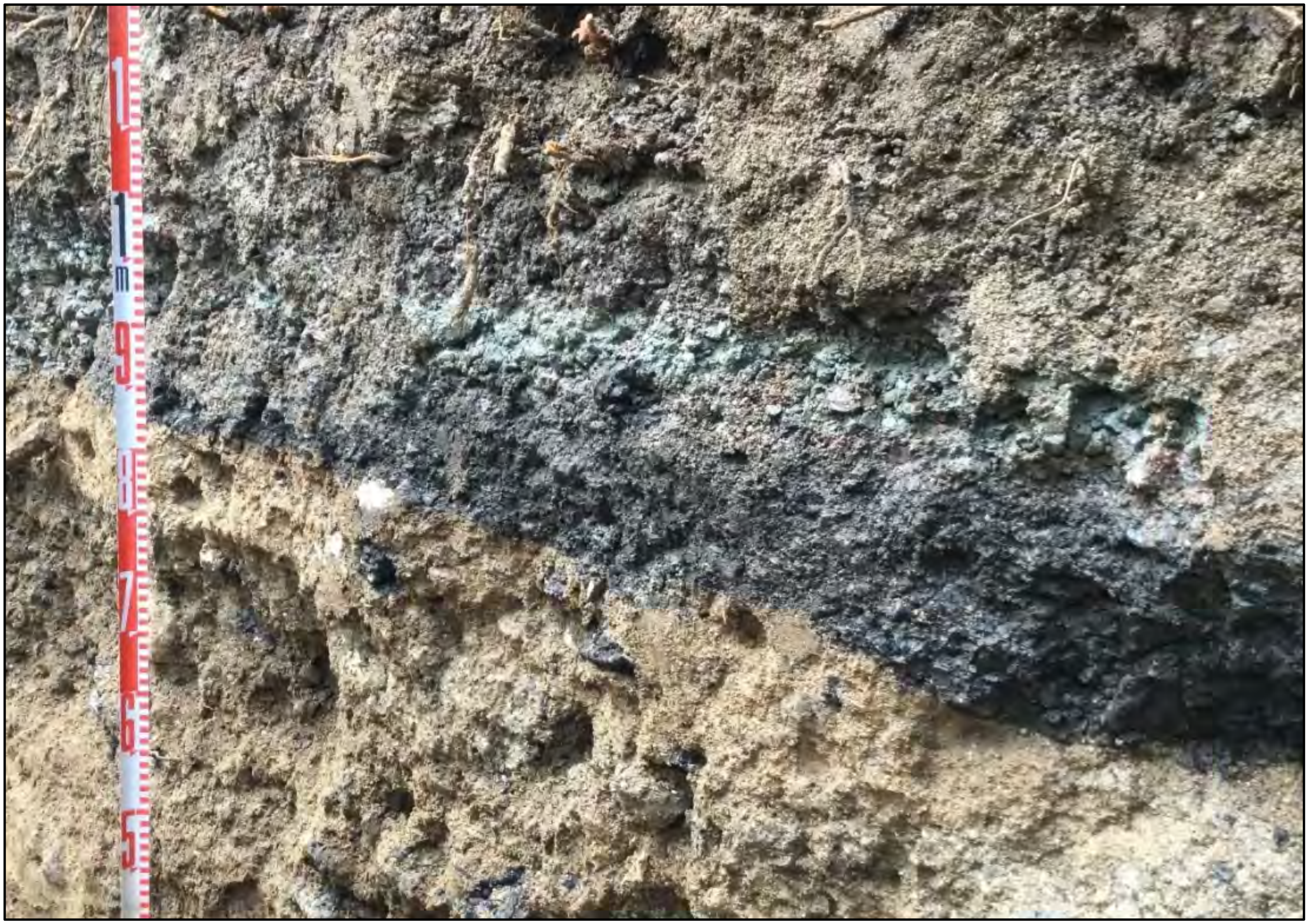


Figure 124. Close-up profile view of T-8 northeast wall, showing the Stratum Ie/SIHP # -9157 Feature 6 buried asphalt layer, view to north

Figure 125. Plan view of T-8 at 128–144 cmbd; see Figure 126 and Figure 127 below for a close-up view of the northwestern and southeastern halves of the trench, respectively, with features and strata labelled

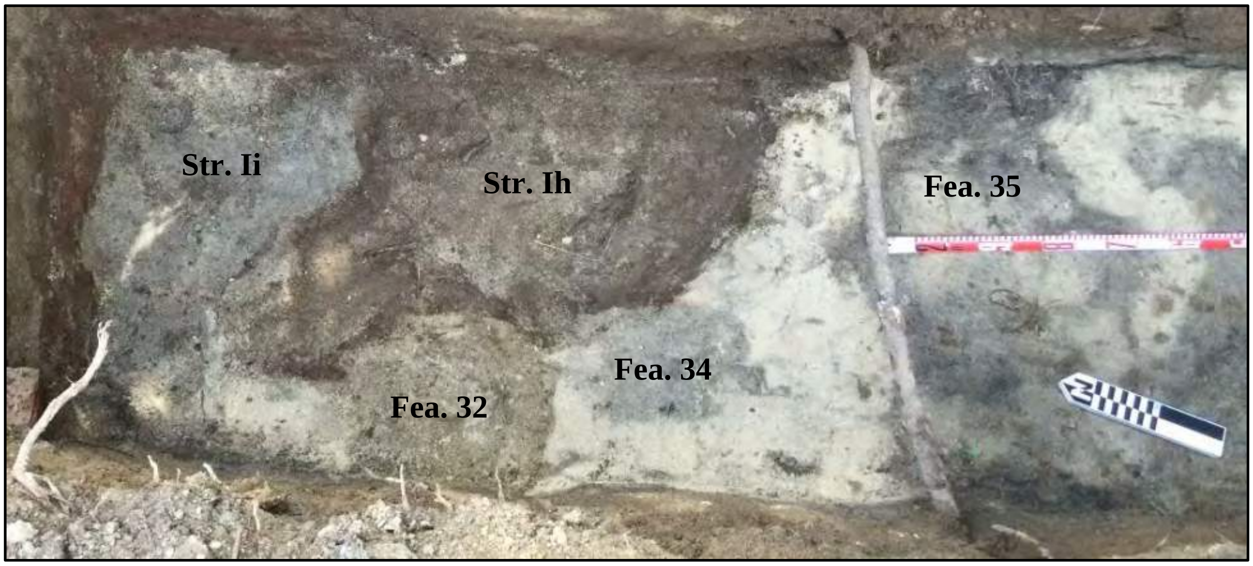


Figure 126. Plan view of the northwest end of T-8 at 128–144 cmbd, showing Stratum Ig/SIHP # -2870 Feature 32 and Stratum IIa/SIHP # -2870 Features 34–35

Figure 127. Plan view of the southeast end of T-8 at 128–144 cmbd, showing Stratum Ig/SIHP # -2870 Features 31 and 44 and Stratum IIa/SIHP # -2870 Features 36–40

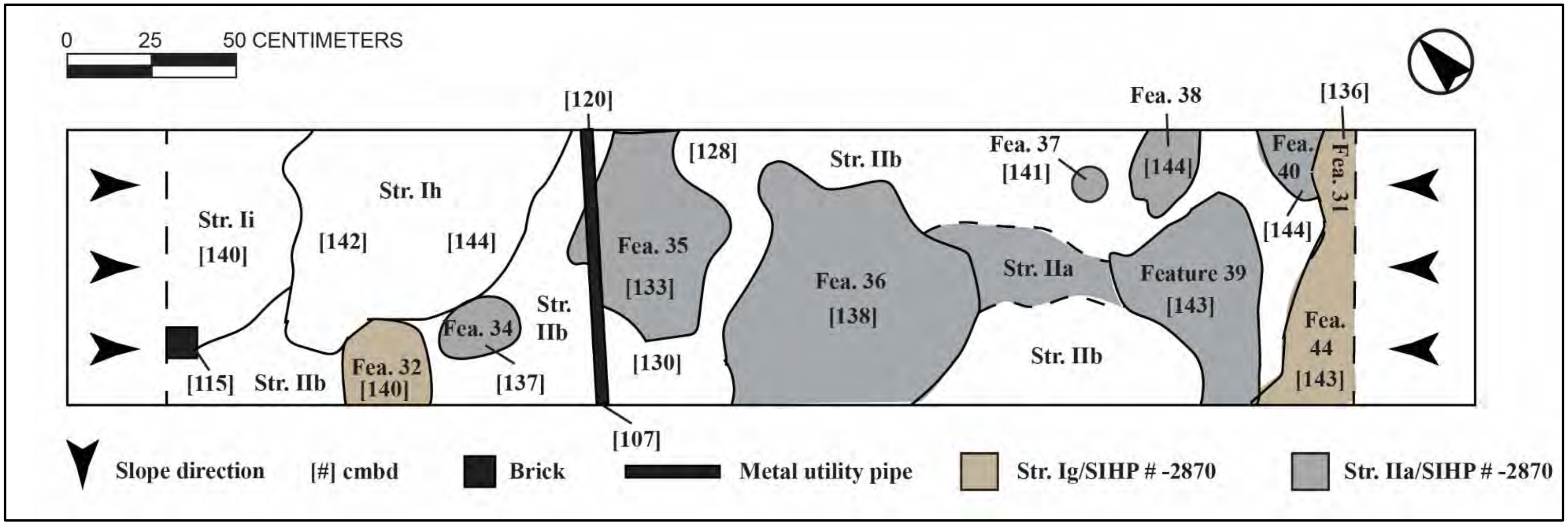


Figure 128. T-8 plan map at 128–144 cmbd; note the brick (Acc. # 6) is protruding from Stratum If in the northwest endwall

Underlying Stratum If is a fill composed of locally available sandy material, Stratum Ig. The Stratum Ig matrix is similar to the underlying Stratum IIa A horizon; however, there are slight differences in both color (dark brown for Stratum Ig compared with very dark grayish brown for Stratum IIa) and soil structure size (fine for Stratum Ig compared with very fine for Stratum IIa). Four pit features were identified as originating within Stratum Ig, indicating it functioned as a land surface for a period of time (see Figure 111, Figure 113, Figure 117, Figure 122, Figure 123, Figure 127, and Figure 128); hence, it is designated as part of SIHP # -2870. A 1-liter (1-L) bulk sample was collected from Stratum Ig in the southwest sidewall, from 115–126 cmbs (see Figure 117). The sample contains metal/slag (fragments too small to be separated; Acc. # 36), a colorless glass fragment (Acc. # 37), charcoal, and marine shell (*B. crebristriatus*, Hipponicidae).

Stratum Ig truncates the upper boundary of the underlying Stratum IIa A horizon and has completely removed Stratum IIa in some parts of the trench (see Figure 113, Figure 117, Figure 120, and Figure 123). Stratum Ig was documented in all four excavation walls and extends for an unknown distance beyond all four walls. A post-1940 artifact (Acc. # 57) in the underlying Stratum IIa indicates T-8 Stratum Ig dates post-1940. As the location was paved sometime between 1954 and 1966, Stratum Ig served as a habitation layer for a relatively short period of time. A review of historical maps suggests Stratum Ig and its features may be associated with a nearby dwelling (“D”) depicted on the 1950 Sanborn Map Company fire insurance map (see Figure 34). SIHP # -2870 Features 31–33 and 44 and are described below.

SIHP # -2870 Feature 31 is an irregularly shaped pit feature containing the skeletal remains of a bird (see Figure 111, Figure 113, Figure 122, Figure 123, Figure 125, Figure 127, and Figure 128). It was documented between 132 and 152 cmbd at the east corner of T-8, within the southeast endwall, northeast sidewall, and trench floor. It measures 25 cm long (northeast-southwest) by 20 cm wide (northwest-southeast) and 20 cm thick (top-bottom). It originates in the Stratum Ig/SIHP # -2870 fill and is intrusive into underlying SIHP # -2870 Feature 40, which is part of Stratum IIa. Initially, this feature and Feature 44 (discussed below) were documented as a single feature in plan view. Hence, both features (approximately 4 gals) were collectively excavated from the trench floor, and the material was screened; the screened sample was collected. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), non-marine shell (*Melampus*, *N. vespertinum*, *N. neglecta*), metal/slag (fragments too small to separate; Acc. # 33), fish bone (Osteichthyes), bird bone (Aves), crab shell (Brachyura), sea urchin (Echinoidea), and charcoal. As the excavated fill from two features was inadvertently screened together, it is not possible to determine which materials are from which feature. However, it should be noted that bird bones were collected by hand from the trench floor within the boundaries of Feature 31; no bird bones were identified in what is now designated as Feature 44. Based on the completeness of the bird remains and the lack of evidence for food preparation (e.g., butchering, hat-alteration), this feature is interpreted as a bird burial.

SIHP # -2870 Feature 32 is a pit feature documented in the southwest sidewall and floor of T-8, near the northwest end of the trench (see Figure 116, Figure 117, Figure 125, Figure 126, and Figure 128). It was documented between 128 and 192 cmbs. It originates in Stratum Ig/SIHP # -2870 and is intrusive through the underlying Stratum IIa/SIHP # -2870 A horizon. It terminates in the Stratum IIb Jaucas sand. Feature 32 is round in plan view and oblong in profile, suggesting it is a post mold. It is 25 cm in diameter and 64 cm thick (top-bottom). Five gallons of material (approximately 50% of the feature) were excavated from the trench floor and screened in the field;

the screened sample was collected. The sample contains metal/slag (fragments too small to separate; Acc. # 34), marine shell comprising mostly *pipipi* (*N. picea*), crab shell (Brachyura), charcoal, fish bone (*Pervagor spilosoma*), sea urchin (Echinoidea), an olive glass fragment (Acc. # 35), and small mammal bone (some burnt).

SIHP # -2870 Feature 33 is an irregularly shaped pit feature of indeterminate function documented in the central portion of the T-8 northeast sidewall (see Figure 112 and Figure 113); it was not identified in plan view. It was documented between 128 and 143 cmbd and measures 40 cm across (northwest-southeast) by 15 cm thick (top-bottom). Feature 33 originates in Stratum Ig/SIHP # -2870 and is intrusive through the underlying Stratum IIa/SIHP # -2870 A horizon. It terminates in the Stratum IIb Jaucas sand. One half liter of material (approximately 50% of the feature) was excavated from the northeast sidewall and collected as a bulk sample; the entire feature was not excavated to avoid destabilizing the sidewall. The sample contains metal/slag (fragments too small to separate; Acc. # 36), a colorless glass fragment (Acc. # 37), charcoal, and marine shell (*B. crebristriatus*, Hipponicidae).

SIHP # -2870 Feature 44 is a semi-circular pit feature of indeterminate function documented in the south corner of T-8 (see Figure 117, Figure 122, Figure 123, Figure 125, Figure 127, and Figure 128). It was documented in the southeast endwall, southwest sidewall, and trench floor between 133 and 160 cmbd. Feature 44 originates in Stratum Ig/SIHP # -2870 and truncates the underlying SIHP # -2870 Feature 39, which is part of Stratum IIa. It terminates in the Stratum IIb Jaucas sand. Feature 44 measures 32 cm (northwest-southeast) by 22 cm (northeast-southwest) and 27 cm thick (top-bottom). Initially, this feature and Feature 31 (discussed above) were documented as a single feature in plan view. Both features (approximately 4 gals) were collectively excavated from the trench floor, and the material was screened; the screened sample was collected. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), non-marine shell (*Melampus*, *N. vespertinum*, *N. neglecta*), metal/slag (fragments too small to separate; Acc. # 33), fish bone (Osteichthyes), bird bone (Aves), crab shell (Brachyura), sea urchin (Echinoidea), and charcoal. As the excavated fill from two features was inadvertently screened together, it is not possible to determine which materials are from which feature.

Underlying Stratum Ig/SIHP # -2870 in the north corner of T-8, within the northwest endwall and northeast sidewall, is the Stratum Ih imported fill (see Figure 109, Figure 113, and Figure 118 through Figure 120). A pocket of redeposited A horizon material underlies the Stratum Ih fill. Initially, this A horizon material was documented in plan view as a potential feature. Hence, the material (20 gals) was excavated from the trench floor and screened in the field; the screened sample was collected. However, in profile view it is clear this pocket of A horizon material is redeposited, as evidenced by its smooth, abrupt lower boundary. As it is present only beneath the Stratum Ih fill, it appears to be associated with the overlying Stratum Ih. As it is a fill deposit rather than a feature, it is designated as Stratum Ii. In this portion of T-8, the Stratum IIa/SIHP # -2870 A horizon appears to have been removed by/replaced with the Strata Ih and Ii fills. As Stratum Ii is likely derived from Stratum IIa, the materials within the Stratum Ii sample likely originated within Stratum IIa. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), charcoal, non-marine shell (*Melampus*, *N. vespertinum*, *N. neglecta*, unidentified), a brass button (Acc. # 39), sea urchin (Echinoidea), crab shell (Brachyura), small to medium mammal bone (some burnt), dog (*Canis lupus familiaris*) bone, rat (Rodentia) bone, glass fragments (Acc. #s 40 and

42), a pearl shell button (Acc. # 41), burnt *kukui* (*A. moluccana*), fish (Osteichthyes) bone, slag (Acc. # 38), and a glass seed bead (Acc. # 43).

Beneath Stratum Ig/SIHP # -2870 in the remainder of T-8 is the Stratum IIa/SIHP # -2870 A horizon. As mentioned above, Stratum Ig truncates the upper boundary of Stratum IIa; in some areas, Stratum IIa has been completely removed. Nine features comprising eight pit features and a charcoal lens were identified as originating within Stratum IIa. Five gallons of material from Stratum IIa were excavated from the trench floor, from 120–130 cmbd, and screened in the field; the screened sample was collected. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), non-marine shell (*Melampus, N. vespertinum, N. neglecta*), charcoal, a plastic button (Acc. # 57), crab shell (Brachyura), burnt *kukui* (*A. moluccana*), sea urchin (Echinoidea), a milk glass fragment (Acc. # 58), and fish (Osteichthyes) bone. In addition, medium mammal and unicornfish (*Naso*) bone were collected from Stratum IIa. The plastic button (Acc. # 57) dates post-1940, indicating Stratum IIa/SIHP # -2870 was buried by the overlying Stratum Ig/SIHP # -2870 post-1940.

The nine features associated with Stratum IIa/SIHP # -2870 are designated as Features 34–40, 43, and 45. They are described below.

SIHP # -2870 Feature 34 is a semi-circular pit feature of indeterminate function, documented in the northwestern portion of T-8 within the trench floor (see Figure 125, Figure 126 and Figure 128). Feature 34 was documented between 137 and 173 cmbd and is 25 cm long (east-west) by 15 cm wide (north-south). It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. The entire feature (4 gals) was excavated from the trench floor and screened in the field; the screened sample was collected. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), a rusted metal object (Acc. # 44), non-marine shell (*N. vespertinum*, *N. neglecta*), crab shell (Brachyura), charcoal, fish (Osteichthyes) bone, and small mammal bone (some burnt).

SIHP # -2870 Feature 35 is an irregularly shaped pit feature of indeterminate function, documented in the central portion of T-8 within the trench floor (see Figure 125, Figure 126 and Figure 128). Although it was documented adjacent to the northeast sidewall in plan view, it was not visible in the wall profile. The feature was documented between 128 and 155 cmbd and is 57 cm long (northeast-southwest) by a maximum of 45 cm wide (northwest-southeast). It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. Five gallons of material (approximately 75% of the feature) were excavated from the trench floor and screened in the field; the screened sample was collected. The sample contains FAR (Acc. # 45), FAC (Acc. # 46), marine shell (*B. crebistriatus*, Hipponicidae, *N. picea*), non-marine shell (*N. neglecta*), dog (*C. lupus familiaris*) and small mammal bone, charcoal, sea urchin (Echinoidea), crab shell (Brachyura), and fish (Osteichthyes) bone.

SIHP # -2870 Feature 36 is a pit feature of indeterminate function, documented in the southeastern portion of T-8 within the southwest sidewall and trench floor (see Figure 115, Figure 117, Figure 125, Figure 127, and Figure 128). It was documented between 138 and 158 cmbd and is 77 cm long (northeast-southwest) by a maximum of 75 cm wide (northwest-southeast). It is irregularly shaped in plan view and semi-circular in profile. It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. Five gallons of material (approximately 50% of the feature) were excavated from the trench floor and screened in the field; the screened sample was collected. The sample contains FAR (Acc. # 47), FAC (Acc. # 48), marine shell comprising mostly *pipipi* (*N. picea*), non-marine shell (*Melampus*, *N. vespertinum*, *N. neglecta*), dog (*C. lupus familiaris*) and small mammal bone, crab shell (Brachyura), charcoal, sea urchin (Echinoidea), fish (Osteichthyes) bone, and metal/slag (fragments too small to separate; Acc. # 49).

SIHP # -2870 Feature 37 is a circular pit feature identified within the trench floor near the east corner of T-8 (see Figure 127 and Figure 128). It was documented between 141 and 150 cmbd and is 10 cm in diameter. It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. Based on shape, it is interpreted as a possible post mold. The entire feature (0.5 gal) was excavated from the trench floor and screened in the field; the screened sample was collected. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), non-marine shell (*N. neglecta*), and charcoal.

SIHP # -2870 Feature 38 is a pit feature of indeterminate function, documented near the east corner of T-8 within the northeast sidewall and trench floor (see Figure 111, Figure 113, Figure 127, and Figure 128). It was documented between 140 and 153 cmbd and has a maximum length and width of 25 cm in plan view. It is irregularly shaped in plan view and basin-shaped in profile. It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. The entire feature (1.5 gals) was excavated from the trench floor and screened in the field; the screened sample was collected. The sample contains FAR (Acc. # 50), FAC (Acc. # 51), marine shell comprising mostly *pipipi* (*N. picea*), non-marine shell (*N. neglecta*), charcoal, small to medium mammal bone, and burnt *kukui* (*A. moluccana*).

SIHP # -2870 Feature 39 is a pit feature of indeterminate function, documented near the south corner of T-8 within the southwest sidewall and trench floor (see Figure 117, Figure 125, and Figure 127). The upper boundary of this feature was truncated by SIHP # -2870 Feature 44, which is part of Stratum Ig. Feature 39 was documented between 143 and 177 cmbd. It has a maximum length of 65 cm (northeast-southwest) and maximum width of 42 cm (northwest-southeast) in plan view. It is irregularly shaped in plan view and semi-circular in profile. It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. Five gallons of material (approximately 90% of the feature) were excavated from the trench floor and screened in the field; the screened sample was collected. The sample contains marine shell comprising mostly *pipipi* (*N. picea*), small mammal bone (some burnt), FAC (Acc. # 52), crab shell (Brachyura), charcoal, and an amber glass fragment (Acc. # 53).

SIHP # -2870 Feature 40 is a semi-circular pit feature of indeterminate function, documented in the east corner of T-8 within the northeast sidewall, southeast endwall, and trench floor (see Figure 111, Figure 113, Figure 122, Figure 123, Figure 125, Figure 127, and Figure 128). The upper boundary of the southeastern portion of this feature was truncated by SIHP # -2870 Feature 31, which is part of Stratum Ig. Feature 40 was documented between 144 and 172 cmbd and is 22 cm long (northeast-southwest) by 20 cm wide (northwest-southeast). The entire feature (2 gals) was excavated from the floor and screened in the field; the screened sample was collected. The sample contains marine shell (*B. crebistriatus*, Hipponicidae, *N. picea*), non-marine shell (*N. neglecta*), crab shell (Brachyura), small to medium mammal bone, copper wire (Acc. # 54), and slag (Acc. # 55).

SIHP # -2870 Feature 43 is a charcoal lens documented along the lower boundary of Stratum IIa/SIHP # -2870 in the northwestern portion of the northeast sidewall of T-8 (see Figure

112 and Figure 113); it was not documented in plan view. It was documented between 132 and 141 cmbd and is 70 cm long (northwest-southeast) by 2 cm thick (top-bottom). The northwestern extent of Feature 43 appears to have been truncated by the Stratum Ih fill, while the southeastern extent appears to have been truncated by Stratum Ig/SIHP # -2870. A sample of the Feature 43 charcoal was collected from the sidewall.

SIHP # -2870 Feature 45 is an irregularly shaped pit feature of indeterminate function, documented in the northeast sidewall of T-8 near the southeast end (see Figure 111 and Figure 113); it was not documented in plan view. It was documented between 138 and 156 cmbd and measures 13 cm across (northwest/southeast). It originates in Stratum IIa/SIHP # -2870 and terminates in the Stratum IIb Jaucas sand. Due to a miscommunication, the feature was not sampled.

No cultural materials or features were identified in the basal Stratum IIb Jaucas sand.

4.2.3.9 Test Excavation 9 (T-9)

Test Excavation 9 (T-9) is an interior test excavation in the *makai*/Diamond Head (south) dining area of the former Kobe Steakhouse, at 1841 Ala Moana Boulevard. The trench is oriented northeast-southwest and is 0.8 m in width. Although the surface concrete (Stratum Ia) was removed from the entire planned extent of the trench (6 m in length), only the *makai* half of the trench, comprising 3 m in length, was excavated due to the presence of a structural column just southeast of the trench, with an associated footing that extends into the trench's footprint, as well as a cast iron utility pipe at 100 cmbs that extends from the northwest sidewall diagonally (east-west) through the trench's footprint (Figure 129). T-9 has a maximum depth of 155 cmbs, with the water table encountered at 150 cmbs. Note this excavation was conducted in full PPE.

The documented stratigraphy comprises the concrete floor (Stratum Ia), a very gravelly (coral and basalt) sandy loam utility trench (Stratum Ib), extremely gravelly loamy sand basalt base course (Stratum Ic), gravelly (coral and basalt) silty clay loam fill (Stratum Id), gravelly (coral and basalt) sandy loam fill (Stratum Ie), a buried asphalt layer (Stratum If; SIHP # -9157 Feature 7), gravelly (basalt) sandy loam fill (Stratum Ig), very gravelly sand crushed coral fill (Stratum Ih; SIHP # -9157 Feature 8), basaltic and coralline sand fill (Stratum Ii; SIHP # -9157 Feature 8), very gravelly sandy loam basalt base course (Stratum Ij; SIHP # -9157 Feature 8), a reworked or redeposited loamy sand A horizon (Stratum IIa), a loamy sand A horizon with associated pit features (Stratum IIb; SIHP # -2870), and Jaucas sand (Stratum IIc) (Figure 130 through Figure 133 and Table 11).

The Stratum Ib utility trench directly underlies the Stratum Ia concrete surface. It is intrusive through the Stratum Ic base course and terminates in the Stratum Id fill. The pit matrix comprises a mixture of material from Strata Ic and Id surrounding an abandoned metal utility pipe.

The Stratum Ie fill contains demolition materials including brick, asphalt, and concrete fragments. The asphalt fragments may represent demolished portions of the underlying buried asphalt surface, Stratum If, which is designated as SIHP # -9157 Feature 7. Feature 7 is described below.

SIHP # -9157 Feature 7 is a buried asphalt layer (Stratum If), identified across the excavated portion (i.e., southwestern half) of T-9 in plan view, giving the exposed portion a horizontal extent of 2.4 sq m. In profile, it was not identified in the southwest endwall, suggesting it does not extend beyond the trench in that direction. The asphalt is approximately 5 cm thick and was documented between 40 and 48 cmbs (see Figure 130, Figure 131, and Figure 134).

Underlying Stratum If/SIHP # -9157 Feature 7 is the Stratum Ig fill. Underlying Stratum Ig are three thin, compacted fill layers (Strata Ih–Ij) collectively interpreted as a prepared surface and designated as SIHP # -9157 Feature 8. Feature 8 is described below.

SIHP # -9157 Feature 8 is a prepared surface composed of three thin, compacted fill layers (Strata Ih–Ij) within T-9 (see Figure 130, Figure 131, and Figure 134). The three layers comprise basalt gravel base course (Stratum Ij) overlain by a mixture of basaltic and coralline sand (Stratum Ii) capped with crushed coral fill (Stratum Ih). The Stratum Ih crushed coral fill is approximately 3 cm thick and was documented between 67 and 75 cmbs. The Stratum Ii sand fill is approximately 2 cm thick and was documented between 70 and 75 cmbs. The Stratum Ij base

Figure 129. Plan view of T-9, showing a cast iron utility pipe at 100 cmbs (indicated with red arrow) extending from the northwest sidewall into the planned footprint of the trench) and a concrete footing (indicated with blue arrow) extending from the southeast sidewall into the planned footprint of the trench

Figure 130. Profile view of T-9 southeast sidewall and a portion of the southwest endwall, showing Stratum If/SIHP # -9157 Feature 7 (buried asphalt layer, indicated with red arrow), Strata Ih–Ij/SIHP # -9157 Feature 8 (prepared surface, indicated with blue arrow), and Stratum IIb/SIHP # -2870 Features 41 and 42 (pit features), view to southeast

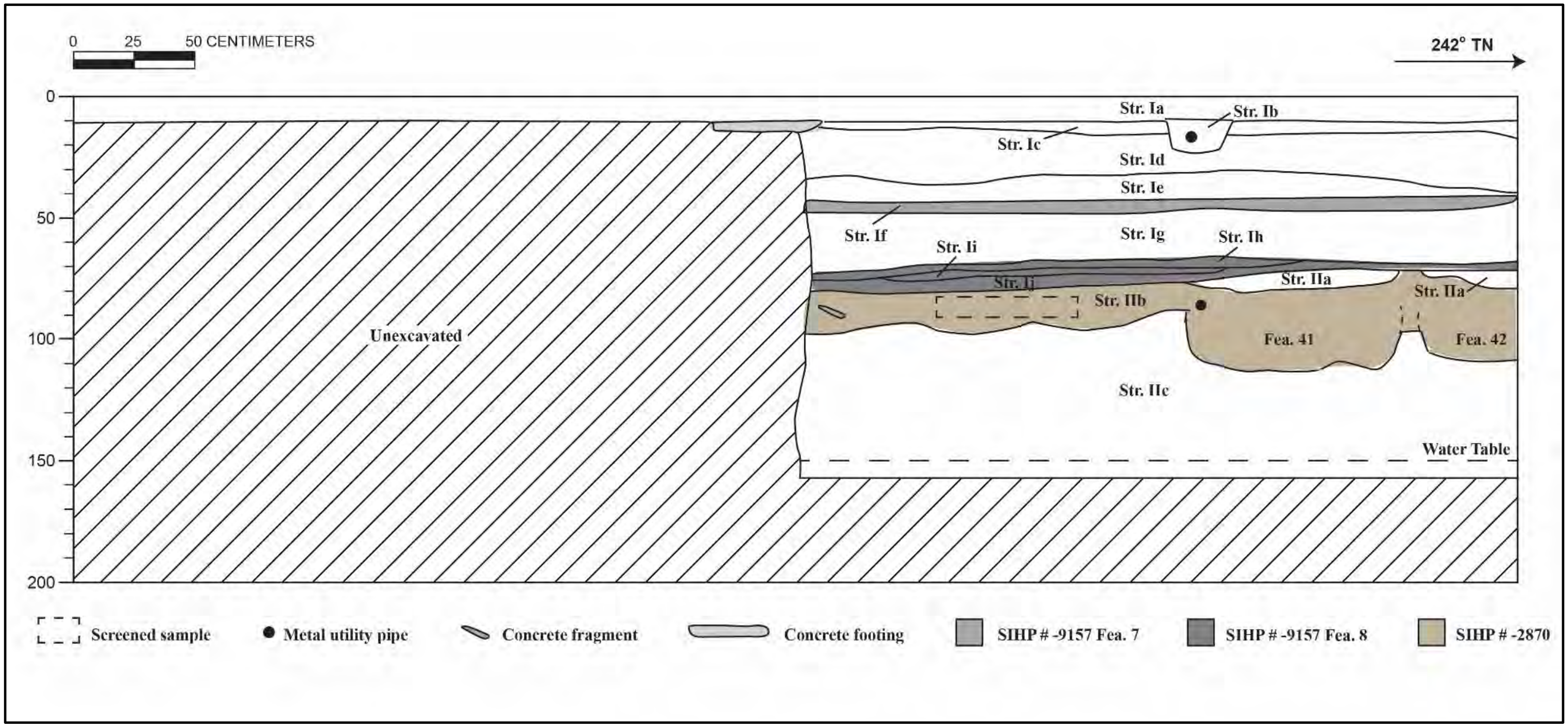


Figure 131. T-9 southeast sidewall profile

Figure 132. Profile view of T-9 southwest endwall, showing Stratum Ij/SIHP # -9157 Feature 8 (base course portion of prepared surface, indicated with red arrow) and Stratum IIb/SIHP # -2870 Feature 42 (pit feature), view to southwest

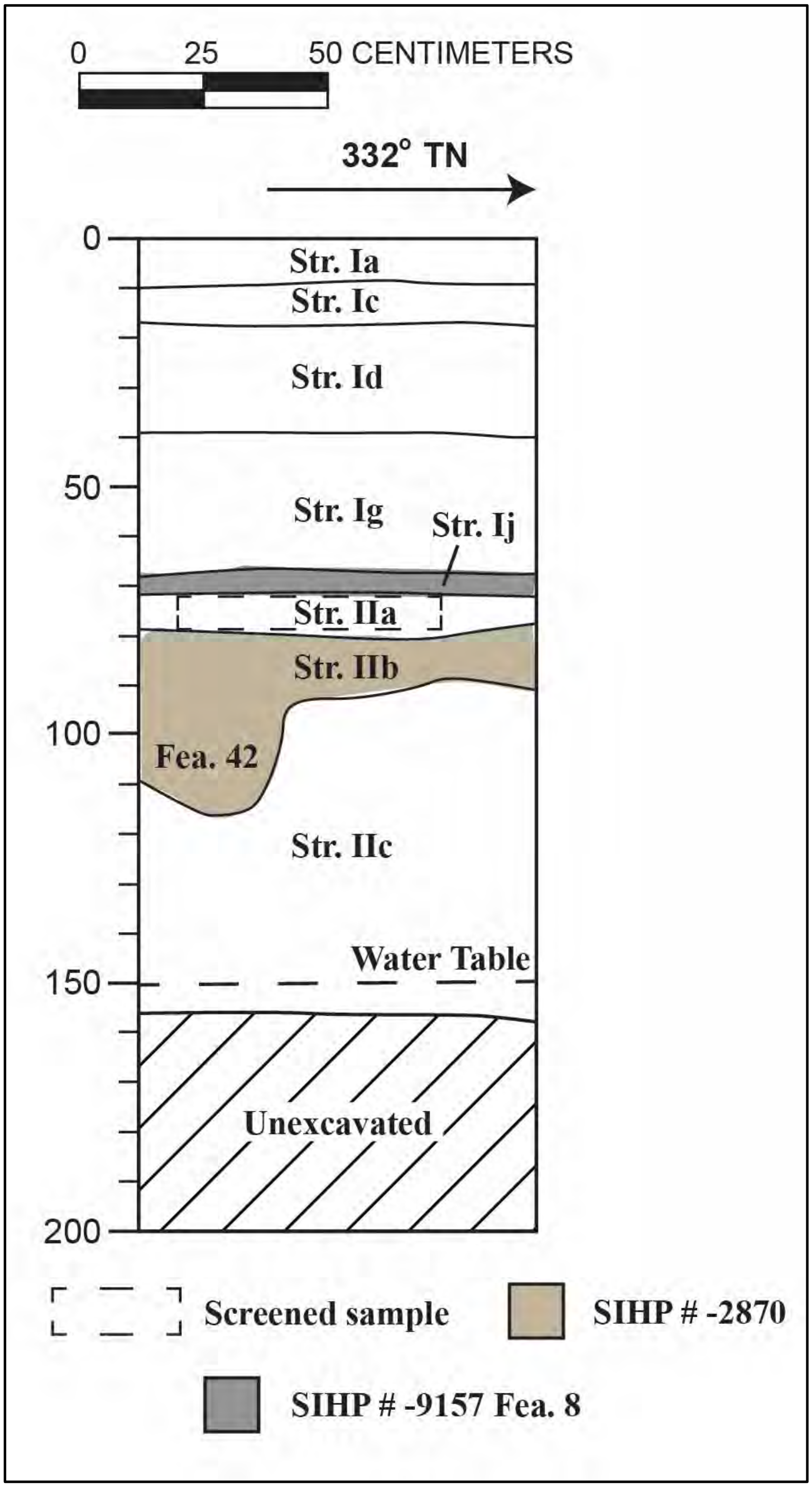


Figure 133. T-9 southwest endwall profile

Table 11. T-9 stratigraphic description

Stratum	Depth (cmbs)	Description
Ia	0–12	Concrete; Kobe Steakhouse floor
Ib	10–18	Fill; 5YR 3/2, dark reddish brown; very gravelly sandy loam; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; no roots observed; utility trench comprising a mottled mix of Str. Ic and Id, containing a metal utility pipe and basalt and coral gravel
Ic	10–18	Fill; 10YR 3/1, very dark gray; extremely gravelly loamy sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; no roots observed; basalt gravel base course supporting the overlying concrete floor
Id	14–40	Fill; 5YR 3/2, dark reddish brown; gravelly silty clay loam; moderate, fine, blocky structure; moist, firm consistence; plastic; no cementation; terrigenous origin; abrupt, wavy lower boundary; no roots observed; imported fill containing basalt and coral gravel
Ie	30–43	Fill; 7.5YR 3/2, dark brown; gravelly sandy loam; weak, medium, granular structure; moist, friable consistence; non-plastic; no cementation; terrigenous origin; abrupt, broken lower boundary; no roots observed; imported fill containing coral and basalt gravel, asphalt and concrete fragments, and brick
If/SIHP # -9157 Fea. 7	40–48	Asphalt; buried surface
Ig	38–72	Fill; 5YR 3/1, very dark gray; gravelly sandy loam; weak, fine, granular structure; moist, friable consistence; non-plastic; no cementation; terrigenous origin; abrupt, smooth lower boundary; common fine roots; imported fill containing basalt gravel
Ih/SIHP # -9157 Fea. 8	67–75	Fill; 10YR 6/2, light brownish gray; very gravelly sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; abrupt, broken lower boundary; no roots observed; compacted crushed coral fill comprising the uppermost portion of a prepared surface
Ii/SIHP # -9157 Fea. 8	70–75	Fill; 10YR 2/1, black, mottled with 10YR 7/3, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; no roots observed; compacted mixture of marine and basaltic sand comprising the middle layer of a prepared surface

Stratum	Depth (cmbs)	Description
Ij/SIHP # -9157 Fea. 8	67–79	Fill; 2.5YR 3/1, dark reddish gray; very gravelly sandy loam; moderate, medium, granular structure; moist, friable consistence; non-plastic; no cementation; terrigenous origin; abrupt, smooth lower boundary; no roots observed; base course for prepared surface containing basalt gravel and cobbles
IIa	70–80	Natural(?); 10YR 3/1, very dark gray; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; abrupt, broken lower boundary; few fine roots; reworked or redeposited A horizon containing faunal bone, marine shell, charcoal, concrete flooring fragment (Acc. # 111), chalk fragment (Acc. # 112), pencil graphite fragment (Acc. # 113), worked pearl shell fragment (Acc. # 114), metal button (Acc. # 115), button shank (Acc. # 116), aluminum foil (Acc. # 117), glass fragments (Acc. #s 118 and 119), and metal nails (Acc. # 120)
IIb/SIHP # -2870	70–97	Natural; 10YR 3/2, very dark grayish brown; loamy sand; weak, very fine, granular structure; moist, friable consistence; non-plastic; no cementation; mixed origin; clear, irregular lower boundary; few fine roots; A horizon containing marine shell, non-marine shell, basalt gravel, charcoal, faunal bone (some sawcut, some burnt), a bone button fragment (Acc. # 121), glass (Acc. # 122), slag (Acc. # 123), metal fragments (Acc. # 124), concrete flooring fragments (Acc. # 125), and two pit features (Feas. 41, 42)
	87–112	Fea. 41; 10YR 4/2, dark grayish brown; loamy sand; pit feature of indeterminate function containing marine shell, basalt gravel, charcoal, faunal bone, redware (terracotta) pot fragments (Acc. # 126), metal (Acc. # 127), a whiteware fragment (Acc. # 128), and glass (Acc. #s 129 and 130)
	87–115	Fea. 42; 10YR 4/2, dark grayish brown; loamy sand; pit feature of indeterminate function containing marine shell, sea urchin, charcoal, slag (Acc. # 131), FAR (Acc. # 132), glass (Acc. #s 133–135), a cupreous metal eyelet (Acc. # 136), a cupreous metal fragment (Acc. # 137), a ferrous metal buckle (Acc. # 138), and ferrous metal fragments (Acc. # 139)
IIc	89–155 (BOE)	Natural; 10YR 7/3, very pale brown; sand; structureless (single-grain); moist, loose consistence; non-plastic; no cementation; marine origin; lower boundary not observed; no roots observed; Jaucas sand

Figure 134. Close-up profile view of T-9 southeast sidewall, showing Stratum If/SIHP # -9157 Feature 7 (buried asphalt layer, indicated with red arrow) and Strata Ih–Ij/ SIHP # -9157 Feature 8 (prepared surface, indicated with blue arrow), view to east

course is 3–8 cm thick and was documented between 67 and 79 cmbs. All three strata were identified in both sidewalls; however, only the Stratum Ij base course was identified in the southwest endwall (see Figure 133). The exposed portion of this feature is approximately 2.4 sq m, although it appears to extend beyond the boundaries of the excavation.

As the Kobe Steakhouse building was constructed in 1964, and an artifact from the underlying Stratum IIa (reworked or redeposited A horizon, see discussion below) dates post-1947, SIHP # -9157 Features 7 and 8 were therefore deposited sometime between 1947 and 1964; however, Feature 7 pre-dates Feature 8 based on stratigraphic position. The 1950 and 1956 Sanborn Map Company fire insurance maps (see Figure 34 and Figure 36) show T-9 in an area between two dwellings (“D”), adjacent to or possibly within a parking area or car port (“A” [automobile]). A 1954 aerial photograph (see Figure 35) shows T-9 within a white area, possibly crushed coral fill, which may correlate with the Feature 8 prepared surface capped with crushed coral. Hence, Feature 8 was likely deposited between 1947 and 1954, while Feature 7 was likely deposited between 1954 and 1964.

The underlying Strata IIa and IIb are both loamy sand A horizons; however, Stratum IIa appears to be reworked or redeposited, as evidenced by its smooth, abrupt lower boundary and lack of associated features. A 2.5-gal sample was excavated from Stratum IIa in the southwest endwall (see Figure 133) and screened. The screened sample was analyzed and photographed by CSH laboratory personnel in the field. The sample includes marine shell (Hipponicidae, *N. picea*), non-marine shell (unknown species), charcoal, unidentified botanicals, a concrete flooring fragment (Acc. # 111), a possible chalk fragment (Acc. # 112), a pencil graphite fragment (Acc. # 113), a worked pearl shell object fragment (Acc. # 114), an embossed bronze metal button (Acc. # 115), a possible cupreous button shank (Acc. # 116), aluminum foil fragments (Acc. # 117), colorless glass fragments (Acc. # 118), olive glass fragments (Acc. # 119), and ferrous and cupreous metal nails (Acc. # 120). In addition, burnt small to medium mammal bone was identified within Stratum IIa (spoils). The aluminum foil (Acc. # 117) dates post-1947, indicating the Stratum IIa A horizon was reworked or redeposited post-1947.

A 2-gal sample was excavated from Stratum IIb/SIHP # -2870 in the southeast sidewall (see Figure 131) and screened. The screened sample was analyzed and photographed by CSH laboratory personnel in the field. The sample includes marine shell (unknown species), non-marine shell (unknown species), basalt gravel, charcoal, medium to large mammal bone (some sawcut, some burnt), a bone button fragment (Acc. # 121), colorless glass fragments (Acc. # 122), slag fragments (Acc. # 123), ferrous metal fragments (Acc. # 124), and concrete flooring fragments (Acc. # 125). These materials indicate a post-Contact age but lack the diagnostic attributes to provide a specific date.

In addition, two pit features originate within the Stratum IIb/SIHP # -2870 A horizon. The features are designated as Features 41 and 42 and are described below.

SIHP # -2870 Feature 41 is an irregularly shaped pit feature of indeterminate function, documented near the southwest end of T-9 within the southeast sidewall (see Figure 130, Figure 131, and Figure 135); it was not identified in plan view. It originates in the Stratum IIb/SIHP # -2870 A horizon at 87 cmbs and terminates in the Stratum IIc Jaucas sand at 112 cmbs. The feature is 88 cm long (northeast-southwest) by 25 cm wide (top-bottom). An abandoned metal utility pipe

Figure 135. Close-up profile view of the base of the south corner of T-9, showing SIHP # -2870 Features 41 (left) and 42 (right), pit features of indeterminate function, view to south; the SIHP # -9157 Feature 8 prepared surface is also visible (indicated with red arrow)

was identified at the upper northeast corner of the feature (see Figure 131). A piece of concrete flooring was removed from the feature before 4 gals of material were excavated and wet-screened; the entire feature was not excavated to avoid destabilizing the wall. The screened sample was analyzed and photographed by CSH laboratory personnel in the field. It contains marine shell (*B. crebristriatus*, Hipponicidae, *N. picea*), basalt gravel, charcoal, fish (Osteichthyes) bone, redware (terracotta) pot fragments (Acc. # 126), ferrous metal fragments (Acc. # 127), a whiteware fragment (Acc. # 128), aqua glass fragments (Acc. # 129), and a dark amber (black) glass bottle fragment (Acc. # 130).

SIHP # -2870 Feature 42 is an irregularly shaped pit feature of indeterminate function, documented in the south corner of T-9 within the southeast sidewall and southwest endwall (see Figure 130 through Figure 133 and Figure 135); it was not identified in plan view. It originates in the Stratum IIb/SIHP # -2870 A horizon at 87 cmbs and terminates in the Stratum IIc Jaucas sand at 115 cmbs. The feature is 42 cm long (northeast-southwest) by 30 cm wide (northwest-southeast) and 28 cm thick (top-bottom). The entire feature (3 gals) was excavated from the trench walls and wet-screened. The screened sample was analyzed and photographed by CSH laboratory personnel in the field. It contains marine shell (*B. crebristriatus*, *Cellana*), Hipponicidae, *N. picea*), sea urchin (Echinoidea), charcoal, a slag fragment (Acc. # 131), FAR (Acc. # 132), an amber glass bottle fragment (Acc. # 133), a dark amber (black) glass bottle fragment (Acc. # 134), a pink glass fragment (Acc. # 135), a cupreous metal eyelet (Acc. # 136), a cupreous metal fragment (Acc. # 137), a ferrous metal buckle (Acc. # 138), and ferrous metal fragments (Acc. # 139).

As discussed above, Stratum IIa was reworked or redeposited post-1947, and SIHP # -9157 Feature 8 was likely deposited between 1947 and 1954. Stratum IIb/SIHP #-2870 and its associated features underlie and therefore pre-date both Stratum IIa and SIHP # -9157 Feature 8. Sample contents indicate a post-Contact age for Stratum IIb/SIHP # -2870 and its associated features; however, they lack the diagnostic attributes to provide a specific date.

No cultural materials or features were identified in the basal Stratum IIc Jaucas sand.

4.3 Geotechnical Boring

In 2017, three geotechnical bores were conducted within Parcel 005 under the supervision of CSH archaeologists (see Figure 10). From *mauka* to *makai*, they are designated as B-1 through B-3 and are described below.

B-1 is 10 cm in diameter, with a maximum depth of 127 cmbs (Figure 136 through Figure 138). The observed stratigraphy comprises the surface asphalt (0–5 cmbs), extremely gravelly silt loam basalt base course (5–15 cmbs), extremely gravelly (basalt) silt loam fill (15–50 cmbs), a loamy sand A horizon (50–60 cmbs), and Jaucas sand (60–127 cmbs). The water table was encountered at BOE. No cultural materials were identified.

B-2 is 10 cm in diameter, with a maximum depth of 140 cmbs (Figure 139 through Figure 141). The observed stratigraphy comprises the surface asphalt (0–10 cmbs), extremely gravelly silt loam basalt base course (10–30 cmbs), extremely gravelly (basalt) silt loam fill (30–90), and Jaucas sand (90–140 cmbs). The water table was encountered at 130 cmbs. No cultural materials were identified.

Figure 136. B-1 location, view to northeast; Kobe Steakhouse building in background

Figure 137. B-1 core, upper portion

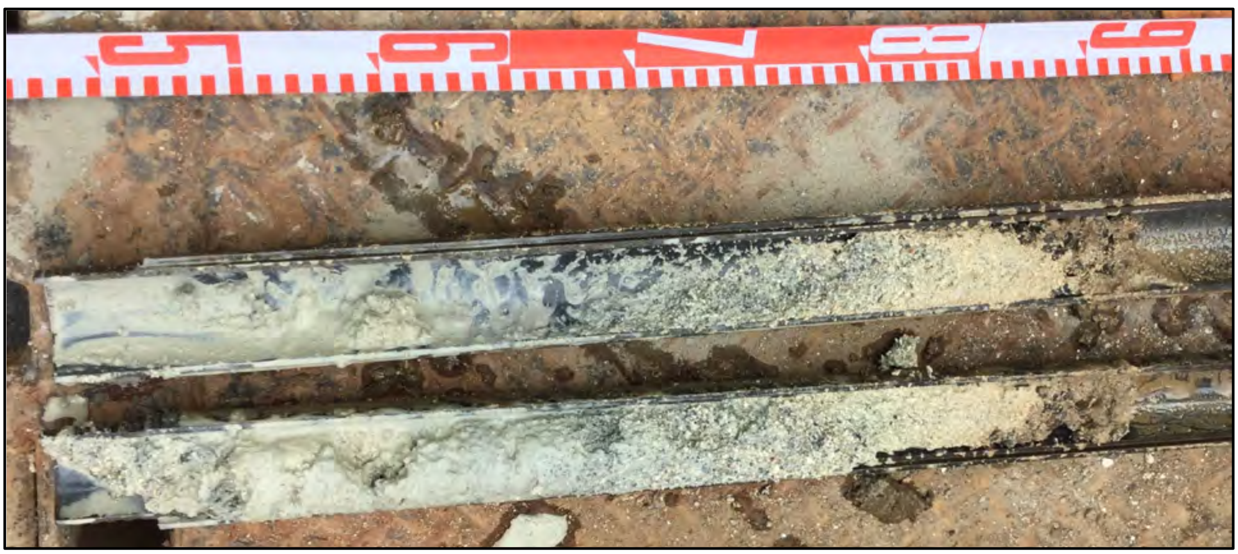


Figure 138. B-1 core, lower portion

Figure 139. B-2 location, view to north; Kobe Steakhouse building (right) and Ala Moana Boulevard (left) in background

Figure 140. B-2 core, upper portion

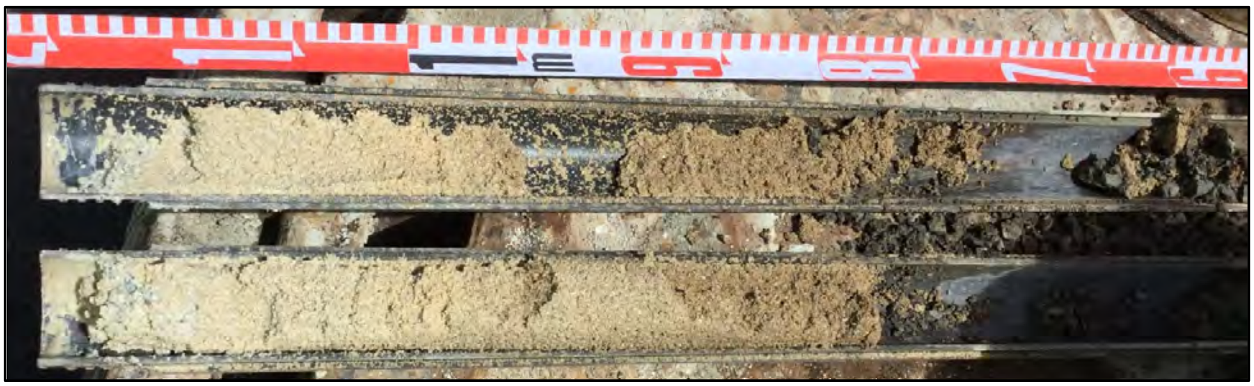


Figure 141. B-2 core, lower portion

Figure 142. B-3 location, view to north; Paradise Rent-a-Car building (left) and Kobe Steakhouse (right) in background

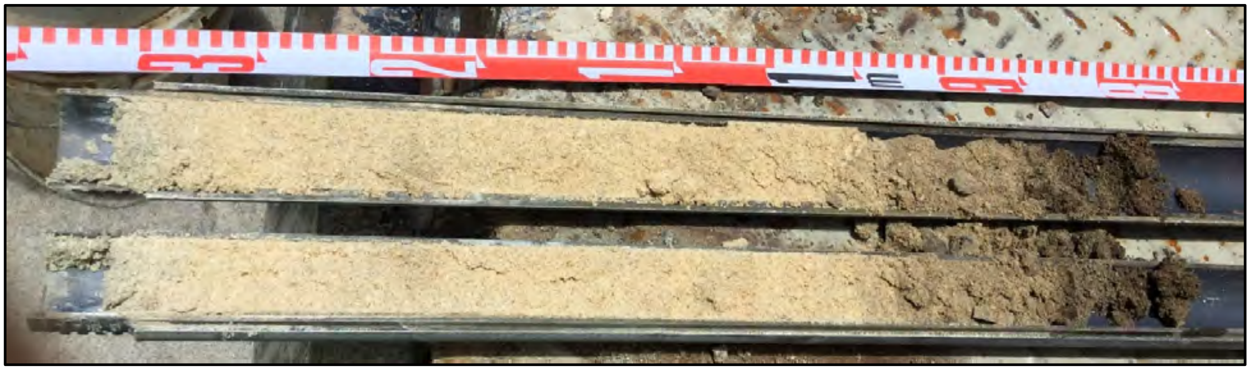


Figure 143. B-3 core, upper portion

Figure 144. B-3 core, lower portion

B-3 is 10 cm in diameter, with a maximum depth of 130 cmbs (see Figure 142 through Figure 144). The observed stratigraphy comprises the surface concrete (0–15 cmbs), extremely gravelly silt loam basalt base course (15–45 cmbs), a loamy sand A horizon (45–55 cmbs), and Jaucas sand (55–130 cmbs). The water table was encountered at BOE. No cultural materials were identified.

Section 5 Results of Laboratory Analysis

Artifacts, faunal bone, and bulk and screened samples from three test excavations (T-2, T-6, and T-8) were collected and analyzed at the CSH laboratory. Artifacts, faunal bone, and screened samples from four test excavations (T-3, T-4, T-5, and T-9) were photographed and analyzed by CSH laboratory personnel in the field, per the SHPD-accepted AIS testing strategy (Shideler et al. 2022). As soil contamination was detected at these locations, no materials were collected in order to avoid introducing harmful contaminants into the CSH laboratory; however, additional analysis of the photographs and data compiled in the field was conducted by laboratory personnel at the CSH office. No materials from two test excavations (T-1 and T-7) were collected or analyzed in the field as no artifacts, faunal bone, or potential cultural layers or features were identified in those excavations.

The results of analysis of collected and uncollected materials are presented in the following subsections.

5.1 Bulk and Screened Sample Analysis

Bulk and screened samples were collected from potential cultural layers and features within T-6 and T-8 and analyzed at the CSH laboratory. In addition, screened samples from potential cultural layers and features within T-3, T-4, T-5, and T-9 were analyzed by CSH laboratory personnel in the field. The results of these analyses are presented below, followed by a synthesis and interpretation of the collective findings. Note that additional analyses of the artifacts and vertebrate faunal remains within these samples are presented in Section 5.2: Artifact Analysis and Section 5.3: Vertebrate Faunal Analysis, respectively.

5.1.1 Collected Bulk and Screened Samples

Three samples were collected from T-6, and 13 samples were collected from T-8 (Table 12). They are discussed below.

5.1.1.1 T-6 Samples

Three samples were collected from T-6 (see Table 12). One was from the Stratum IIb/SIHP # -2870 buried A horizon. Another was from a pit feature of indeterminate function that is intrusive into the A horizon, designated as Stratum IIa/SIHP # -2870 Feature 29. The third is from a pocket of redeposited A horizon material, which was initially documented as a potential feature but was ultimately determined not to be in situ; however, it is likely the contents of this sample originated within the Stratum IIb/SIHP # -2870 buried A horizon.

All three T-6 samples contain marine shell, metal, slag (Acc. #s 9, 12, and 20), faunal bone, charcoal, crab shell (Brachyura), and sea urchin (Echinoidea). The marine shell includes *Brachidontes crebristriatus*, *Cellana*, Cerithiidae, *Crepidula*, *Ctena bella*, Hipponicidae, *Nerita picea*, Strombidae, Trochidae, and Turbinidae. In all three samples, *pipipi* (*N. picea*) is the most abundant species. The faunal bone includes bony fish (Osteichthyes), as well as small, small to medium, and large mammal bone; some is burnt and/or sawcut. The metal includes rusted nails (Acc. # 8), a metal decoration (likely jewelry or clothing ornament; Acc. # 10), and unidentified metal objects and fragments (Acc. #s 15 and 21).

Table 12. Summary of screened and bulk samples collected and analyzed at the CSH laboratory

Test Excavation	Provenience	Vol * (gals)	Contents
T-6	Redeposited A horizon material in a disturbed area, trench floor, 60–72 cmbs	5.0	Aqua glass bottle fragment (53.2 g; Acc. # 11), metal/slag (51.6 g; Acc. # 12), charcoal (32.7 g), basalt core (32.5 g; Acc. # 13), colorless glass bottle fragments (29.4 g; Acc. # 14), rusted ferrous metal objects (28.9 g; Acc. # 15), amber glass bottle fragments (19.5 g; Acc. # 16), large mammal bone (15.5 g; some burnt), marine shell (16.4 g; *B. crebristriatus*, *Cellana*, Cerithiidae, *C. bella*, Hipponicidae, *N. picea* [4.5 g], Turbinidae), basalt debitage (8.3 g; Acc. # 17), colorless glass fragments§ (5.6 g; Acc. # 18), small to medium mammal bone (3.7 g; some burnt), olive glass bottle fragment (2.7 g; Acc. # 19), Brachyura (0.6 g), Osteichthyes (0.3 g; some burnt), Echinoidea (0.1 g), *A. moluccana* (< 0.1 g; burnt), botanicals (< 0.1 g)
	Str. IIa, SIHP # -2870 Fea. 29, pit feature, SW wall, 40–75 cmbs	5.0	Marine shell (9.2 g; *B. crebristriatus*, *Cellana*, Cerithiidae, *Crepidula*, Hipponicidae, *N. picea* [2.3 g] †, Strombidae), rusted nails (8.3 g; Acc. # 8), metal/slag‡ (3.1 g; Acc. # 9), cupreous metal decoration with plastic or stone “jewel” in the center (2.2 g; Acc. # 10), Osteichthyes (1.4 g), charcoal (0.8 g), small mammal bone (0.6 g;), Brachyura (0.5 g), medium to large mammal bone (0.4 g; burnt), Echinoidea (< 0.1 g), *A. moluccana* (< 0.1 g; burnt), botanicals (< 0.1 g)
	Str. IIb, SIHP # -2870, A horizon, trench floor, 26–31 cmbs	5.0	Metal/slag (26.6 g; Acc. # 20), rusted metal objects (22.2 g; Acc. # 21), marine shell (13.1 g; Cerithiidae, *Crepidula*, *C. bella*, Hipponicidae, *N. picea* [9.8 g], Strombidae, Trochidae), bullet (9.6 g; Acc. # 22), large mammal bone (6.5 g; some burnt and/or sawcut), charcoal (1.4 g), 1947 penny (2.7 g; Acc. # 23), aqua glass fragment (1.3 g; Acc. # 24), red plastic fragment (1.2 g; Acc. # 25), Echinoidea (1.2 g), small to medium mammal bone (1.2 g; some burnt), colorless glass fragments (0.6 g; Acc. # 26), non-marine shell (0.5 g; *N. vespertinum*, *N. neglecta*), whiteware fragment (0.4 g; Acc. # 27), milk glass fragment (0.3 g; Acc. # 28), Osteichthyes (0.1 g), Brachyura (< 0.1 g), orange plastic fragment (< 0.1 g; Acc. # 29), amber glass fragment (< 0.1 g; Acc. # 30), olive glass fragments (< 0.1 g; Acc. # 31), red glass fragments (< 0.1 g; Acc. # 32)
T-8	Str. Ig, SIHP # -2870, culturally enriched fill, SW wall, 115–126 cmbd	0.25	Marine shell (1.8 g; *B. crebristriatus*, Hipponicidae, *N. picea* [0.6 g], Strombidae, Trochidae), charcoal (< 0.1 g), botanicals (< 0.1 g), Osteichthyes (< 0.1 g), Brachyura (< 0.1 g)
	Str. Ig, SIHP # -2870, Feas. 31 (bird burial) and 44 (pit feature), trench floor, 143–163 cmbd	4.0	Aves bone (56.7 g), marine shell (32.9 g; *B. crebristriatus*, *Cellana*, Cerithiidae, Hipponicidae, *N. picea* [21.3 g], Trochidae), metal/slag (14.3 g; Acc. # 33), Osteichthyes (< 0.1 g), non-marine shell (2.7 g; *Melampus*, *N. vespertinum*, *N. neglecta*), Brachyura (0.5 g), Echinoidea (0.4 g), charcoal (0.1 g), botanicals (0.1 g)
	Str. Ig, SIHP # -2870, Fea. 32, post mold, trench floor, 140–192 cmbd	5.0	Metal/slag (9.1 g; Acc. # 34), marine shell (16.3 g; *B. crebristriatus*, *Cellana*, *C. bella*, Hipponicidae, *N. picea* [8.7 g], Trochidae, Turbinidae), Brachyura (0.5 g), charcoal (0.3 g), botanicals (0.3 g), *P. spilosoma* (0.2 g), Echinoidea (0.1 g), Osteichthyes (< 0.1 g), olive glass fragment (< 0.1 g; Acc. # 35)
	Str. Ig, SIHP # -2870, Fea. 33, pit feature, NE wall, 128–143 cmbd	0.15	Metal/slag (0.2 g; Acc. # 36), colorless glass fragment (0.2 g; Acc. # 37), charcoal (< 0.1 g), marine shell (< 0.1 g; *B. crebristriatus*, Hipponicidae)
	Str. Ii, fill composed of redeposited A horizon material, trench floor, 140–172 cmbd	20.0	Metal/slag (155.0 g; Acc. # 38), marine shell (143.6 g; *B. crebristriatus*, *Cellana*, Cerithiidae, *Crepidula*, *C. bella*, Cypraeidae, Hipponicidae, *N. picea* [97.6 g], *T. palatum*, Trochidae, Turbinidae), charcoal (16.4 g), botanicals (9.0 g), non-marine shell (9.0 g; *Melampus*, *N. vespertinum*, *N. neglecta*, unidentified), brass button (4.0 g; Acc. # 39), Echinoidea (2.6 g), Brachyura (2.5 g), olive glass fragment (0.9 g; Acc. # 40), small to medium mammal bone (0.8 g; some burnt), pearl shell button (0.8 g; Acc. # 41), Osteichthyes (0.6 g), *C. lupus familiaris* bone (0.2 g), *A. moluccana* (0.1 g; burnt), Rodentia (< 0.1 g), *P. spilosoma* (< 0.1 g), colorless glass fragments (< 0.1 g; Acc. # 42), green glass seed bead (< 0.1 g; Acc. # 43)
	Str. IIa, SIHP # -2870, A horizon, trench floor, 120–130 cmbd	5.0	Marine shell (54.8 g; *B. crebristriatus*, Hipponicidae, *N. picea* [48.6 g], Patellidae, Tellinidae), botanicals (6.5 g), non-marine shell (2.1 g; *Melampus*, *N. vespertinum*, *N. neglecta*), charcoal (1.5 g), plastic button (0.6 g; Acc. # 57), Brachyura (0.5 g), *A. moluccana* (0.4 g; burnt), milk glass fragment (0.4 g; Acc. # 58), *P. spilosoma* (0.1 g), Echinoidea (0.1 g), small mammal bone (< 0.1 g), Osteichthyes (< 0.1 g)

Test Excavation	Provenience	Vol * (gals)	Contents
T-8 cont.	Str. IIa, SIHP # -2870, Fea. 34, pit feature, trench floor, 137–173 cmbd	4.0	Marine shell (81.0 g; *B. crebristriatus*, Hipponicidae, *Isognomon*, *N. picea* [72.5 g]), rusted metal object (30.9 g; Acc. # 44), non-marine shell (13.6 g; *N. vespertinum*, *N. neglecta*), Brachyura (0.4 g), charcoal (0.3 g), Osteichthyes (0.1 g), botanicals (< 0.1 g), small mammal bone (< 0.1 g; some burnt)
	Str. IIa, SIHP # -2870, Fea. 35, pit feature, trench floor, 128–155 cmbd	5.0	FAR (66.7 g; Acc. # 45), FAC (39.9 g; Acc. # 46), marine shell (8.5 g; *B. crebristriatus*, Hipponicidae, *N. picea* [0.6 g], Tellinidae; some burnt), small to medium mammal bone (2.5 g; some burnt), charcoal (1.6 g), Brachyura (0.6 g), non-marine shell (0.3 g; *N. neglecta*), botanicals (0.1 g), Osteichthyes (< 0.1 g)
	Str. IIa, SIHP # -2870, Fea. 36, pit feature, trench floor, 138–145 cmbd	5.0	FAR (812.9 g; Acc. # 47), FAC (212.0 g; Acc. # 48), marine shell (66.7 g; *B. crebristriatus*, Hipponicidae, *S. maculatus*, *N. picea* [46.2 g], *T. palatum*), non-marine shell (2.6 g; *Melampus*, *N. vespertinum*, *N. neglecta*), *C. lupus familiaris* bone (0.9 g), Brachyura (0.8 g), charcoal (0.8 g), Echinoidea (0.4 g), Osteichthyes (0.2 g), metal/slag (0.2 g; Acc. # 49), botanicals (< 0.1 g), small mammal bone (< 0.1 g)
	Str. IIa, SIHP # -2870, Fea. 37, post mold, trench floor, 141–150 cmbd	1.5	Marine shell (3.5 g; *B.crebristriatus*, *Cellana*, Hipponicidae, *N. picea* [1.8 g], *S. maculatus*), non-marine shell (0.5 g; *N. neglecta*), charcoal (< 0.1 g)
	Str. IIa, SIHP # -2870, Fea. 38, pit feature, trench floor, 145–155 cmbd	5.0	FAR (66.3 g; Acc. # 50), FAC (12.8 g; Acc. # 51), marine shell (7.7 g; *B. crebristriatus*, *C. bella*, Hipponicidae, *N. picea* [5.6 g]), non-marine shell (1.1 g; *N. neglecta*), charcoal (0.2 g), small to medium mammal bone (0.1 g), *A. moluccana* (< 0.1 g; burnt)
	Str. IIa, SIHP # -2870, Fea. 39, pit feature, trench floor, 143–170 cmbd	2.0	Marine shell (7.8 g; *B. crebristriatus*, Hipponicidae, *N. picea* [1.5 g]), FAC (3.7 g; Acc. # 52), botanicals (2.3 g), small mammal bone (2.2 g; some burnt), Brachyura (0.6 g), charcoal (0.1 g), amber glass fragment (0.1 g; Acc. # 53)
	Str. IIa, SIHP # -2870, Fea. 40, pit feature, trench floor, 144–165 cmbd	2.0	Marine shell (10.1 g; *B. crebristriatus*, Hipponicidae, *N. picea* [3.9 g]), copper wire (0.6 g; Acc. # 54), non-marine shell (0.4 g; *N. neglecta*), Brachyura (0.3 g), small to medium mammal bone (0.2 g), metal/slag (< 0.1 g; Acc. # 55), botanicals (< 0.1 g)

*refers to volume screened

†*N. picea* weight provided, as this was the most abundant species in most assemblages

‡fragments are too small to separate

§when not specified, fragments were too small to identify as bottle or flat glass

¶two features inadvertently excavated and screened together

The Feature 29 sample and the redeposited A horizon sample contain very small amounts (i.e., < 0.1 g) of burnt *kukui* (*A. moluccana*) and unidentified botanicals. The A horizon and redeposited A horizon samples both contain glass fragments. These include aqua, colorless, olive, amber, red, and milk glass (Acc. #s 11, 14, 18, 19, 24, 26, 28, and 30–32); some are identified as bottle glass, while other fragments are too small to identify as bottle or flat glass.

Contents unique to the A horizon sample include plastic (Acc. #s 25 and 29), a bullet (Acc. # 22), a whiteware ceramic fragment (Acc. # 27), a 1947 penny (Acc. # 23), and non-marine shell identified as *Neripteron vespertinum* and *Neritina neglecta*. Contents unique to the redeposited A horizon sample include a basalt core (Acc. # 13) and basalt debitage (Acc. # 17); these are notable for being the only traditional-type artifacts identified in the current study.

5.1.1.2 T-8 Samples

Thirteen samples were collected from T-8 (see Table 12). Four are from Stratum Ig/SIHP # -2870, a culturally enriched fill deposit, and its associated features. One is from Stratum Ii, fill composed of redeposited A horizon material, which was initially documented as a potential feature. Eight samples are from the Stratum IIa/SIHP # -2870 buried A horizon and its associated features.

5.1.1.2.1 T-8 Stratum Ig/SIHP # -2870 Samples

One sample is from Stratum Ig/SIHP # -2870 within the T-8 southwest sidewall, and the other three are from associated features. One sample is from Feature 32, interpreted as a post mold, and another is from Feature 33, a pit feature of indeterminate function. The remaining sample is from Features 31 and 44, which were inadvertently excavated and screened together. Feature 31 is interpreted as a bird burial, as skeletal bird (Aves) remains were hand-collected from the feature. Feature 44 is a pit feature of indeterminate function. As the feature material was screened together, it is not possible to determine from which feature specific sample contents originate.

Feature 33 is a small pit feature, and this is the smallest of the Stratum Ig samples (0.15 gal) with the lowest variety of contents. This sample contains a colorless glass fragment and very small amounts (between < 0.1 and 0.2 g) of metal, slag, charcoal, and marine shell. The other three samples similarly contain marine shell and charcoal, in addition to unidentified botanicals, faunal bone, and crab shell (Brachyura). The marine shell includes *B. crebristriatus*, *Cellana*, Cerithiidae, *C. bella*, Hipponicidae, *N. picea*, Strombidae, Trochidae, and Turbinidae; the most abundant species in all three samples is *pipipi* (*N. picea*). Faunal bone includes *Pervagor spilosoma* and other bony fish (Osteichthyes), as well as bird (Aves).

Sea urchin (Echinoidea) was identified in the Feature 32 and Features 31/44 samples. An olive glass fragment (Acc. # 35) was also identified in the Feature 32 sample. The Features 31/44 sample is the only Stratum Ig sample that contains non-marine shell, which was identified as *Melampus*, *N. vespertinum*, and *N. neglecta*.

5.1.1.2.2 T-8 Stratum Ii and Stratum IIa/SIHP # -2870 Samples

One sample is from T-8 Stratum Ii, fill composed of redeposited A horizon material, from the southwest sidewall. As it is likely the contents within Stratum Ii originated within the Stratum IIa/SIHP # -2870 A horizon, these samples are discussed in the same subsection. Another sample is from Stratum IIa/SIHP # -2870 within the trench floor, and an additional seven samples are from features originating in Stratum IIa (SIHP # -2870 Features 34–40). Features 32 and 37 are interpreted as post molds, while the rest are pit features of indeterminate function.

All of the samples contain marine shell. This includes *B. crebristriatus*, *C. bella*, *Cellana*, Hipponicidae, *Isognomon*, *N. picea*, Patellidae, *S. maculatus*, and Tellinidae. *Pipipi* (*N. picea*) is the most abundant species in seven of the nine samples. Charcoal, non-marine shell, and faunal bone were each identified in eight of the nine samples. The non-marine shell comprises *Melampus*, *N. vespertinum*, *N. neglecta*, and unidentified species. The faunal bone comprises small mammal, small to medium mammal, dog (*C. lupus familiaris*), rodent (Rodentia), and bony fish (Osteichthyes); some is burnt.

Crab shell (Brachyura) was identified in seven of the nine samples, and unidentified botanicals were identified in six samples. Fire-affected basalt (Acc. #s 45, 47, and 50) and/or fire-affected coral (Acc. #s 46, 48, 51, and 52) was identified in four samples, while sea urchin (Echinoidea) was identified in three samples.

Imported western materials were identified in five of the nine samples. The Stratum Ii, Feature 36, and Feature 40 samples all contain metal/slag (fragments too small to separate; Acc. #s 38, 49, and 55). The Feature 40 sample additionally contains a copper wire (Acc. # 54), and the Stratum Ii sample also contains a brass button (Acc. # 39), olive and colorless glass fragments (Acc. #s 40 and 42), a glass seed bead (Acc. # 43), and a pearl shell button (Acc. # 41). A plastic button was identified in the Stratum IIa sample, and an amber glass fragment (Acc. # 53) was identified in the Feature 39 sample.

5.1.2 Uncollected Bulk and Screened Samples

Eight screened samples were photographed and analyzed by CSH laboratory personnel in the field (Table 13). These include one sample each from the Stratum IIa remnant A horizon within T-3 and T-4; one sample each from the Stratum IIa/SIHP # -2870 A horizon and SIHP # -2870 Feature 27 within T-5; and four samples from T-9, from the Stratum IIa reworked or redeposited A horizon, the Stratum IIb/SIHP # -2870 A horizon, and SIHP # -2870 Features 41 and 42, pit features of indeterminate function.

5.1.2.1 T-3 Sample

The T-3 sample is from the Stratum IIa remnant A horizon within the trench floor. It contains marine shell, non-marine shell (unknown species), sea urchin (Echinoidea), faunal bone, charcoal, chewing gum (Acc. # 94), a pencil graphite fragment (Acc. # 95), colorless glass fragments (Acc. # 96), and a metal fragment (Acc. # 97). The marine shell comprises *C. bella*, Hipponicidae, and *N. picea* (*pipipi*). The faunal bone comprises bony fish (Osteichthyes) and small mammal or bird (Aves).

5.1.2.2 T-4 Sample

The T-4 sample is from the Stratum IIa remnant A horizon within the trench floor. It contains marine shell, faunal bone, FAR (Acc. # 98), and metal. The marine shell comprises *B. crebristriatus*, and Hipponicidae, while the faunal bone is small mammal or bird (Aves). The metal comprises a cupreous metal nail (Acc. # 100) and a ferrous metal nail or bolt (Acc. # 99).

Table 13. Summary of uncollected screened samples, analyzed in the field

Test Excavation	Provenience	Vol * (gals)	Contents
T-3	Str. IIa, A horizon, trench floor, 77–87 cmbd	5.0	Marine shell (*C. bella*, Hipponicidae, *N. picea*, Echinoidea, non-marine shell (unknown species), Osteichthyes, small mammal or Aves bone, charcoal, chewing gum (Acc. # 94), pencil graphite fragment (Acc. # 95), colorless glass fragments† (Acc. # 96), ferrous metal fragment (Acc. # 97)
T-4	Str. IIa, A horizon, trench floor, 100–110 cmbs	4.0	Marine shell (*B. crebristriatus*, Hipponicidae), small mammal or Aves bone, FAR (Acc. # 98), ferrous metal nail or bolt (Acc. # 99), cupreous metal nail (Acc. # 100)
T-5	Str. IIa, A horizon, trench floor, 45–49 cmbs	5.0	Marine shell (*B. crebristriatus*, *Cellana*, Hipponicidae, *N. picea*, Strombidae), non-marine shell (unknown species), Echinoidea, Brachyura, medium mammal bone (some burnt), small mammal, ferrous metal fragments (Acc. # 101), possible fabric fragments (Acc. # 102), concrete fragment (Acc. # 103), FAC (Acc. # 104), aqua glass fragment (Acc. # 105), bone button fragment (Acc. # 106)
	Str. IIa, SIHP # -2870, Fea. 27, pit feature, trench floor, 48–58 cmbs	4.0	Marine shell (Hipponicidae, *N. picea*, Trochidae), non-marine shell (unknown species), Echinoidea, Osteichthyes, medium mammal bone (some burnt), ferrous metal nails (Acc. # 107), aqua glass bottle fragments (Acc # 108), colorless flat glass fragments (Acc. # 109), blue glass seed bead (Acc. # 110)
T-9	Str. IIa, reworked or redeposited A horizon, SW wall, 72–78 cmbs	2.5	Marine shell (Hipponicidae, *N. picea*), non-marine shell (unknown species), charcoal, botanicals, concrete flooring fragment (Acc # 111), possible chalk fragment (Acc. # 112), pencil graphite fragment (Acc. # 113), worked pearl shell object fragment (Acc. # 114), embossed bronze metal button (Acc. # 115), possible cupreous button shank (Acc. # 116), aluminum foil fragments (Acc. # 117), colorless glass fragments (Acc. # 118), olive glass fragments (Acc. # 119), ferrous and cupreous metal nails (Acc. # 120)
T-9 cont.	Str. IIb, A horizon, SIHP # -2870, SE wall, 84–93 cmbs	2.0	Marine shell (unknown species), non-marine shell (unknown species), basalt gravel, charcoal, medium to large mammal bone (some sawcut, some burnt), bone button fragment (Acc. # 121), colorless glass fragments (Acc. # 122), slag fragments (Acc. # 123), ferrous metal fragments (Acc. # 124), concrete flooring fragments (Acc. # 125)
	Str. IIb, SIHP # -2870, Fea. 41, pit feature, SE wall, 90–110 cmbs	4.0	Marine shell (*B. crebristriatus*, Hipponicidae, *N. picea*), basalt gravel, botanicals, charcoal, Osteichthyes, redware (terracotta) pot fragments (Acc. # 126), ferrous metal fragments (Acc. # 127), whiteware fragment (Acc. # 128), aqua glass fragments (Acc. # 129), dark amber (black) glass bottle fragment (Acc. # 130)
	Str. IIb, SIHP # -2870, Fea. 42, pit feature, SE and SW walls, 87–115 cmbs	3.0	Marine shell (*B. crebristriatus*, *Cellana*, Hipponicidae, *N. picea*), Echinoidea, charcoal, slag fragment (Acc. # 131), FAR (Acc. # 132), amber glass bottle fragment (Acc. # 133), dark amber (black) glass bottle fragment (Acc. # 134), pink glass fragment (Acc. # 135), cupreous metal eyelet (Acc. # 136), cupreous metal fragment (Acc. # 137), ferrous metal buckle (Acc. # 138), ferrous metal fragments (Acc. # 139)

*refers to volume screened

†when not specified, fragments were too small to identify as bottle or flat glass

5.1.2.3 T-5 Samples

The T-5 samples comprise one sample each from the Stratum IIa/SIHP # -2870 A horizon and SIHP # -2870 Feature 27, pit feature of indeterminate function originating in Stratum IIa. Both samples contain marine shell, non-marine shell (unknown species), sea urchin (Echinoidea), faunal bone, metal, and glass. The marine shell includes *B. crebristriatus*, *Cellana*, Hipponicidae, *N. picea* (*pipipi*), Strombidae, and Trochidae. The faunal bone includes bony fish (Osteichthyes) and small and medium mammal; some is burnt. The metal includes ferrous nails (Acc. # 101) and fragments (Acc. #107). The glass includes aqua glass bottle fragments (Acc. # 108) and an aqua glass fragment too small to identify as bottle or flat glass (Acc. # 105), and colorless flat glass fragments (Acc. # 109). The A horizon sample additionally contains possible fabric fragments (Acc. # 102), FAC (Acc. # 104), and a bone button fragment (Acc. # 106). The Feature 27 sample contains a blue glass seed bead (Acc. # 110).

5.1.2.4 T-9 Samples

The four T-9 samples are from the Stratum IIa reworked or redeposited A horizon, the Stratum IIb/SIHP # -2870 A horizon, and SIHP # -2870 Features 41 and 42, pit features of indeterminate function originating in Stratum IIb. All four samples contain marine shell, charcoal, glass, and metal. The marine shell comprises *B. crebristriatus*, *Cellana*, Hipponicidae, and *N. picea*. The glass includes colorless (Acc. #s 118 and 122), amber (Acc. # 133), pink (Acc. # 135), aqua (Acc. # 121), and olive (Acc. # 119) fragments too small to identify as bottle or flat, as well as amber (Acc. # 133) and dark amber (black) glass bottle fragments (Acc. #s 130 and 134). The metal includes a bronze metal button (Acc. # 115), a possible cupreous button shank (Acc. # 116), ferrous and cupreous metal nails (Acc. # 120), ferrous metal fragments (Acc. #s 124, 127, and 139), a cupreous metal eyelet (Acc. # 136), a cupreous metal fragment (Acc. # 137), and a ferrous metal buckle (Acc. # 138).

Non-marine shell (unknown species), concrete flooring fragments (Acc. #s 111 and 125), faunal bone, and basalt gravel were each identified in two of the four samples. The faunal bone comprises bony fish (Osteichthyes) and medium to large mammal (some sawcut, some burnt).

Materials unique to the Stratum IIa sample include a possible chalk fragment (Acc. # 112), a pencil graphite fragment (Acc. # 113), a worked pearl shell object fragment (Acc. # 114), and aluminum foil fragments (Acc. # 117). The Stratum IIb/SIHP # -2870 sample contains a bone button fragment (Acc. # 121). The Feature 41 sample contains redware (terracotta) pot fragments, and the Feature 42 sample contains a slag fragment (Acc. # 131), sea urchin (Echinoidea), and FAR.

5.1.3 Summary and Interpretation of Screened and Bulk Samples

Samples from T-6 and T-8 were collected and analyzed at the CSH laboratory. Samples from T-3, T-4, T-5, and T-9 were screened, photographed, and analyzed in the field; additional analysis of the photographs and data recorded was conducted at the CSH office. The samples are primarily from a buried A horizon atop Jaucas sand (Stratum IIa in T-3, T-4, T-5, and T-8; Stratum IIb in T-6 and T-9) and associated features. Where associated features were identified, the A horizon and features are designated as part of SIHP # -2870. Additional samples are from a pit feature intrusive into the A horizon (T-6 Stratum IIa/SIHP # -2870 Feature 29); from a reworked or redeposited

A horizon (T-9 Stratum IIa); and from a culturally enriched fill deposit and associated features (T-8 Stratum Ig/SIHP # -2870).

The feature samples typically contain a small amount of charcoal, with some additionally containing FAR and/or FAC. However, based on the very small amounts, the fact that these amounts are consistent with samples from the associated layers, and the lack of fire-reddened soil indicative of burning, these are not interpreted as fire-related features. One is a bird burial, and two are likely post molds; the rest are of indeterminate function.

Almost all samples contain marine shell, with the most common species being *pipipi* (*N. picea*), possibly indicative of midden (i.e., food refuse). Many samples also contain non-marine shell identified as *N. vespertinum*, *N. neglecta*, and *Melampus*. *Neripteron vespertinum* is a mollusk found in fresh or brackish water, while *N. neglecta* is a brackish water mollusk endemic to Hawaiʻi. *Melampus* is a genus of small, air-breathing salt marsh snails. The presence of non-marine shell is consistent with the former proximity of the project area to Piʻinaio Stream, prior to its realignment in the early twentieth century (see Section 1.3.1 discussion).

Identified vertebrate faunal remains include small, medium, and large mammal bone that could not be identified to species but is inconsistent with human morphology, as well as bird (Aves), dog (*C. lupus familiaris*), rat (Rodentia), and bony fish (Osteichthyes). The only fish remains that could be identified to species are *P. spilosoma*, a species of filefish from reefs in the Hawaiian Islands. Many of the remains are burnt and/or sawcut, suggesting they represent food refuse. Evidence for sawcutting (i.e., cutting with a metal implement) further indicates a post-Contact age for those contexts.

In fact, a post-Contact age for all sampled strata is evidenced not only by the presence of sawcut faunal bone, but also by the presence of imported western materials. These include glass, metal, plastic, ceramic, slag, chalk, chewing gum, pencil graphite, and concrete. The only traditional-type artifacts, a basalt core (Acc. # 13) and basalt debitage (Acc. # 17), were identified in a sample of redeposited A horizon material from T-6; presumably, this material was sourced from the Stratum IIb/SIHP # -2870 A horizon. However, based on the imported western materials within both the A horizon and redeposited A horizon samples from T-6, these traditional-type artifacts likely date to the post-Contact period.

T-8 is the only test excavation with two overlying habitation layers designated as part of SIHP # -2870: Stratum Ig, culturally enriched fill deposit, and Stratum IIa, buried A horizon. Sample contents from these two contexts are generally similar, with samples from both strata yielding marine shell, charcoal, unidentified botanicals, faunal bone, crab shell, sea urchin, metal, slag, and glass. Materials identified in Stratum IIa that were absent from Stratum Ig include FAR, FAC, plastic, and *kukui*. Aside from plastic, these are not imported western materials; hence, their presence in the Stratum IIa samples is consistent with the earlier age of the layer, which underlies and therefore pre-dates Stratum Ig.

However, it should be noted that the number and volume of samples from T-8 Stratum Ig are lower than Stratum IIa. There are eight samples from T-8 Stratum IIa and its associated features, in comparison with only four samples from Stratum Ig and its associated features. Moreover, the sample from the Stratum IIa layer is 5 gals, while the sample from the Stratum Ig layer is only 0.25 gal. This is due to the Stratum IIa sample being collected from the trench floor, while the Stratum Ig sample was collected from the sidewall (excavation into the sidewall was limited to avoid sidewall collapse). Hence, the greater variety of materials within the Stratum IIa samples may at least partially be a result of the greater quantity and volume of samples.

5.2 Artifact Analysis

Fifty-seven artifacts were collected from T-2, T-6, and T-8 and analyzed at the CSH laboratory. The vast majority (n = 49) are from collected bulk and screened samples (see Section 5.1.1). An additional 81 artifacts from T-3, T-4, T-5, and T-9 were photographed and analyzed by CSH laboratory personnel in the field, with additional analysis (e.g., researching diagnostic attributes) conducted at the CSH office; as with the collected artifacts, most of these (n = 46) were identified within screened samples (see Section 5.1.2). No artifacts were identified in T-1 (not fully excavated due to subsurface utility infrastructure) or T-7 (basalt gravel fill to BOE). Two of the artifacts, a basalt core (Acc. # 13) and basalt debitage (Acc. # 17), are traditional-type artifacts; however, based on context, they likely date to the post-Contact period. Collected and uncollected artifacts are summarized in Table 14 through Table 17 and discussed below.

5.2.1 Glass Artifacts

There are 36 glass artifacts, 19 collected and 17 uncollected. They comprise 12 bottle fragments (Acc. #s 2, 11, 14, 16, 19, 70, 78, 82, 108, 130, 133, and 134), one window fragment (Acc. # 64), two beads (Acc. #s 43 and 110), and 21 fragments of unknown type (Acc. #s 18, 24, 26, 28, 30, 31, 32, 35, 37, 40, 42, 53, 58, 96, 105, 109, 118, 119, 122, 129, and 135).

5.2.1.1 Glass Bottles

The terminology used to describe bottle traits and dating information is based on information from the U.S. Department of the Interior, Bureau of Land Management (BLM) Society of Historic Archaeology (SHA) “Historic Glass Bottle Identification and Information Website” (BLM/SHA 2021). Bottle manufacture dates can typically be determined through assessment of features associated with manufacturing techniques and bottle type and function, as well as through research using reference texts and online resources to identify maker’s marks and company histories. Of the 12 bottle fragments identified in the current study, only two (Acc. #s 2 and 70) have sufficient diagnostic characteristics to assess the manufacture date more narrowly than post-1850.

Accession # 70 was dated by its manufacture type. The evolution of bottle manufacturing can be broken down into three stages: free-blown, mold-blown, and machine-made. Since antiquity, bottles have been free-blown with a blow pipe. Free-blown bottles are usually asymmetrical, crudely made, and have a pontil mark where a rod was used to hold the bottle during the last steps of manufacture. Around 1800, glassworkers began to blow bottles in molds. A variety of mold types were used throughout history, which can be identified by the pattern of mold seams present on the surface of the bottle, until ca. 1920. Semi-automatic machines were introduced in the 1890s and were mostly used to make wide-mouth jars. Michael Owens invented the first fully automatic machine in 1903, which could blow wide-mouth bottles as early as 1905 and narrow-necked bottles (such as beverage bottles) as early as 1908. Machine-made bottles can be identified by two side seams that extend over the lip of the bottle (BLM/SHA 2021). Accession # 70 is a fragment of a colorless glass machine-made bottle with a small mouth non-continuous external thread finish, produced post-1908.

Table 14. Summary of hand-collected artifacts

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
T-2	Str. Ic, imported fill, spoils	1	Slag	–	Slag fragment	Post-1850	–
	Str. Ie, imported fill, spoils	2	Glass	Bottle	Aqua glass household bottle, body fragment, rectangular shape, embossed: “WHITT[EMORE]” / “BOS[TON]” / “U[.S.A.]” vertically on body	1852–ca. 1930s	U.S.
		3	Ceramic	Hollowware	Whiteware dish or mug, body to rim fragment, undecorated	Post-1850	Euro-American
T-6	Pocket of A horizon material, trench floor, 60 cmbs	4	Basalt	FAR	Fire-affected basalt cobble with adhered ferrous metal fragment	–	–
T-8	Str. If, imported fill, spoils	5	Basalt	FAR	Fire-affected basalt cobble	–	–
		7	Brick	–	Dark red brick fragment, likely handmade	Post-1847	–
	Str. If, imported fill, NW wall, 115 cmbd	6	Brick	–	Dark red brick, likely handmade	Post-1847	–

Table 15. Summary of artifacts from collected bulk and screened samples

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
T-6	Str. IIa/SIHP # -2870 Fea. 29, pit feature, SW wall, 40–75 cmbs	8	Metal	Other	Rusted ferrous metal nails, two with round heads, one indeterminate	Post-1850	–
		9	Metal/Slag	–	Metal and slag fragments	–	–
		10	Metal	Apparel accessory	Cupreous metal decoration with plastic or stone “jewel” in the center, likely a jewelry or clothing ornament	Post-1850	–
	Pocket of A horizon material within an area of disturbance, trench floor, 60–72 cmbs	11	Glass	Bottle	Aqua glass bottle, body fragment, round shape, side seam, unknown method of manufacture	Post-1850	–
		12	Metal/Slag	–	Metal and slag fragments	Post-1850	–
		13	Basalt	Core	Basalt core with intact cortex and at least two flake scars	–	–
		14	Glass	Bottle	Colorless glass bottle, body fragments (2), square or rectangular shape, unknown method of manufacture	Post-1850	–
		15	Metal	Other	Rusted ferrous metal objects, including nails or nail fragments (8), most with round heads (7)	Post-1850	–
		16	Glass	Bottle	Amber glass bottle, base fragment (1), body fragment (7), round shape, slightly recessed base, unknown method of manufacture	Post-1850	–
		17	Basalt	Debitage	Shatter and possible flakes (17)	–	–
		18	Glass	Unknown	Colorless glass fragments, most melted and warped due to exposure to heat	Post-1850	–
		19	Glass	Bottle	Dark olive (black) glass bottle, body fragment, round shape, unknown method of manufacture	Post-1850	–
	Str. IIb/SIHP # -2870, A horizon, trench floor, 26–31 cmbs	20	Metal/Slag	–	Metal and slag fragments	Post-1850	–
		21	Metal	Unknown	Rusted ferrous metal objects/fragments	Post-1850	–
		22	Metal	Ammunition	Cupreous spitzer bullet, no cartridge, rifling marks indicate projectile was fired	Post-1898	–
		23	Metal	Coin	American Lincoln wheat penny	1947	U.S.
		24	Glass	Unknown	Aqua glass fragment	Post-1850	–
		25	Plastic	Unknown	Red plastic fragment with silver paint splotches	Post-1850	–
		26	Glass	Unknown	Colorless glass fragments	Post-1850	–
		27	Ceramic	Hollowware	Whiteware hollowware body fragment, yellow glaze on interior and exterior	Post-1850	Euro-American
		28	Glass	Unknown	Milk glass fragment	Post-1850	–
		29	Plastic	Unknown	Orange plastic fragment	Post-1850	–
		30	Glass	Unknown	Amber glass fragment	Post-1850	–

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
		31	Glass	Unknown	Olive glass fragments	Post-1850	–
		32	Glass	Unknown	Red glass fragments	Post-1850	–
T-8	Str. Ig/SIHP # -2870 Fea. 31, bird burial, and Fea. 44, pit feature*, trench floor, 143–163 cmbd	33	Metal/Slag	–	Metal and slag fragments	Post-1850	–
	Str. Ig/SIHP # -2870 Fea. 32, post mold, trench floor, 140–192 cmbd	34	Metal/Slag	–	Metal and slag fragments	Post-1850	–
		35	Glass	Unknown	Olive glass fragments	Post-1850	–
	Str. Ig/SIHP # -2870 Fea. 33, pit feature, NE wall, 138–141 cmbd	36	Metal/Slag	–	Metal and slag fragments	Post-1850	–
		37	Glass	Unknown	Colorless glass fragment	Post-1850	–
	Str. Ii, fill composed of redeposited A horizon material, trench floor, 140–172 cmbd	38	Metal/Slag	–	Metal and slag fragments	Post-1850	–
		39	Metal	Button	Corroded round cupreous metal shank button	Post-1850	–
		40	Glass	Unknown	Olive glass fragments	Post-1850	–
		41	Shell	Button	Two-hole pearl shell button	Post-1850	–
		42	Glass	Unknown	Colorless glass fragments	Post-1850	–
		43	Glass	Bead	Green glass seed bead	Post-1850	–
	Str. IIa/SIHP # -2870 Fea. 34, pit feature, trench floor, 137–173 cmbd	44	Metal	Unknown	Rusted ferrous metal object	Post-1850	–
	Str. IIa/SIHP # -2870 Fea. 35, pit feature, trench floor, 128–155 cmbd	45	Basalt	FAR	Fire-affected basalt	–	Hawai'i
		46	Coral	FAC	Fire-affected coral	–	Hawai'i
	Str. IIa/SIHP # -2870 Fea. 36, pit feature, 138–145 cmbd	47	Basalt	FAR	Fire-affected basalt	–	Hawai'i
		48	Coral	FAC	Fire-affected coral	–	Hawai'i
		49	Metal/Slag	–	Metal and slag fragments	Post-1850	–
	Str. IIa/SIHP # -2870 Fea. 38, pit feature, trench floor, 144–155 cmbd	50	Basalt	FAR	Fire-affected basalt	–	Hawai'i
		51	Coral	FAC	Fire-affected coral	–	Hawai'i
	Str. IIa/SIHP # -2870 Fea. 39, pit feature, trench floor, 143–170 cmbd	52	Coral	FAC	Fire-affected coral	–	Hawai'i
		53	Glass	Unknown	Amber glass fragment	Post-1850	–
	Str. IIa/SIHP # -2870 Fea. 40, pit feature, trench floor, 144–165 cmbd	54	Metal	Wire	Copper wire	Post-1850	–
		55	Metal/Slag	–	Metal and slag fragments	Post-1850	–
	Str. IIa/SIHP # -2870, A horizon,	57†	Plastic	Button	Round white plastic shank button	Post-1940	–

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
	trench floor, 120–130 cmbd	58	Glass	Unknown	Milk glass fragment	Post-1850	–

*features accidentally excavated and screened together

†Accession # 56 was deleted

Table 16. Uncollected artifacts not from bulk samples

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
T-3	Str. Ib, fill composed of imported and locally available material, spoils	59	Plastic	Bottle	White plastic glue bottle, continuous threaded finish	Post-1951	U.S.
		60	Plastic	Other	White plastic paint brush handle, “PURE BRISTLE” printed horizontally on body	Post-1850	–
		61	Plastic	Other	Plastic sunglasses lens, black	Post-1950s	–
		62	Plastic	Other	Plastic matchbook cover, “CORAL SUPPLY” / “HAWAII” printed on the front flap	Post-1976	U.S.
		63	Metal	Nail	Rusted ferrous metal nail, round head	–	–
		64	Glass	Window	Six aqua flat fragments, likely window glass	Post-1850	–
		65	Metal	Can	Aluminum can, round shape, short height, white interior lining, stamped “8702” in pink on base	Post-1963	–
		66	Plastic	Bottle	Brown plastic household bottle, round body, flat base, threaded finish, “CONCIERGE” printed horizontally in white across the body, decorative white bands on the upper and lower portions of body, illegible white lettering just above the lower decorative bands	Post-1850	–
		67	Metal	Hardware	Heavily rusted nail or bolt	Post-1850	–
		68	Plastic	Other	Plastic six-pack rings	Post-1962	–
		69	Plastic	Other	Kodak instant film photograph, “Kodak Film” printed on lower right corner of photograph	1976–1986	U.S.
		70	Glass	Bottle	Colorless glass bottle, neck to finish fragment, machine-made, non-continuous external thread finish	Post-1908	–
		71	Plastic	Other	Plastic Tengu brand beef steak jerky package	Post-1973	U.S.
		72	Plastic	Other	Gray polyethylene shopping bag	Post-1965	–
		73	Plastic	Cosmetic	Red plastic Estée Lauder Re-Nutriv lipstick tube with cap, “Estée Lauder” (arch) / “Re-Nutriv” / “Walnut B[…]” / “NY, NY-10022” inverted arch printed on base label	1956–ca. 1999	U.S.
		74	Plastic	Other	Red and yellow striped plastic drinking straw	Post-1960s	–
		75	Ceramic	Toiletware	Thick porcelain fragment, likely from a sanitary fixture (e.g., toilet or sink)	Post-1850	–
	Str. IIa, A horizon, spoils	76	Ceramic	Flatware	Whiteware plate base to rim fragment (1), cavetto fragment (1)	Post-1850	Euro-American
		77	Shell	Button	Two-hole pearl shell button, round, unknown method of manufacture	–	–
T-4	Str. Ib, mixed fill, spoils	78	Glass	Bottle	Emerald glass bottle, body fragment, unknown method of manufacture	Post-1850	–
	Str. Ic, basalt base course, spoils	79	Plastic	Bottle	Yellow plastic Pennzoil oil bottle, complete, flat base, rectangular body, threaded finish, embossed “Pennzoil” on both sides of shoulder	Post-1986	U.S.

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
		80	Plastic	Other	Orange plastic toy sand shovel	Post-1850	–
		81	Metal	Other	Rusted ferrous metal shelving bracket with decorative chrome plating	Post-1850	–
		82	Glass	Bottle	Aqua glass bottle, body fragment, square or rectangular body	Post-1850s	–
	Str. Id, fill composed of imported and locally available material, spoils	83	Brick	–	Yellow brick (half), likely calcium silicate	Post-1850	–
		84	Metal	Other	Gold-painted non-ferrous metal flooring transition strip	Post-1850	–
		85	Plastic	Unknown	Red and white plastic fragment, likely a wrapper	Post-1850	–
		86	Plastic	Unknown	Unidentified red plastic fragment	Post-1850	–
		87	Plastic	Other	White plastic disposable fork with “DISPOZ-O USA 8-24” embossed horizontally on back of body	Post-1973	–
T-5	Str. IIa/SIHP # -2870, A horizon, spoils	88	Ceramic	Hollowware	Yellowware bowl or dish, rim fragment, undecorated	1850–1930s	Euro-American
T-9	Str. Ie, imported fill, spoils	89	Concrete	Other	Large piece of concrete flooring with red paint on surface	Post-1850	–
		90	Ceramic	Hollowware	Undecorated whiteware cup or bowl fragment	Post-1850	Euro-American
		91	Metal	Unknown	Strip of ferrous metal	Post-1850	–
		92	Ceramic	Tile	Flooring tile fragment	–	–
	Str. IIb/SIHP # -2870, A horizon, spoils	93	Ceramic	Flatware	Porcelain plate rim fragment, molding and silver gilt decoration on interior rim	Post-1850	Euro-American

Table 17. Uncollected artifacts from screened samples

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
T-3	Str. IIa, A horizon, trench floor, 77–87 cmbd	94	Other	Other	Chewing gum (2)	Post-1850	–
		95	Other	Other	Pencil graphite fragment, round	Post-1876	–
		96	Glass	Unknown	Colorless glass fragments (2)	Post-1850	–
		97	Metal	Unknown	Rusted ferrous metal fragment	Post-1850	–
T-4	Str. IIa, A horizon, trench floor, 100–110 cmbs	98	Basalt	FAR	Fire-affected basalt	–	Hawai‘i
		99	Metal	Hardware	Heavily rusted ferrous metal nail or bolt	Post-1850	–
		100	Metal	Nail	Cupreous metal nail, round head, square tapered shank	Post-1850	–
T-5	Str. IIb/SIHP # -2870, A horizon, trench floor, 45–49 cmbs	101	Metal	Other	Highly rusted ferrous metal fragments, including nail shaft fragments (7)	Post-1850	–
		102	Other	Other	Dark colored organic material, possibly fabric	Post-1850	–
		103	Concrete	Unknown	Dark colored concrete fragment	Post-1850	–
		104	Coral	FAC	Fire-affected coral	–	Hawai‘i
		105	Glass	Unknown	Aqua glass fragment	Post-1850	–
		106	Bone	Button	Bone button fragment, round, unknown method of manufacture	Post-1850	–
	Str. IIa/SIHP # -2870 Fea. 27, pit feature, trench floor, 48–58 cmbs	107	Metal	Nail	Highly rusted ferrous metal nail shaft fragments (2)	Post-1850	–
		108	Glass	Bottle	Aqua glass bottle, body fragments (2), round shape, unknown method of manufacture	Post-1850	–
		109	Glass	Unknown	Colorless flat glass fragments, unknown if from window or square/rectangular bottle	Post-1850	–
		110	Glass	Bead	Light blue glass seed bead	Post-1850	–
T-9	Str. IIa, reworked or redeposited A horizon, SW wall, 72–78 cmbs	111	Concrete	Other	Concrete flooring fragment	Post-1850	–
		112	Other	Other	Possible chalk fragment	Post-1850	–
		113	Other	Other	Pencil graphite fragment, round	Post-1876	–
		114	Shell	Unknown	Worked pearl shell object fragment, possibly button	Post-1850	–
		115	Metal	Button	Bronze shank button, round, Great Seal of the United States embossed on the front, “HORSTMANN*** PHILA***” imprinted on back, split ring through shank	1902–1935	U.S.
		116	Metal	Unknown	U-shaped cupreous metal fragment, possible button shank	Post-1850	–
		117	Metal	Other	Aluminum foil fragments	Post-1947	–

Test Excavation	Provenience	Acc. #	Material	Type	Description	Age	Origin
		118	Glass	Unknown	Colorless glass fragments (5)	Post-1850	–
		119	Glass	Unknown	Olive glass fragments (2)	Post-1850	–
		120	Metal	Nail	Cupreous metal nail with round, domed head and round shank (1), and ferrous metal nail fragments (8), two with round heads	Post-1850	–
	Str. IIb/SIHP # -2870, A horizon, SE wall, 84–93 cmbs	121	Bone	Button	Two-hole bone button fragment, round, unknown method of manufacture	Post-1850	–
		122	Glass	Unknown	Colorless glass fragments (3)	Post-1850	–
		123	Slag	–	Slag fragments (15)	Post-1850	–
		124	Metal	Unknown	Highly rusted ferrous metal fragments	Post-1850	–
		125	Concrete	Other	Concrete flooring fragments with red painted surface (many)	Post-1850	–
	Str. IIb/SIHP # -2870 Fea. 41, pit feature, SE wall, 90–110 cmbs	126	Ceramic	Other	Redware (terracotta) flower pot, base to body (2) and body (3) fragments	Post-1850	–
		127	Metal	Other	Highly rusted ferrous metal fragments, including at least 60 nails or nail fragments	Post-1850	–
		128	Ceramic	Flatware	Undecorated whiteware plate or dish fragment	Post-1850	Euro-American
		129	Glass	Unknown	Aqua glass fragments (2)	Post-1850	–
		130	Glass	Bottle	Dark amber (black) glass bottle, body fragment, round shape, unknown method of manufacture	Post-1850	–
	Str. IIb/SIHP # -2870 Fea. 41, pit feature, SE and SW walls, 87–115 cmbs	131	Slag	–	Slag fragment	Post-1850	–
		132	Basalt	FAR	Fire-affected basalt	–	Hawai‘i
		133	Glass	Bottle	Amber glass bottle, body fragment, round shape, unknown method of manufacture	Post-1850	–
		134	Glass	Bottle	Dark amber (black) glass bottle, body fragment, round shape, unknown method of manufacture	Post-1850	–
		135	Glass	Unknown	Pink glass fragment	Post-1850	–
		136	Metal	Apparel accessory	Cupreous metal shoe eyelet	Post-1850	–
		137	Metal	Apparel accessory	Cupreous metal fragment, likely from jewelry or clothing	Post-1850	–
		138	Metal	Apparel accessory	Highly rusted ferrous metal buckle	Post-1850	–
		139	Metal	Other	Highly rusted ferrous metal fragments, including at least 11 nails or nail fragments, too rusted to tell shape	Post-1850	–

Accession # 2 (Figure 145), an aqua glass shoe polish bottle fragment, lacks diagnostic features to determine method of manufacture; however, it is embossed with proprietary information for the Whittemore Brothers Corporation of Cambridge, Massachusetts, indicating the bottle was produced during the years the company was in business, between 1852 and ca. the 1930s (Whitten 2022).

5.2.1.2 Other Glass Artifacts

Accession # 64 is a collection of six aqua flat glass fragments that appear to be window fragments. Some historic window glass can be diagnostic depending on, among other traits, surface texture, uniformity, and thickness (Weiland 2009:29); however, Acc. # 64 was uncollected and thus could not be measured.

Two round glass seed beads, one green (Acc. # 43) (Figure 146) and one blue (Acc. # 110), were documented during the project. Seed beads are very small, usually mass-produced glass beads that come in a variety of shapes including round, square, and tube-shaped (American Museum of Natural History 2018). The manufacture method and origin were unable to be determined for either bead.

The remaining glass artifacts are all small fragments for which it was not possible to identify the artifact type. These artifacts could not be dated more narrowly than post-1850.

5.2.2 Ceramic Artifacts

Ceramic artifacts were analyzed for function, paste, decoration, and origin. Pastes include “earthenware,” “stoneware,” and “porcelain.” Ceramic tableware fragments were further designated as “flatware” (e.g., plates, shallow saucers) or “hollowware” (e.g., bowls, cups). The terminology and dates for manufacturing and decoration techniques used in this section are from the Maryland Archaeological Conservation Lab (2018) internet site “Diagnostic Artifacts of Maryland,” unless otherwise noted.

Ten ceramic artifacts (Acc. #s 3, 27, 75, 76, 88, 90, 92, 93, 126, and 128) were identified during the current study, two collected and eight uncollected. They comprise seven tableware fragments, one toiletware fragment, one set of flowerpot fragments, and one flooring tile fragment.

5.2.2.1 Tablewares

All seven tableware fragments are Euro-American in origin. Four are from hollowwares (Acc. #s 3, 27, 88, and 90), and three are from tablewares (Acc. #s 76, 93, and 128). Six are earthenwares, including five whitewares (Acc. #s 3, 27, 76, 90, and 128; Figure 147) and one yellowware (Acc. # 88). One is porcelain (Acc. # 93).

Whiteware is a type of earthenware made of a semi-porous to porous, compact material fired at 1100–1200º C (Florida Museum of Natural History 2020). Whiteware production began in 1820, with the height of production between 1850 and 1910 (Lebo 1997). None of the current whiteware fragments have decoration or any other diagnostic characteristics.

Yellowware is a type of earthenware made from yellow clays in England and North America. Yellowwares are made of coarser paste than refined earthenwares, such as whitewares, and are fired at higher temperatures. Yellowware production began in the United Kingdom in the late

Figure 145. Acc. # 2, aqua glass household bottle fragment embossed with proprietary information for Whittemore Brothers Corporation

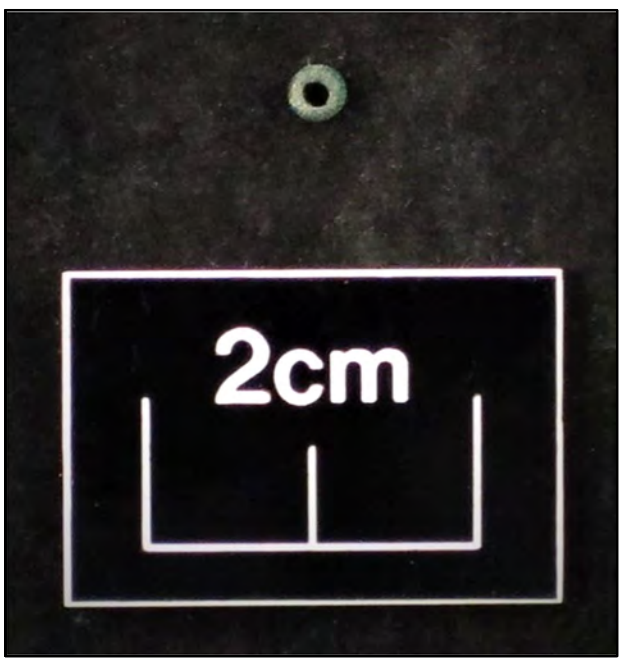


Figure 146. Acc. # 42, green glass seed bead

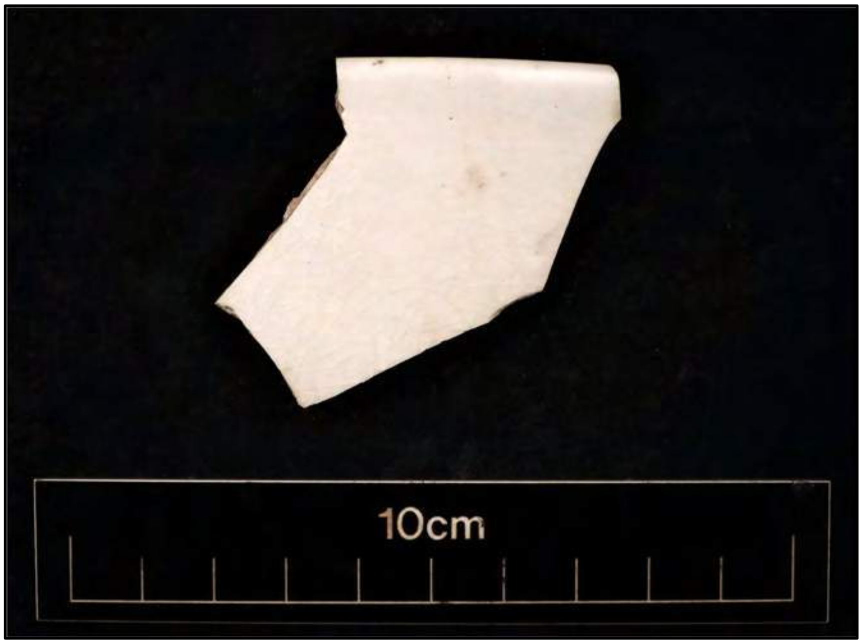


Figure 147. Acc. # 3, whiteware hollowware body to rim fragment (T-2, Stratum Id)

eighteenth century. By 1800, North American potteries were producing yellowware in Ohio, New Jersey, Pennsylvania, and Maryland. Although popularity declined around the turn of the twentieth century, yellowware continued to be produced until the 1930s (Liebowitz 1985:9). Accession # 88 (Figure 148), a yellowware hollowware fragment, is undecorated.

Porcelains are very hard, compact, vitreous, and fired at temperatures of 1300–1450º C (Florida Museum of Natural History 2020). The manufacture of Euro-American porcelain began as early as the mid-1700s, but the popularity of porcelain did not fully take hold until the mid- to late-nineteenth century. Most Euro-American porcelain is decorated. Common decoration techniques included overglaze painting and printing, relief molding, gilding, and decal print (Majewski and O'Brien 1987:128). Accession # 93 (Figure 149), a plate fragment, has molding and remnants of silver gilt around the rim.

5.2.2.2 Other Ceramic Artifacts

Accession # 75 is a thick porcelain toilet fragment, likely from a large fixture such as a toilet or sink. Accession # 92 is a flooring tile fragment, and Acc. # 126 is a fragmented terracotta flower pot. None of these artifacts have diagnostic characteristics that can be used to narrow the dates of manufacture or assess their origins.

5.2.3 Metal and Slag Artifacts

Forty-two metal or slag artifacts were identified during the project, 19 collected and 22 uncollected. These include a bullet (Acc. # 22), a penny (Acc. # 23), a can (Acc. # 65), aluminum foil fragments (Acc. # 117), personal ornaments and accessories (e.g., buckles, buttons; Acc. #s 10, 39, 115, and 136–138), household items (e.g., a shelving bracket, a flooring transition strip; Acc. #s 81 and 84), copper wire (Acc. # 54), hardware (e.g., nails and bolts; Acc. #s 8, 63, 67, 99, 100, 107, and 120), slag (Acc. #s 1, 123, and 131), mixed metal and slag (Acc. #s 9, 12, 20, 33,

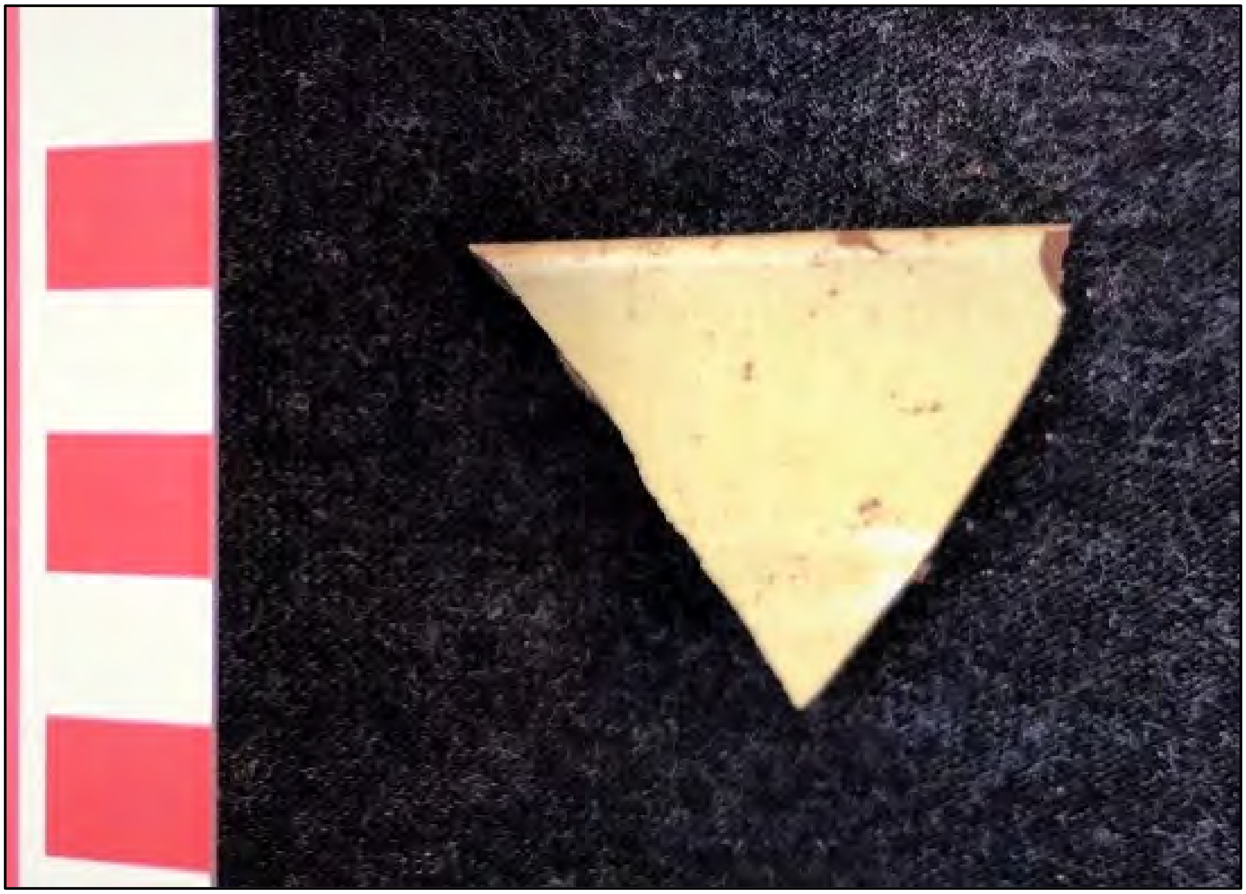


Figure 148. Acc. # 88, yellowware bowl or dish rim fragment

Figure 149. Acc. # 93, porcelain plate rim fragment, molding and silver gilt decoration on interior rim

34, 36, 38, 49, and 55), collections of metal fragments and objects (Acc. #s 15, 21, 101, 124, 127, 139), and unidentified metal objects or fragments (Acc. #s 44, 91, and 97). Most of the metal artifacts are in poor condition and have few characteristics useful for dating. In some screened samples, an abundance of small and decomposing metal fragments necessitated the grouping of such artifacts. Similarly, in cases where slag was present, its appearance was so similar to that of some of the rusted and decomposing metal fragments that the two could not be separated and were instead accessioned together as metal/slag.

5.2.3.1 Ornaments and Accessories

Accession # 115 (Figure 150) is a large bronze shank button embossed with the Great Seal of the United States on the front and impressed with proprietary information for W.H. Horstmann & Co. on the back. The manufacturer used this backmark between 1893 and 1935. The Great Seal on the front indicates it was produced for the U.S. Army after 1902, when the branch mandated the design for all troops except those in the Engineer Corps (Inkspot Antiques 2022). Dress uniform buttons would have been gilt, and service uniform buttons bronze, indicating Acc. # 115 is from a service uniform (Inkspot Antiques 2022). Of note is a small split ring attached to the shank of the button, which was likely not part of its original condition.

Accession # 39 is a large, round, cupreous metal shank button, consistent with those typical of coats and similar outerwear garments; however, it is too corroded to discern any details necessary for dating. Similarly, two cupreous metal clothing ornaments or jewelry fragments (Acc. #s 10 and 137), a cupreous metal shoe eyelet (Acc. # 136), and a rusted ferrous metal buckle (Acc. # 138) also lack the characteristics sufficient for dating more narrowly than post-1850.

5.2.3.2 Hardware

Many nails and nail fragments were identified during the project; some were accessioned separately, while others were accessioned with collections of metal material. Most are highly degraded, obscuring features necessary for dating. Of those able to be assessed, one cupreous nail has a round head and square tapered shank (Acc. # 100), while another has a round domed head and round shank (Acc. # 120). Others have round heads, but the shapes of the shafts are indeterminate (Acc. #s 8, 15, 120, and 139). Conversely, others have round shafts, but the shapes of the heads are indeterminate (Acc. # 127).

Intermountain Antiquities Computer System (IMACS 1992) summarizes nails based on several criteria. Nail head details and profile or thickness variations aid in distinguishing the differences among types. Handmade wrought nails are the earliest nails made in America, generally dating pre-1850 (Nelson 1968). Wrought nail shanks are square or rectangular with a variable thickness that tapers to a point. The nail is topped with a round or rectangular head that might be lettered. Machine-cut nails date from as early as ca. 1790 to as recently as the mid-1920s. These nails generally date from 1835–1890, although some are still made today (Adams 2002:68). Such nails can be readily distinguished from wrought nails by the consistent thickness of their shafts. Machine cut nail heads are rectangular or square in shape. Wire nails are the most recently produced nails, manufactured in America from ca. 1850 to the present. They have round heads and round shafts with consistently shaped shanks and exhibit little change over time. Thus, distinguishing early wire nails from modern wire nails is very difficult (IMACS 1992). Wire nails were first imported to Hawaiʻi by E.O. Hall and Son in 1894 (Hurst and Allen 1992).

Figure 150. Acc. # 115, bronze shank button, round, Great Seal of the United States embossed on the front, “HORSTMANN***PHILA***” on back

Based on its shape, Acc. # 100 (Figure 151) is most likely a handmade wrought nail produced before 1850. None of the other nails could be dated. It is likely that many of the round head or round shank nails are wire nails, but their condition makes it impossible determine definitively. Accession #s 67 and 99 are either large nail fragments or bolt fragments; however, both are heavily rusted and could not be identified.

5.2.3.3 Slag

Slag is a byproduct of metallurgical processes, such as smelting and welding. It can have a range of appearances based on its mineralogical composition, including highly vitrified and glassy, rocky and vesicular, and billowy and ferrous (Encyclopaedia Britannica, Inc. 2022). These variations in appearance often lead to misidentification in archaeological contexts and confusion with volcanic glass, volcanic rock, and metal (Albion Fire and Ice Mineral Supplier 2022). Slag consistent with all of the above descriptions was identified during the current study. In some screened samples, the appearance of the slag was so similar to that of rusted and decomposing metal fragments that the two could not be separated and were instead accessioned together as metal/slag. While the presence of slag may be indicative of smelting or welding activities in the area, it can also be imported. Slag has commonly been repurposed as gravel or aggregate to be used in a variety of contexts, including railway embankments and construction projects (Albion Fire and Ice Mineral Supplier 2022; McMahon 2022). Accession #s 1, 123, and 131 are larger slag fragments (Figure 152), while the rest of the slag was collected with small metal fragments (Acc. #s 9, 12, 20, 33, 34, 36, 38, 49, and 55).

Figure 151. Acc. # 100, cupreous metal nail, round head, square tapered shank

Figure 152. Acc. # 1, slag fragment

5.2.3.4 Other Metal Artifacts

Accession # 22 (Figure 153) is a cupreous spitzer bullet with no cartridge. Rifling impressions on the surface of the projectile indicate it was fired from a firearm. The bullet dates post-1898—the date when the first spitzer bullet, characterized by a pointed tip and a tapered “boat-tail” end, was introduced (Hawks 2013).

Accession # 23 (Figure 154) is a 1947 American Lincoln wheat penny.

Accession # 65 is a short, round, aluminum food can. As the first aluminum can was introduced in 1963 (Industrial Physics 2022), Acc. # 65 dates post-1963.

Accession # 117 is a collection of small aluminum foil fragments. Aluminum foil was first sold in 1947 (Panati 1987:113 in Miller et al. 2000:17), indicating Acc. # 117 dates post-1947.

A small length of copper wire (Acc. # 54), a rusted ferrous metal shelving bracket (Acc. # 81), and a flooring transition strip (Acc. # 84) could not be dated more narrowly than post-1850.

5.2.4 Plastic Artifacts

Nineteen plastic artifacts were identified during the current study, three collected and 16 uncollected. They comprise a button (Acc. # 57), three bottles (Acc. #s 59, 66, and 79), a paint brush handle (Acc. # 60), a black sunglasses lens (Acc. # 61), a matchbook cover (Acc. # 62), a six-pack ring (Acc. # 68), a Kodak instant film photograph (Acc. 69), a beef jerky packet (Acc. # 71), a polyethylene shopping bag (Acc. # 72), a lipstick tube (Acc. # 73), a drinking straw (Acc. # 74), a child’s toy sand shovel (Acc. # 80), a disposable fork (Acc. # 87), and fragments of unidentified objects (Acc. #s 25, 29, 85, and 86).

5.2.4.1 Bottles

Accession # 59 is a white plastic glue squeeze bottle. Elmer’s Glue-All, the first multipurpose consumer glue, was created in 1947 by the Borden Company. In 1951, the company adopted the iconic white squeeze bottle with the orange twist cap, which remains a standard bottle associated with multipurpose glues today (Zippia, Inc. 2022). Hence, Acc. # 59 dates post-1951.

Accession # 66 is a small brown plastic bottle labelled “CONCIERGE.” No information could be found on the bottle or its contents. As it is unclear what type of plastic the bottle is made from, it could not be dated.

Accession # 79 (Figure 155) is a rectangular plastic yellow Pennzoil motor oil bottle. The company introduced this rectangular bottle in 1986 to compete for shelf space with other companies’ round cans (Samit 2015:147). Hence, Acc. # 79 dates post-1986.

5.2.4.2 Other Plastic Artifacts

Accession # 57 is a round white plastic shank button, a type first produced in 1940 (Meikle 1995:82–95 in Maples 1998:111). Hence, Acc. # 57 dates post-1940.

Accession # 61 is a single black plastic sunglasses lens. As plastic lenses were first introduced in the 1950s (Glasses History 2022), Acc. # 61 dates no earlier than the 1950s.

Accession # 62 (Figure 156) is a plastic matchbook cover with “CORAL SUPPLY HAWAII” printed on the front flap. Coral Supply, Inc. is a jewelry manufacturer that was established in 1976

Figure 153. Acc. # 22, cupreous spitzer bullet with rifling marks

Figure 154. Acc. # 23, 1947 American Lincoln wheat penny

Figure 155. Acc. # 79, yellow plastic Pennzoil motor oil bottle, rectangular, embossed “Pennzoil” on shoulder

Figure 156. Acc. # 62, plastic matchbook cover, “CORAL SUPPLY” / “HAWAII” printed on the front flap

and incorporated in Hawai‘i (Manta Media, Inc. 2022). The company is first mentioned in the *Honolulu Advertiser* in 1982 (*Honolulu Advertiser* 1982:115). Hence, Acc. # 62 dates post-1976.

Accession # 68 is a set of plastic connected rings used in multi-packs of beverages also known as six-pack rings. Six-pack rings were developed in 1962 by Illinois Tool Works and are still popular today (Smith 1997). Hence, Acc. # 68 dates post-1962.

Accession # 69 is a Kodak instant film photograph, with the Kodak film logo in the bottom right corner. Kodak began manufacturing instant film in 1976. In 1986, Polaroid won a patent infringement lawsuit against Kodak that halted all sales of their cameras and film (Curtis 2022). Hence, Acc. # 69 dates between 1976 and 1986.

Accession # 71 is a Tengu Beef Jerky packet, with a bar code on the front. Bar codes were first used in 1973 (Kovel and Kovel 2000:AA-3 in Miller et. al 2000:17), indicating Acc. # 71 dates post-1973.

Accession # 72 is a gray plastic (polyethylene) shopping bag. Polyethylene shopping bags were patented in 1965 and became popular in the United States in the late 1970s (United Nations Environment Program 2021); they are still used today. Hence, Acc. # 72 likely dates no earlier than the late 1970s.

Accession # 73 is a red plastic Estée Lauder Re-Nutriv lipstick tube. The company was founded in 1946 and introduced the Re-Nutriv lipstick line in 1956. The lipstick line has since been discontinued (Goya Studios 2018), and newspaper ads show that by 1999, the product was no longer being advertised (Evening Standard 1999:21). Hence, Acc. # 73 likely dates between 1956 and ca. 1999.

Accession # 74 is a red and yellow striped plastic drinking straw. Plastic drinking straws were mass-produced starting in the 1960s (Eating Utensils 2022; National Geographic Society 2018) and are still manufactured today. Hence, Acc. # 74 likely dates no earlier than the 1960s.

Accession # 87 is a disposable plastic fork produced by Dispozo-o, a South Carolina-based manufacturer of disposable cutlery and similar products established in 1973 (Dispozo Products, Inc. n.d:4). Hence, Acc. # 87 dates post-1973.

A plastic paint brush handle (Acc. # 60) and a plastic toy sand shovel (Acc. # 80) could not be dated. Little information could be found about either type of artifact; the exact type of plastic with which they were made could not be determined. Similarly, no dates could be determined for the four small unidentified plastic fragments (Acc. #s 25, 29, 85, and 86).

5.2.5 Other Artifacts

Other artifacts identified during the current study include three bricks or brick fragments (Acc. #s 6, 7, and 83), two bone buttons (Acc. #s 106 and 121), two shell buttons (Acc. #s 41 and 77), a worked shell fragment (Acc. # 114), chewing gum (Acc. # 94), concrete flooring fragments (Acc. #s 89, 103, 111, and 125), a possible chalk fragment (Acc. # 112), two pencil graphite fragments (Acc. #s 95 and 113), possible fabric fragments (Acc. # 102), FAC (Acc. #s 46, 48, 51, 52, and 104), FAR (Acc. #s 4, 5, 45, 47, 50, 98, and 132), basalt debitage (Acc. # 17), and a basalt core (Acc. # 13).

Accession #s 6 (Figure 157) and 7 are a dark red brick and brick fragment, respectively. They may be handmade, as evidenced by their ill-defined edges and the linear striations on one face (Lebo 1997:108; Stelle 2001). The intact brick measures 18.5 cm by 8.5 cm by 5 cm. Bricks were imported to Hawaiʻi from the U.S. mainland as early as 1820 and from Japan starting in the 1860s. They were also made by hand in Honolulu for a short time beginning in 1839 (Greer 1966:16; Greer 1977 in Lebo 1997:107; Woolfenden 1983:20 in Lebo 1997:107). It is unknown where these bricks originated, but it is likely they date post-1847 when the first brick building was built in Honolulu (Lebo 1997:106–107). Accession # 83 is a yellow brick fragment, which appears to be made of calcium silicate; however, as this could not be verified, the brick cannot be dated.

Accession #s 41 and 77 are both two-hole pearl shell buttons. Accession # 121 is a two-hole bone button, and Acc. # 106 is a fragment of a bone button. As it was not possible to discern the method of manufacture, the buttons cannot be dated more narrowly than post-1850. Accession # 114 may be a button fragment, but this could not be determined definitively.

The two graphite fragments (Acc. #s 95 and 113) are both round; hence, they date post-1876, when pencils started to be produced with round graphite instead of square (Early Office Museum 2014).

Accession #s 13 (Figure 158) and 17, a basalt core and basalt debitage, respectively, are the only artifacts identified during the current study that are consistent with traditional artifacts. Traditional Hawaiian artifacts may have been manufactured in the pre-Contact period (pre-1778, before the first Western Contact) or in the early post-Contact period when Hawaiians still used "traditional" methods to make tools and other artifacts. Debitage includes flakes and shatter discarded during the reductive process of lithic manufacture. Accession #s 13 and 17 may be indicative of tool-making activities in the vicinity (Andrefsky 1994:22).

The remaining artifacts, comprising FAR (Acc. #s 4, 5, 45, 47, 50, 98, and 132), FAC (Acc. #s 46, 48, 51, 52, and 104), concrete flooring fragments (Acc. #s 89, 103, 111, and 125), chewing gum (Acc. # 94), possible fabric fragments (Acc. # 102), and a possible chalk fragment (Acc. # 112) lacked diagnostic characteristics necessary for dating.

5.2.6 Artifact Summary and Discussion

Artifacts from T-2, T-6, and T-8 were collected, or identified within collected bulk and screened samples, and analyzed at the CSH laboratory. Artifacts from T-3, T-4, T-5, and T-9, including within screened samples, were photographed and analyzed in the field, with additional analysis of the photographs and recorded data conducted at the CSH office. Overall, the assemblage is notable for its lack of complete and intact artifacts. This may be a result of the high percentage of artifacts identified within bulk and screened samples; the previous disturbance to the project area caused by mid- to late-twentieth century development; and/or the high number of metal artifacts, which break down more easily than ceramics and glass.

The artifacts are mostly historical, although some items from upper fill deposits are modern (i.e., less than 50 years old). Modern items include a KODAK instant film photograph (Acc. # 69) and matchbook cover (Acc. # 62) from T-3 Stratum Ib, which indicate this fill was deposited post-1976; a motor oil bottle (Acc. # 79) from T-4 Stratum Ic, indicating the fill was deposited post-1986; and a plastic fork (Acc. # 87) from T-4 Stratum Id, indicating the fill was deposited post-

Figure 157. Acc. # 6, likely handmade brick

Figure 158. Acc. # 13, basalt core

1973. As T-3 Stratum Ib and T-4 Stratum Id correlate with one another, this fill was deposited post-1976; note the disarticulated human skeletal remains designated as SIHP # -9156 were identified within this fill (T-4 Stratum Id). Artifacts from other fill deposits provided little dating information, and most are dated only post-1850.

Historical artifacts and fragments were documented in a buried A horizon (designated as Stratum IIa or IIb) atop Jaucas sand and its associated features. Where associated features were identified, the A horizon and features are designated as part of SIHP # -2870. In addition, historical artifacts and fragments were documented within a culturally enriched fill deposit (T-8 Stratum Ig) and its associated features, which are also designated as part of SIHP # -2870. Metal and slag are especially abundant within these contexts, indicating a post-Contact age.

All of the artifacts from T-8 Stratum Ig, culturally enriched fill deposit, and the vast majority of artifacts from the buried A horizon can be dated no more specifically than post-1850. Exceptions include a post-1876 pencil graphite fragment (Acc. # 95) from T-3 Stratum IIa, a ceramic fragment (Acc. # 88) dating between the 1850s and 1930s from T-5 Stratum IIa/SIHP # -2870, a post-1940 plastic button (Acc. # 57) from T-8 Stratum IIa/SIHP # -2870, and a 1947 penny (Acc. # 23) from T-6 Stratum IIb/SIHP # -2870. Of note, the only traditional-type artifacts, a basalt core (Acc. # 13) and basalt debitage (Acc. # 17), likely also originated within T-6 Stratum IIb, as they are from a pocket of redeposited A horizon material that presumably was sourced from the Stratum IIb/SIHP # -2870 A horizon. However, based on the imported western materials within both the A horizon and redeposited A horizon samples in T-6, the traditional-type artifacts likely date to the post-Contact period.

5.3 Vertebrate Faunal Analysis

Vertebrate faunal remains were identified within seven of the nine test excavations (all except T-1, which could not be excavated fully due to subsurface utility infrastructure, and T-7, which comprised basalt gravel fill to BOE). Remains were hand-collected from T-2, T-6, and T-8 (Table 18) and identified within collected bulk and screened samples from T-6 and T-8 (Table 19). Additional remains from T-3, T-4, T-5, and T-9 were photographed and analyzed by CSH osteologists in the field, with additional analysis of the photographs and recorded data conducted at the CSH office; some of these remains were identified within the excavation or spoils pile (Table 20), while others were identified within screened samples (Table 21).

The remains are from fill deposits, including a culturally enriched fill deposit (T-8 Stratum Ig; SIHP # -2870) and its associated features; a buried A horizon atop Jaucas sand and its associated features (designated as part of SIHP # -2870 where features are present); a pit feature intrusive into the A horizon (T-6 Stratum IIa; SIHP # -2870 Feature 29); and a reworked or redeposited A horizon (T-9 Stratum IIa). The remains comprise cow (*Bos taurus*), pig (*Sus scrofa*), dog (*Canis lupus familiaris*), bird (Aves), rodent (Rodentia), bony fish (Osteichthyes), fantail filefish (*Pervagor spilosoma*), unicornfish (*Naso*), Acanthuridae (surgeonfish, tang, or unicornfish), and unidentified mammals inconsistent with human morphology. Of these, cow (*B. taurus*) is a historically introduced species (Henke 1929:8). Hence, the identification of cow bone within the T-4, T-5, and T-6 buried A horizon indicates a post-Contact age for the layer.

Many of these remains are consistent with food refuse. Cow (*B. taurus*), pig (*S. scrofa*), and certain species of bird and fish were commonly eaten. Fantail filefish (*P. spilosoma*) and many

Table 18. Summary of hand-collected vertebrate faunal remains

Test Excavation	**Provenience**	**Species; Weight**	**Description**
T-2	Str. Ic (mixed crushed coral fill), spoils	Cow (*B. taurus*); 26.1 g	Long bone shaft section, rib portions (some sawcut)
T-6	Str. IIa/SIHP # -2870, A horizon, spoils	Cow (*B. taurus*); 15.2 g	Vertebral arch portions, rib shaft fragments (sawcut; rodent gnaw marks)
		Pig (*S. scrofa*); 0.4 g	Unfused vertebral centrum fragment (subadult)
		Bird (Aves); 0.1 g	Unidentified element portion
T-8	Fill, spoils (exact provenience unknown)	Cow (*B. taurus*); 1.8 g	Rib shaft fragment
		Small to medium mammal; 1.2 g	Long bone shaft fragments (subadult)
	Str. IIa/SIHP # -2870, A horizon, trench floor	Medium mammal; 2.1 g	Long bone shaft fragments (weathered)
		Unicornfish (*Naso*); 0.5 g	Scute

Table 19. Summary of vertebrate faunal remains from collected bulk and screened samples

Test Excavation	Provenience	Species; Weight	Description
T-6	Str. IIa/SIHP # -2870 Fea. 29, pit feature, SW wall, 40–75 cmbs	Bony fish (Osteichthyes); 1.4 g	Ribs, vertebrae, cranial and appendicular skeleton fragments, scales
		Small mammal; 0.6 g	Unidentified small fragments (subadult)
		Medium to large mammal; 0.4 g	Cortical fragment (burnt)
	Pocket of redeposited A horizon material, trench floor, 60–72 cmbs	Large mammal; 15.5 g	Unfused proximal tibia epiphysis, cortical and trabecular fragments (some burnt, some subadult)
		Small to medium mammal; 3.7 g	Vertebra, cortical and trabecular fragments (some burnt)
		Bony fish (Osteichthyes); 0.3 g	Vertebrae, appendicular skeleton fragments, scales (some burnt)
	Str. IIb/SIHP # -2870, A horizon, trench floor, 26–31 cmbs	Large mammal; 6.5 g	Cortical fragments either from ribs or long bones (some burnt, some sawcut)
		Small to medium mammal; 1.2 g	Long bone shaft fragments, unidentified small fragments (some burnt)
		Bony fish (Osteichthyes); 0.1 g	Vertebrae fragments, scales
T-8	Str. Ig/SIHP # -2870, culturally enriched fill, SW wall, 115–126 cmbd	Bony fish (Osteichthyes); < 0.1 g	Scales, unidentified fragment
	Str. Ig/SIHP # -2870 Fea. 31, bird burial*, and	Bird (Aves); 56.7 g	Complete or mostly complete burial (highly fragmented)
	Fea. 44, pit feature, trench floor, 143–163 cmbd	Bony fish (Osteichthyes); < 0.1 g	Scales
	Str. Ig/SIHP # -2870 Fea. 32, post mold, trench floor, 140–192 cmbd	Fantail filefish (*P. spilosoma*); 0.2 g	Dorsal fin spines
	Str. Ig/SIHP # -2870 Fea. 33, pit feature, NE wall, 128–143 cmbd	Small to medium mammal; 0.8 g	Rib fragments, proximal phalanx fragment, unidentified small fragments (some burnt, some subadult)
		Bony fish (Osteichthyes); 1.8 g	Vertebrae, ribs, axial and appendicular skeleton fragments, scales
		Dog (*C. lupus familiaris*); 0.2 g	Tooth crown fragment
		Rodent (Rodentia); < 0.1 g	Humerus
		Fantail filefish (*P. spilosoma*); < 0.1 g	Dorsal fin spines
	Str. IIa/SIHP # -2870, A horizon, trench floor, 120–130 cmbd	Fantail filefish (*P. spilosoma*); 0.1 g	Dorsal fin spine
		Small mammal; < 0.1 g	Likely canine tooth fragment with incomplete root (subadult)
		Bony fish (Osteichthyes); < 0.1 g	Scales
	Str. IIa/SIHP # -2870 Fea. 34, pit feature, trench floor, 137–173 cmbd	Bony fish (Osteichthyes); 0.1 g	Scales, unidentified small fragments
		Small mammal; < 0.1g	Unidentified small fragments (some burnt)
	Str. IIa/SIHP # -2870 Fea. 35, pit feature, trench floor 128–155 cmbd	Small to medium mammal; 2.5 g	Long bone shaft fragments (some burnt)
		Bony fish (Osteichthyes); 0.1 g	Scales
	Str. IIa/SIHP # -2870 Fea. 36, pit feature, trench floor, 138–145 cmbd	Bony fish (Osteichthyes); 0.2 g	Vertebrae fragments, unidentified small fragments, scales
		Small mammal; < 0.1 g	Long bone shaft fragments, unidentified small fragments (some burnt)
	Str. IIa/SIHP # -2870 Fea. 38, pit feature, trench floor, 145–155 cmbd	Small to medium mammal; 0.1 g	Unidentified small cortical fragment
	Str. IIa/SIHP # -2870 Fea. 39, pit feature, trench floor, 143–170 cmbd	Small mammal; 2.2 g	Rib shaft fragments, unidentified small fragments (some burnt)
	Str. IIa/SIHP # -2870 Fea. 40, pit feature, trench floor,	Small to medium mammal; 0.2 g	Unidentified small cortical fragment

Test Excavation	Provenience	Species; Weight	Description
	144–165 cmbd		

*two features inadvertently excavated and screened together

Table 20. Summary of uncollected vertebrate faunal remains not from screened samples

Test Excavation	Provenience	Species	Description
T-3	Str. Ib, fill containing locally available sandy material, spoils	Large mammal	Unfused femoral head epiphysis fragment (subadult)
	Str. IIa, A horizon, trench floor	Medium mammal	Unidentified small cortical fragment (burnt)
T-4	Str. Ib, mixed fill, spoils	Medium mammal	Likely scapula fragment
		Large mammal	Long bone shaft portion (cut marks on shaft)
	Str. Ic, basalt base course, spoils	Large mammal	Zygomatic process portion (sawcut)
	Str. IIa, A horizon, spoils	Cow (B. *taurus*)	Long bone shaft section (sawcut)
T-5	Str. IIa, A horizon, spoils	Pig (*S. scrofa*)	Proximal radius portion (sawcut)
		Cow (*B. taurus*)	Rib fragment (sawcut)
T-9	Str. IIa, reworked or redeposited A horizon, spoils	Small to medium mammal	Small cortical fragment (burnt)

Table 21. Summary of vertebrate faunal remains from uncollected screened samples

Test Excavation	Provenience	Species	Description
T-3	Str. IIa, A horizon, trench floor, 77–87 cmbd	Bony fish (Osteichthyes)	Vertebrae fragments, rib fragments
		Small mammal or bird (Aves)	Unidentified small fragments (burnt)
T-4	Str. IIa, A horizon, trench floor, 100–110 cmbs	Small mammal or bird (Aves)	Cortical fragments
T-5	Str. IIa/SIHP # -2870, trench floor, 45–49 cmbs	Medium mammal	Long bone shaft fragments; some burnt
		Small mammal	Rib fragment
	Str. IIa/SIHP # -2870, Fea. 27, pit feature, trench floor, 48–58	Bony fish (Osteichthyes)	Vertebra
		Medium mammal	Long bone shaft fragments; some burnt
T-9	Str. IIa, reworked or redeposited A horizon, SW wall, 72–78 cmbs	Bony fish (Osteichthyes)	Vertebrae, scales, unidentified small fragments
		Small mammal	Unidentified small fragments
	Str. IIb/SIHP # -2870, A horizon, SE wall, 84–93 cmbs	Bony fish (Osteichthyes)	Vertebra
		Medium to large mammal	Long bone and possibly rib fragments (some sawcut, some burnt)
	Str. IIb/SIHP # -2870, Fea. 41, pit feature, SE wall, 90–110 cmbs	Bony fish (Osteichthyes)	Vertebra
		Small to medium mammal	Long bone shaft fragments
	Str. IIb/SIHP # -2870, Fea. 42, pit feature, SE and SW walls, 87–115 cmbs	Bony fish (Osteichthyes)	Spine fragments, unidentified small fragments
		Surgeonfish, tang, or unicornfish (Acanthuridae)	Dorsal pterygiophore

species of Acanthuridae, including several species of unicornfish (*Naso*), are known to have been eaten in Hawaiʻi (Dye and Longenecker 2004:18, 19, 52). Some of the remains are burnt, as evidenced by color and texture changes, which could be the result of food preparation. In addition, many of the remains show evidence of post-Contact butchering methods identified by thin, precise cuts made by metal implements and uniform saw mark striations left behind on the cortical bone. The identification of sawcut remains within the T-4, T-5, T-6, and T-9 buried A horizon indicates a post-Contact age for the layer.

Of note, the skeletal remains of a bird were identified within T-8 Stratum Ig/SIHP # -2870 Feature 31. The remains comprise a complete or nearly complete articulated skeleton of a large bird. There is no evidence of butchering or heat modification. Due to the high degree of fragmentation, it was not possible to determine the species of the bird. Based on the completeness of the remains and the lack of evidence for food preparation, this feature is interpreted as a bird burial.

Section 6 Historic Property Descriptions

Three archaeological historic properties were documented during this AIS: SIHP #s -2870, -9156, and -9157. SIHP # -2870 is a previously identified historic property that was further documented during the current study. SIHP #s -9156 and -9157 are newly identified. The three historic properties are summarized in Table 22, and their distributions are depicted on Figure 63 and Figure 159.

Table 22. Historic properties identified during the AIS

SIHP # 50-80-14-	Formal Type	Function/Description
2870	Historical cultural layers with associated features and human remains	Habitation, activity area, refuse disposal, human burial
9156	Human skeletal remains	Disarticulated remains in fill
9157	Infrastructure remnants	Commercial and residential infrastructure

6.1 SIHP # 50-80-14-2870

FORMAL TYPE:	Historical cultural layers with associated features and human remains
FUNCTION:	Habitation, activity area, refuse disposal, human burial
NUMBER OF FEATURES:	62 total; 19 newly identified
AGE:	Post-Contact
TEST EXCAVATIONS/ STRATA:	T-5 (Str. IIa), T-6 (Str. IIa, IIb), T-8 (Str. Ig, IIa), and T-9 (Str. IIb)
HORIZONTAL EXTENT:	8.2 acres (3.32 hectares) total; 0.15 acre (0.06 hectare) current project
TAX MAP KEY:	[1] 2-6-009:005–007 (current study)
LAND JURISDICTION:	SMK, Inc.; Hilton Hawaiian Village LLC (current study)
PREVIOUS DOCUMENTATION:	Neller 1980; Hurlbett et el. 1992; Tulchin et al. 2011; Yucha and Hammatt 2014; Krause et al. 2022; Sroat et al. 2019

SIHP # -2870 consists of historical cultural layers with associated features and human burials (Figure 160 through Figure 162). It has primarily been documented as a buried, discontinuous, disturbed, and/or truncated A horizon atop Jaucas sand. SIHP # -2870 was initially identified by Neller (1980) and further documented by Hurlbett et al. (1992), Tulchin et al. (2011), Yucha and Hammatt (2014), Krause et al. (2022), and Sroat et al. (2019). These previous studies documented SIHP # -2870 features comprising human skeletal remains, trash pits/concentrations, pits/trenches of indeterminate function, a possible filled drainage ditch, a possible fire pit, basalt boulder structural remnants, buried road surfaces, and abandoned residential utility lines with

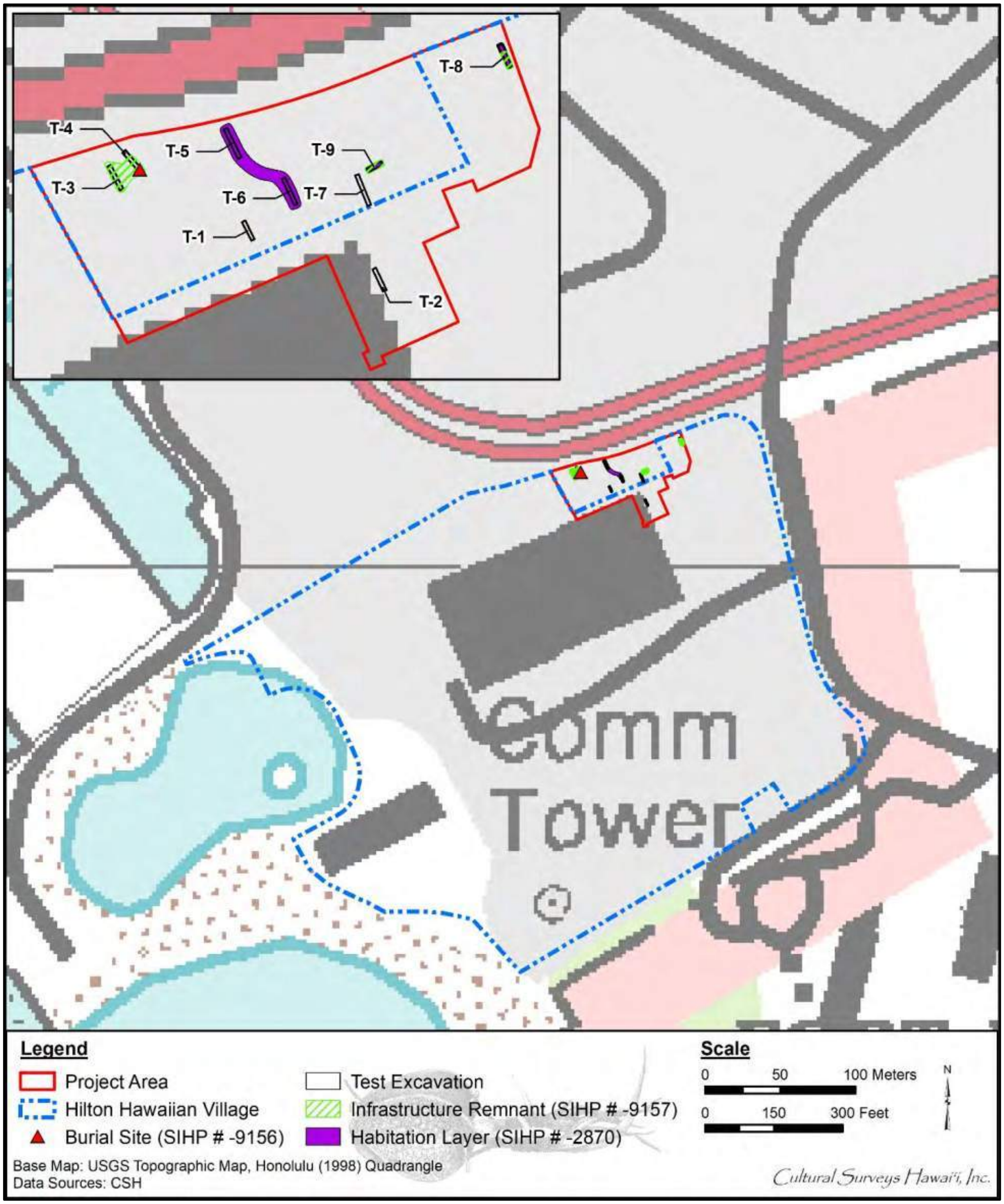


Figure 159. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle with overlay of AIS test excavations and historic properties identified

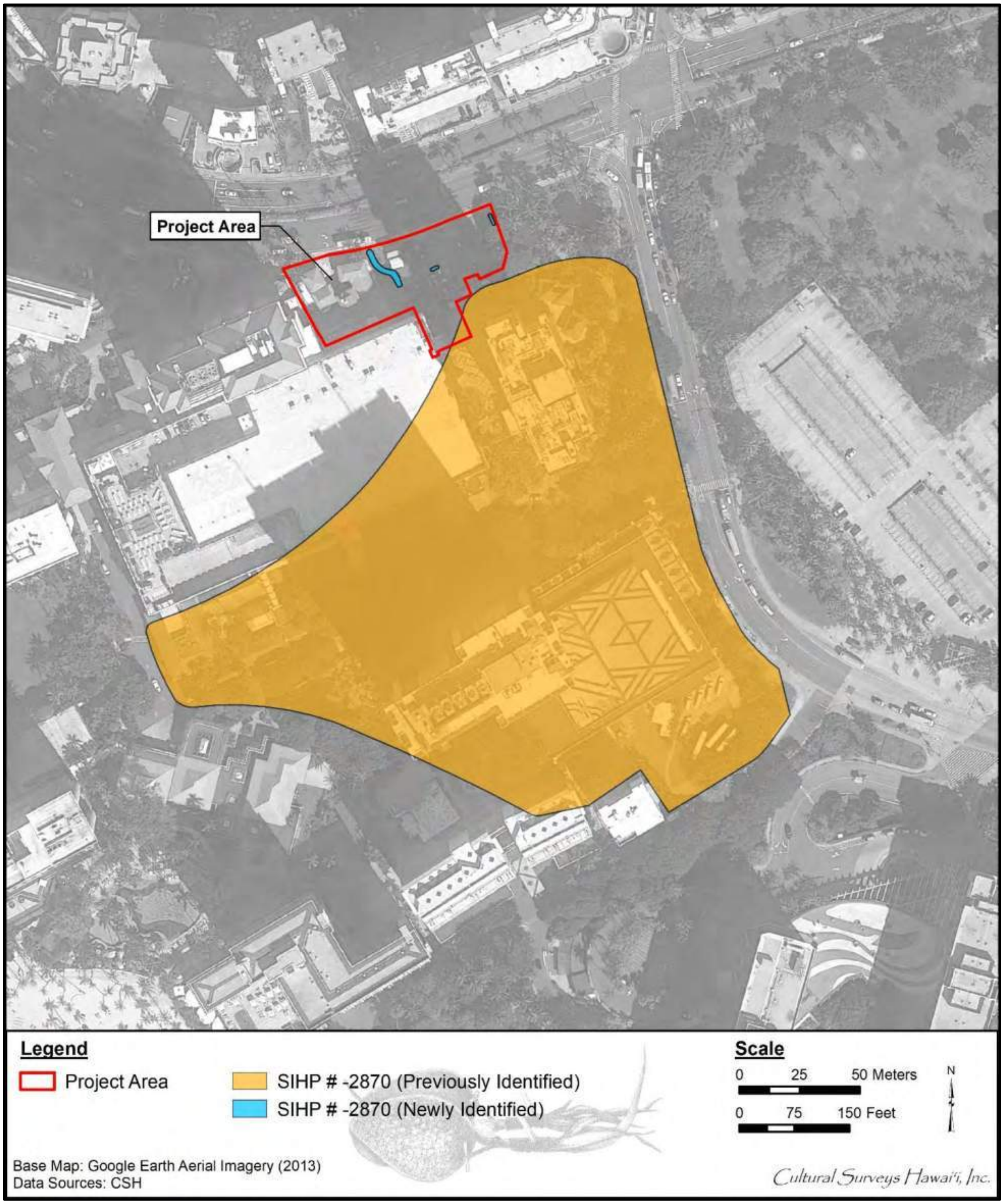


Figure 160. 2013 Google Earth aerial imagery with overlay of previously (orange) and newly (blue) documented portions of SIHP # -2870; previously and newly identified features and burials are depicted on Figure 161 and Figure 162, respectively

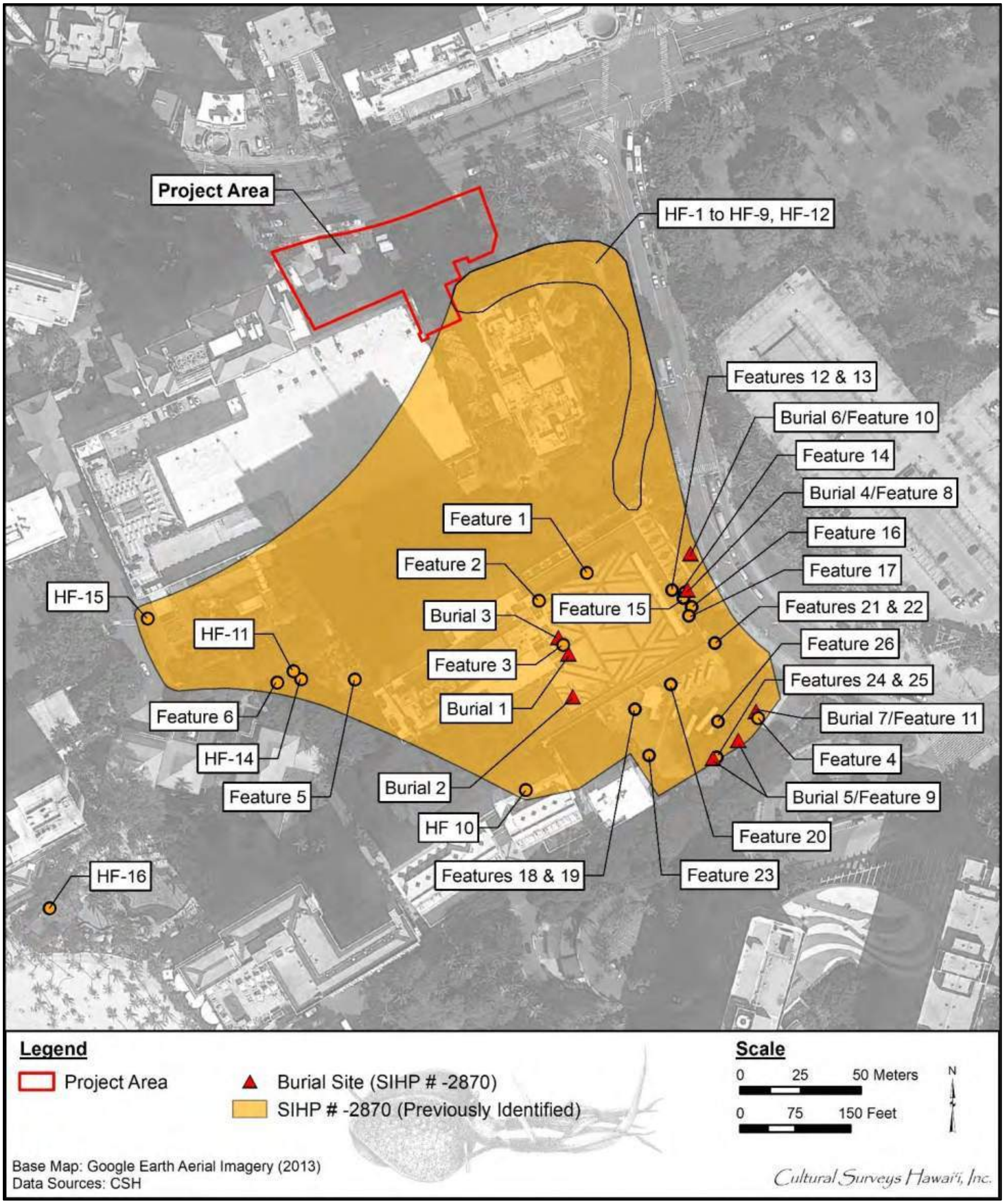


Figure 161. 2013 Google Earth aerial imagery with overlay of SIHP # -2870 features and burials documented prior to the current study; note individual locations for HF-1 through HF-9 and HF-12 are not indicated, as they were not provided in the original report

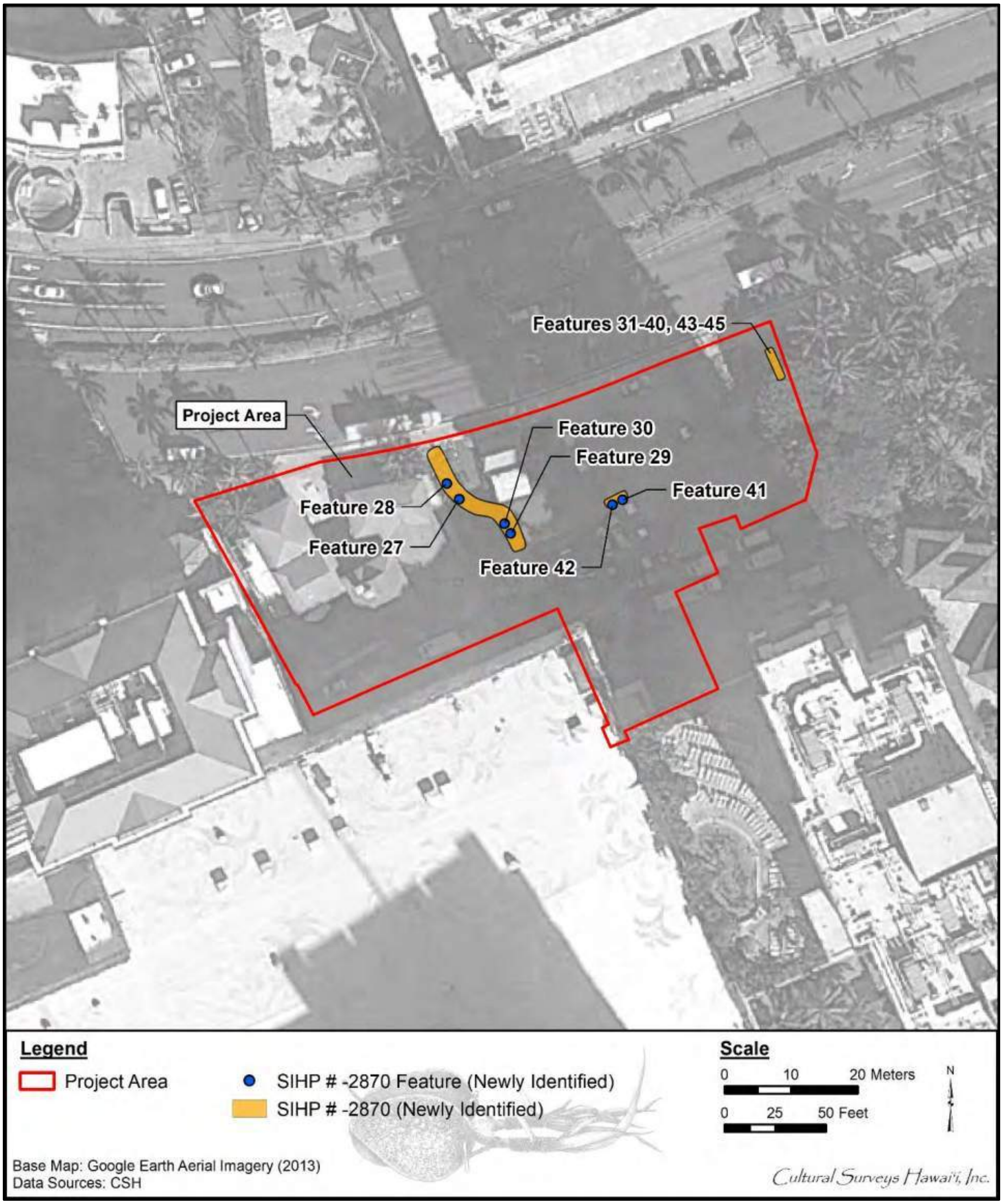


Figure 162. 2013 Google Earth aerial imagery with overlay of SIHP # -2870 features documented during the current AIS; note the features identified within T-8 (Features 31–40 and 43–45) are not depicted individually due to the high number of features within a small space, many of which overlap (plan view photographs and plan map are provided in Section 4.2.3.8)

Table 23. Summary of SIHP # -2870 features

Reference	Feature/ Burial #	Formal Type	Function	Description/Contents
Neller 1980	Burial 1	Human skeletal remains	Interment	Inadvertent discovery found within backdirt; sand matrix adhered to remains; determined to be a young adult, female, likely Native Hawaiian
	Burial 2	Human skeletal remains	Interment	Inadvertent discovery found within backdirt; originated in vicinity of Burial 1; determined to be a young adult, male, likely Native Hawaiian
	Burial 3	Human skeletal remains	Interment	Inadvertent discovery; a single human femur that did not belong to Burials 1 or 2
	Fea. 1	Pit, trench, or ditch	Possible drainage ditch	Floor of possible ditch composed of silty alluvial deposits; capped by Ala Wai Canal dredge fill (1920s)
	Fea. 2	Pit or trench	Unknown	Small feature; capped by Ala Wai Canal dredge fill (1920s)
	Fea. 3	Pit or trench	Refuse disposal	Deep pit or trench containing abundant historic artifacts (bottle glass, ceramic sherds, window pane); pre-dates construction of an overlying crushed coral roadbed and prior to deposition of Ala Wai Canal dredge fill
Hurlbett et al. 1992	HF-1	Pit	Refuse disposal	Contains glass fragments, charcoal, *pipipi* (*N. picea*) shell, ceramic pipe fragments, and crab shell
	HF-2	Pit	Refuse disposal	Contains early 20th century glass, silverware, and a charcoal lens
	HF-3	Pit	Refuse disposal	Contains faunal bone (butchered cow and pig), glass fragments, ceramic sherds, rusted metal can pieces, and coral cobbles
	HF-4	Pit	Refuse disposal	Contains glass bottles, a jar, and abundant rusted metal
	HF-5	Pit	Refuse disposal	Contains faunal bone (dog and butchered pig), ceramic sherds, glass fragments, fabric, rusted metal, and coral cobbles; dates post-1935
	HF-6	Trench	Indeterminate	Contains coral, waterworn basalt pebbles, charcoal, ceramic sherds, rusted metal pieces, and marine shell
	HF-7	Trench	Indeterminate	Contains glass bottles and a large piece of metal
	HF-8	Pit	Refuse disposal	Contains rusted metal pieces, eggshell, ceramic sherds, and coral; dates post-1935
	HF-9	Trench	Indeterminate	Contains glass fragments, ceramic sherds, charcoal, nails, and metal fragments
	HF-10	Pit	Refuse disposal	Contains metal cans, whole and fragmented glass bottles, and ceramic sherd; dates post-1935
	HF-11	Pit	Refuse disposal	Contents not listed in report
	HF-12	Pit	Indeterminate	No cultural material identified
	HF-13*	N/A	N/A	Disqualified as a feature during post-field analysis
	HF-14	Pit	Refuse disposal	Contains sparse coral and a single rusted nail
	HF-15	Pit	Refuse disposal	Filled with smooth, rounded, black, pebble-sized material (unidentified)
	HF-16	Pit	Refuse disposal	Contents not listed in report
Yucha and Hammatt 2014	Fea. 4	Pit	Indeterminate	Contains charcoal (palm, *āheahea*, *kukui*, and one unknown taxon), two *pipipi* (*N. picea*) shells, and a *kukui* (*A. moluccana*) shell
Krause et al. 2022	Fea. 5	Bottle concentration	Refuse disposal	Collected 38 whole bottles; majority dated to 1930s and 1940s—one bottle post-dates 1960
	Fea. 6	Pit	Refuse disposal	Contains intact and fragmentary glass bottles, ceramic sherds; artifacts dated from mid-1800s to mid-1900s, including a bottle manufactured in 1942

Reference	Feature/ Burial #	Formal Type	Function	Description/Contents
Sroat et al. 2019	Burial 4/ Fea. 8*	Human skeletal remains	Interment	Isolated right mandibular fragment within backdirt pile (from fill)
	Burial 5/ Fea. 9	Human skeletal remains	Interment	Disturbed burial; in situ cranium, cervical vertebrae, right clavicle, and several hand bones within sand at water table; disturbed portions within adjacent utility fill (skeletal elements from torso, arms, and legs); likely flexed position; adult female, likely Native Hawaiian
	Burial 6/ Fea. 10	Human skeletal remains	Interment	Disarticulated fragments of pelvis, mandible, cranium, and fibula within fill
	Burial 7/ Fea. 11	Human skeletal remains	Interment	Secondary burial; fibula, tibia, and pelvic fragments discovered within a buried plastic PVC pipe fragment; found adjacent to concrete utility jacket within disturbed Jaucas sand; likely a purposeful reinterment of remains disturbed during previous construction activities
	Fea. 12	Pavement	Infrastructure	Compacted crushed coral surface
	Fea. 13	Pit	Refuse disposal	Contains charcoal, bottle glass fragments, metal, a metal nail, cement fragments, and faunal bone
	Fea.14	Pavement	Infrastructure	Compacted crushed coral surface
	Fea. 15	Pit	Indeterminate	No cultural material
	Fea. 16	Pit	Possible fire-related feature	Charcoal-stained pit
	Fea. 17	Structural remnant	Infrastructure	Concentration of small basalt boulders with mortar
	Fea. 18	Pavement	Surface	Oil-rolled gravel surface
	Fea. 19	Pavement	Surface	Compacted crushed coral surface
	Fea. 20	Structural remnant	Infrastructure	Four large basalt cobbles interpreted as a dry-stacked structural remnant
	Fea. 21	Trench	Utility infrastructure	Abandoned utility line and trench, likely associated with previous residences
	Fea. 22	Trench	Utility infrastructure	Abandoned utility line and trench, likely associated with previous residences
	Fea. 23	Artifact concentration	Refuse disposal	Concentration of historic artifacts, including intact and fragmented glass bottles, ceramic sherds, a metal nail, and a glass marble
	Fea. 24	Pit	Indeterminate	Contains small glass fragments and *pipipi* (*N. picea*) shells
	Fea. 25	Pit	Indeterminate	No cultural material
	Fea. 26	Pit	Indeterminate	No cultural material
Current study	Fea. 27	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), non-marine shell, sea urchin, faunal bone (some burnt), ferrous metal nails, flat and bottle glass fragments, and a blue glass seed bead
	Fea. 28	Pit	Indeterminate	Not sampled
	Fea. 29	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), charcoal, faunal bone, sea urchin, and burnt *kukui* (*A. moluccana*)
	Fea. 30	Charcoal lens	Combustion	Along lower boundary of A horizon
	Fea. 31	Pit	Bird burial	Contains bird bone and may contain marine shell including *pipipi* (*N. picea*), metal, slag, faunal bone, crab shell, sea urchin, and/or charcoal (feature inadvertently excavated and screened collectively with Fea. 44)
	Fea. 32	Pit	Post mold	Contains metal, slag, snail shell, crab shell, charcoal, sea urchin, glass, marine shell including *pipipi* (*N. picea*), and faunal bone (some burnt)

Reference	Feature/ Burial #	Formal Type	Function	Description/Contents
Current study cont.	Fea. 33	Pit	Indeterminate	Contains metal, slag, a colorless glass fragment, charcoal, and marine shell
	Fea. 34	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), metal, slag, non-marine shell, crab shell, charcoal, and faunal bone (some burnt)
	Fea. 35	Pit	Indeterminate	Contains fire-affected basalt and coral, marine shell including *pipipi* (*N. picea*), non-marine shell, faunal bone, charcoal, sea urchin, crab shell, metal, and slag
	Fea. 36	Pit	Indeterminate	Contains fire-affected basalt and coral, *pipipi* (*N. picea*), snail shell, dog and small mammal bone, crab shell, charcoal, sea urchin, fish bone, metal, and slag
	Fea. 37	Pit	Post mold	Contains marine shell including *pipipi* (*N. picea*), non-marine shell, and charcoal
	Fea. 38	Pit	Indeterminate	Contains fire-affected basalt and coral, marine shell including *pipipi* (*N. picea*), non-marine shell, charcoal, faunal bone, and burnt *kukui* (*A. moluccana*)
	Fea. 39	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), faunal bone (some burnt), fire-affected coral, crab shell, charcoal, and a glass fragment
	Fea. 40	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), non-marine shell, crab shell, faunal bone, metal, and slag
	Fea. 41	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), basalt gravel, botanicals, charcoal, faunal bone, redware (terracotta) pot fragments, ferrous metal fragments, ceramic fragment, and glass fragments
	Fea. 42	Pit	Indeterminate	Contains marine shell including *pipipi* (*N. picea*), sea urchin, charcoal, slag, fire-affected basalt, glass bottle fragments, cupreous metal eyelet and fragment, ferrous metal buckle and fragments
	Fea. 43	Charcoal lens	Combustion	Along lower boundary of A horizon
	Fea. 44	Pit	Indeterminate	May contain marine shell including *pipipi* (*N. picea*), metal, slag, fish bone, crab shell, sea urchin, and/or charcoal (feature inadvertently excavated and screened collectively with Fea. 31)
	Fea. 45	Pit	Indeterminate	Not sampled

*SIHP # -2870 Feature 7 designation was omitted

associated trenches (Table 23). During the current study, SIHP # -2870 was documented as a buried A horizon and a culturally enriched fill deposit with associated features. Nineteen features were documented, comprising pits of indeterminate function, charcoal lenses, a bird burial, and post molds (see Table 23). The current study expanded the horizontal extent of SIHP # -2870 by 0.15 acre (0.06 hectare), giving it a total extent of approximately 8.2 acres (3.32 hectares).

Documentation of SIHP # -2870 during previous studies and the current study is discussed below, followed by a summary and interpretation, as well as significance and integrity assessments.

6.1.1 Documentation of SIHP # -2870 by Neller 1980

SIHP # -2870 was initially identified in 1980 by the SHPD in response to inadvertent discoveries of human skeletal remains during the construction of Tapa Tower at the HHV campus. Neller (1980) documented the partial recovery of three early historic Native Hawaiian burials (Burials 1–3) and three subsurface pit features (Features 1–3). The human skeletal remains were determined to be post-Contact based on a reconstruction of historic period shorelines. Historical maps indicate rapid accretion of the shoreline in the area during the 1800s, and it was posited the burials may date to the smallpox epidemic of 1853 (Neller 1980:5). The remains were disinterred and relocated to the SHPD offices. Neller (1980:11–12) describes the inadvertent discoveries as follows:

> Burial #1. The burial was not observed in situ (in place); but based on the construction workers' comments and the sand adhering to the bones, most likely the bones came from a shallow grave about 3 feet below the original surface. No artifacts were found with the bones […] Based on the bones recovered, the person buried was a young adult, female, and Hawaiian. She was approximately 63 inches tall. All bones had completed their growth, indicating the individual had reached maturity. There were no signs of old age. Based on the tibia length of 53cm, the individual was about 5'3" tall. The sloping forehead and extremely thick skull bones suggested the individual was Hawaiian […]
>
> Burial #2. Again, the burial was not observed in situ. Based on construction workers' comments, the grave was separate from the first, but in the same general area. It came from 4 to 5 feet below the surface. No complete long bones were recovered from which measurements could be made. Only a part of the skull was recovered. Everything indicates the skeleton was complete prior to being disturbed by the construction project. No artifacts were found with the burial. The person buried was a young adult, male, and Hawaiian. All bones had completed their growth, indicating the person had reached maturity. The skull portions recovered had [a] large, prominent glabella, well-rounded brow ridges, and a sharp, well-marked supra-mastoid crest, indicating the individual was a male. The heaviness and density of the bones also indicated the person was a male. The muscle attachments on the long bones had extended crests and rough ridges, as is often the case with muscular Hawaiian individuals […]
>
> It is not certain that all of the bones came from the same area, as there are a few that do not belong to this individual, including 3 pig teeth, 1 dog tooth, 1 stew rib (modern), and 1 human femur (burial #3). One of the workers indicated he thought

> a third burial was near the filled drainage ditch, and this may be where the extra femur came from. It is also possible the filled area was not a ditch. The exotic character of the fill material argued against it being a burial pit, however, and suggested it was an open feature that required the importation of outside material for filling.
>
> Burial #3. One right femur was picked up somewhere in the vicinity of the filled irrigation/drainage ditch or the other two burials, indicating that a third burial existed, or still exists, somewhere in the area […] [Neller 1980:11–12]

According to Neller (1980:11), the stratigraphy was consistent throughout the project site and consisted of project-related construction fill, hydraulic fill likely dredged from the Ala Wai Canal, a discontinuous crushed coral fill layer, a buried A horizon, and natural marine sand. The three features identified by Neller (1980) include a possible filled drainage ditch (Feature 1), and two pits or trenches of indeterminate function (Features 2 and 3). Neller (1980:12) describes the three features as follows:

> Feature #1. Filled pit, trench, or ditch in north wall of excavation. From its dimensions, about 2 1/2’ deep and 5’ wide, this appeared to be the profile of a drainage ditch. The absence of obviously gleyed deposits argued against this interpretation, but the floor of the feature did seem to be composed of silty, alluvial deposits. A little excavating and a carefully made profile could have answered this question. The fill material was foreign to the immediate area, suggesting the feature had been open for some time and dirt had to be brought in from somewhere else when it had to be filled. Whatever the feature may have been, it had been dug, used, and filled prior to the dredging of Ala Wai Canal in the 1920s. The dredged deposits from the canal covered this feature unbroken.
>
> In this area, probably in the pit fill, was found a ‘coffee bean’ sinker, the type used for an octopus lure weight. It was made of pink granite, probably obtained from ship ballast stones, and consequently postdates the arrival of foreigners.
>
> Feature #2. Profile of a small pit or trench, function unknown. It was dug and filled prior to the dredging of Ala Wai Canal.
>
> Feature #3. Profile of a deep pit or trench, function unknown. Exact dimensions unknown. The curved shape and extreme depth are unusual. It was filled prior to construction of the overlying crushed coral roadbed, and prior to the dredging of Ala Wai Canal. The fill material was rich with 19th century trash. The crew indicated a number of whole bottles came from this area the following day. This would have been a feature well worth excavating for archaeological purposes. [Neller 1980:12]

6.1.2 Documentation of SIHP # -2870 by Hurlbett et al. 1992

Between 1985 and 1987, PHRI conducted archaeological monitoring for mechanical loop excavations at the HHV campus. Hurlbett et al. (1992) documented 15 archaeological features, designated as Horizontal Features (HF) 1 through 12 and 14 through 16 (HF-13, identified in the field, was later excluded as a feature). According to Hurlbett et al. (1992:18, 32–33):

> Twelve of the features (Nos. 1-5, 8, 10-12, 14-16) were pits excavated into the sterile sand layer. HFs-6 and -7 were identified as trenches, based on their cross-sections, while HF-9 was a large historic trench containing cultural debris and fill.
>
> Of the 12 horizontal features identified as pits, nine were excavated from the surface of the sterile sand layer, indicating that this layer was a living surface at some point in the past. The remaining three features (HFs -2, -3, and -15) were excavated from the surface of a stratigraphically more recent layer into the sterile sand layer. Based on the presence of historic debris, HFs 1-5, -8, -10, -11, and 14-16 were interpreted as historic trash pits. In four of these pits, the inclusion of charcoal concentrations or ash lenses suggests that the trash was burned prior to burial. The contents of HF-15 suggest that it was most likely a refuse pile created during recent construction. The functions of pit HF-12 and the three trenches (HFs -6, -7, and -9) remain unclear […]
>
> In general, the artifact assemblage represents the byproducts of activities pursued by affluent foreigners and Hawaiian residents living in the project area during the late nineteenth and early twentieth centuries. Most of the artifacts in the assemblage are items relating to food or beverage consumption (bottles, jars, ceramic and glass serving vessels, metal utensils, etc.) […] [Hurlbett et al. 1992:18, 32–33]

Most of the features (HF-1 through HF-9 and HF-12) and artifacts were identified within the *mauka* portion of the HHV complex, within Trench C. The artifacts collected from the trash pits date to the late nineteenth and early twentieth centuries, and several trash pits (HF-5, HF-7, HF-8, and HF-10) date post-1935 based on artifact analysis.

6.1.3 Documentation of SIHP # -2870 by Tulchin et al. 2011

In 2010, CSH conducted an AIS for the HHV Master Plan Improvements project (Tulchin et al. 2011). Subsurface test excavations consisted of 20 linear trenches, clustered primarily in the southeast corner of the bus depot lot and along Rainbow Drive. In general, the stratigraphy consisted of the resort infrastructure-related ground surface overlying a series of relatively thick, often compacted fill layers; a discontinuous, previously disturbed, historic A horizon (SIHP # -2870); and previously disturbed marine sand to the water table.

The SIHP # -2870 A horizon was documented in eight of the 20 test excavations and was interpreted as the remnant of a stable, historic land surface significantly disturbed by modern development. Observed disturbances “suggest that the stratum was potentially displaced, leveled, and in some cases, redeposited, throughout the project area during construction activities” (Tulchin et al. 2011:124). In one trench (Trench 15), the A horizon overlay previously disturbed strata containing cinder blocks and concrete fragments. In two trenches (Trenches 3 and 12), the A horizon was partially underlain by a buried asphalt surface (no SIHP number assigned). Cultural materials within the A horizon include wood, asphalt, ceramic and bottle glass fragments, metal nails, and plastic. One glass bottle (from Trench 3) dates post-1902, indicating twentieth century use of the layer.

In Trench 20, “several small, undulating pits and one possible backfilled trench outline were observed extending from the base of the buried A-horizon” (Tulchin et al. 2011:121); however, no feature designations were assigned.

6.1.4 Documentation of SIHP # -2870 by Yucha and Hammatt 2014

In 2014, a supplemental AIS was conducted by CSH within the southeast corner of the HHV campus. Yucha and Hammatt (2014) identified a buried A horizon consistent with the characteristics of SIHP # -2870. While only sparse cultural material was identified within the A horizon (a 10-gallon screened sample yielded only a single *pipipi* [*N. picea*] shell), a pit feature was documented originating within the A horizon. Designated as SIHP # -2870 Feature 4, it contains charcoal, *pipipi* (*N. picea*), and *kukui* (*A. moluccana*). The charcoal was identified as palm (cf. *Arecaceae*), native *āheahea* (*Chenopodium oahuense*), one unknown taxon, and Polynesian-introduced *kukui* (*A. moluccana*).

6.1.5 Documentation of SIHP # -2870 by Krause et al. 2022

In 2012, CSH conducted archaeological monitoring for the HHV Master Plan Improvements project within the central portion of the HHV campus (Krause et al. 2022). Two features associated with SIHP # -2870 were identified and designated as Features 5 and 6. They are described below.

SIHP # -2870 Feature 5 consists of a large concentration of intact and fragmented bottles. The concentration extends from the upper boundary of disturbed Jaucas sand into the gleyed sand at the water table. The bottles included soda, condiment, medicine, beer, spirits, and milk bottles. Most were American or manufactured at an American plant; one was Italian. As one bottle dates post-1960, the feature is also post-1960.

SIHP # -2870 Feature 6 is a trash pit extending from the upper boundary of the buried A horizon into the underlying Jaucas sand. It contains whole and fragmented glass bottles and ceramic sherds. The bottles included beer, spirits, wine/champagne, cosmetic, soda, and medicine bottles of American and Euro-American origin. The ceramic artifacts consist of whiteware, stoneware, and ironstone of Euro-American and English origin. Based on the 1942 manufacture date of one soda bottle, the feature dates post-1942.

6.1.6 Documentation of SIHP # -2870 by Sroat et al. 2019

Between 2014 and 2017, CSH conducted archaeological monitoring for the HHV Grand Islander project (Sroat et al. 2019). During this monitoring program, the SIHP # -2870 A horizon was documented as a discontinuous and often truncated layer composed of loamy sand or sandy loam (sometimes with a clay or silt component possibly representing imported topsoil) overlying Jaucas sand. The A horizon was most intact within the *mauka* portion of the study area, near Kālia Road and along Paoa Place. Sroat et al. (2019) attribute the observed truncation and disturbance to the A horizon to past construction events, including the installation and removal of multiple utilities.

Nineteen features of SIHP # -2870 were identified during archaeological monitoring, including four inadvertent discoveries of human skeletal remains designated as Features 8–11/Burials 4–7. Feature 8/Burial 4 comprises two human bone fragments identified within mixed fill in a spoils pile; based on the soil adhering to the fragments, as well as their location within the spoils pile, Sroat et al. (2019) believe the remains originated within the SIHP # -2870 A horizon. Feature 9/Burial 5 comprises a partially in situ burial within Jaucas sand, with disturbed remains identified within an adjacent utility trench. Feature 6/Burial 10 comprises human bone fragments identified within mixed fill in a spoils pile. Feature 11/Burial 7 comprises human bone fragments within a PVC pipe segment that contains Jaucas sand. As the PVC pipe is adjacent to a utility jacket within disturbed Jaucas sand, Sroat et al. (2019:149) conclude the “remains appeared to have been purposefully interred within the PVC pipe, potentially by a construction crew that disturbed the remains while excavating in the area.” Features 8–11/Burials 4–7 were disinterred and reinterred within the Paoa Place/Kālia Road Burial Preserve.

The non-burial features, designated as Features 12–26, consist of a trash pit, a trash concentration, a possible fire pit, four pits of indeterminate function, three crushed coral surfaces, one oil-rolled gravel surface, two basalt structural remnants (possible walls), and two abandoned residential utility lines with associated trenches. The crushed coral surfaces (Features 12, 14, and 19) were all founded directly atop the SIHP # -2870 A horizon, while the oil-rolled gravel surface (Feature 18) was atop the Feature 19 crushed coral surface. All of these buried surfaces were interpreted by Sroat et al. (2019) as being associated with early twentieth century residences previously in the vicinity, based on a review of historical maps, All of the pit features (Features 13, 15, 16, and 23–26) originated within the SIHP # -2870 A horizon and were intrusive into the underlying Jaucas sand. The historical basalt structural remnants (Features 17 and 20) are composed of hand-hewn, square basalt blocks, some with mortar, as well as unmodified basalt boulders, identified within the upper portion of Jaucas sand; Sroat et al. (2019) interpret these as possible wall remnants. The two abandoned historical utility lines with associated trenches (Features 21 and 22) extend from the SIHP # -2870 A horizon into the underlying Jaucas sand. Like the buried surfaces, discussed above, Sroat et al. (2019) interpret these infrastructure remnants as being associated with early twentieth century residences previously in the vicinity, based on a review of historical maps.

6.1.7 Documentation of SIHP # -2870 during the Current Study

During the current study, 19 features of SIHP # -2870 were identified within four test excavations (T-5, T-6, T-8, and T-9) (see Table 23 and Table 24). These include 14 pits of indeterminate function (Features 27–29, 33–36, 38–42, 44, and 45), two post molds (Features 32 and 37), two charcoal lenses (Features 30 and 43), and a bird burial (Feature 31). Fourteen of these (Features 27, 28, 30, 34–43, and 45) originate within a buried A horizon (T-5 Stratum IIa, T-6 Stratum IIb, T-8 Stratum IIa, and T-9 Stratum IIb). Four (Features 31–33 and 44) originate within a culturally enriched fill deposit (T-8 Stratum Ig). A single feature (T-6 Stratum IIa/Feature 29) was identified at the truncated upper boundary of a buried A horizon (T-6 Stratum IIb). Profiles, plan maps, and photographs of the features are presented in Section 4.2.3: Test Excavations.

A buried A horizon atop Jaucas sand was documented in seven of the nine test excavations (all except T-2 and T-7). It is designated as part of SIHP # -2870 in the four excavations where it was most intact and had associated features (T-5, T-6, T-8, and T-9). In the more *makai* excavations (T-5 and T-6), the SIHP # -2870 A horizon is yellowish brown or dark yellowish brown, while in the more *mauka* excavations (T-8 and T-9), it is very dark grayish brown. It is described as loamy sand in all four excavations, although it has slightly higher clay content in T-5.

It should be noted the level of the ground surface was not consistent throughout the project area, with the location of T-5 and T-6 approximately 30 cm below street level. The location of T-8 is approximately 15–20 cm above street level (with depth measurements taken from a datum 25 cm above street level), and T-9 is at street level. Accounting for these differences, the upper boundary of the SIHP # -2870 A horizon was documented between 47 and 90 cm below street level, with the depth increasing *mauka*.

Table 24. Summary of SIHP # -2870 features identified during the current AIS

Test Excavation	Stratum	Feature Type	Feature Numbers
T-5	IIa (A horizon)	Pit of indeterminate function	27, 28
T-6	IIa (pit intrusive into A horizon)	Pit of indeterminate function	29
	IIb (A horizon)	Charcoal lens	30
T-8	Ig (fill composed of locally available sandy material	Pit of indeterminate function	33, 44
		Post mold	32
		Bird burial	31
	IIa (A horizon)	Pit of indeterminate function	34–36, 38–40, 45
		Post mold	37
		Charcoal lens	43
T-9	IIb (A horizon)	Pit of indeterminate function	41, 42

The SIHP # -2870 A horizon documented during the current study is generally consistent with documentation during previous studies. It is discontinuous and disturbed, and its upper boundary is often truncated. It contains marine shell dominated by *pipipi* (*N. picea*), faunal bone (some burnt and/or sawcut, indicative of food refuse), and small amounts of charcoal, sea urchin, *kukui*, crab shell, FAR, and FAC. It also contains historical artifacts and debris including metal, glass, ceramic, plastic, concrete, and slag, with date ranges spanning the mid-nineteenth through mid-twentieth century. The most specific dates were provided by a ceramic fragment (Acc. # 88) dating between the 1850s and 1930s from T-5 Stratum IIa, a post-1940 plastic button (Acc. # 57) from T-8 Stratum IIa, and a 1947 penny (Acc. # 23) from T-6 Stratum IIb.

Traditional-type artifacts comprising a basalt core (Acc. # 13) and basalt debitage (Acc. # 17) were identified in a single excavation during the current study. They were identified in a pocket of A horizon material within a large area of disturbance but likely originated within the buried A horizon (T-6 Stratum IIb/SIHP # -2870). Based on the presence of imported western materials in the same context, as well as in the A horizon where they likely originated, these traditional-type artifacts likely date to the post-Contact period. This is consistent with prior documentation of a traditional-type artifact associated with SIHP # -2870 by Neller (1980), who documented a granite octopus lure sinker—a traditional-type artifact composed of an imported western material and therefore dating to the post-Contact period.

One difference between the previous and current documentation of the SIHP # -2870 A horizon is the non-marine shell within the current samples, identified as *N. vespertinum*, *N. neglecta*, and *Melampus*. *Neripteron vespertinum* is a mollusk found in fresh or brackish water, while *N. neglecta* is a brackish water mollusk endemic to Hawaiʻi. *Melampus* is a genus of small, air-breathing salt marsh snails. The presence of this non-marine shell is consistent with the former proximity of the project area to Piʻinaio Stream, prior to its realignment in the early twentieth century. The lack of non-marine shell documented during previous studies is consistent with the locations of those studies farther away from the former stream.

The SIHP # -2870 A horizon features are relatively sparse, except for in T-8, the most *mauka* of the excavations. While no other test excavation has more than two features originating in the SIHP # -2870 A horizon, T-8 has nine such features, comprising a charcoal lens (Feature 43), a post mold (Feature 37), and seven pits of indeterminate function (Features 34–36, 38–40, and 45). T-8 is also notable for being the only test excavation with two overlying habitation layers with associated features, with the Stratum Ig culturally enriched fill deposit overlying the Stratum IIa A horizon. Although a secondary A horizon (Stratum IIa) was documented overlying the SIHP # -2870 A horizon (Stratum IIb) in T-9, this overlying A horizon appears to be reworked or redeposited and does not have associated features; hence, it is not designated as part of SIHP # -2870.

T-8 Stratum Ig is composed of locally available sandy material, including A horizon material. Like the underlying Stratum IIa, Stratum Ig is composed of mixed origin loamy sand, although the color differs slightly (dark brown for Stratum Ig compared with very dark grayish brown for Stratum IIa), as does soil structure size (fine for Stratum Ig compared with very fine for Stratum IIa). The four features originating in Stratum Ig comprise a post mold (Feature 32), a bird burial (Feature 31), and two pit features of indeterminate function (Features 33 and 44). As T-8 is the only test excavation with multiple habitation layers and has by far the highest number of features, it follows that T-8 also has the greatest variety of feature types and functions. Apart from the features within T-8, the only feature that is not a pit of indeterminate function is Feature 30, a charcoal lens identified in T-6.

Analysis of associated materials indicates a post-Contact age for both the SIHP # -2870 buried A horizon (Stratum IIa in T-5 and T-8, Stratum IIb in T-6 and T-9) and culturally enriched fill deposit (T-8 Stratum Ig) documented during the current study. A post-Contact age is indicated by faunal bone that is sawcut and/or from a historically introduced species, as well as imported western materials including metal, glass, ceramic, plastic, concrete, and slag. This dating is consistent with previous documentation of SIHP # -2870. While most of the artifacts lack the diagnostic attributes to be dated more precisely than post-1850, there are a few exceptions (as mentioned above). A post-1940 artifact (Acc. # 57) within the T-8 Stratum IIa screened sample and a 1947 penny (Acc. # 23) within the T-6 Stratum IIb screened sample suggest mid-twentieth century use of the A horizon; however, as T-6 Stratum IIb appears to be disturbed, it is possible the penny instead represents mid-twentieth century disturbance to the layer.

The post-1940 artifact (Acc. # 57) within the T-8 Stratum IIa sample further indicates the overlying Stratum Ig dates post-1940. As the location was asphalt-paved sometime between 1954 and 1966, it appears Stratum Ig served as a habitation layer for a relatively short period of time. A review of historical maps suggests Stratum Ig and its features may be associated with a nearby dwelling ("D") depicted on the 1950 Sanborn Map Company fire insurance map (Figure 163).

6.1.8 Summary and Interpretation for SIHP # -2870

SIHP # -2870 was initially documented by Neller (1980) in response to inadvertent discoveries of human skeletal remains during the construction of the HHV Tapa Tower along Kālia Road. It was further documented by Hurlbett et al. (1992), Tulchin et al. (2011), Yucha and Hammatt (2014), Krause et al. (2022), Sroat et al. (2019), and the current study. SIHP # -2870 has primarily been documented as a historical buried A horizon with associated features and human remains.

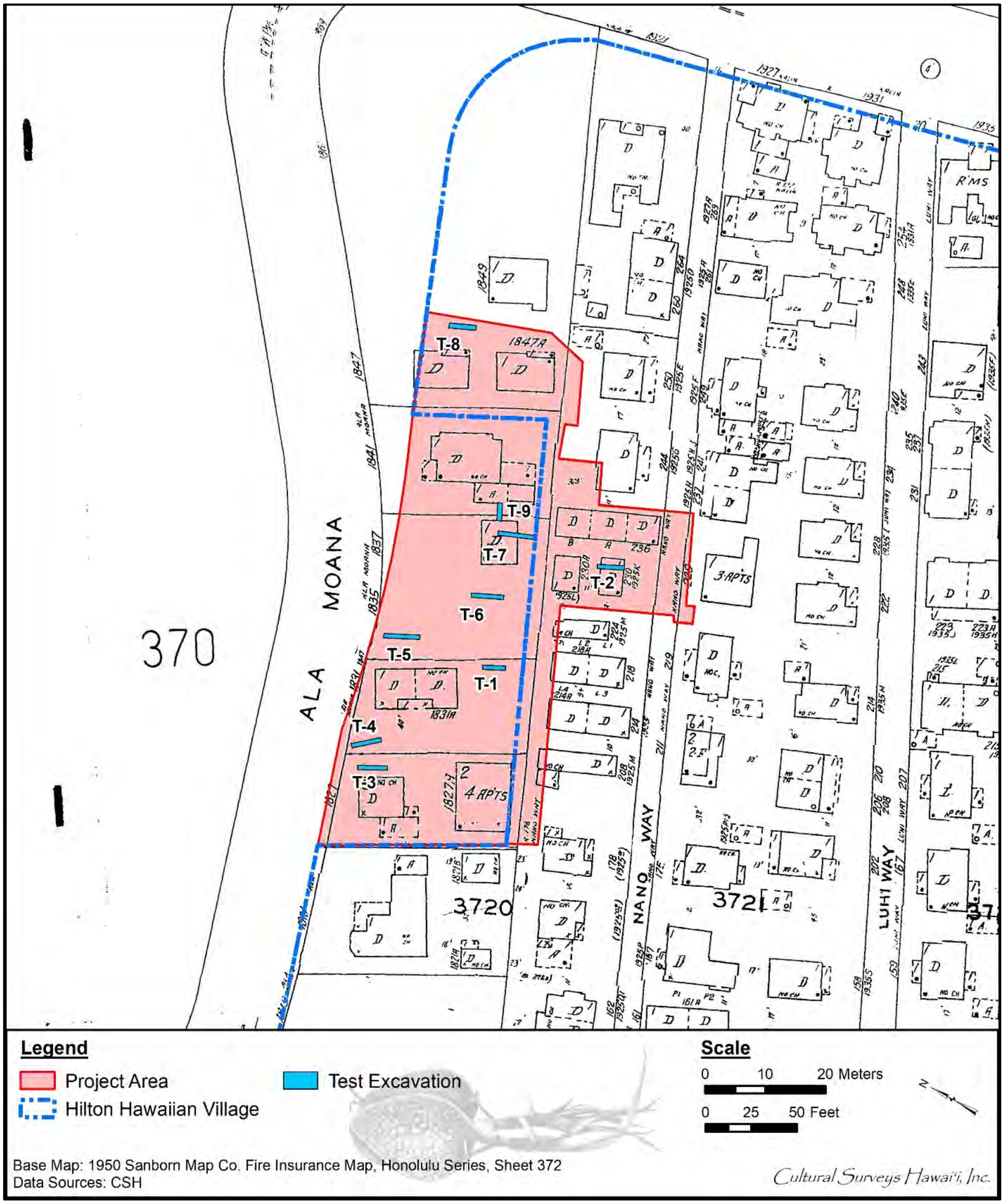


Figure 163. 1950 Sanborn Map Company fire insurance map, Honolulu Series, Sheet 372, with overlay of AIS test excavations

However, additional components include buried surfaces documented by Sroat et al. (2019) and a culturally enriched fill deposit documented during the current study.

The SIHP # -2870 A horizon consists of mixed origin loamy sand or sandy loam atop natural Jaucas sand. Sroat et al. (2019) observed that in some areas, imported terrigenous material had been incorporated into the deposit. The SIHP # -2870 A horizon is discontinuous and is frequently disturbed and/or truncated as a result of twentieth century construction activities; however, it is generally more intact within the *mauka* portion of the historic property’s boundaries.

The SIHP # -2870 A horizon contains relatively sparse cultural material (e.g., sparse charcoal flecking and scattered historic artifacts); however, numerous features have been documented in association with the layer, including human burial sites. Most of the SIHP # -2870 features consist of trash pits or concentrations and pits or trenches of indeterminate function. Additional features include a possible fire pit, buried surfaces, basalt structural remnants, historic residential utility lines with associated trenches, a possible drainage ditch, post molds, charcoal lenses, and a bird burial.

Sroat et al. (2019) described the cultural material associated with SIHP # -2870 as follows:

> The SIHP # -2870 A horizon cultural layer and associated refuse disposal features contain primarily late nineteenth to mid-twentieth century domestic and architectural items, indicating its function as a post-Contact residential cultural layer. Architectural artifacts include metal nails, window glass, slate roofing, tiles, insulators, and doorknobs. Domestic artifacts include intact and fragmented glass bottles (e.g., milk, condiment, food, medicine, cosmetic, soda, wine, spirits, and beer bottles), ceramic tableware sherds, silverware, fabric, metal cans, glass marbles, a doll, flowerpots, and telephone fragments. Additional cultural material includes metal fragments, faunal bone, charcoal, and sparse Neritidae shell […] The bottle artifacts consist primarily of American and European manufacture, while the ceramic tableware sherds appear to represent both Euro-American and Asian manufacture. [Sroat et al. 2019:150–151]

Based on analysis of collected artifacts, Hurlbett et al. (1992) dated several trash pits (HF-5, HF-7, HF-8, and HF-10) to post-1935, while Krause et al. (2022) dated a trash pit (Feature 6) and trash concentration (Feature 5) to post-1942 and post-1960, respectively. Analysis of artifacts during the current study yielded similar results, including a plastic button dating post-1940 (Acc. # 57) and a 1947 penny (Acc. # 23). A traditional-type artifact associated with SIHP # -2870, a pink granite octopus lure sinker, was identified by Neller (1980); however, the imported western material used to construct the item indicates it dates to the post-Contact period. Similarly, traditional-type artifacts comprising a basalt core (Acc. # 13) and basalt debitage (Acc. # 17) were identified during the current study; based on the presence of imported western materials within the same context, they likely date to the post-Contact period as well.

Additionally, three at least partially in situ human burials (Burials 1, 2, and 5) have been documented previously in association with SIHP # -2870, as well as four instances of disarticulated human skeletal remains (Burials 3, 4, 6, and 7). Neller (1980) assessed Burials 1 and 2 as likely originating from natural sand deposits and of likely early historic age, based on an assessment of the historical Kālia shoreline. Burial 5 was identified partially within Jaucas sand at the water table and appeared to be in a traditional flexed position. No human remains associated with SIHP # -2870 were identified during the current study.

6.1.9 Significance and Integrity Assessments for SIHP # -2870

SIHP # -2870 was previously assessed by Hurlbett et al. (1992) as significant under Hawaiʻi State historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history), pursuant to HAR §13-284-6. All subsequent studies that documented SIHP # -2870 concurred with this prior assessment. Sroat et al. (2019) additionally assessed SIHP # -2870 as significant under Hawaiʻi State historic property significance Criterion e (have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity), pursuant to HAR §13-284-6. SIHP # -2870 has yielded and has the potential to yield additional information regarding post-Contact land use, including burial practices, along the Kālia shoreline. It retains integrity of location, design, materials, workmanship, and feeling.

6.2 SIHP # 50-80-14-9156

FORMAL TYPE:	Human skeletal remains
FUNCTION:	–
NUMBER OF FEATURES:	0
AGE:	Unknown
TEST EXCAVATIONS/ STRATA:	T-4 Str. Id
HORIZONTAL EXTENT:	Approximately 0.4 sq m
TAX MAP KEY:	[1] 2-6-009:004
LAND JURISDICTION:	Park Ala Moana LLC
PREVIOUS DOCUMENTATION:	N/A

SIHP # -9156 comprises four small bone fragments originating within a near-surface fill deposit (Stratum Id) at the southeast end of T-4, between 30 and 55 cmbs. This fill corresponds with Stratum Ib in nearby T-3 and is composed of a mixture of locally available sandy material and imported material. It contains basalt gravel, concrete fragments, faunal bone, metal, glass, porcelain, brick, and plastic; in T-3, it is associated with a concrete utility jacket. Based on analysis of associated artifacts, this fill was deposited post-1976.

Three of the bone fragments were observed in the spoils pile, while the fourth was in slumped sediment within the trench. Osteologists Allison Hummel, M.Sc., and Sara Blahut, M.A., identified two of the bone fragments as human cranial fragments. The remaining two fragments were too small to be identified but were treated as human. The remains are in fair condition and represent less than 1% of an individual. Sex and age could not be determined based on osteological evidence.

No evidence of a coffin or grave marker and no burial goods were identified. Temporary burial treatment measures were facilitated by the on-site cultural monitor from Moehonua Cultural Monitoring Services and included wrapping the four fragments in muslin and placing them in a paper bag. Upon completion of the excavation, the trench was backfilled to 43 cmbs (see Figure 89). The bag containing the remains was placed in the southeast end of the trench and covered with plywood, soil/sediment, and caution tape (see Figure 90); the trench was then paved with concrete. Photographs and a profile drawing are presented in Section 4.2.3.4.

Neither the archaeological context nor any specific osteological observations of the small bone fragments support an ethnicity determination; however, based on past precedent and overall demography, the remains are reasonably believed to be Native Hawaiian. As a previously identified burial site, the remains’ long-term treatment will be decided through the burial treatment process outlined in HAR §13-300. This treatment will be detailed in a forthcoming burial treatment plan (BTP).

SIHP # -9156 retains integrity of materials and is assessed as significant under State of Hawai‘i historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history) and Criterion e (have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity), pursuant to HAR §13-284-6. SIHP # -9156 has yielded important information on the distribution of burial sites along the Kālia shoreline and has important value to the Native Hawaiian people.

6.3 SIHP # 50-80-14-9157

FORMAL TYPE:	Buried historical infrastructure remnants
FUNCTION:	Commercial, residential
NUMBER OF FEATURES:	8
AGE:	Post-Contact, likely mid-twentieth century
TEST EXCAVATIONS/ STRATA:	T-3 (Str. Ic, Id), T-4 (Str. Ie–Ij), T-8 (Str. If), T-9 (Str. If, Ih–Ij)
HORIZONTAL EXTENT:	Approximately 11.1 sq m
TAX MAP KEY:	[1] 2-6-009:004, 006, 007
LAND JURISDICTION:	Park Ala Moana LLC, SMK Inc., Hilton Hawaiian Village LLC
PREVIOUS DOCUMENTATION:	--

SIHP # -9157, buried historical infrastructure remnants, were identified in four test excavations (T-3, T-4, T-8, and T-9) during the current study. They comprise seven buried asphalt layers (Features 1–7) and a prepared surface (Feature 8) (Table 25). Stratigraphic profiles, plan maps,

Table 25. Summary of SIHP # -9157 features

Fea. #	Test Excavation	Stratum	Depth*	Description	Age
1	T-3	Ic	44–76	Asphalt layer	Post-1954
2	T-3	Id	75–95	Asphalt layer, partially embedded with concrete	Likely deposited between 1954 and 1966
3	T-4	Ie–Ig	48–73	Asphalt layer with two associated base course layers	Post-1954
4	T-4	Ih–Ii	63–90	Asphalt layer with associated base course layer	Post-1954
5	T-4	Ij	88–102	Asphalt layer	Likely deposited between 1954 and 1966
6	T-8	Ie	47–65	Asphalt layer	Post-1954
7	T-9	If	40–48	Asphalt layer	Likely deposited between 1947 and 1954
8	T-9	Ih–Ij	67–79	Prepared surface consisting of three thin, compacted fill layers	Likely deposited between 1954 and 1964

*Depths for T-3 and T-8 are cmbd, while depths for T-4 and T-9 are cmbs

and photographs of SIHP # -9157 Features 1–8 are presented in Section 4.2.3: Test Excavations and are referenced in the discussion below.

Three of the asphalt layers (Features 3–5) were identified in T-4, directly overlying one another (separated by associated layers of base course), with the deepest (i.e., oldest; Feature 5) directly atop a disturbed, remnant A horizon (see Section 4.2.3.4; Figure 82, Figure 86, and Figure 88). Two asphalt layers were identified in nearby T-3 (Features 1 and 2), again directly overlying one another and founded upon a disturbed, remnant A horizon (see Section 4.2.3.3; Figure 75 through Figure 80). The deeper (older) of the two (Feature 2) is partially embedded with concrete, which may have functioned as curbing. The remaining asphalt layers were identified in T-8 (Feature 6; see Section 4.2.3.8, Figure 109, Figure 110, Figure 113, Figure 114, Figure 117, Figure 121, Figure 123, and Figure 124) and T-9 (Feature 7; see Section 4.2.3.9, Figure 130, Figure 131, and Figure 134), overlying fill deposits. The Feature 8 prepared surface was also identified in T-9 and is composed of three thin, compacted fill layers (see Section 4.2.3.9; Figure 130, Figure 131, and Figure 134). The three layers comprise basalt base course overlain by a mixture of basaltic and marine sand capped with crushed coral fill. The Feature 8 prepared surface underlies and therefore pre-dates the Feature 7 asphalt layer.

A review of historical maps and aerial photographs, as well as analysis of artifacts from underlying deposits, indicate these buried infrastructure remnants are associated with mid-twentieth century urban development of the project area. Aerial photographs indicate the locations of T-3, T-4, and T-8 (where Features 1–6, buried asphalt layers, are located) were paved with asphalt sometime between 1954 and 1966 (see Figure 35, Figure 37, and Figure 164), suggesting the deepest asphalt layers within T-3 and T-4 (Features 2 and 5, respectively) and the layer within T-8 (Feature 6) date to that time period. However, it should be noted that asphalt fragments in an underlying fill deposit within T-8 suggest Feature 6 does not represent the earliest paving of that location; this hypothesis is supported by the fact that unlike Features 2 and 5, Feature 6 is not founded upon the buried A horizon. Analysis of artifacts from overlying fill deposits in T-3 and T-4 indicates the uppermost asphalt layers in those excavations (Features 1 and 3, respectively) were buried post-1976. It is likely one or more of the asphalt layers within T-3 and T-4 correlate with one another.

The Kobe Steakhouse building, where T-9 is located, was constructed in 1964; hence, Features 7 and 8 were deposited prior to 1964. As an artifact from the underlying Stratum IIa (reworked or redeposited A horizon) dates post-1947, Features 7 and 8 were deposited post-1947. Hence, Features 7 and 8 were both deposited sometime between 1947 and 1964, although Feature 7 pre-dates Feature 8 (based on stratigraphic position). An overlay of the current test excavations on 1950 and 1956 Sanborn Map Company fire insurance maps (see Figure 163 and Figure 165) shows T-9 in an area between two dwellings (“D”); T-9 is adjacent to a parking area or car port (“A” [automobile]). A 1954 aerial photograph (Figure 166) shows T-9 within a white area, possibly crushed coral fill; this may correlate with the Feature 8 prepared surface, which is capped with crushed coral. Hence, Feature 8 was likely deposited between 1947 and 1954, and Feature 7 was likely deposited between 1954 and 1964.

SIHP # -9157 retains integrity of location and materials and is assessed as significant under State of Hawai‘i historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history), per HAR §13-284-6. It has yielded and has the potential to yield additional important information regarding twentieth century urban development along the Kālia shoreline.

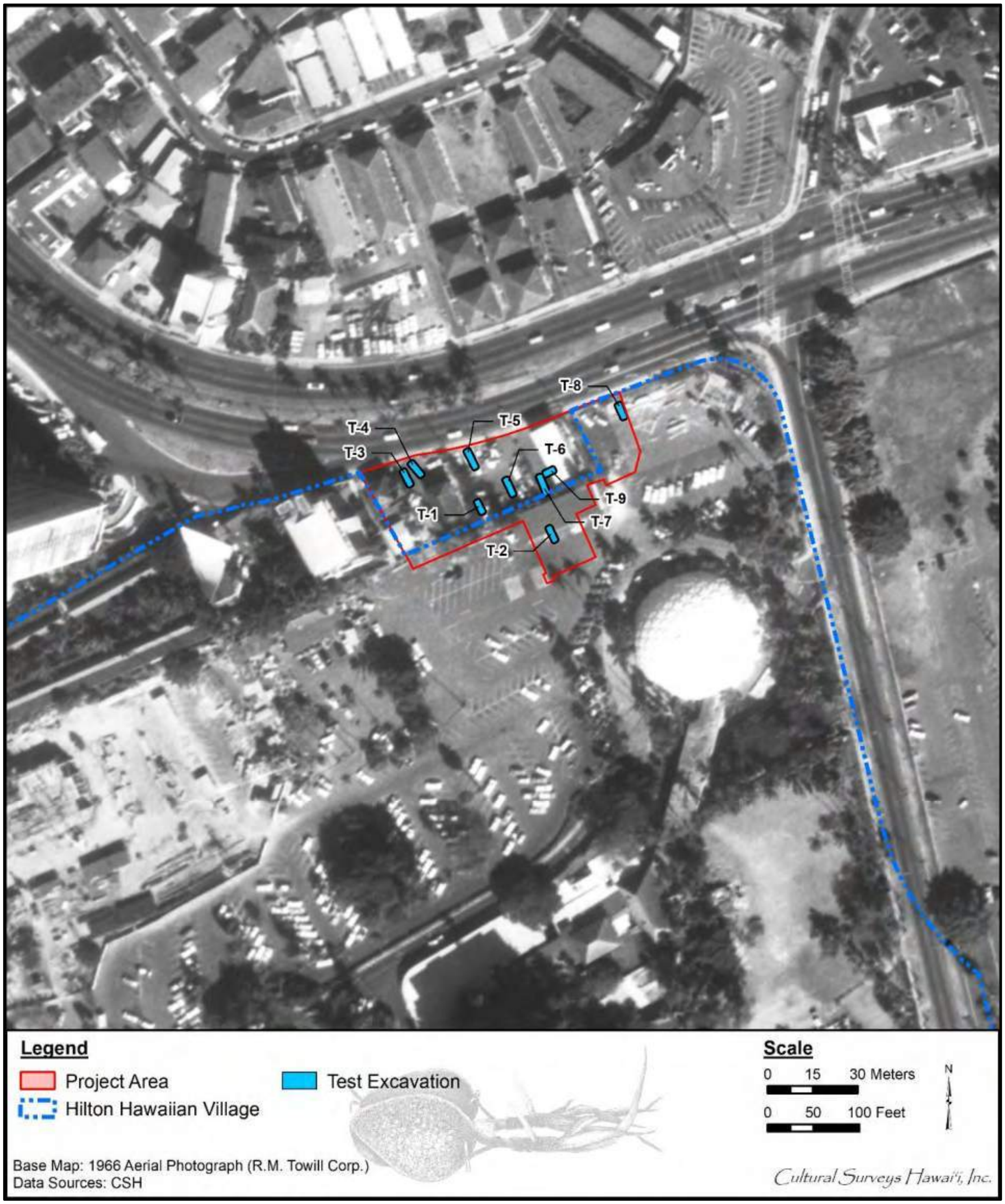


Figure 164. Close-up of a portion of a 1966 RM Towill aerial photograph showing that much of the project area had been asphalt-paved, including the locations of SIHP # -9157 Features 1–6, buried asphalt layers, in T-3, T-4, and T-8; the Kobe Steakhouse building, constructed in 1964, is present in the location of T-9

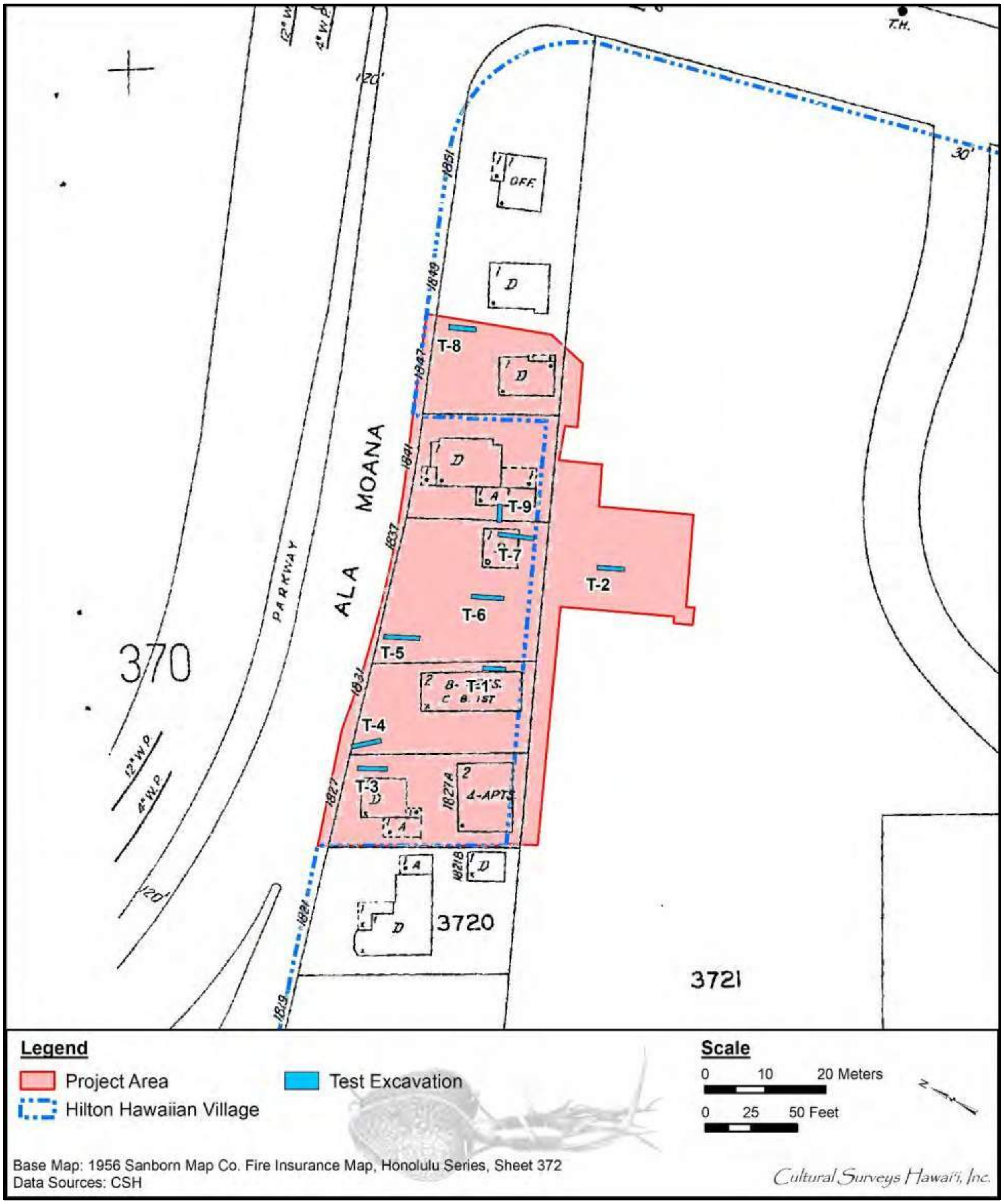


Figure 165. 1956 Sanborn Map Company fire insurance map, Honolulu Series, Sheet 372, with overlay of AIS test excavations

Figure 166. 1954 RM Towill aerial photograph with overlay of AIS test excavations

Section 7 Consultation

Consultation with SHPD regarding this project was initiated on 27 April 2017 with a project meeting at the SHPD offices in Kapolei. The following attended: SHPD Archaeology Branch Chief Dr. Susan Lebo, O‘ahu archaeologists Kimi Matsushima and Stephanie Hacker, and Architecture Branch Chief Kaiwi Yoon; G70 Vice Chairman and CEO Norman G.Y. Hong and architect Aimee Ramil Pang; and CSH project manager Matt McDermott and executive assistant Daniel Akiyama. At this meeting, Mr. Hong introduced the project to SHPD. Mr. McDermott gave a PowerPoint presentation introducing the project area and its land use and archaeological history and summarized what is known about the standing architecture. It was explained that this project would involve no federal funding or oversight. The attendees discussed the archaeological and architectural context of the project area and the surrounding vicinity. The consultation process and timeline, including the writing and submission to the SHPD of an HRS §6E letter of determination request, was clarified. At this meeting, the SHPD relayed that an AIS would be needed for this project as part of its historic preservation review.

On 20 October 2021, a meeting was held (via Zoom) with CSH, the project proponents, and previously recognized cultural descendants of Waikīkī. In attendance were Ivan Lui-Kwan of Starn O’Toole; Lani Lapilio of ‘Aukahi Consulting; Matt McDermott and Daniel Akiyama of CSH; Debi Bishop of Hilton; Kawika McKeague, Tracy Camuso, Norman Hong, Noelle Besa-Wright, and Jeff Overton of G70; Jonathan Fuisz of Park; and cultural descendants including members of the Caceres, Norman, Ho‘ohuli, and Kaleikini ‘Ohana. After introductions, Mr. McKeague discussed the location of the proposed project in relation to previous HHV projects. Then, Mr. McDermott discussed the historical and archaeological background of the project area and surrounding vicinity. He also discussed the current conditions of the project area, as documented during the recent field inspection by CSH. Mr. McKeague stated that an SEIS will be submitted to the SHPD, and the AIS testing strategy will be developed in consultation with the SHPD and the descendants. He invited the descendants to reach out to Ms. Lapilio if they have any questions moving forward.

On 4 December 2021, a meeting was held (via Zoom) with CSH, the project proponents, and members of the Norman ‘Ohana (previously recognized cultural descendants of Waikīkī). In attendance were Lani Lapilio of ‘Aukahi Consulting; Matt McDermott, Daniel Akiyama, and Gina Farley of CSH; Kawika McKeague of G70; and Keala Norman, Kekahili Kini, and Kekua Norman of the Norman ‘Ohana. Mr. McKeague presented an overview of the proposed project. Then, Mr. McDermott presented an overview of the historical and archaeological background of the project area, as well as the proposed AIS testing strategy. At that time, the proposed testing strategy included eight test excavations; no excavations were proposed within the former Kobe Steakhouse (Parcel 006) due to potential environmental, health, and safety concerns. Keala Norman suggested testing could be conducted safely within the former Kobe Steakhouse through appropriate precautionary measures. Kekahili Norman agreed she would like to see testing conducted in that location if it could be done safely via the suggested methodology. Mr. McDermott suggested the next step may be to have the existing conditions within the former Kobe Steakhouse assessed so options can be evaluated. Mr. McKeague agreed he would discuss the potential environmental, health, and safety issues with the project team to see what AIS testing is possible within the former Kobe Steakhouse.

Also on 4 December 2021, a meeting was held (via Zoom) with CSH, the project proponents, and previously recognized cultural descendants of Waikīkī. In attendance were Lani Lapilio of ʻAukahi Consulting; Matt McDermott and Daniel Akiyama of CSH; Kawika McKeague of G70; and cultural descendants Thomas Shirai, Bill Haole, Manuel Kuloloia, Kalehua Caceres, Mana Caceres, Makoa Caceres, Kamaehu Caceres, and Hiehie Caceres. Mr. McDermott presented an overview of the proposed project, the historical and archaeological background of the project area, and the proposed AIS testing strategy (at that point comprising eight excavations, with none proposed for Parcel 006 [former Kobe Steakhouse]). The cultural descendants did not express any questions or concerns regarding the proposed testing strategy.

On 12 January 2022, a presentation was given at the monthly Oʻahu Island Burial Council (OIBC) monthly meeting (conducted via Zoom). The presentation gave an overview of the historical and archaeological background of the project area, as well as the proposed AIS testing strategy. The only questions raised were to confirm the project team's commitment to complete the ninth testing location (T-9) within the former Kobe Steakhouse (Parcel 006).

On 30 March 2022, human skeletal remains (SIHP # -9156) were identified during excavation of T-4. The SHPD was informed the same day via phone call (Matt McDermott of CSH to Regina Hilo of SHPD) and email (Matt McDermott of CSH to Regina Hilo, Susan Lebo, Deidra Moore, and Samantha Hemenway of SHPD).

At the 13 April 2022 monthly meeting of the OIBC, the preliminary results of the AIS were presented, and the next steps in the project's historic preservation review process were discussed. There were no comments or questions raised.

On 26 April 2022, a letter from Gina Farley of CSH to Sylvia Hussey of the Office of Hawaiian Affairs (OHA) was transmitted via email (to OHACompliance@OHA.org). The letter requested consultation regarding the results of the AIS and asked that OHA respond with any questions, comments, or concerns, particularly regarding the significance assessment and forthcoming burial treatment plan (BTP) for the previously identified Native Hawaiian burial site (SIHP # -9156).

On 17 May 2022, a follow-up email was sent from Gina Farley of CSH to OHACompliance@OHA.org. Once again, the email requested that OHA reply with any questions, comments, or concerns regarding the results of the AIS. No response has been received to date.

Section 8 Summary and Interpretation

As the project area is fully developed, and no potential surface archaeological historic properties were identified during multiple field inspections by CSH, the AIS investigation focused on subsurface testing. AIS testing consisted of nine test excavations comprising eight exterior excavations (T-1 through T-8) and one interior excavation (T-9, inside the former Kobe Steakhouse building). Per the SHPD-accepted AIS testing strategy (Shideler et al. 2022), modified excavation and sampling methodology was employed for five of the nine test excavations (T-1, T-3, T-4, T-5, and T-9) due to soil contamination.

Background research indicates that prior to the 1920s construction of the Ala Wai Canal, the project area was adjacent to what was likely the shifting seaward-most portions of Piʻinaio Stream as it met the prograding shoreline at Kālia. Piʻinaio Stream was filled in with the construction of the Ala Wai Canal between 1921 and 1927, and by the early 1900s, there were western-style dwellings, likely bungalows, within the project area. Into the 1950s, historical maps depict the buildings within the project area as one- and two-story dwellings, with some labeled as apartments. The late-1950s through the 1980s saw the development of the HHV campus and the change of land use within the project area from residential to commercial.

The results of prior archaeological investigations within and adjacent to the project area show abundant remnants of past historical land use, including artifacts and features from the mid-1800s through mid-1900s. Two previously identified historic properties are partially within the current project area: SIHP #s -2870 and -6399. SIHP # -2870 comprises historical cultural layers with associated features and human remains; its interpolated boundaries extend into the southeastern portion of the current project area. SIHP # -6399 comprises five features, three of which are within the southern portion of the current project area; these comprise a pit of indeterminate function, a post-Contact refuse pit, and a latrine or refuse pit.

Notably, these prior studies have not documented evidence of traditional Hawaiian land use, possibly due to the dynamic hydrological environment along Piʻinaio Stream, where the drainage shifted periodically based on flow rates and changing shoreline conditions. The results of prior archaeological investigations also show the project area and its immediate vicinity have been subject to prior ground disturbance related to twentieth century development. Hence, the current AIS provided an opportunity to better assess the presence of archaeological deposits within the project area—whether there is evidence of traditional Hawaiian and/or historical land use preserved within this fully developed, and potentially heavily disturbed, location.

The results of the current AIS are consistent with the results of those prior investigations, in terms of both stratigraphy and historic properties documented. In general, the stratigraphy comprises the current land surface, one or more fill deposits, a buried loamy sand A horizon, and Jaucas sand. The surface consists of the concrete walkway at T-1, T-3, and T-4; the asphalt parking/driving surface at T-2 and T-5 through T-7; the landscaped lawn at T-8; and the concrete floor of Kobe Steakhouse at T-9. The underlying fill deposits include imported fills and fills composed of locally available sandy material, including A horizon material and/or Jaucas sand. Some of the fills contain historical to modern artifacts and debris including ceramic, glass, brick, asphalt, concrete, metal, plastic, and faunal bone.

One near-surface fill deposit, T-4 Stratum Id, contains disarticulated human skeletal remains, designated as SIHP # -9156. SIHP # -9156 comprises four small bone fragments—two cranial fragments and two fragments that are too small to be identified but were treated as human. In consultation with the SHPD, the remains are reasonably believed to be Native Hawaiian and have been preserved in place within T-4. Long-term burial treatment will be detailed in a forthcoming BTP.

Other fills are interpreted as buried surfaces and are designated as SIHP # -9157. SIHP # -9157 comprises seven buried asphalt layers, designated as Features 1–7, and a prepared surface designated as Feature 8; these were identified in T-3, T-4, T-8, and T-9. A review of historical maps and aerial photographs, as well as analysis of artifacts from underlying deposits indicate these features are associated with mid-twentieth century development of the project area.

One fill deposit, T-8 Stratum Ig, has associated pit features and is designated as part of SIHP # -2870. SIHP # -2870 was documented during six previous studies in the immediate vicinity, and its interpolated boundaries extend into the southeastern portion of the project area. SIHP # -2870 has primarily been documented as a buried, discontinuous, disturbed, and/or truncated A horizon atop Jaucas sand. During the current study, a buried A horizon was identified in seven of the nine test excavations, all except T-2 and T-7. In the four excavations where the A horizon was most intact and had associated features (T-5, T-6, T-8, and T-9), it is designated as part of SIHP # -2870.

A total of 19 features of SIHP # -2870 were identified during the current study; they comprise two post molds (Features 32 and 37), two charcoal lenses (Features 30 and 43), a bird burial (Feature 31), and 14 pit features of indeterminate function (Features 27–29, 33–36, 38–42, 44, and 45). Fourteen (Features 27, 28, 30, 34–43, and 45) originate within a buried A horizon, and four (Features 31–33 and 44) originate within the T-8 Stratum Ig culturally enriched fill deposit. In addition, a single feature (Feature 29) is intrusive into the A horizon. As documented during prior studies, the SIHP # -2870 A horizon within the project area is discontinuous and disturbed, often with a truncated upper boundary. It contains scattered historical artifacts and debris including ceramic, glass, brick, concrete, metal, plastic, and vertebrate and invertebrate faunal remains. As in prior studies, associated diagnostic artifacts date between the mid-1800s and mid-1900s. Although traditional-type artifacts, a basalt core and basalt debitage, were identified in a single excavation, imported western materials in the same context suggest they date to the post-Contact period. Hence, the results of the current study are consistent with the results of prior studies within and in the vicinity of the project area; they reflect historical land use but lack evidence for earlier traditional Hawaiian activity, possibly due to the "potentially dynamic hydrological environment along Piʻinaio Stream," as suggested by Shideler et al. (2022:11).

Section 9 Significance Assessments

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

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

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

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

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

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

Three historic properties were documented during the current AIS. Table 26 lists the historic properties along with their significance/eligibility assessments and mitigation commitments, which are included in this AIS report for the review and concurrence of the SHPD. In addition, historic property integrity, which is the ability of a property to convey its significance, was assessed based on the guidance provided in National Register Bulletin #15, “How to Apply the National Register Criteria for Evaluation” (NPS 1997) and “Assessing Site Significance: A Guide for Archaeologists and Historians” (Hardesty and Little 2000). The seven aspects of integrity and their descriptions are as follows:

Location is the place where the historic property was constructed or the place where the historic event occurred

Design is the combination of elements that create the form, plan, space, structure, and style of the property

Setting is the physical environment of a historic property

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory

Feeling is a property’s expression of the aesthetic or historic sense of a particular period of time

Table 26. Archaeological historic property integrity and significance assessments and mitigation commitments

SIHP # 50-80-14-	Test Excavations/ Strata	Formal Type/ Description	Integrity							Significance (per HAR §13-284-6)	Mitigation Commitment
			Location	Design	Setting	Materials	Workmanship	Feeling	Association		
2870	T-5 (Str. IIa), T-6 (Str. IIa, IIb), T-8 (Str. Ig, IIa), and T-9 (Str. IIb)	Historical cultural layers with associated features and human remains	Y	Y	N	Y	Y	Y	N	d, e	Archaeological monitoring
9156	T-4 Str. Id	Human skeletal remains	N	N	N	Y	N	N	N	d, e	Burial treatment
9157	T-3 (Str. Ic, Id), T-4 (Str. Ie–Ij), T-8 (Str. If), T-9 (Str. If, Ih–Ij)	Infrastructure remnants	Y	N	N	Y	N	N	N	d	Archaeological monitoring

> *Association* is the direct link between an important historic event or person and a historic property [NPS 1997; Hardesty and Little 2000]

SIHP # -2870 comprises historical cultural layers with associated features and human remains. It was previously assessed by Hurlbett et al. (1992) as significant under Hawaiʻi State historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history), pursuant to HAR §13-284-6. All subsequent studies that documented SIHP # -2870 concurred with this prior assessment. Sroat et al. (2019) additionally assessed SIHP # -2870 as significant under Hawaiʻi State historic property significance Criterion e (have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity), pursuant to HAR §13-284-6. SIHP # -2870 has yielded and has the potential to yield additional important information regarding post-Contact land use, including burial practices, along the Kālia shoreline. It retains integrity of location, design, materials, workmanship, and feeling.

SIHP # -9156 comprises human skeletal remains within a near-surface fill deposit. It is assessed as significant under State of Hawaiʻi historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history) and Criterion e (have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity), pursuant to HAR §13-284-6. SIHP # -9156 has yielded important information on the distribution of burial sites along the Kālia shoreline and has important value to Native Hawaiians. It retains integrity of materials.

SIHP # -9157 comprises subsurface infrastructure remnants. It is assessed as significant under State of Hawaiʻi historic property significance Criterion d (has yielded, or is likely to yield, information important for research on prehistory or history), per HAR §13-284-6. It has yielded and has the potential to yield additional important information regarding twentieth century urban development along the Kālia shoreline. It retains integrity of location and materials.

Section 10 Project Effect and Mitigation Commitments

10.1 Project Effect

Under Hawai‘i State historic preservation review legislation, one of two project effect determinations must be established: 1) “No historic properties affected,” the project will have no effect on significant historic properties; or 2) “Effect, with agreed upon mitigation commitments,” the project will affect one or more significant historic properties, and the effects will potentially be harmful. However, the agreed upon mitigation commitments involving one or more forms of mitigation will reasonably and acceptably mitigate any harmful effects (HAR §13-284-7).

Three architectural historic properties (SIHP #s -8188, -8189, and -8190; the buildings within Parcels 006, 005, and 004, respectively) were identified within the project area. However, an SHPD-accepted RLS determined these are not significant due to lack of integrity (see Section 1.2.1 discussion). Hence, according to this prior SHPD determination, no significant architectural historic properties will be affected by the project’s demolition of the project area’s current standing buildings and structures.

Three significant archaeological historic properties (SIHP #s -2870, -9156, and -9157) were identified during the AIS, and the proposed project has the potential to affect these historic properties. Hence, the results of this AIS support a project effect determination of “Effect, with agreed upon mitigation commitments.” The mitigation measures outlined below will reduce the project’s potential effect on these significant historic properties.

10.2 Mitigation Commitments

Under Hawai‘i State historic preservation review legislation, if a project will have an “effect” (impact) on significant historic properties, then a mitigation commitment proposing the form of mitigation to be undertaken for each significant historic property shall be submitted for SHPD review and acceptance. Mitigation may occur in the following five forms: A) Preservation, B) Architectural Recordation, C) Archaeological Data Recovery (which includes archaeological monitoring), D) Historical Data Recovery, and E) Ethnographic Documentation (HAR §13-284-8).

Three significant archaeological historic properties (SIHP #s -2870, -9156, and -9157) were identified within the project area during the current AIS. Based on the AIS results and in consultation with the SHPD, the agreed upon mitigation commitments are archaeological data recovery in the form of archaeological monitoring for SIHP #s -2870 and -9157 and burial treatment for SIHP # -9156. Archaeological monitoring will be conducted in accordance with an archaeological monitoring plan meeting the requirements of HAR §13-279-4. Burial treatment will be conducted in accordance with a BTP meeting the requirements of HAR §13-300-33.

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Appendix A SHPD Acceptance of AIS Testing Strategy

Ala Moana Boulevard (AMB) Tower Project, Hilton Hawaiian Village Campus (AIS Testing Strategy)
SHPD Project No.: 2017PR24629

Thank you for the consultation on March 3 (Susan Lebo [SHPD] and Matt McDermott [Cultural Surveys Hawaii]). SHPD accepts the AIS testing strategy, which includes a total of 9 test trenches. The testing strategy includes hand-excavation through natural sand deposits within Trenches 2, 6, 7, and 8. CSH will collect all material encountered in Trenches 2, 6, 7, and 8.

On 1 March 2022, CSH was informed of soil contamination throughout the project area. Due to the contamination, CSH personnel will wear personal protective equipment (PPE) in the form of Tyvek suits and respirators during excavation of five of the nine test excavations (Trenches 1, 3, 4, 5, and 9). SHPD agrees to the use of a mini excavator with a small bucket instead of hand excavations for areas where contamination was located. SHPD requests shallow passes (2-4 inches) through the natural sand deposits. SHPD also requests a minimum of 2 monitors. One monitor observing the passes and one monitor observing the material going into the spoil pile. SHPD requests the second monitor also rake the spoil piles. CSH will clean all cultural materials found in T1, T3, T4, T5, and T9 to observe the identifying characteristics. CSH will photograph all material with a scale. Photos will be of the front and back and include a close up. Due to the contamination, materials from T1, T3, T4, T5, and T9 will not be collected, and all identification will be done in the field. SHPD requests a monitor on site who has the ability to identify and describe the materials. Additionally, SHPD requests CSH to send copies of all photos at the end of each workday before the material is put back in the trench.

Profiles will be completed for all trenches

Appendix B SHPD Acceptance of RLS Studies

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

January 29, 2018

IN REPLY REFER TO:
LOG NO: 2017.02584
2017.02585
2017.02586
DOC NO: 1801TGM16
Architecture

Thomas C. Morey, Senior VP and General Counsel
Park Intermediate Holdings LLC
1600 Tyson Blvd., Suite 1000
McLean, VA 22102

Dear Mr. Morey:

SUBJECT: **FINAL – 1831, 1835, & 1841 Ala Moana Blvd Reconnaissance Level Surveys (RLS)**
Park Hotels & Resorts – Development of Three Parcels
Owner Name: Trusts and Members of the Jong and Toda Families & SMK Inc.
Waikīkī Ahupua‘a, Kona District, Island of O‘ahu
TMK: (1)2-6-009:004; 005; and 006

Thank you for the submittal from the Trusts and Members of the Jong and Toda Families & SMK Inc. for the Final Reconnaissance Level Surveys (RLS) for the properties located on Ala Moana Boulevard. The State Historic Preservation Division (SHPD) received this submittal on January 4, 2018.

On August 28, 2017, SHPD requested RLS reports for the multiple buildings within the Lots 004, 005 and 006 (LOG NO: 2017.01290; DOC NO: 1708KN26). The RLS reports identified that all of the buildings are not eligible for listing on the Hawai‘i and National Registers of Historic Places. The buildings are not significant under any National Register criteria and they do not contain historic integrity due to numerous changes to character defining features.

SHPD received the payment for the survey reports.

SHPD accepts the final RLS. The SIHP numbers for the sites are:
Kobe Steakhouse: 50-80-14-08188
Budget Rent-A-Car: 50-80-14-08189
Waikīkī Mini Shops: 50-80-14-08190

Please contact Ms. Tanya Gumapac-McGuire, Architectural Historian, at (808) 692-8022 or at Tanya.Gumapac-Mcguire@hawaii.gov regarding architectural resources or this letter.

Aloha,
Alan Downer

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

cc: Ms. Lesleigh Jones, Mason Architects, Inc., lj@masonarch.com
Ms. Trina Evensen, Mason Architects, Inc., te@masonarch.com

Appendix C

Cultural Impact Assessment (CIA) for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013

Cultural Surveys Hawaiʻi, Inc.

September 2022

DRAFT
Cultural Impact Assessment for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013

Prepared for
G70

On Behalf of
Park Ala Moana LLC,
Hilton Hawaiian Village Beach Resort & Spa,
and
SMK, Inc.

Prepared by
Kellen Tanaka, B.S.
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: WAIKIKI 278)

September 2022

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Management Summary

Reference	Cultural Impact Assessment for the Ala Moana Boulevard Tower Project, Hilton Hawaiian Village Campus, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013 (Tanaka and Hammatt 2022)
Date	September 2022
Project Number(s)	Cultural Surveys Hawaiʻi, Inc. (CSH) Job Code: WAIKIKI 278
Agencies	State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP)
Land Jurisdiction	Hilton Hawaiian Village (HHV) plans to develop a new resort tower, the Ala Moana Boulevard (AMB) Tower, largely within TMKs: [1] 2-6-009:004–006. These three parcels are currently privately owned and will remain privately owned. Parcel 004 is owned by Park Ala Moana LLC and leased by SMK, Inc., while Parcels 005 and 006 are owned by SMK, Inc. The portions of adjacent TMKs: [1] 2-6-009:007, 009, and 013 within the project area are part of the HHV campus and are privately owned by Hilton Hawaiian Village LLC.
Project Location	The project area comprises three full parcels, TMKs: [1] 2-6-009:004, 005, and 006, and adjacent portions of three additional parcels, TMKs: [1] 2-6-009:007, 009, and 013, located along Ala Moana Boulevard at the northern boundary of the HHV campus, in Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu. The project area is bounded to the north by Ala Moana Boulevard, to the southeast by HHV's Kālia Tower, to the southwest by HHV's parking structure, and to the west by the Hilton Grand Vacations' Grand Waikikian Honolulu Tower. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Description	Construction of a new resort tower will involve the demolition of existing buildings and structures. Associated ground disturbance will include structural footing installation, utility installation, and landscaping. Surface grading may be required for roadway improvements and parking area installation. As is common with urban redevelopment projects, project construction could extend a short way into adjacent sidewalks and streets that are outside the HHV Campus property, for example, for utility connections.
Project Acreage	The project area comprises 0.742 acre (0.3 hectare).
Document Purpose and Regulatory Context	This cultural impact assessment (CIA) supports compliance for the AMB Tower Project with: • The mandate set forth by the Hawaiʻi State Constitution (Articles IX and XII), courts, Hawaiʻi Revised Statutes (HRS), and Hawaiʻi Administrative Rules (HAR) and other Hawaiʻi

	State laws requiring government agencies to promote and preserve cultural beliefs, practices. and resources of Native Hawaiians and other ethnic groups; • the State of Hawaiʻi's environmental review process under HRS §343, which requires consideration of the proposed project's potential effects on cultural practices and cultural features in order to "promote responsible decision making" (HRS §343); • and the State of Hawaiʻs historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to "promote the use and conservation of historic properties for the education of the citizens of Hawaiʻi" (HAR §13-275-6) This CIA contains information gathered from archival research and consultation, compiled in order to "analyze the impact of a proposed action on cultural practices and features associated with the project area" (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawaiʻi significance Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that "have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity" (HAR §13-275-6 and §13-284-6).
Results of Background Research	Background research for the proposed project yielded the following information: 1. The *ahupuaʻa* (traditional land division usually extending from the mountains to the sea) of Waikīkī ("water spurting from many sources") (Pukui et al. 1974:223), extended east from the land area named Kou (old name for Honolulu) to Maunalua (known today as Hawaiʻi Kai). 2. The *ʻili* (traditional land division smaller than an *ahupuaʻa*) of Kālia, located in the western section of Waikīkī, is a name used for the central portion of Mānoa Stream as well as the name of the coastal area where the Piʻinaio Stream emptied into the ocean. The stream's mouth was on the western end of the Waikīkī coast, where the Ala Moana Hotel and Shopping Center is now located. 3. Although rain tends to skirt around Waikīkī today, largely due to thermodynamics and the rising of heat from numerous concrete

	surfaces, there exist rains traditionally known to be specific to Waikīkī. These are the Makahuna rain and the Waʻahila rain, respectively. Two winds found in the vicinity of the project area are a breeze of Kālia and the ʻŌlauniu of Kahaloa (an area of Waikīkī) (Hoʻoulumahiehie 2008a:277; Nakuina 1990:50–51). 4. Thomas G. Thrum reports that eight *heiau* (pre-Contact place of worship) were once located in Waikīkī, consisting of Papaʻenaʻena Heiau, Kapua Heiau, Kūpalaha Heiau, Helumoa Heiau, Makahuna Heiau, Kamauakapu Heiau, Pahu-a-Maui Heiau, and Kulanihakoi Heiau (Thrum 1906:44–45). Samuel Kamakau notes another *heiau* of Waikīkī called Halekumukaaha Heiau (Kamakau n.d. in McAllister 1933:78), and early historic maps by C.J. Lyons (Registered Maps [RM] 726 and 727) indicate the location of another *heiau* called Ōpūnahā Heiau. Several of the *heiau* were of *poʻokanaka* (sacrificial) classification and used ceremoniously for human sacrifices (Stokes 1991:24). These *heiau*, however, did not exist within or in close proximity to the current project area. 5. The marshland of Waikīkī was watered from streams in the Makiki, Mānoa, and Pālolo valleys and from springs in Mānoa (Punahou and Kānewai). Before the construction of the Ala Wai Canal in the 1920s, the Mānoa and Pālolo streams did not merge until deep within Waikīkī. As they entered the flat Waikīkī Plain, the names of the streams changed. The Mānoa Stream became the Kālia, and the Pālolo Stream became the Pāhoa. They joined near Hamohamo (now an area *mauka* [towards the mountains] of the Kapahulu Library) and then divided into three new streams: Kuekaunahi, ʻĀpuakēhau, and Piʻinaio. 6. Hawaiians constructed a vast system of irrigated *kalo* (taro; *Colocasia esculenta*) fields that extended across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. 7. Historic maps and images depict the locations of numerous *loko iʻa* (fishponds) in Waikīkī and historic documents describe “several hundred” and “innumerable” artificial freshwater fishponds extending a mile inland from the shore (Bloxam 1925:35–36 in McAllister 1933:76). Kālia is associated with a traditional fishing technique used to catch schools of mullet. The fishermen of Kālia became known as human fishnets. 8. John Papa ʻĪʻī (1959) discussed early nineteenth century trails in the Waikīkī area that traversed the region which was characterized by ponds, marshlands, and *loʻi* (irrigated terrace). He suggested that the trail, especially as it neared the coastline

	at Kālia, must have run on a sand berm raised above surrounding wetlands and coral flats. 9. Most of the project area was part of the 1853 Land Commission Award (LCA) 1775 to Paoa for a *pāhale*, or house lot. This was the ancestral homesite of the family of Duke Paoa Kahinu Mokoe Hulikohola Kahanamoku (24 August 1890–22 January 1968), a Native Hawaiian competition swimmer (winning six Olympic medals, three of them gold) and foremost surfer who popularized surfing to the world, known as Hawai‘i's "Ambassador of Aloha." Additionally, a portion of the project area crosses into Land Grant 316T to H.A. Widdeman and later (1880) to John Ena (Waihona ‘Aina 2000). 10. A traditional saying, *Kāhunahuna pa‘akai o Kālia*, "the fine-grained salt of Kālia" (Pukui 1983:144) indicates Kālia was a traditional area for salt collection by Native Hawaiians. 11. By the end of the nineteenth century, most of the fishponds that had previously proliferated had been neglected and allowed to deteriorate. The remaining taro fields were planted with rice to supply the growing numbers of immigrant laborers imported from China and Japan, and for shipment to the west coast of the United States (Coulter and Chun 1937). 12. By the early 1900s, there were western-style dwellings (likely bungalows) in the project area, one of which was owned by famed Native Hawaiian Olympian and surfer Duke Kahanamoku. 13. The land surface of modern Waikīkī is the result of a decades-long dredging and fill project that included the creation of the Ala Wai Canal. Dredging for the Ala Wai Canal began in 1921 and was completed seven years later. The Ala Wai Canal is listed as State Inventory of Historic Places (SIHP) # 50-8-14-9757. 14. Into the 1950s, the buildings within the project area were one- and two-story dwellings, some labeled as apartments. 15. The later 1950s through the 1980s saw the development of the HHV campus. During this period, land use within the project area changed from residential to commercial.
Results of Community Consultation	CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 118 individuals or groups; six responded, one provided written testimony, and one of these *kama‘āina* (native-born) and/or *kūpuna* (elder/of the

	grandparent's generation) met with CSH for a more in-depth interview. Consultation was received from: 1. Robert Clarke Paoa, *Kamaʻāina* of Kālia 2. Carolyn Keala Norman, Cultural Descendant 3. Winifred "Niniaulani" Barr, *Kamaʻāina* of Kālia; Harbottle Descendant
Identification of Cultural Practices	Consultation identified the following cultural, historical, and natural resources where cultural practices (including traditional and customary Native Hawaiian rights) are being exercised in Waikīkī Ahupuaʻa: 1. Marine Resources Based on the results of community consultation and background research conducted as part of this CIA, CSH has identified the following cultural practices within Waikīkī Ahupuaʻa: 1. Farming (*kalo*, banana, rice) 2. Fishing 3. *Limu* (seaweed) gathering 4. Salt Production 5. Recreational activities (swimming, surfing, paddling) 6. *Lāʻau Lapaʻau* (medicine) 7. *Moʻolelo* (stories) and *Wahi Pana* (storied places) 8. Burial practices At the production of this report, CSH has determined that no immediately discernible or readily known ongoing cultural practices were identified within the project area during community consultation. The project area is also located in the general vicinity of ongoing cultural practices such as recreational activities and traditional burial practices.
Identification of Impacts to Cultural Practices	Zero immediately discernible or readily known impacts to ongoing cultural practices were identified within the project area during community consultation for this CIA.
Mitigation Possibilities Identified During Background Research and Consultation	The results of community consultation, underscored by background research conducted for this CIA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups: 1. Based on available information there is potential for subsurface archaeological deposits within the project area. As project-related ground disturbance is likely to be widespread throughout much, if not all of the project area, there is potential for project effect on archaeological historic properties.

	2. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the State Historic Preservation Division (SHPD) will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* (ancestral remains) are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended. 3. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

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Section 1 Introduction

1.1 Project Description

At the request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc., Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this cultural impact assessment (CIA) report for the Ala Moana Boulevard (AMB) Tower Project, Hilton Hawaiian Village (HHV) Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu, TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013. The 0.742-acre (0.3-hectare) project area is bounded to the north by Ala Moana Boulevard, to the southeast by HHV's Kālia Tower, to the southwest by HHV's parking structure, and to the west by the Hilton Grand Vacations' Grand Waikikian Honolulu Tower. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and 2020 and 2013 aerial photographs (Figure 3 and Figure 4, respectively).

HHV plans to develop a new resort tower, the AMB Tower. Construction of the new resort tower will involve the demolition of existing buildings and structures, structural footing installation, utility installation, and landscaping. Surface grading may be required for roadway improvements and parking area installation. As is common with urban redevelopment projects, project construction may extend into adjacent sidewalks and streets, for example for utility connections.

1.2 Regulatory Context

This CIA supports compliance for the AMB Tower Project with:

- The mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Regulatory Statutes (HRS), and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices. and resources of native Hawaiians and other ethnic groups;
- the State of Hawai‘i's environmental review process under HRS §343, which requires consideration of the proposed project's potential effects on cultural practices and cultural features in order to "promote responsible decision making" (HRS §343);
- and, the State of Hawai‘s historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to "promote the use and conservation of historic properties for the education of the citizens of Hawai‘i" (HAR §13-275-6)

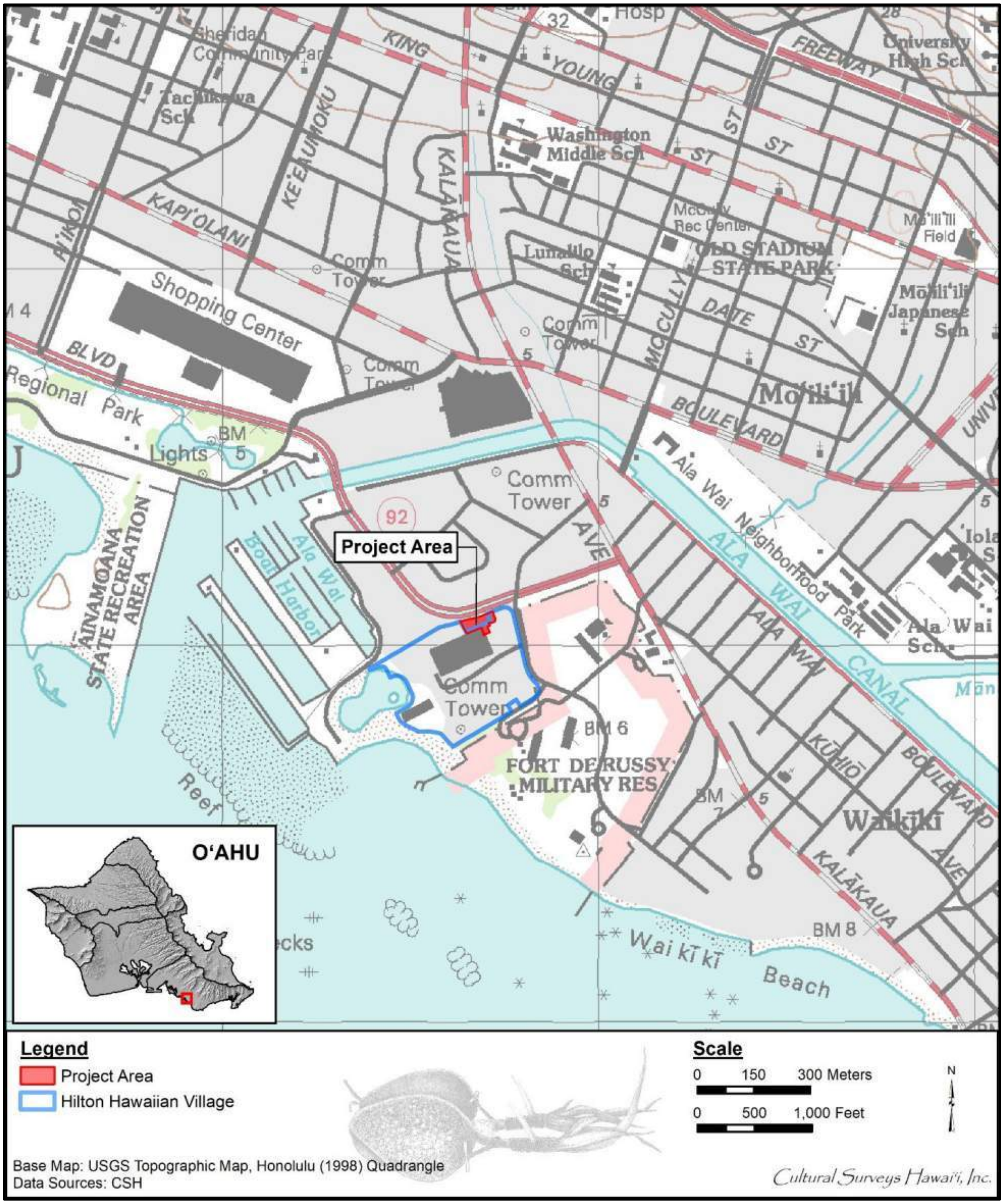

Figure 1. Portion of the 1998 Honolulu USGS 7.5-minute topographic quadrangle showing the project area in relation to the HHV campus

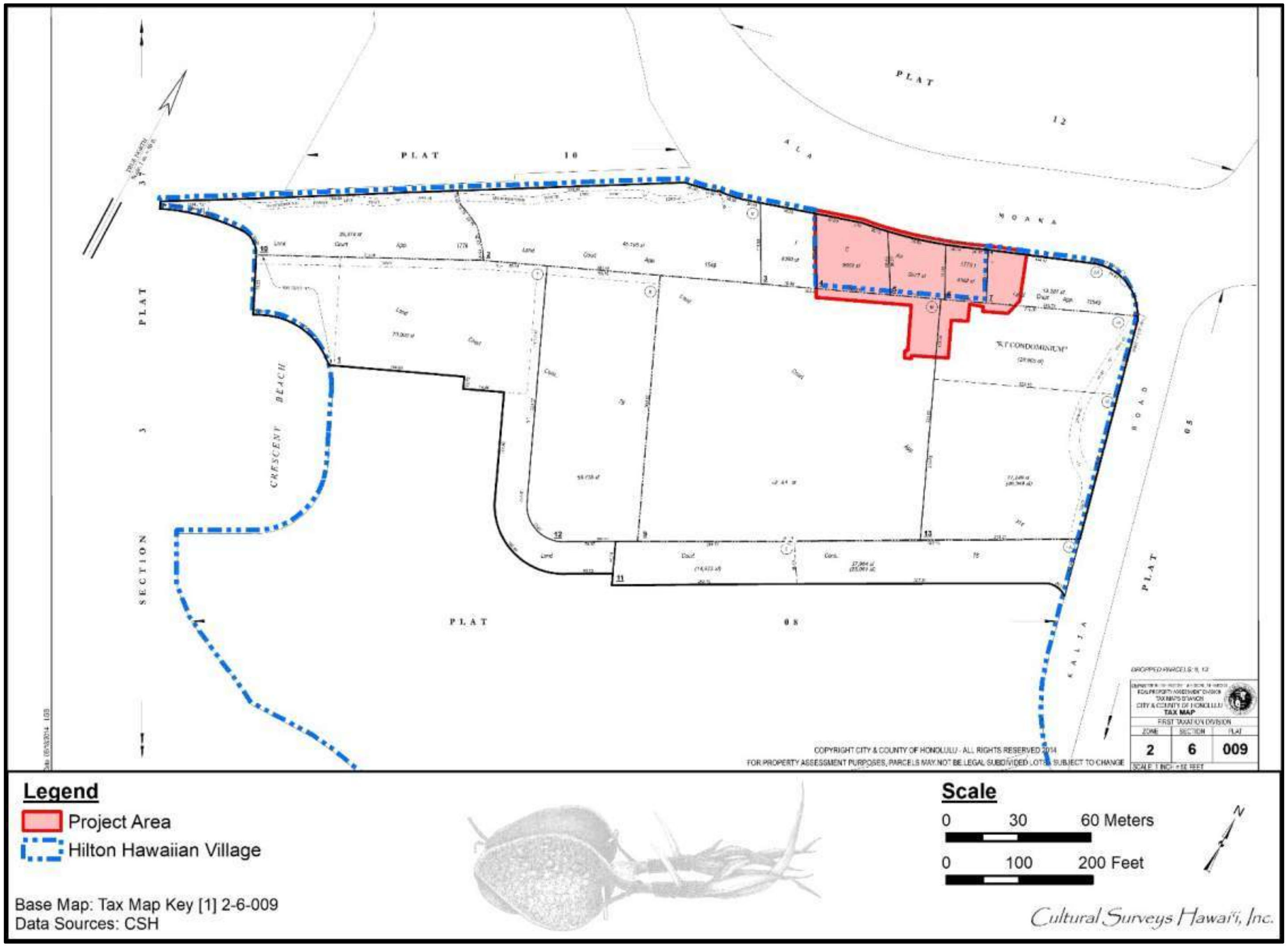

Figure 2. Tax Map Key (TMK) [1] 2-6-009 showing the project area in relation to the HHV campus (Hawai‘i TMK 2014)

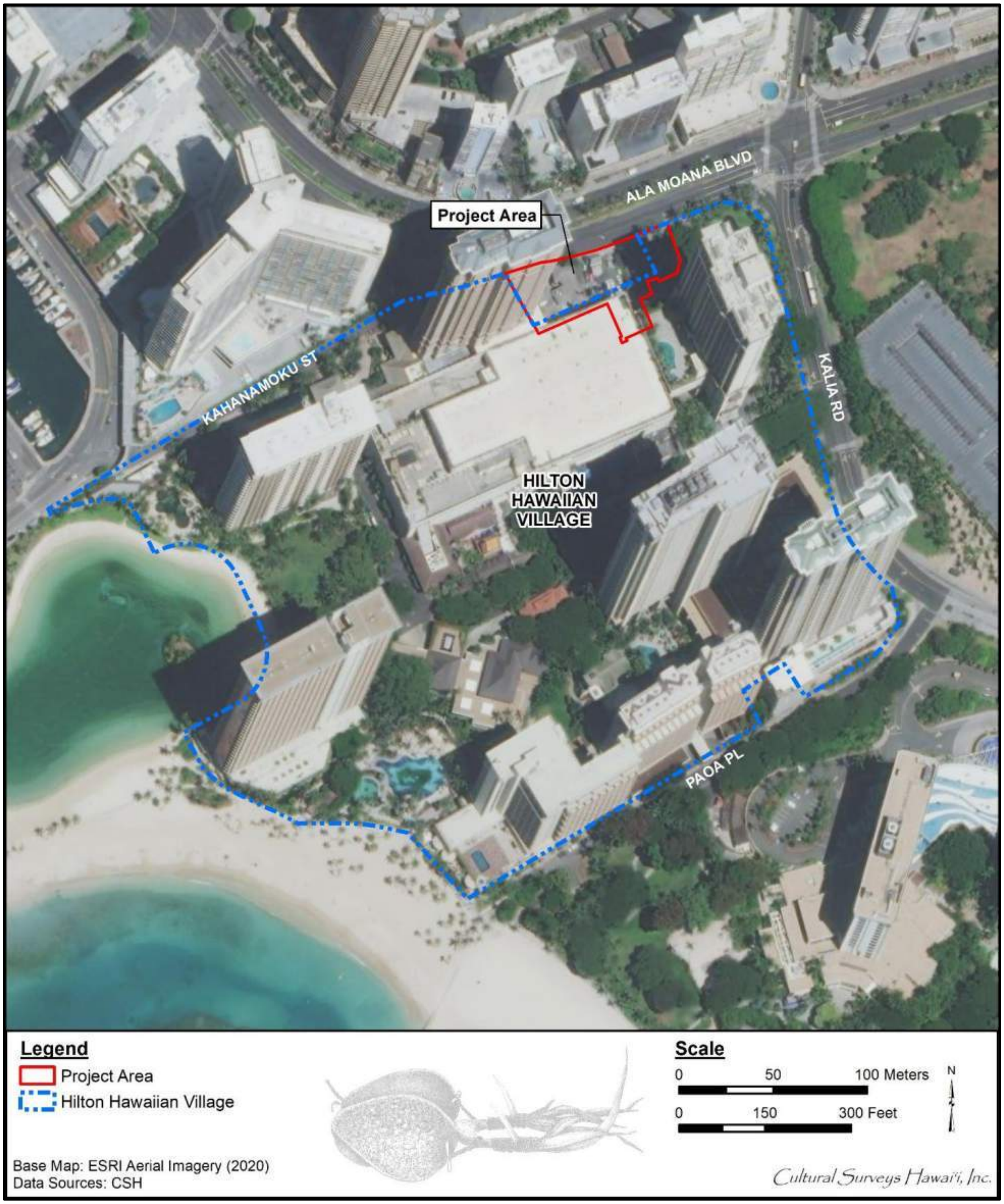

Figure 3. Aerial photograph showing the project area in relation to the HHV campus (ESRI 2020)

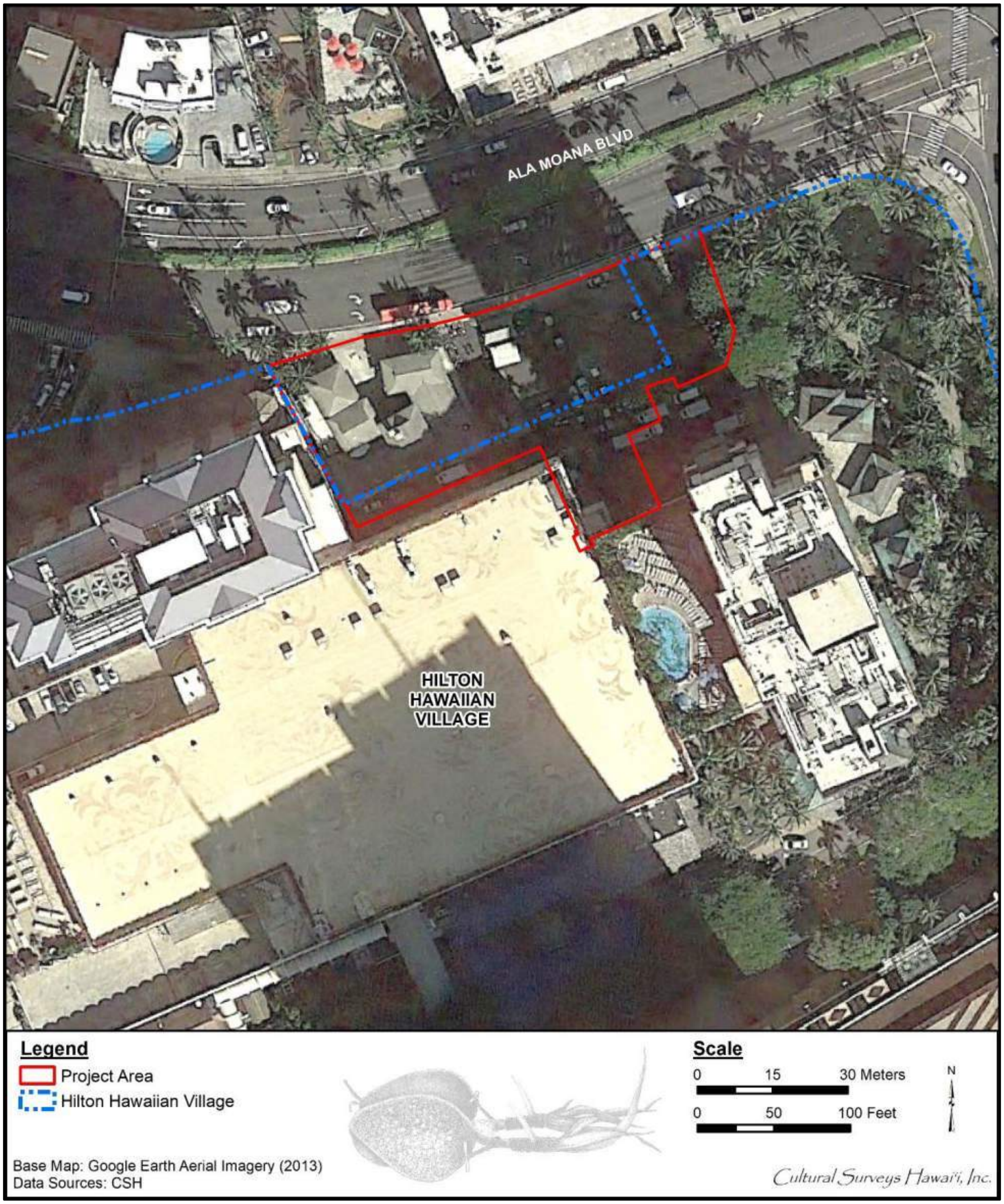

Figure 4. Aerial photograph showing the project area in relation to the HHV campus (Google Earth 2013)

1.3 Document Purpose

This CIA contains information gathered from archival research and consultation, compiled in order to "analyze the impact of a proposed action on cultural practices and features associated with the project area" (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawaiʻi significance Criterion e, pursuant to Hawaiʻi Administrative Rules (HAR) §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that "have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity" (HAR §13-275-6 and §13-284-6).

1.4 Scope of Work

The scope of work for this cultural component includes the following:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.
2. Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.
3. Consultation and interviews with knowledgeable parties regarding cultural and natural resources and practices at or near the parcel; present and past uses of the parcel; and/or other practices, uses, or traditions associated with the parcel and environs.
4. Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

1.5 Natural Environment

The project area is situated along the southeastern coast of Oʻahu. Part of the Honolulu leeward coastal plain, this area is stratified with late-Pleistocene coral reef substrate overlain with calcareous marine beach sand, terrigenous sediments, and/or stream-fed alluvial deposits (Armstrong 1973:36). The modern Honolulu shoreline configuration is primarily the result of three factors: the rising sea level following the end of the Pleistocene (Stearns 1978); the 1.5–2.0-m highstand of the sea during the mid- to late-Holocene; and pre- and post-Contact human landscape modification. Historical progradation of the shoreline adjacent to the current project area is shown in Figure 5.

1.5.1 *Nā Lepo* (Soils)

According to the U.S. Department of Agriculture (USDA) soil survey geographic database (SSURGO) and data gathered by Foote et al. (1972), soils within the project area consist of Jaucas sand, 0 to 15% slopes (JaC) (Figure 6).

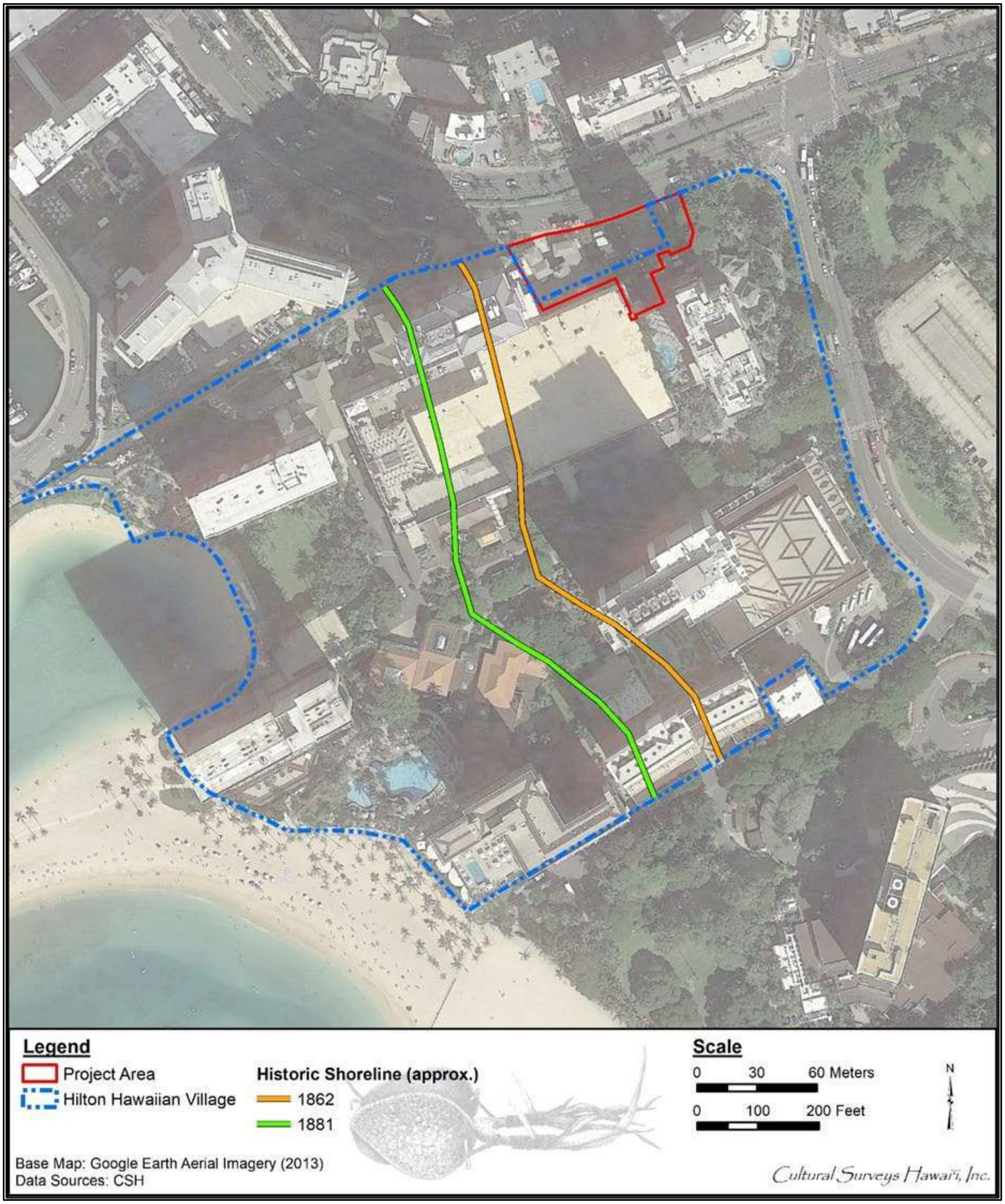

Figure 5. 2013 Google Earth aerial imagery of the project area and HHV campus in relation to the historical progradation of the adjacent Waikīkī shoreline

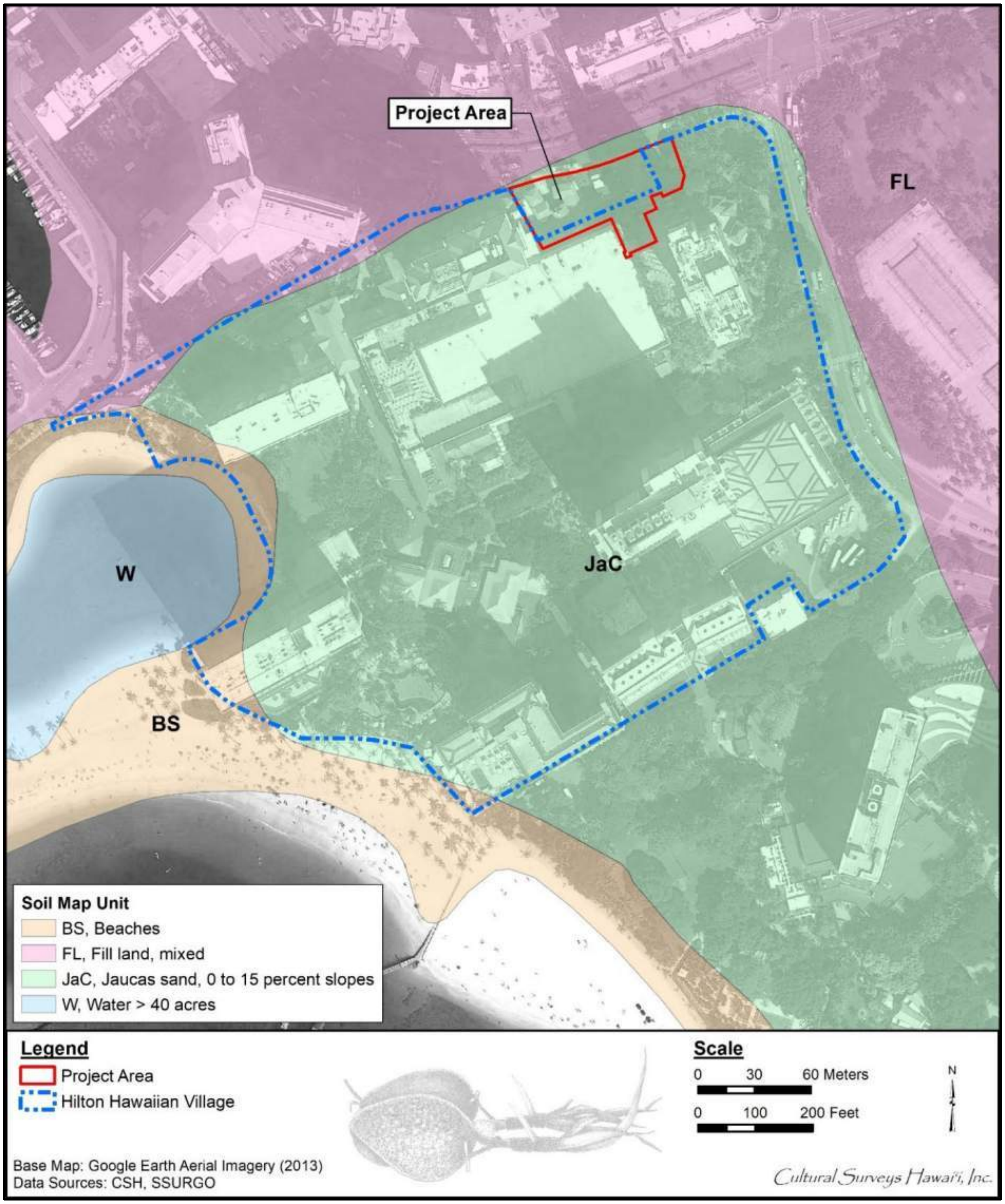

Figure 6. Aerial photograph (Google Earth 2013) with overlay of Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA/SSURGO 2001)

> **Jaucas Series**. This series consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean […] developed in wind and water deposited sand from coral and seashells […] used for pasture, sugarcane, truck crops, alfalfa, recreational areas, wildlife habitat, and urban development. [Foote et al. 1972:48]

1.5.2 *Nā Ua* (Rains)

Precipitation is a major component of the water cycle accountable for depositing fresh water on local flora. Pre-Contact *kānaka ‘ōiwi* (Native Hawaiians) recognized two distinct annual seasons. The first, known as *kau* (period of time, especially summer) lasts typically from May to October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *ho‘oilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common (Giambelluca et al. 1986:17). Typically, the maximum rainfall occurs in January and the minimum in June (Giambelluca et al. 1986:17).

Although rain tends to skirt around Waikīkī today, largely due to thermodynamics and the rising of heat from numerous concrete surfaces, there exist rains traditionally known to be specific to Waikīkī. These are the Makahuna rain and the Wa‘ahila rain, respectively.

The Makahuna rain, a rain of both Pālolo and Waikīkī at large, is mentioned in a chant by the goddess Hi‘iaka during her travels across the islands (Akana and Gonzalez 2015:169; Ho‘oulumahiehie 2008a:291). While calling out to the *mo‘o* (lizard-like creature or water spirit) Pāhoa, Hi‘iaka pronounces:

1. *‘O ‘oe ia, e Pāhoa*
Wahine noho ua Makahuna o Pālolo
Ho‘olono mai ana ‘o ka leo
Leo ualo a kama hele.

It is you, O Pāhoa
Woman who dwells in the Makahuna rain of Pālolo
Listening to the voice
The beckoning call of the traveler
[Akana and Gonzalez 2015:169]

The rain of Makahuna is mentioned on a second occasion in a *mele* (song) by Hi‘iaka; in this *mele*, she remarks on hearing the clamor of people in the house she has just left in Waikīkī:

2. *Ku‘u kane i ka makani Hauālia*
‘O ka Makahuna i Hāwāwā ē
Wā ihola, ke wā wale maila nō
Ka ua hilahila moe awakea

My husband of the Hauālia wind
The Makahuna rain at Hāwāwā
Boisterous, making an uproar
The shy rain that settles down at midday

[Akana and Gonzalez 2015:169-170; Hoʻoulumāhiehie 2008b:291]

The Waʻahila (also Waʻahia) rain is mentioned in a *mele* by Hiʻiaka; in this *mele* she remarks on leaving a house filled with noisy people playing the game of *kilu* (a game attended with gambling and licentiousness) in Waikīkī (Akana and Gonzalez 2015:280):

27. *Kuʻu kāne i ka ua noe*
Noe hāliʻi a ka Waʻahila
Hoʻohila ka manaʻo, wehi i ka lau
Lau a ke aloha e piʻi ana i ka liko
Wā ihola, ke wā wale maila nō

My husband of the misty rains
Blanketing fall of the Waʻahila showers
Abashed, yet adorned by the outpour
An outpouring of love, rising to brightness
Boisterous, an uproar
[Akana and Gonzalez 2015:280; Hoʻoulumāhiehie 2008b:290]

The following *kanikau* (lament), written for the *aliʻi ʻai moku* (chief of an island) Kahahana, recalls the soothing nature of the Waʻahila (identified as Waʻahia in this instance) rain (Kamakau 1991:92):

He pua ka lani, he pua laha ʻole nei no nā moku
He kamahaʻo ka lani na Oʻahu
I walea ka lani i Kona, i ka lulu
I ka pohu wale o ka ua Waʻahia
Ke hāliʻi maila i ke pili

The chief is a flower, a rare blossom of the islands
Magnificent is the chief of Oʻahu
The chief relaxes at Kona in the calm
In the soothing serenity of the Waʻahia rain
Covering the pili grass
[Akana and Gonzales 2015:271–272]

This next *kanikau* was written for Kaʻahumanu, the favored wife of Kamehameha I:

ʻO ka wahine ʻalo ua Waʻahila o Kona
Nihi makani ʻalo ua Kūkalahale
Noho ānea kula wela lā o Pahua
Wahine holo ua Hāʻao Nuʻuanu ē, ia

The woman who resists the Waʻahila rain of Kona
Creeping softly like the wind, resisting the Kūkalahale rain
A bleak existence along the hot plains of Pahua
Woman traveling in Nuʻuanu's Hāʻao rain
[Akana and Gonzales 2015:273]

1.5.3 *Nā Makani* (Winds)

Similar to rain, *makani* (wind) were named for various reasons such as describing the intensity or direction of the wind, relating the wind to a story, or even relating the wind to the landscape. David Malo, a Native Hawaiian historian, explains some general terms related to wind:

> […] There was the *kona*, a wind from the south, of great violence and of wide extent. It affected all sides of an island, east, west, north, and south, and continued for many days […] The *kona* wind often brings rain, though sometimes it is rainless […] The *hoolua*, a wind that blows from the north, sometimes brings rain and sometimes is rainless […] The *hau* is a wind from the mountains, and they are thought to be the cause of it, because this wind invariably blows from the mountains outwards towards the circumference of the island. [Malo 1951:14]

Two winds found in the vicinity of the project area are a breeze of Kālia and the ʻŌlauniu of Kahaloa (an area of Waikīkī) (Hoʻoulumahiehie 2008b:297; Hoʻoulumahiehie 2008a:277; Nakuina 1990:50–51). In *The Epic Tale of Hiʻiakaikapoliopele*, a breeze at Kālia is described as follows:

10. *Pā pae (papa pae) a kāua*	10. On the waves our boards have mounted
I kaʻu aloha la, ua hala	To my love who has gone
Ka hōkū papa nemonemo ō	The star of that smooth strata, oh
Aloha ka makani lihi kai o Kālia	Beloved is the shoreline breeze at Kālia
Ke kali nei au ʻo kō hoʻi mai	I await your return
[Hoʻoulumahiehie 2008b:297]	[Hoʻoulumahiehie 2008a:277]

In the *Wind Gourd of Laʻamaomao*, the names of the winds of Oʻahu are listed in a chant concerning a powerful gourd called the wind gourd of Laʻamaomao. When the gourd was opened, a specific wind could be called to fill the sails of a canoe and take the person in the desired direction. In a particular verse, the chanter calls out the ʻŌlauniu wind of Kahaloa (Nakuina 1990:140):

> The wind of Leʻahi turns here and there,
> ʻŌlauniu is of Kahaloa,
> Waiʻōmaʻo is of Palolo,
> Kuehu-Iepo is of Kahua
> [Nakuina 1990:50]

ʻŌlauniu is literally translated as "coconut-leaf piercing," although it is also noted to have "promiscuous" connotations (Pukui and Elbert 1986:20). The Kahaloa mentioned above refers to the beach area between the Royal Hawaiian Hotel and the Halekūlani Hotel (Alameida 1997).

1.5.4 *Nā Kahawai* (Streams and Freshwater)

The marshland of Waikīkī was watered from streams in the Makiki, Mānoa, and Pālolo valleys and from springs in Mānoa (Punahou and Kānewai). Before the construction of the Ala Wai Canal in the 1920s, the Mānoa and Pālolo streams did not merge until deep within Waikīkī. They joined near Hamohamo (now an area *mauka* of the Kapahulu Library) and then divided into three new streams: Kuekaunahi, ʻĀpuakēhau, and Piʻinaio (Figure 7).

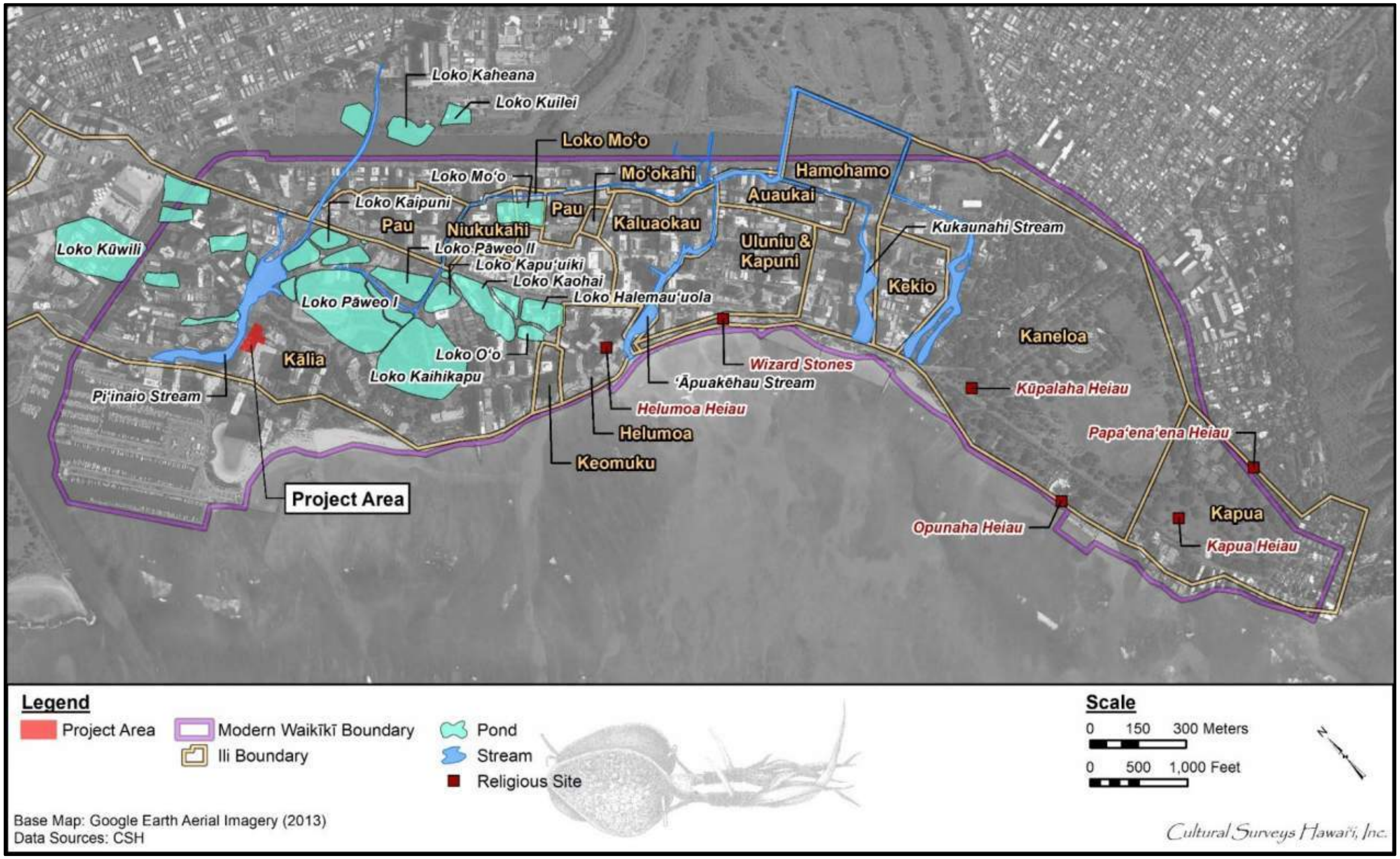

Figure 7. Aerial photograph (Google Earth 2013) of Waikīkī with overlay of significant place names, including *‘ili* boundaries, fishponds, and Kuekaunahi, ‘Āpuakēhau, and Pi‘inaio streams. The current project area is in the *‘ili* of Kālia along the margins of the former Pi‘inaio Stream.

Piʻinaio Stream was northwest-adjacent to the current project area and entered the sea just to the west. Hence, prior to the stream being filled in with the construction of the Ala Wai Canal between 1921 and 1927, the shifting Piʻinaio *kahawai* (stream) and *muliwai* (stream mouth), as well as the changing shoreline, likely made the project area a hydrologically active location.

1.5.5 *Ka Lihikai a me Ka Moana* (the Coast and Ocean)

Traditionally, the seashore and ocean were vitally important for resource extraction in the early days of settlement. Fishermen along the coast maintained a respected status within traditional Hawaiian society; Kanahele asserts that "early Hawaiians regarded fishing as the oldest, and hence the most prestigious of professions" (Kanahele 1995:17).

For those engaged in this profession, knowledge of the seas, particularly fishing grounds, was especially important. This knowledge was passed down from one generation to another. As D. Kanewanui notes, "our fishing grounds were sought by the ancestors with great patience, and those spots were revealed to their children, which is how that knowledge was passed down" (Kahāʻulelio 2006:xv). The names of the seas of southeastern Oʻahu are listed in a chant for the high chief, Kūaliʻi, paramount chief of the Hawaiian Islands from 1720 to 1740 (Cordy 2002:19). The chant also identifies the cultural resources known to be available within a specific sea. From the eastern end of Waikīkī to the western boundary of the Kona district, the seas were as follows:

> A sea for surf swimming is Kahaloa [in Waikīkī]
> A sea for net fishing is Kalia [in Waikīkī]
> A sea for going naked is Mamala [mouth of Honolulu Harbor]
> A sea for swimming is Kapuuone [in Kapālama/Kalihi]
> A sea for surf-swimming sideways is Makaiwa [in Kapālama/Kalihi]
> A sea for catching ʻanae [mullet] is Keehi [in Moanalua]
> A sea for crabs is Leleiwi [in Moanalua]
> [Fornander 1880:390]

The last century has seen the area of Waikīkī, including the seashore and extending to the offshore areas, extensively altered. According to a report produced by Robert L. Wiegel evaluating the coastal area of Waikīkī, most of the Waikīkī shore (between Kewalo Basin and the Elks Club near Diamond Head) at the beginning of the twentieth century was "a narrow, thin ribbon of carbonate sand lying between wetlands, mudflats, duck ponds, fishponds, and a gently sloping fringing reef a few thousand feet wide" (Wiegel 2008:3). He further elaborates that the subsurface geology of the Waikīkī "coastal plain is a complicated mix of horizons/lenses of lagoonal deposits, marsh deposits, sand and coralline debris, coral ledges, alluvium, cemented sand, cinder, clinker, tuff, and basalt" (Wiegel 2008:6 citing data in Ferrall 1976 and Noda 1994). The continual transformation of the Waikīkī coastline into areas of "intensively used urban beach" (Wiegel 2008:3) has resulted in its current conditions.

1.6 Built Environment

The project area and its vicinity are developed with high- and low-rise buildings and concrete- and asphalt-paved roads, walkways, and parking areas (see Figure 3). Within the project area, there are one- and two-story restaurant and commercial buildings. Landscaped trees and hedges are also present (see Figure 4). Current land use for each project area parcel is summarized below:

- Parcel 004: Waikīkī Mini Shops (ABC Store, Lucky Shop, and KPop Donuts Hawaii on ground floor; additional shops and restaurants on second floor)
- Parcel 005: Paradise Rent-a-Car
- Parcel 006: Kobe Steakhouse (vacant)
- Portions of Parcels 007, 009, and 013: adjacent landscaped and paved areas, part of the HHV Campus

Section 2 CIA Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka'ao* (legends), *wahi pana*, *'ōlelo no'eau* (proverbs), *oli* (chants), *mele*, traditional *mo'olelo*, traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai'i State Archives, the Bishop Museum Archives, the University of Hawai'i at Mānoa's Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai'i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona 'Aina Corporation's Māhele database (Waihona 'Aina 2000), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of 'Āina website (Ava Konohiki 2015).

2.2 Consultation

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua'a* of Waikīkī.

2.2.1 Community Outreach, Interview, and Transcription Methods

2.2.1.1 Scoping for Participants

We begin our consultation efforts with utilizing our in-house contact list from previous outreach efforts to facilitate the interview process. This list often includes *kūpuna*, *kama'āina*, cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior's NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response to the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.1.2 "Talk Story" Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their *'ike* (insight) and *mana'o* (opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

"Talk Story" sessions range from the formal (e.g., sit down and *kūkākūkā* [consultation, discussion] in participant's choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH also conducts group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee's answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) providing missing details for *mo'olelo*.

CSH seeks *kōkua* (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua'a*; past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka'ao* and *mo'olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

In order to ensure the safety of participants and comply with state and county COVID-19 mandates, no in-person interviews were conducted as part of this CIA. While it is always a preference to meet with participants in person, CSH cultural researchers were able to effectively communicate with participants via telephone, email, and video conference call interviews.

2.2.1.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask them to make any necessary edits. Once the interviewee has made those edits, we incorporate their *'ike* and *mana'o* into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant's transcription, interview summary, and any photos taken during the interview. We also include a thank you card and honoraria. This is for the interviewee's records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their *'ohana* (family). CSH researchers feel this is an important component to building relationships and being part of an *'ohana* and community.

"*I ulu no ka lālā i ke kumu*—the branches grow because of the trunk," an *'ōlelo no'eau* (#1261) shared by Mary Kawena Pukui with the simple explanation: "Without our ancestors we would not be here" (Pukui 1983:137). As cultural researchers, we often lose our *kūpuna* but we do not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our *kūpuna*. CSH makes it a point to reach out to the *'ohana* of our fallen *kūpuna* and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 Archival Research Results

3.1 Traditional Accounts

3.1.1 *Nā Ka‘ao a me Nā Mo‘olelo* (Legends and Stories)

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment and their stories contained teachings while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green (1995), storytelling is better heard rather than read for much becomes lost in the transfer from the spoken to the written word and *ka‘ao* are often full of *kaona* or "double meanings."

Ka‘ao are defined by Pukui and Elbert as a "legend, tale [...], romance, [and/or], fiction" (Pukui and Elbert 1986:108). *Ka‘ao* may be thought of as oral literature or legends, often fictional or mythic in origin, and have been "consciously composed to tickle the fancy rather than to inform the mind as to supposed events" (Beckwith 1970:1). Conversely, Pukui and Elbert define *mo‘olelo* as a "story, tale, myth, history, [and/or] tradition" (Pukui and Elbert 1986:254). The *mo‘olelo* are generally traditional stories about the gods, historic figures or stories that cover historic events and locate the events with known places. *Mo‘olelo* are often intimately connected to a tangible place or space.

In differentiating *ka‘ao* and *mo‘olelo* it may be useful to think of *ka‘ao* as expressly delving into the *wao akua* (realm of the gods), discussing the exploits of *akua* (gods) in a primordial time. However, it is also necessary to note there are exceptions, and not all *ka‘ao* discuss gods of an ancient past. *Mo‘olelo* on the other hand, reference a host of characters from *ali‘i* (royalty), to *akua* and *kupua* (supernatural beings), to finally *maka‘āinana* (commoners), and discuss their varied and complex interactions within the *wao kānaka* (realm of man). Beckwith elaborates, "In reality, the distinction between ka‘ao as fiction and mo‘olelo as fact cannot be pressed too closely. It is rather in the intention than in the fact" (Beckwith 1970:1). Thus, a so-called *mo‘olelo*, which may be enlivened by fantastic adventures of *kupua*, "nevertheless corresponds with the Hawaiian view of the relation between nature and man" (Beckwith 1970:1).

Both *ka‘ao* and *mo‘olelo* provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly valued tradition. Additionally, oral traditions associated with the study area communicate the intrinsic value and meaning of a place, specifically its meaning to both *kama‘āina* as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the Ala Moana Boulevard Tower project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of *ali‘i* and *maka‘āinana*. The *ka‘ao* in and around the project area shared below are some of the oldest Hawaiian stories that have survived. They still speak to the characteristics and environment of the area and its people.

3.1.1.1 Kalamakua and His Romantic Meeting with Keleanuinoho‘ana‘api‘api (“Great Kelea who flutters”)

The area of Kālia marked the end point of the Kalehuawehe surfing course, a surfing course that extended from the “surfing *heiau*” of Papa‘ena‘ena, at the foot of Lē‘ahi (Diamond Head) to Kawewehi (the deep, dark surf) at Kālia (Kanahele 1995:56). Although most every level of society surfed, including women and children, *ali‘i* were the true masters of the sport. The best surfer among Waikīkī’s chiefs was Kalamakua (Kanahele 1995:57). “He came from a long ancestry of champion surfers whose knowledge, skill, and *mana* [spiritual power] were handed down and passed on from generation to generation” (Kanahele 1995:57). His love affair with Keleanuinoho‘ana‘api‘api (Great Kelea who flutters) reaffirms the central role that surfing played in the history of Waikīkī (Kanahele 1995:57):

> One day this beautiful chiefess with ‘clear skin and sparkling eyes,’ who then resided in Wahiawā (in Central O‘ahu), was visiting Waikīkī with a few of her ladies-in-waiting. She entered the coconut grove and beach of Kawehewehe […] which was located just east of the Halekūlani Hotel. Here is where the sick came to bathe and to be healed. They would wear *limu-kala* (seaweed) leis and leave them in the water as a request to the gods for forgiveness of past wrongs which was the cause of much illness.
>
> The residents welcomed Keleanuinoho‘ana‘api‘api and offered her coconuts to eat. She remarked that Waikīkī was ‘the most pleasant place we have seen,’ to which her hosts replied, ‘This is a place for enjoyment. Over there is the *kou* grove of Kahaloa where one may view the surfing of the chiefs and of the *ali‘i nui* Kalamakua.’ Kahaloa, or ‘Long Place,’ was also a beach area located today between the Royal Hawaiian and Halekūlani hotels and noted for its fragrant *līpoa* seaweed. When she asked if she could borrow a surfboard, the Waikīkīans were surprised because they thought people from Wahiawā were only adept at ‘slicing *mo‘okilau* ferns and *pōpolo* stalk,’ not at surfing. They did not know that their visitor was originally from Maui where she surfed with all the chiefs. She was too beautiful to refuse and someone gave her a board.
>
> Before she entered the water, she ‘rubbed off the red dirt of ‘Ewa from her feet so as to look fresh,’ and then paddled off like an expert, moving easily and noiselessly without the least heeling over. Instead of starting at the first break where *kama‘āina* (native born or old-time resident) surfers congregated, she went beyond and waited for a large wave. She let the first, second and third waves pass, and rode the fourth all the way to shore. The chiefs and commoners were so impressed with her skill and grace that they immediately joined in loud cheers of admiration.
>
> Meanwhile, Kalamakua, who was working in his taro fields nearby asked his men who was causing the commotion. They replied that the people were amazed at the performance of a female surfer. A skilled surfer himself, Kalamakua rushed to the edge of the beach to see for himself. He recognized Kelea at once as the chiefess from Maui famed for her surfing prowess.

> When she reached shore, he took hold of her board and asked, ‘Are you Kelea?’ ‘Yes,’ she answered. As she stood up, in naked splendor, he removed his feathered shoulder cape and wrapped it around her. Then he guided her to a *kapu* place and made her his *ali‘i wahine mō‘ī*, or queen. [Kanahele 1995:56–58]

3.1.1.2 The Shark God Ka‘ehu

In his book *Waikīkī: 100 B.C. to 1900 A.D. An Untold Story*, author George Kanahele discusses a particular legend concerning a man-eating shark in the waters off Waikīkī. In this *mo‘olelo*, “the little yellow shark Ka‘ehu of Pearl Harbor who was endowed with magical power by his ancestor Kamohoali‘i, the shark god and brother of Pele” (Kanahele 1995:58) devises a plan to destroy the man-eating shark who threatens the people of Waikīkī:

> One day Ka‘ehu called his shark friends to accompany him to Puna. On the way they stopped at Waikīkī where they met Pehu, a man-eating shark from Maui, who was swimming back and forth at Kalehuawehe in wait for an unsuspecting surfer.
>
> Ka‘ehu asked what Pehu was doing there and he replied, ‘I‘m catching a crab for my breakfast.’ ‘We‘ll help you catch your crab,’ Ka‘ehu said, and told him to go near the coral reef while he and his friends would drive them shoreward, allowing Pehu to catch this crab easily. He was pleased with the plan and swam close to the reef where he hid himself in its shadows.
>
> Then Ka‘ehu told his friends, ‘We must kill this man-eater because he is destroying our people. Let’s try to push him into the shallow water.’
>
> Soon two surfers appeared and when Pehu leaped to catch one, Ka‘ehu and his friends pushed the surfer aside and hurled Pehu over the reef into a deep hole in the coral. The more he thrashed about to escape, the more trapped he became.
>
> When the surfers saw what had happened, they were not as afraid of Pehu and moved to the hole to kill him. As they cut into his body they discovered the remains of their own people. Out of respect, they delivered them to Pele‘ula (an area with many healing heiau located in Kou, now downtown Honolulu) and burned the remains. Ka‘ehu had many more adventures that had a similar objective, the punishment of other man-eaters from the great sea. [Kanahele 1995:58–59]

3.1.1.3 The *Mo‘olelo* of Kawelo

In the “Legend of Kawelo,” two boys are born on the same day, Kawelo-lei-makua, called Kawelo, the great nephew of the king of Kaua‘i, and Kawelo-aikanaka, called ‘Aikanaka, the grandson of the king. Kawelo’s older brothers and his parents soon moved from Kaua‘i to live at Waikīkī on O‘ahu near the ruling chief of O‘ahu, Kākuhihewa. The older brothers of Kawelo often challenged a famous wrestler living with Kākuhihewa, but they could never beat him.

The brothers of Kawelo were great surf riders, and they often went to ride the surf at Kalehuawehe (near the present Seaside Hotel in Waikīkī). After the surf ride they would go to the stream of ‘Āpuakēhau and wash, and from there they would go to the shed where the wrestling bouts were held and test their skill with Kākuhihewa’s strong man; but in all their trials they never once were able to throw him (Fornander 1918:4).

When the king of Kauaʻi died, ʻAikanaka became the new king. The grandparents, who longed to see their other children, traveled with Kawelo to Oʻahu, to Ulukou in Waikīkī, near the mouth of the stream ʻĀpuakēhau, where his elder brother and parents had been living. His grandparents later took him just inland of the coast. While Kawelo was working in the fields, he heard some shouting from the beach, and asked his grandparents, "What is that shouting down yonder?" (Fornander 1918:5). The grandparents answered that his older brothers had just finished surfing and must have challenged the king's strong man. The shouting indicated one of them must have been thrown. Next day, Kawelo went down to the beach, went surfing with his brothers, and then bathed in the freshwater stream of ʻĀpuakēhau. He challenged the strong man to a match, even though his brothers mocked him, saying "Are you strong enough to meet that man? If we whose bones are older cannot throw him, how much less are the chances of yourself, a mere youngster?" (Fornander 1918:6). The strong man, impressed by Kawelo's courage, said:

> 'Ina wau e kahea penei, "Kahewahewa, he ua!" alaila, kulai kaua.' Hai aku la no hoi o Kawelo i kana olelo hooulu, penei: 'Kanepuaa! Ke nahu nei! Alia! Alia i oki ka aina o Kahewahewa, he ua!'
>
> 'If I should call out "Kahewahewa, it is raining," then we begin.' Kawelo then replied in a mocking way: 'Kanepuaa, he is biting, wait awhile, wait awhile. Don't cut the land of Kahewahewa, it is raining.' [Fornander 1918:6]

Kawelo won the match, shaming his older brothers so much that they returned to Kauaʻi. In another version (Thrum 1923:154), the strong man was from Halemano (central Oʻahu), and was killed by a mighty blow from Kawelo. The man's body was given to the king of Oʻahu, and was carried as a sacrifice to the gods at a *heiau* in Lualualei, Waiʻanae.

3.1.2 *Nā Wahi Pana* (Storied Places)

Wahi pana are legendary or storied places in a landscape. These legendary or storied places can be a variety of natural or human-constructed features. Oftentimes dating to the pre-Contact period, many but not all *wahi pana* are connected to particular *moʻolelo*. Dr. Davianna McGregor outlines the types of natural and human-made structures that may constitute *wahi pana*:

> Natural places have mana or spiritual power, and are sacred because of the presence of the gods, the akua, and the ancestral guardian spirits, the ʻaumakua. Human-made structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or heiau, for war, peace, agriculture, fishing, healing, and the like; puʻuhonua, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the loʻi pond fields and terraces slopes, ʻauwai irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, hōlua slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, *wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as *ahupuaʻa* or *ʻili*, and man-made structures such as fishponds. In this way, the *wahi pana* of Waikīkī tangibly link the *kamaʻāina* of Waikīkī to their past. It is common for places and landscape features to have multiple names, some of which may only be known to certain *ʻohana* or even certain individuals within an *ʻohana*, and many have been lost, forgotten or kept secret through time. Place names also convey *kaona* (hidden meanings) and *huna* (secret) information that may even have political or subversive undertones. Before the introduction of writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including individual garden plots and *‘auwai* (water courses), house sites, intangible phenomena such as meteorological and atmospheric effects, *pōhaku* (stone), *pūnāwai* (freshwater springs), and many others. According to Landgraf (1994), Hawaiian *wahi pana* “physically and poetically describes an area while revealing its historical or legendary significance” (Landgraf 1994:v).

3.1.2.1 Waikīkī Ahupua‘a

Historical and traditional sources sometimes make a distinction between Waikīkī Kai (coastal Waikīkī) and Waikīkī Waena (middle Waikīkī; “the middle land between the ocean and mountains”). The boundaries of Waikīkī Kai roughly coincide with the coastal area on the *makai* (toward the sea) side of the Ala Wai (“fresh waterway”) Canal and the area within and *makai* of Kapi‘olani Park. The boundaries of Waikīkī Waena roughly coincide with the area between King Street/Wai‘alae Avenue and the Ala Wai Canal, encompassing the neighborhoods of Kamō‘ili‘ili, Kaimukī, and Kapahulu (Ruby 2005:iv).

The distinction between Waikīkī Kai and Waikīkī Waena was more than geographical. Differences in land use and habitation patterns existed between the two areas during the pre- and early post-Contact era. In the fourteenth century, the Waikīkī Kai region had become the residential and political power center of O‘ahu’s chiefly elite. Royal compounds, religious structures, villages (including the village of Waikīkī), fishponds, wetland taro patches, and coconut palms dotted the coastline and inner coastal areas of Waikīkī Kai. Additionally, the area of Waikīkī Kai was also comprised of distinct *‘ili* lands, including (listed generally from west to east) Kālia (“waited for”), Pau (“finished”), Niukukahi (“coconut standing alone”), Loko Mo‘o (“lizard/water spirit pond”), Keōmuku (“the shortened sand”), Helumoa (“chicken scratch”), Ulukou (“kou tree grove”), Mookahi, Kaluaokau, Auaukai, Hamohamo (“rub gently”), Uluniu (“coconut grove”), Kapuni (“the surrounding”), Kekio, Kāneloa (“tall Kāne”), Kapua (“the flower”), and Kaluahole (“the āhole fish cavern”) (‘Ī‘ī 1959:92–94). By contrast, Waikīkī Waena comprised the intensively cultivated “plains” of greater Waikīkī, a broad expanse of largely marshy land with habitation and cultivation areas clustered along the many streams and springs flowing through the region from the valleys to the sea. This marshland was characterized by frequent inundation as well as herbaceous vegetation (i.e., lacking a persistent wooden stem above ground, such as *kalo*) adapted to these saturated soil conditions (Mitsch and Gosselink 2007:516).

The name Waikīkī, which means “spouting water” according to Pukui et al. (1974:223), was well adapted to the character of the marshy land of ancient Waikīkī, where water from the upland valleys would gush forth from underground. The original Waikīkī marshland extended from the volcanic craters of Lē‘ahi (Diamond Head) and the Kaimukī craters (where the present day Kaimukī fire station is built) on the east, to present day Kapahulu Park, and continued along the foot of Mānoa Valley into the districts of Kamō‘ili‘ili and Makiki. The western edge of the marshland extended to the junction of present-day Wilder and Pi‘ikoi streets, before turning again to the sea. This marshland area was approximately 3 miles long and 1 mile wide, enclosing approximately 2,000 acres of land (Kanahele 1986:5–6).

Both Waikīkī Kai and Waikīkī Waena were highly watered lands. Underground water periodically gushed upwards through the region's intermittently porous geological substructure of sediment, basaltic rock, and limestone (Kanahele 1995:8). In addition to these underground sources of water, surface water manifested as the Kuʻekaunahi Stream, the ʻĀpuakēhau ("basket of dew") Stream, and the Piʻinaio Stream. The meaning of Kuʻekaunahi has been lost over time, however, *kue* means "fishhook." Just as the meaning of Kuʻekaunahi has become lost over time, so has the meaning of Piʻinaio as well. While the exact meaning of Piʻinaio remains unknown, the term *piʻina* means "climb or ascend" (Pukui and Elbert 1986:327). It has also been conjectured that the term Piʻinaio may be an allusion to going inland (*piʻi*), to the location of a *naio* (bastard sandalwood; *Myoporum sandwicense*) tree, as may have commonly grown in the vicinity to a stream crossing place. These three streams originated in the area of Hamohamo, as offshoots of the Kālia and Pāhoa streams. Hamohamo, within Waikīkī Waena, later became the site of Queen Liliʻuokalani's Waikīkī residence:

> Queen Liliʻuokalani owned a large tract of land in this part of Waikīkī, extending from the Ala Wai Canal to the beach between Liliʻuokalani Avenue and Wai Nani ["beautiful water" most likely referring to the Kuʻekaunahi Stream that flowed through the Queen's lands] Way, connecting with a 1,400-foot strip of beachfront land. [Acson 2003:7]

Queen Liliʻuokalani's private residence in Waikīkī was Paoakalani ("royal perfume"); her residence was located between the current Paoakalani Street and Wai Nani Way on the *makai* side of the Ala Wai Canal.

While many other place names in Waikīkī have been lost to antiquity, a song composed by Kawelo during the reign of Kākuhihewa provides a glimpse into other place names of Waikīkī and the emotions they once evoked. After Kawelo surfed and participated in wrestling matches at the coconut grove of Helumoa, he sang the following love song for Kou, his sweetheart from Waikīkī, upon his departure to his homeland of Kauaʻi:

Aloha Kou e, Aloha Kou,	Farewell to thee, farewell Kou,
Ke aloha mai nei Kou iaʻu	The love of Kou is within me,
Ka hoa hele i ka makani,	My companion of the windy days
I ka ʻāpaʻapaʻa anu o Ahulu nei.	And the cold of Ahulu.
E ualo mai ana iaʻu nā niu o Pai,	The coconut trees of Pai are calling me back,
E ʻenaʻena mai ana i kuʻu maka,	They appear as raging fire to my eyes,
Ke aʻā o Kuamānuʻunuʻu,	Like the volcanic rocks at Kuamānuʻunuʻu
ʻIʻiau e kiʻi, e kui, a lei—e	I am tempted to get them, to string them, and to wear them,
Nā ʻākulikuli papa o Huia nei la,	The ʻākulikuli blossoms there at Huia,
E ualo mai ana iaʻu—e	For they are calling me back there
[Hibbard and Franzen 1986:7]	

3.1.2.2 Kālia ʻIli

Kālia ʻIli, located in the western section of Waikīkī, is a name used for the central portion of Mānoa Stream as well as the name of the coastal area where the Piʻinaio Stream emptied into the ocean. The stream's mouth was on the western end of the Waikīkī coast, where the Ala Moana Hotel and Shopping Center is now located.

A Hawaiian saying talks about the pleasant portion of the coast of Kālia in Waikīkī (Pukui 1983:186):

Ke kai wawalo leo leʻa o Kālia	The pleasing, echoing sea of Kālia.

The ribboned delta of Piʻinaio Stream entered the ocean at Kālia, bringing fresh waters from the mountain valleys and creating an area of abundance. The plentiful land and marine resources encouraged the utilization and settlement of the area (Figure 8 and Figure 9). In oral history interviews of residents who lived in Waikīkī before the construction of the Ala Wai Canal, the abundant resources of the area were described.

> We lived at Kalia, where my dad was a net fisherman. He caught kala, mullet, and weke. He also caught squid [octopus]. There was limu eleele where Piʻinaio Stream entered the ocean. Towards Fort DeRussy there was limu manauea and limu huluhulu waena and a lot of wana. We caught lobsters using nets at night. We used to catch a lot of kala. Where the stream entered the ocean, there was a lot of mud, and there were clams in the mud. We caught opae and oopu in the stream. We fished for papio and white eels. We caught two types of crabs, aama and alamihi. On the reef my dad dived for uhu and kumu, and we did torch fishing at night for mullet, uhu, and kumu. [Fred Paoa in UHCOH 1985:2:532–535]

> Limu manauea, limu lipoa, and limu wawaeiole, and big schools of manini were found at Kalia. [John Ernstberg in UHCOH 1985:1:125]

Kālia is also a place where *ʻalamihi* (common black crab; *Metopograpsus thukuhar)* crabs were once plentiful, leading to a play on the word *ʻala-mihi* (path of repentance), indicating someone who is in a repentant mood (Pukui 1983:110):

Hoʻi i Kālia ka ʻai ʻalamihi.	Gone to Kālia to eat ʻalamihi crabs.

Kālia was also known for a fishing technique used to catch schools of mullet. When a school of mullet appeared, a bag net was set and the men swam out in a row, surrounded the fish, and slapped the water together and kicked their feet, thus driving the frightened fish into the opening of their bag net. The fishermen of Kālia became known as human fishnets (Pukui 1983:150):

Ka iʻa pīkoi kānaka o Kālia;	The fish caught by the men of Kālia;
he kānaka ka pīkoi,	men are the floaters
he kānaka ka pōhaku.	men are the sinkers

John Clark (2011) has recently collected and translated sayings from old Hawaiian language newspapers, which are printed in his book *Hawaiian Surfing*. Several sayings reference the sea, the surf, the wind, or the rain of Kālia.

Kuu hoa o ka i-a lauahi lima o Kalia	My companion who holds the fishnet at Kalia

[*Ka Nupepa Kuokoa*, 12 April 1862:4; Clark 2011:438]

He kai hopuni ko Kalia.	A sea for surround [nets] is at Kalia

[*Ka Nupepa Kuokoa*, 19 January 1867:1; Clark 2011:438]

Figure 8. Nineteenth century photo of Waikīkī and fishponds, likely taken from Kālia (Hawaiʻi State Archives n.d.)

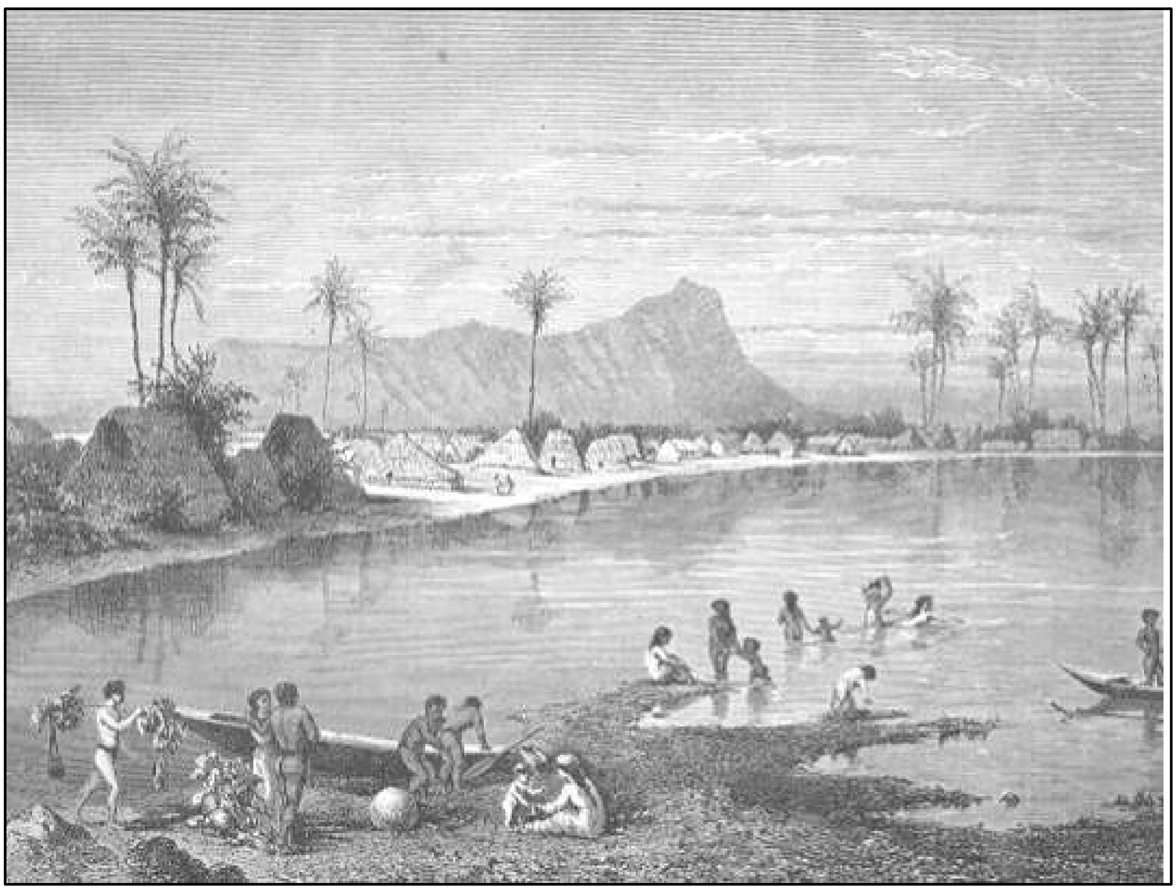

Figure 9. 1853 sketch of Waikīkī with view to Diamond Head (University of Chicago) (note close proximity of houses to the shore)

The mullet were caught on their annual migration from their home in Pearl Harbor as they traveled around the island of Oʻahu:

> […] starting from Puuloa and going windward, passing successively Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai and so on, around to the Koolau side, ending at Laie, and then return by the same course to their starting point. [Keliipio 1900:112]

Kālia was one of eight important fisheries along the Waikīkī coast. The fishing grounds from the reef to the shore were so rich they were *kapu* (restricted) to anyone but the king and his representatives during certain seasons (Maly and Maly 2003:244).

> Kalia is one of eight fishing grounds (also called fisheries) on the shoreline of Waikīkī. From east to west they are: Kaʻalāwai, Kuilei, Keaʻuaʻu, Kaluāhole, Kapua, Kāneloa, Hamohamo, and Kalia**.** [*Honolulu Advertiser*, 11 March 1923:12; map of the fisheries of Oʻahu in Clark 2011:438]
>
> *Penei kana, 'E hoomaka ana ke kapu ma ka muliwai o Piinaio, a hiki i ke kai o Kalia. Aole loa kekahi e lawaia malaila.'*
>
> This is what he said, 'The restriction will commence at the stream of Pi'inaio to the sea at Kālia. No one is allowed to fish there.' [*Ka Hoku o ka Pakipika,* 10 April 1862:4; Clark 2011:438]

The offshore waters of Kālia were also used for surfing; many of these areas no longer exist, as dredging and land filling have destroyed the ancient breaks.

> *E ho-i, E ho-i e Kilopu ka wai hale i Kalia. He wai na ka ua Naulu mai luna.*
>
> Return, return, o Kiliʻopu, the fresh waters that fill Kalia. These are the waters of the Nāulu rains from the uplands. [*Ka Nupepa Kuokoa*, 23 April 1864:2; Clark 2011:438]
>
> *E Kalia i ke kai nehe i ka pu-eone, ame wai limu nii o Piinaio*
>
> Oh, Kalia in the gentle rustling of the waves on the sand dunes and the plentiful fresh water seaweed of Piʻinaio stream. [*Ka Nupepa Kuokoa,* 9 April 1925:5; Clark 2011:438]

Ke haaheo ae la i ke kai o Kalia	We are proud of the sea of Kalia

[*Ka Nupepa Kuokoa,* 22 March 1862:3; Clark 2011:437]

E hoi ka nanai i Ulukou la,	Beauty rests in Ulukou.
I ka nalu hoi muku i Kapuna la,	In the waves that break at Kapuni.
Punihei ho au ia la la la,	I am taken by him,
I ka leo o ke kai leo nui la.	By the great voice of the sea,
Ke wa mai la i Kalia la.	It makes a thundering noise at Kalia

[*Ka Hoku o ka Pakipika,* 12 April 1862:4; Clark 2011:438]

Kālia is also mentioned in a story about a woman who left her husband and children on Kīpahulu, Maui, to go away with a man of Oʻahu. Her husband missed her and went to see a *kahuna* (priest) who was skilled in *hana aloha* (prayer to evoke love) sorcery. The *kahuna* told the man to find a container with a lid and then speak into it of his love for his wife. The *kahuna* then uttered an incantation into the container, closed it, and threw it into the sea. The wife was fishing one morning at Kālia, O‘ahu, and saw the container. She opened the lid, and was possessed by a great longing to return to her husband. She walked until she found a canoe to take her home:

> *Ka makani kā‘ili aloha o Kīpahulu.* The love-snatching wind of Kīpahulu.
> [Pukui 1983:158]

3.1.2.3 Healing Waters of Kawehewehe

The healing waters of Kawehewehe, comprising the nearshore waters between Kālia and Helumoa, is said to be located near the present-day Halekulani Hotel. Kawehewehe takes its meaning from the root word, *wehe*, which can be translated as “to remove” (Pukui et al. 1974:383). Thus, as the name implies, Kawehewehe was a traditional place where people went to be cured of all types of physical and spiritual illnesses. Two healing areas share the name Kawehewehe, one being a healing pond and the other a beach. Kawehewehe pond was located in the vicinity of Saratoga Road. As a treatment for illness and defilement, the sick were brought here to bathe in the healing waters of the ocean. As part of the healing ritual, the ill might wear a *lei* (garland) made from the *limu kala* (*Sargassum* species), a seaweed that had both ceremonial and food uses (Abbott 1992:116), and leave it in the water as a request that his sins be forgiven; hence the origin of the name *kala* (“the removal,” Pukui et al. 1974:99). By ducking under the water, the ill person releases the *lei* from around his neck, letting the *lei* float out to sea. Upon turning around to return to shore, the custom is to never look back, symbolizing the *‘oki* (to sever or end) and putting an end to the illness; as well as forgiveness (*kala*) and the leaving of anything negative behind. It is uncertain if the tradition of Kawehewehe as a healing place originated hundreds of years ago in Hawaiian history or whether it began after the introduction of foreign diseases and epidemics that decimated thousands of Hawaiians.

3.1.2.4 Waikīkī Trail and Beach Road

John Papa ‘Ī‘ī (1959) discussed early nineteenth century trails in the Waikīkī area that traversed the region which was characterized by ponds, marshlands, and *lo‘i*. He suggested that the trail, especially as it neared the coastline at Kālia, must have run on a sand berm raised above surrounding wetlands and coral flats. Historic trails on the south side of O‘ahu included a trail that ran along the coastal area of Waikīkī most likely where the present Kalākaua Avenue is located. ‘Ī‘ī provided a written account of the Waikīkī path of his experience ca. 1810 from which Gerald Ober produced a reconstructed figure (Figure 10).

> A trail led out of the town at the south side of the coconut grove of Honuakaha and went on to Kalia. From Kalia it ran eastward along the borders of the fish ponds and met the trail from lower Waikiki […]
>
> The trail from Kawaiahao which led to lower Waikiki went along Kaananiau, into the coconut grove at Pawaa, the coconut grove of Kuakuaka, then down to Piinaio; along the upper side of Kahanaumaikai’s coconut grove, along the border of Kaihikapu pond, into Kawehewehe; then through the center of Helumoa of Puaaliilii, down to the mouth of the Apuakehau stream. [‘Ī‘ī 1959:92]

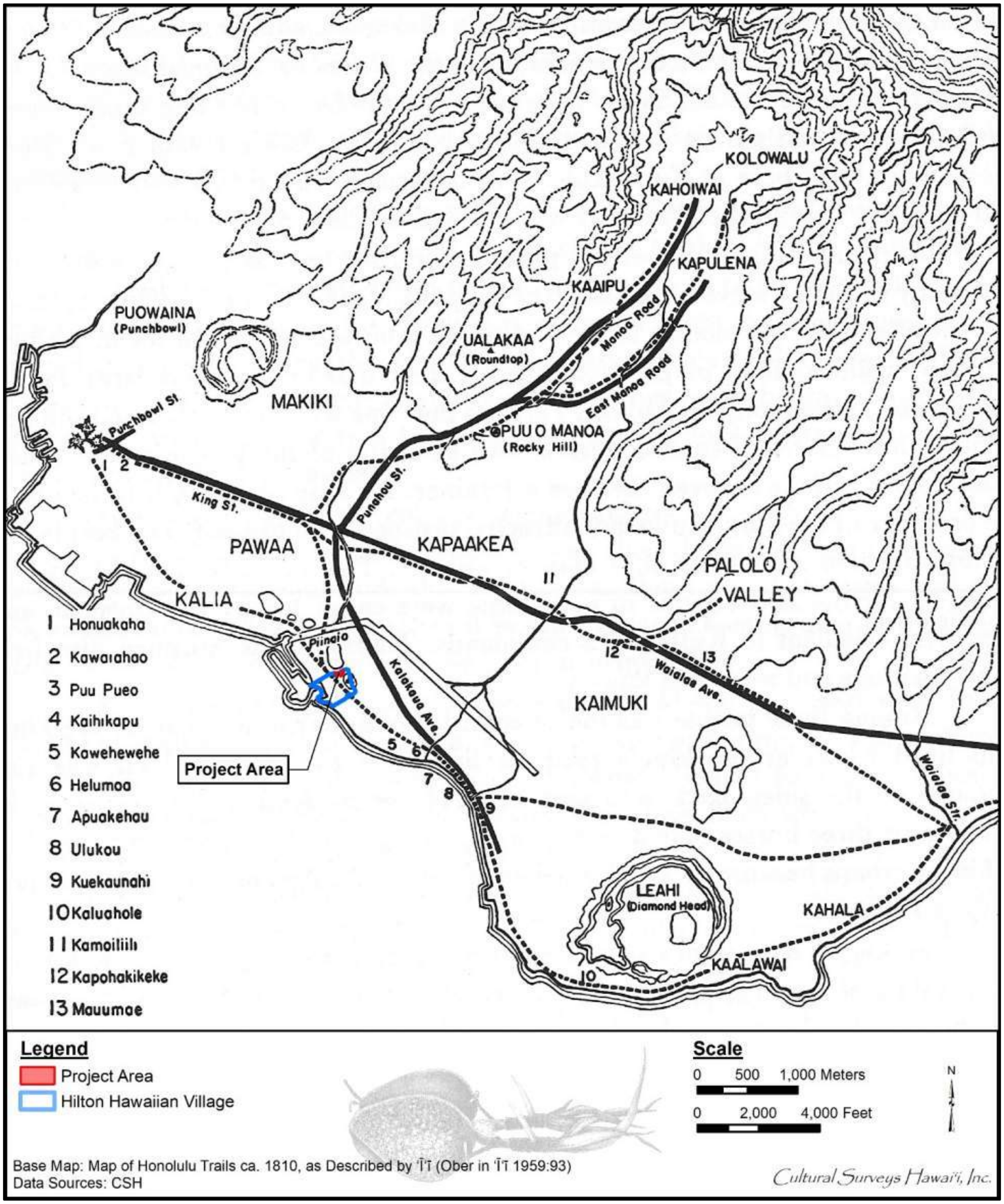

Figure 10. Map of the trails of O‘ahu ca. 1810, Waikīkī area, based on the recollections of nineteenth-century Hawaiian historian John Papa ‘Ī‘ī (1959:93, map by Gerald Ober); the project area is along the ‘Ewa/Diamond Head coastal trail that connected Kālia with Waikīkī proper

3.1.2.5 Nā Pōhaku Ola Kapaemāhū a Kapuni

A special religious site in Waikīkī is called Nā Pōhaku Ola Kapaemāhū a Kapuni, commonly referred to as the Wizard Stones of Kapaemāhū (Figure 11). These stones were unearthed in the late 1800s on the Waikīkī premises of the Cleghorn family, Governor A. Cleghorn, his wife Princess Likelike, and their daughter Princess Ka‘iulani. According to a *mo‘olelo* gathered by Thrum (1906:139–141), four soothsayers from the court of a Tahiti king came to Hawai‘i and helped heal many people. Four large stones were gathered from the vicinity of a “bell rock” in Kaimukī and erected in Waikīkī to commemorate them, two at their habitation and two at their bathing place in the sea. The chief of the wizards, Kapaemāhū, named his stone after himself, and a virtuous young chiefess was sacrificed and placed beneath the stone. Today they are located at Kūhiō Beach Park (Thrum 1906:139–141). The Honorable A.S. Cleghorn unearthed an 8-ton stone at his residence close to the Moana Hotel in 1905. Another stone weighing 10 tons was uncovered by Mr. Lutted, and two more were excavated in a straight line with the others. Underneath the 10-ton stone Mr. Cleghorn uncovered a female jaw bone and some crude images, which he later cemented onto the stone. In 1941, the Waikiki Bowling Alley was constructed with the stones serving as part of the foundation, but they were then uncovered in 1958 when the building was razed. In 1963, the stones were located together on the beach, and in 1980 they were relocated to their present site near the police substation. The location of Mr. Cleghorn’s cement casings indicated the stones had been positioned incorrectly; however, a decision was reached to leave them as they had been placed (Paglinawan 1997:5–6).

3.1.2.6 *Heiau*

Thomas G. Thrum reports that eight *heiau* were once located in Waikīkī, consisting of Papa‘ena‘ena Heiau, Kapua Heiau, Kūpalaha Heiau, Helumoa Heiau, Makahuna Heiau, Kamauakapu Heiau, Pahu-a-Maui Heiau, and Kulanihakoi Heiau (Thrum 1906:44–45). Samuel Kamakau notes another *heiau* of Waikīkī called Halekumukaaha Heiau (Kamakau n.d. in McAllister 1933:78), and early historic maps by C.J. Lyons (Registered Maps [RM] 726 and 727) indicate the location of another *heiau* called Ōpūnahā Heiau. Several of the *heiau* were of *po‘okanaka* classification and used ceremoniously for human sacrifices (Stokes 1991:24). These *heiau*, however, did not exist within or in close proximity to the current project area.

3.1.3 *Nā ‘Ōlelo No‘eau* (Proverbs)

Hawaiian knowledge was shared by way of oral histories. Indeed, one’s *leo* (voice) is oftentimes presented as *ho‘okupu* (“a tribute or gift” given to convey appreciation, to strengthen bonds, and to show honor and respect); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional Hawaiian “aesthetic, historic, and educational values” (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

> They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai‘i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai‘i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values.

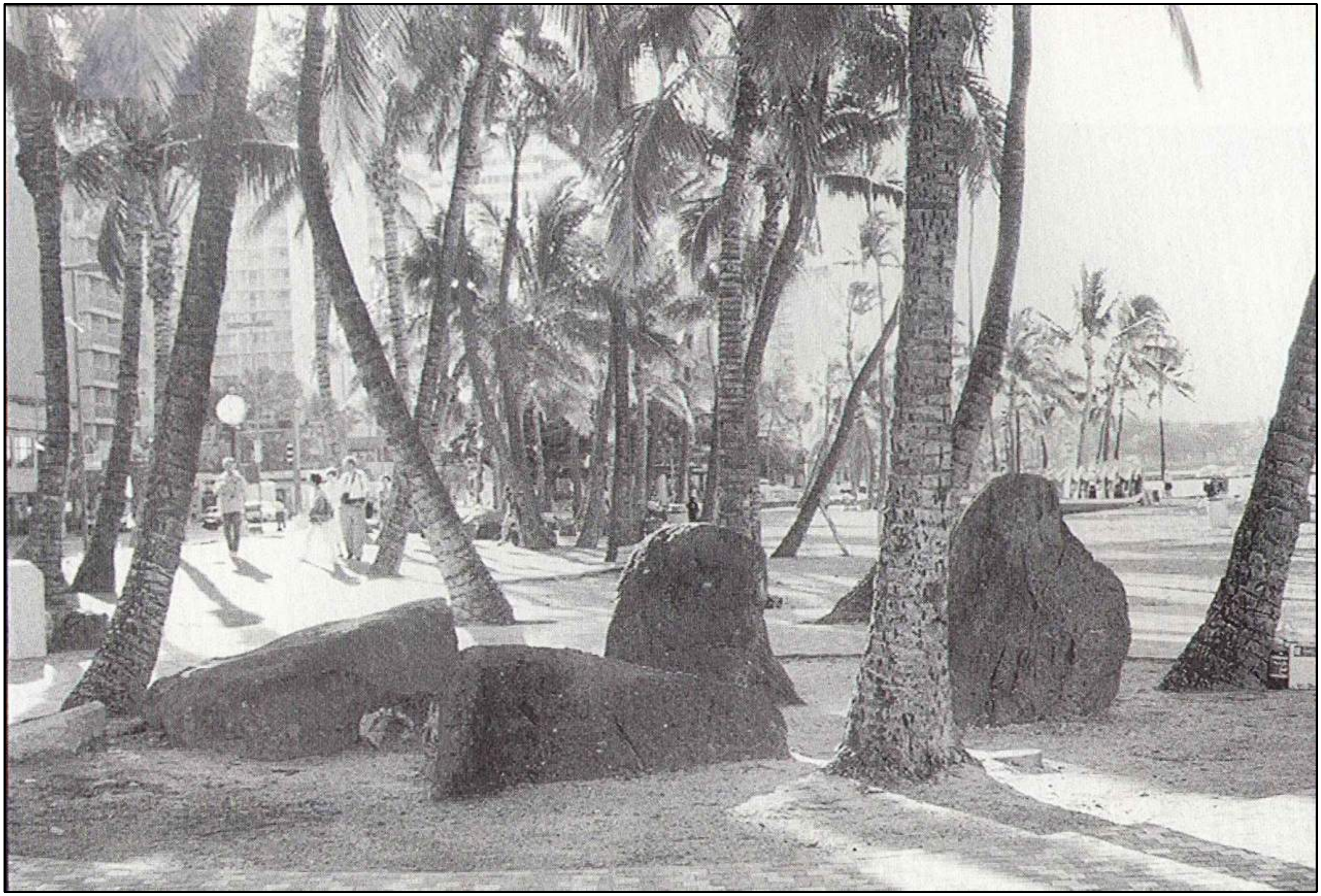

Figure 11. Photo of Nā Pōhaku Ola Kapaemāhū a Kapuni, also known as the Wizard Stones (Hawai‘i State Archives)

> The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, *‘ōlelo no‘eau* may be understood as proverbs. The Webster dictionary notes it as "a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation." It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii). Oftentimes within these Hawaiian expressions or proverbs are references to places. This section draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing *‘āina* (land), chiefs, plants, and places relative to *‘ili* of Kālia and the larger Waikīkī Ahupua‘a.

3.1.3.1 *‘Ōlelo No‘eau* #285

The following *‘ōlelo no‘eau* mentions surfing at Kalehuawehe in Waikīkī, the most famous location for surfing in Waikīkī.

> *E ho‘i ka u‘i o Mānoa, ua ahiahi.*
>
> Let the youth of Mānoa go home, for it is evening.
>
> Refers to the youth of Mānoa who used to ride the surf at Kalehuawehe in Waikīkī. The surfboards were shared among several people who would take turns using them. Those who finished first often suggested going home early, even though it might not be evening, to avoid carrying the boards to the *hālau* [long house] where they were stored. Later the expression was used for anyone who went off to avoid work. [Pukui 1983:35–36]

3.1.3.2 *‘Ōlelo No‘eau* #1321

The following *‘ōlelo no‘eau* mentions that Kālia was known as "a place for gathering salt" (Pukui 1983:144).

> *Kāhunahuna pa‘akai o Kālia*
>
> Fine-grained salt of Kālia.
>
> A derogatory expression for the dried, viscid matter in the corners of the eyes of an unwashed face. Kālia was a place for gathering salt, although any place name might be used. [Pukui 1983:144]

3.1.3.3 *‘Ōlelo No‘eau* #1378

The following *‘ōlelo no‘eau* describes the fishing techniques found in the Kālia area.

> *Ka i‘a pīkoi kānaka o Kālia; he kānaka ka pīkoi, he kānaka ka pōhuku.*
>
> The fish caught by the men of Kālia; men are the floaters, men are the sinkers.

> In ancient days, when a school of mullet appeared at Kālia, O'ahu, a bag net was set and the men swan out in a row and surrounded the fish. Then the men would slap the water together and kick their feet, driving the frightened fish into the opening of their bag net. Thus the fishermen of Kālia became known as human fishnets. [Pukui 1983:151]

3.1.3.4 *'Ōlelo No'eau* #1493

The following *'ōlelo no'eau* mentions also mentions surfing at Kalehuawehe.

> *Ka nalu ha'i o Kalehuawehe.*
>
> The rolling surf of Kalehuawehe.
>
> Ka-Lehua-wehe (take-off-the-*lehua*) was Waikīkī's most famous surf. It was so named when a legendary hero took off his *lei* of *lehua* [the flower of the *'ōhi'a* tree] blossoms and gave it to the wife of the ruling chief, with whom he was surfing. [Pukui 1983:161–162]

3.1.3.5 *'Ōlelo No'eau* #1734

The following *'ōlelo no'eau* describes the pleasant ocean reverberations characteristic of shallow reef shorelines.

> *Ke kai wawalo leo le'a o Kālia.*
>
> The pleasing, echoing sea of Kālia.
>
> Refers to the sea of Kālia, Honolulu, now known as Ala Moana. [Pukui 1983:186]

3.1.3.6 *'Ōlelo No'eau* #2255

The following *'ōlelo no'eau* mentions the abundance of *limu līpoa* (*Dictyopteris plagiogramma* and *D. australis*) in the waters off of Waikīkī.

> *Na līpoa 'ala o Kawehewehe.*
>
> The fragrant līpoa of Kawehewehe.
>
> The līpoa seaweed of Waikīkī, especially at Kawehewehe, was so fragrant that one could smell it while standing on the shore. Often mentions in songs about Waikīkī [Pukui 1983:246]

3.1.4 *Oli* (Chants)

Oli, according to Mary Kawena Pukui (Pukui 1995:xvi–xvii) are often grouped according to content. Chants often were imbued with *mana*; such *mana* was made manifest through the use of themes and *kaona*. According to Pukui, chants for the gods (prayers) came first, and chants for the *ali'i*, "the descendants of the gods," came second in significance. Chants "concerning the activities of the earth peopled by common humans," were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states:

> In its most familiar form the Hawaiians–many of whom [were lyrical masters]– used the oli not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades.

> The dividing line, then, between the oli and those other weightier forms of the mele, the inoa, the kanikau (threnody), the pule, and that unnamed variety of mele in which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]

While *oli* may vary thematically, subject to the perspective of the *ho‘opa‘a* (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall special places and events, and to offer prayers to *akua* and *‘aumākua* (family gods) alike. Perhaps most importantly, as Alameida (1993:26) writes, “chants […] created a mystic beauty […] confirming the special feeling for the environment among Hawaiians: their *one hānau* (birthplace), their *kula iwi* (land of their ancestors).”

3.1.4.1 Chant of Papa‘ena‘ena

In Waikīkī when the waves were running, the *kahuna* signaled to the people by flying a kite. An ancient chant tells of Papa‘ena‘ena (the start of the surfing course which ended at Kālia):

> There at Kalahuewehe is the big surf created by Papa‘ena‘ena.
> Arise, of ye surf of Kalahuewehe, arise!
> The *kahuna* of Papa‘ena‘ena flies his moon kite
> To proclaim the suitability of the sea for surfing.
> The eager lookout on yonder highland
> Anxiously scans the skies for this signal,
> And relays the good news by runners;
> Farmers, woodsmen, bird catchers all,
> Leave their tasks and fetching their surf boards
> Hurry to the beach at Waikīkī.
> Soon the sea is filled with natives
> Sporting in the billowy surf;
> Trick riding, zigging and zagging, amidst the foam
> Shouting words of defiance against the angry surf'
> To topple the rider if it can […]
> [Kanahele 1995:56–57]

3.1.5 *Nā Mele* (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song.

> Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the *kaona*, or ‘inner meaning.’ The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai‘i could see it very plainly. There are but two meanings: the literal and the *kaona*, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem. [Pukui 1949:247]

> The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their

> art. These young men were taught the old *meles* and the technique of fashioning new ones. [Pukui 1949:247]

A number of late nineteenth, twentieth, and twenty-first century *mele* concern or mention Waikīkī Ahupuaʻa. These particular *mele* may also be classified as *mele wahi pana* (songs for legendary or historic places). *Mele wahi pana* such as those presented here may or may not be accompanied by *hula* (dance) or *hula wahi pana* (dance for legendary or historic places). As the Hula Preservation Society notes,

> Hula Wahi Pana comprise a large class of dances that honor places of such emotional, spiritual, historical, or cultural significance that chants were composed for them. Only the composers of the chants could know the deepest meanings, as they would be reflections of their feelings and experiences […] Since the subjects of Wahi Pana compositions are extremely varied, their implementation through hula are as well. Coupled with the differences from one hula style and tradition to the next, Hula Wahi Pana can be exceptionally diverse. They can be done sitting or standing, with limited body movement or wide free movement; with or without the use of implements or instruments; with the dancers themselves chanting and/or playing an implement or being accompanied by the *hoʻopaʻa* [drummer and *hula* chanter (memorizer)]. Beyond the particular hula tradition, what ultimately determines the manner in which a Hula Wahi Pana is performed are the specific place involved, why it is significant, the story being shared about it, and its importance in the composer's view. [Hula Preservation Society 2014]

3.1.5.1 Oʻahu

Oʻahu is a traditional *mele* describing Oʻahu as the land of love; it highlights the areas of Mānoa, Waikīkī, Nuʻuanu, and Makiki. Raiatea Helm recently rerecorded this *mele* on her 2016 album *He Leo Huali*:

Mānoa he uʻi nō i kaʻu ʻike	Mānoa is indeed a beauty for my sight
I ka piʻo mai a ke ānuenue	At the arching of the rainbow
Waikīkī i ke kai malamalama	Waikīkī in the glimmering sea
He wai hoʻoheno a ka puʻuwai	Cherished waters of my heart
Nuʻuanu i ka makani lawe mālie	Nuʻuanu in the caressing wind
I ke ʻala o nēia pua o ka ʻawapuhi	In the fragrance of this blossom of ginger
Makiki ka home o nā manu	Makiki, the home of the birds when they soar into the sky
Haʻina ʻia mai ana ka puana	Tell the refrain
He uʻi ke ea mai i ka lani	A beauty, a breath in the heavens,
Oʻahu ka ʻāina o ke aloha	Oʻahu, the land of love
[Huapala n.d.]	

3.1.5.2 Waikīkī Hula

Waikīkī Hula is a traditional *mele.* This song "was written for Pualeilani, the Waikīkī home of Prince Jonah Kuhio Kalanianaole. It was given to Helen Ayat by her mother, a lady-in-waiting to Princess Kahanu, wife of Prince Kuhio (Huapala n.d.):

He aloha ʻia no aʻo Waikīkī, eā	Beloved is Waikīkī
Ka nehe o ke kai hāwanawana	The rustling of the whispering sea
Pa iho ka makani lawe mālie, eā	The wind blows carrying softly
Ke ʻala onaona o ka līpoa	The sweet fragrance of seaweed
Kaulana kou inoa i nā malihini, eā	Your name is famous to visitors,
Kaʻapuni kou nani puni ka honua	All your beauty known around the world
Huli aku nānā ia Kaimana Hila, eā	Turn and look at Diamond Head
ʻIke i ka nani aʻo Honolulu	See the beauty of Honolulu
Haʻina ʻia mai ana ka puana, eā	The story is told
He aloha ʻia no aʻo Waikīkī	Beloved is Waikīkī
[Huapala n.d.]	

3.1.5.3 *Kuʻu Pua i Paoakalani* (My Flower at Paoakalani)

This *mele* was composed by Queen Liliʻuokalani during the eight months she was imprisoned at ʻIolani Palace. The queen was imprisoned with one of her loyal supporters, Mrs. Evelyn Townsend Wilson. Her son would often bring the queen flowers from one of her Oʻahu estates; these flowers would be wrapped in newspaper so the queen would have access to the news occurring outside her palace prison. "One day, she recognized a type of flower that grew at her home in Waikīkī, Paoakalani, and composed this song—translated as 'My Flower at Paoakalani'—as a tribute to its beauty" (Bolante and Keany 2007):

E ka gentle breeze *a pa mai nei*	O gentle breeze that waft to me
Hoʻohāliʻaliʻa mai ana iaʻu	Sweet, cherished memories of you
E kuʻu sweet never fading flower	Of my sweet never fading flower
I pua i ka uka o Paoakalani	That blooms in the fields of Paoakalani
Hui: ʻIke mau i ka nani o nā pua	Chorus: Iʻve seen those beauteous flowers
O ka uka o Uluhaimalama	That grew at Uluhaimalama
ʻAʻole naʻe hoʻi e like	But none of those could be compared
Me kuʻu pua i ka laʻi o Paoakalani	To my flower that blooms in the fields of Paoakalani
Lahilahi kona ma hiʻona	Her face is fair to behold
With softest eyes as black as jet	With softest eyes as black as jet
Pink cheeks so delicate of hue	Pink cheeks so delicate of hue
I ulu i ka uka o Paoakalani	That grew in the fields of Paoakalani
Nane ʻia mai ana kuʻu aloha	Now name to me the one I love
E ka gentle breeze *e waft mai nei*	Gentle breezes passing by
O come to me *kaʻu mea e liʻa nei*	And bring to me that blossom fair
[Bolante and Keany 2007]	

3.1.5.4 Waikiki

In 1938, Andrew Kealoha Cummings, "a homesick local boy," composed this famous song while touring in Michigan (Bolante and Keany 2007). The song, originally performed by Cummings, has been described by George Kanahele as a "rare instance of a near perfect fit of song and singer" (Bolante and Keany 2007):

There's a feeling deep in my heart
Stabbing at me just like a dart
It's a feeling heavenly
I see memories out of the past
Memories that always will last
Of the days that used to be
(Of a place beside the sea)
Waikiki
At night when the shadows are falling
I hear the rolling surf calling
Calling and calling to me
Waikiki
Tis for you that my heart is yearning
My thoughts are always returning
Out there to you across the sea
Chorus: Your tropic nights and your wonderful charms
Are ever in my memory
And I recall when I held in my arms
An angel sweet and heavenly
Waikiki
My whole life is empty without you
I miss that magic about you
Magic beside the sea
Magic of Waikiki
[Bolante and Keany 2007]

3.2 Archaeological and Historical Narrative

3.2.1 Pre-Contact to Early Post-Contact Period

By the time of Europeans' arrival in the Hawaiian Islands in the late eighteenth century, Waikīkī had long been a center of population and political power on O‘ahu. According to Martha Beckwith (1940:383), by the end of the fourteenth century, Waikīkī had become "the ruling seat of the chiefs of O‘ahu." George Kanahele relates that the ruling chief Ma‘ilikūkāhi made the following decision:

> […] to move his capital from ‘Ewa to Waikīkī around 1400. As a result, for the next 400 years—and until Honolulu became the trading center of the Kingdom of Hawai‘i in the early 1800s—Waikīkī remained one of the main political and economic centers of O‘ahu. [Kanahele 1995:62]

Ma‘ilikūkāhi was known as a kind chief and was greatly loved by his subjects, who enjoyed prosperity and peace under his reign. Ma‘ilikūkāhi won the respect and loyalty of his people due to "his exceedingly great concern for the prosperity of the kingdom" (Kamakau 1992:55).

Kanahele (1995:134) notes the continuity in royal residences, stating "The royal residences were generally located in the same areas that all of Waikīkī's ancient chiefs had located their residences for hundreds of years." Kanahele (1995:134–135) goes on to explain that "[t]hree features were common to royal locations in Waikīkī. They were situated (1) near the beach, (2) next to a stream or *‘auwai*, and (3) among a grove of cocoanut [*sic*] or *kou* trees.”

Hibbard and Franzen note the following:

> When old Hawaiians refer to O‘ahu they recall, ‘ke one ‘ai ali‘i o Kākuhihewa’, or the chief-consuming sands of Kakuhikewa. Kakuhihewa was a famous ali‘i (chief) who ruled O‘ahu during the late 1500s. He lived at Ulukou, Waikiki on the spot now occupied by the Moana Hotel. His reign was marked by great prosperity during which all the invading chiefs from other islands were defeated. The sands at Ulukou were known as chief-eating sands because of the strength of this great chief. Kakuhikewa’s Waikiki came to epitomize the golden era of aboriginal Hawaiian history and is mentioned frequently in traditional Hawaiian chants as well as contemporary song. Five generations before Kakuhihewa’s birth, circa 1450, Ma‘ilikukahi first established Waikiki as the government center for the island of O‘ahu. From this time until 1809, when Kamehameha I moved his court to Honolulu, Waikiki was the seat of power for O‘ahu. Originally Waikiki encompassed a larger area than the section we are familiar with today. [Hibbard and Franzen 1986:2]

The preeminence of Waikīkī continued into the eighteenth century, when Kamehameha decided to reside there after winning control of O‘ahu by defeating the island’s chief, Kalanikūpule. The nineteenth century Hawaiian historian John Papa ‘Ī‘ī, a member of the *ali‘i*, described the king’s Waikīkī residence as follows:

> Kamehameha’s houses were at Puaaliilii, makai of the old road [now Kalakaua Avenue], and extended as far as the west side of the sands of ‘Apuakehau [Stream]. Within it was Helumoa where Ka‘ahumanu mā [Ka‘ahumanu’s people] went to while away the time. The king built a stone house there, enclosed by a fence […] [‘Ī‘ī 1959:17]

‘Ī‘ī further noted that the “place had long been a residence of chiefs. It is said that it had been Kekuapoi’s home, through her husband Kahahana, since the time of Kahekili” (‘Ī‘ī 1959:17). The main trail into Waikīkī was *makai* of present-day Ala Moana Boulevard/Kalākaua Avenue, adjacent to the current project area (see Figure 10).

However, chiefly residences were only one element of a complex of features that characterized Waikīkī up to the time of Western Contact. Beginning in the fifteenth century, Hawaiians constructed a vast system of irrigated taro fields that extended across the littoral plain from Waikīkī to lower Mānoa and Pālolo valleys. This field system—an impressive engineering design traditionally attributed to the chief Kalamakua—took advantage of the streams descending from Makiki, Mānoa, and Pālolo valleys that also provided ample fresh water for Hawaiians living in the *ahupua‘a* (traditional land division). Water was also available from springs in nearby Mō‘ili‘ili and Punahou. Closer to the Waikīkī shoreline, houses, ponded taro fields, coconut groves, and fishponds dotted the landscape, as shown on early historic maps (see Figure 10, Figure 12 and Figure 13). Located near the mouth of Pi‘inaio Stream, the traditional Hawaiian fishpond complexes of Paweo and Kaipuni were approximately 150 m to the northeast and east, respectively, of the current project area. Likely constructed in the pre-Contact period, these

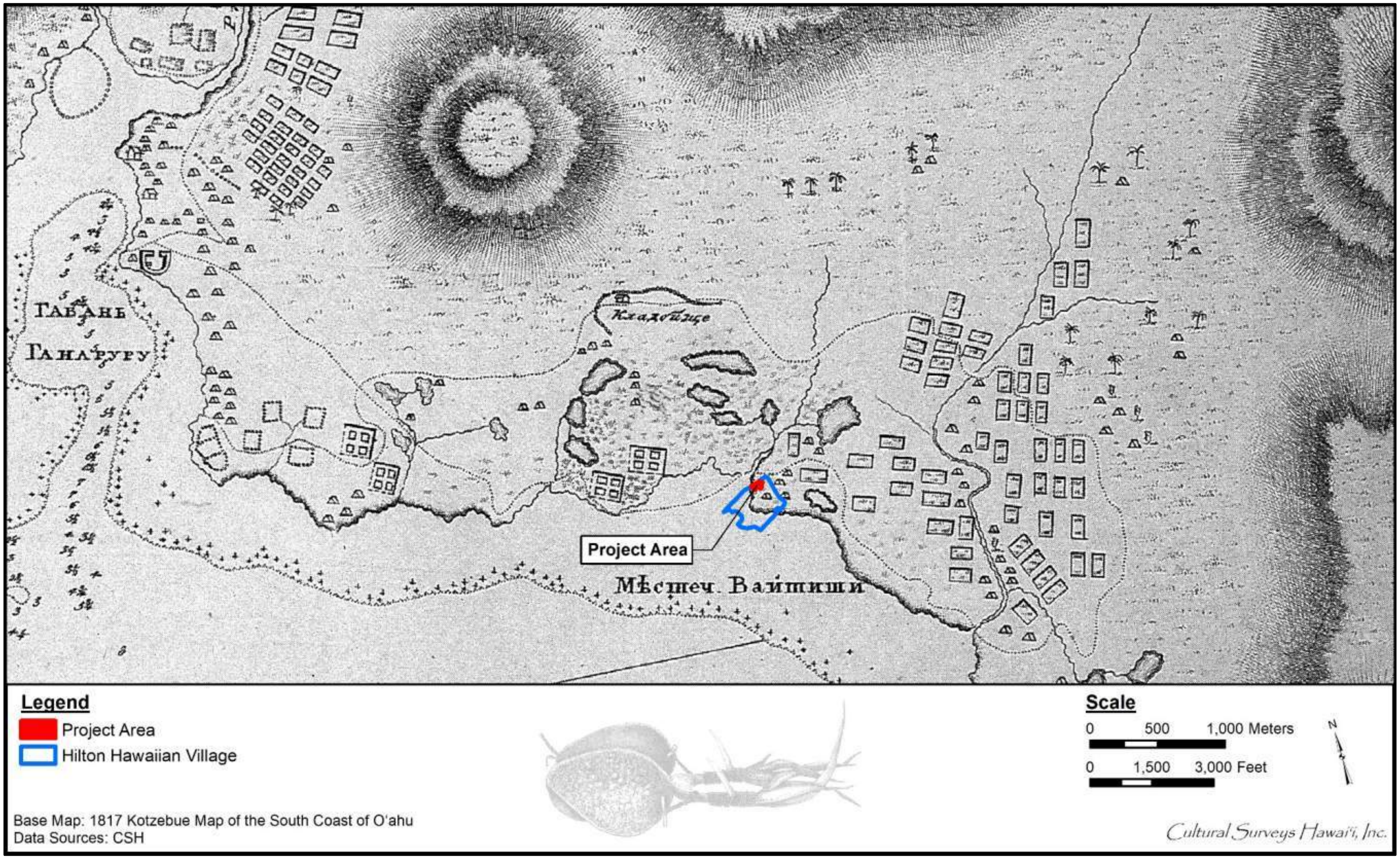

Figure 12. Portion of 1817 map by Otto von Kotzebue (reprinted in Fitzpatrick 1986:48–49) showing a schematic of fishponds, taro *lo‘i* (rectangles), residences (small trapezoids), and salt pans (grid squares) in Honolulu and Waikīkī; note the shoreline at this time is adjacent to the project area

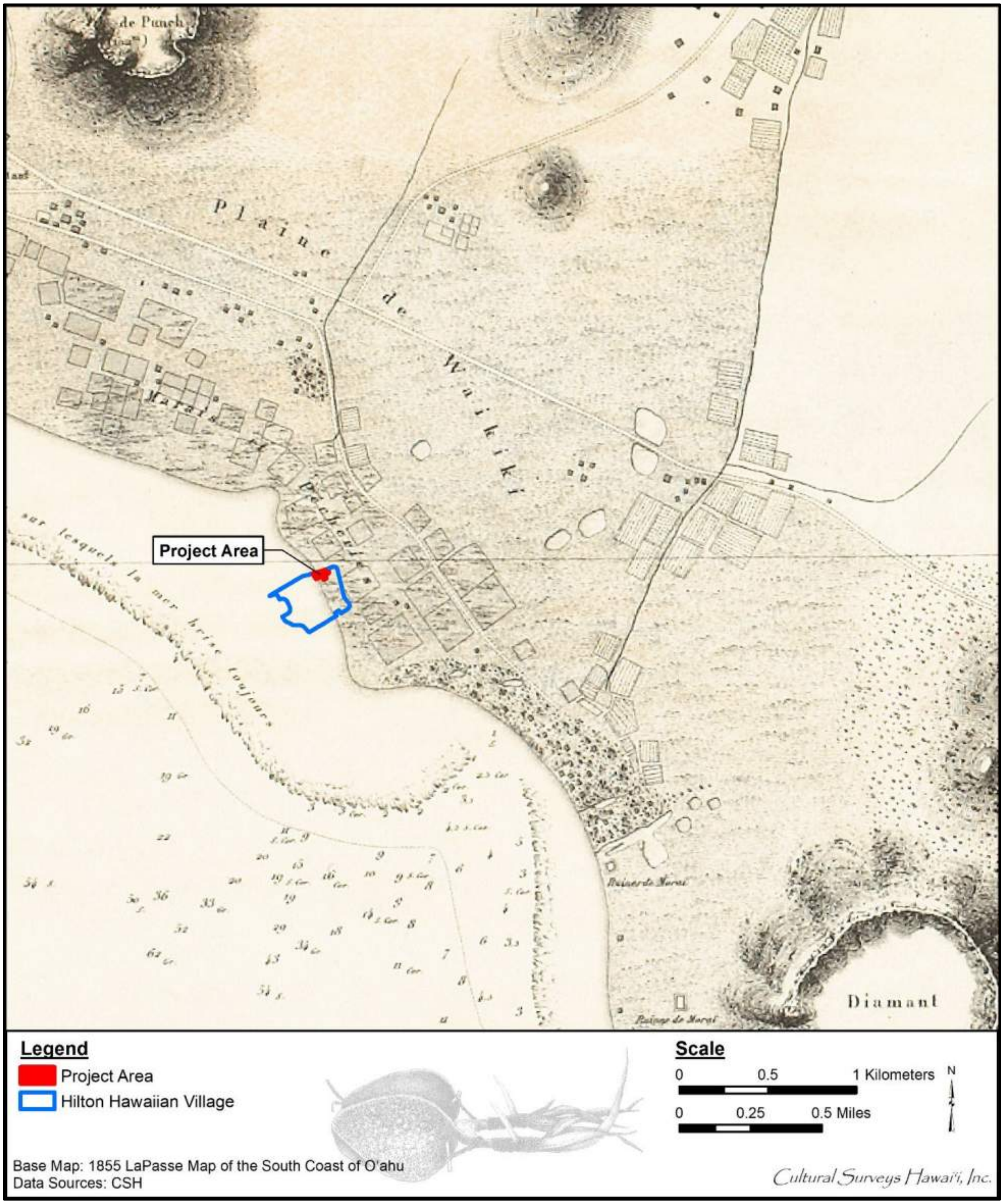

Figure 13. Portion of an 1855 map of the south coast of O'ahu by M. de LaPasse of the *Eurydice*, showing the project area in relation to fishponds ("Pecheries")

fishponds were used into the later 1800s before being systematically filled in with the development of the U.S. Army's Fort DeRussy in the early 1900s.

A sizeable population developed amidst this Hawaiian-engineered abundance. Captain George Vancouver, arriving at "Whyteete" in 1792, captured something of this profusion in his journals:

> On shores, the villages appeared numerous, large, and in good repair; and the surrounding country pleasingly interspersed with deep, though not extensive valleys; which, with the plains near the sea-side, presented a high degree of cultivation and fertility.
>
> [Our] guides led us to the northward through the village, to an exceedingly well-made causeway, about twelve feet broad, with a ditch on each side. This opened our view to a spacious plain, which, in the immediate vicinity of the village, had the appearance of the open common fields in England; but, on advancing, the major part appeared to be divided into fields of irregular shape and figure, which were separated from each other by low stone walls, and were in a very high state of cultivation. These several portions of land were planted with the eddo or taro root, in different stages of inundation; none being perfectly dry, and some from three to six or seven inches under water. The causeway led us near a mile from the beach, at the end of which was the water we were in quest of. It was a rivulet five or six feet wide, and about two or three feet deep, well banked up, and nearly motionless; some small rills only, finding a passage through the dams that checked the sluggish stream, by which a constant supply was afforded to the taro plantations.
>
> [We] found the plain in a high state of cultivation, mostly under immediate crops of taro; and abounding with a variety of wild fowl, chiefly of the duck kind […] The sides of the hills, which were at some distance, seemed rocky and barren; the intermediate vallies, which were all inhabited, produced some large trees, and made a pleasing appearance. The plain, however, if we may judge from the labour bestowed on their cultivation, seemed to afford the principal proportion of the different vegetable productions on which the inhabitants depend for their subsistence. [Vancouver 1798:161–164]

Further details of the exuberance of Hawaiian life and land use in the *ahupua‘a* of Waikīkī are given by Archibald Menzies, a naturalist accompanying Vancouver's 1792 expedition:

> The verge of the shore was planted with a large grove of cocoanut [*sic*] palms, affording a delightful shade to the scattered habitations of the natives. Some of those near the beach were raised a few feet from the ground upon a kind of stage, so as to admit the surf to wash underneath them. We pursued a pleasing path back to the plantation, which was nearly level and very extensive, and laid out with great neatness into little fields planted with taro, yams, sweet potatoes and the cloth plant. These, in many cases, were divided by little banks on which grew the sugar cane and a species of Draecena without the aid of much cultivation, and the whole was watered in a most ingenious manner by dividing the general stream into little aqueducts leading in various directions so as to be able to supply the most distant fields at pleasure, and the soil seemed to repay the labour and industry of these

> people by the luxuriancy of its productions. Here and there we met with ponds of considerable size, and besides being well stocked with fish, they swarmed with water fowl of various kinds such as ducks, coots, water hens, bitterns, plovers and curlews. [Menzies 1920:23–24]

These early Euro-American contacts, while providing the first western documentation of Waikīkī, also disrupted its traditional role as a center of chiefly and agricultural activities on southeastern O‘ahu. Because the only sheltered harbor on O‘ahu was found in the *ahupua‘a* of Honolulu, trade with visiting foreign vessels gradually centered there; increasing numbers of Hawaiians left their traditional environments to move to Honolulu. The shift in preeminence is illustrated by the fact that Kamehameha moved his residence from Waikīkī to Honolulu. Indeed, by 1828 Levi Chamberlain described a journey into Waikīkī as follows:

> Our path led us along the borders of extensive plats of marshy ground, having raised banks on one or more sides, and which were once filled with water, and replenished abundantly with esculent fish; but now overgrown with tall rushes waving in the wind. The land all around for several miles has the appearance of having once been under cultivation. I entered into conversation with the natives respecting this present neglected state. They ascribed it to the decrease of population.
> [Chamberlain 1957:26]

The depopulation of Waikīkī can be attributed not only to the attractions of Honolulu (where, by the 1820s, the population was estimated at 6,000 to 7,000) but also tragically to the European diseases that had devastating effects upon the Hawaiian population.

3.2.2 Nineteenth Century

Despite the depopulation of Waikīkī, the *ahupua‘a* continued to sustain Hawaiians living traditionally into the mid-nineteenth century. 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 (Hawaiian government), the *ali‘i*, and their land managers (*konohiki*) received their land titles. Subsequently in the Māhele, Land Commission Awards (LCAs) for *kuleana* (individual parcels) were awarded to commoners and others who could prove residency on and use of the parcels they claimed (Figure 14).

Most of the project area was part of LCA 1775:1, awarded to Paoa in 1853, for a *pāhale*, or house lot (see Figure 14 and Figure 15). This was the ancestral homesite of the maternal side of the family of Duke Paoa Kahinu Mokoe Hulikohola Kahanamoku (24 August 1890–22 January 1968), a Native Hawaiian competition swimmer who won six Olympic medals, including three gold medals. He was also the foremost surfer who popularized surfing to the world and was known as Hawai‘i's "Ambassador of Aloha." In later years, Duke was elected as sheriff of Waikīkī, serving 13 consecutive terms.

Additionally, a portion of the project area is within Land Grant 3162 (mis-labeled as Grant 3167 on the 1881 Bishop map) to H.A. Widemann (spelled Widdemann on the 1881 Bishop map) and later (1890) to John Ena (see Figure 14 and Figure 16). Ena served on the Privy Council of both King Kalākaua and Queen Lili‘uokalani. An 1897 map shows buildings/structures within Ena's land; however, these are all outside the current project area.

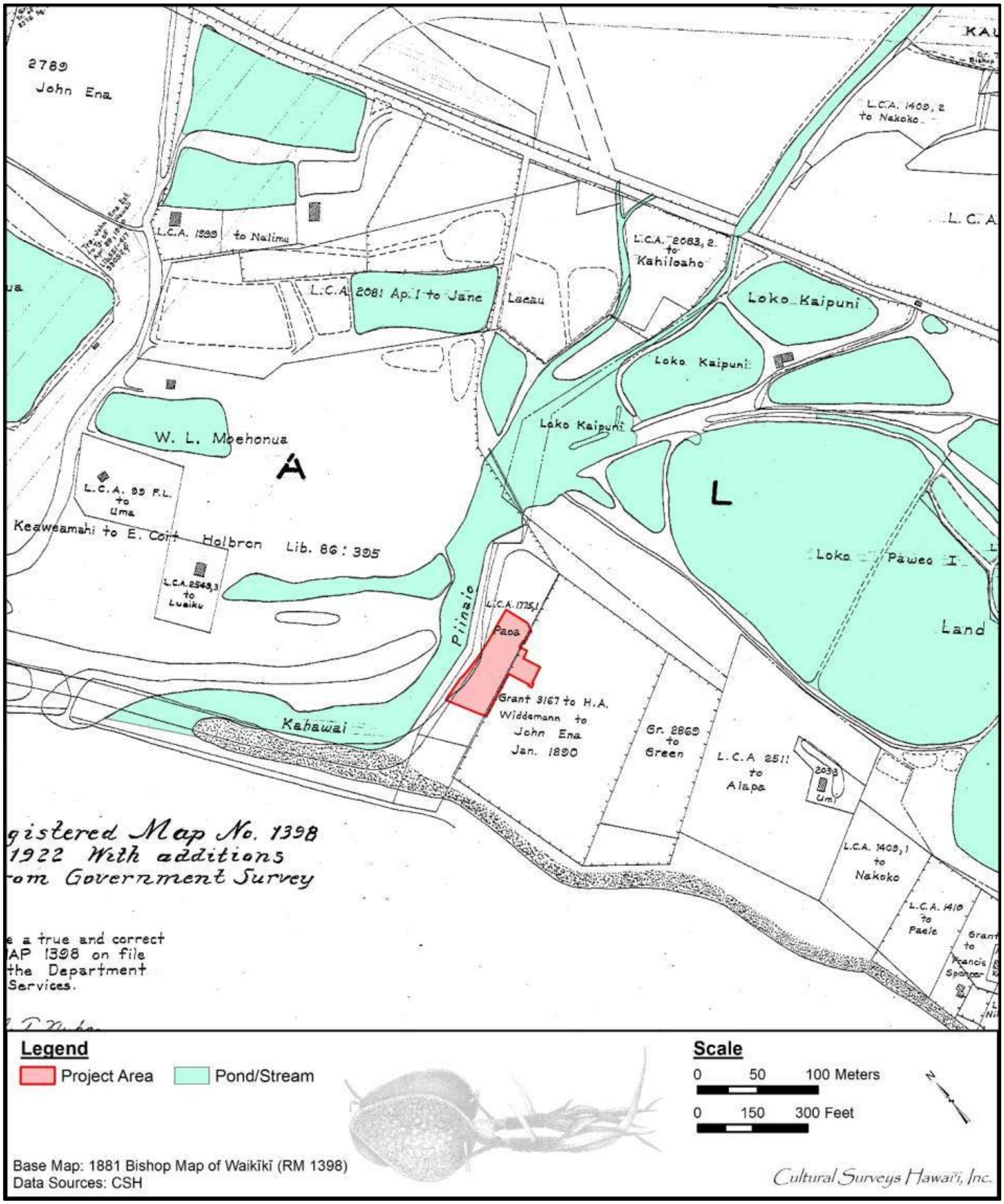

Figure 14. Portion of an 1881 map of Waikīkī (RM 1398) by S.E. Bishop showing the locations of LCAs, land grants, ponds, and streams; the project area is just south of Piʻinaio Stream and is mainly within LCA 1775 ʻĀpana (lot) 1 to Paoa

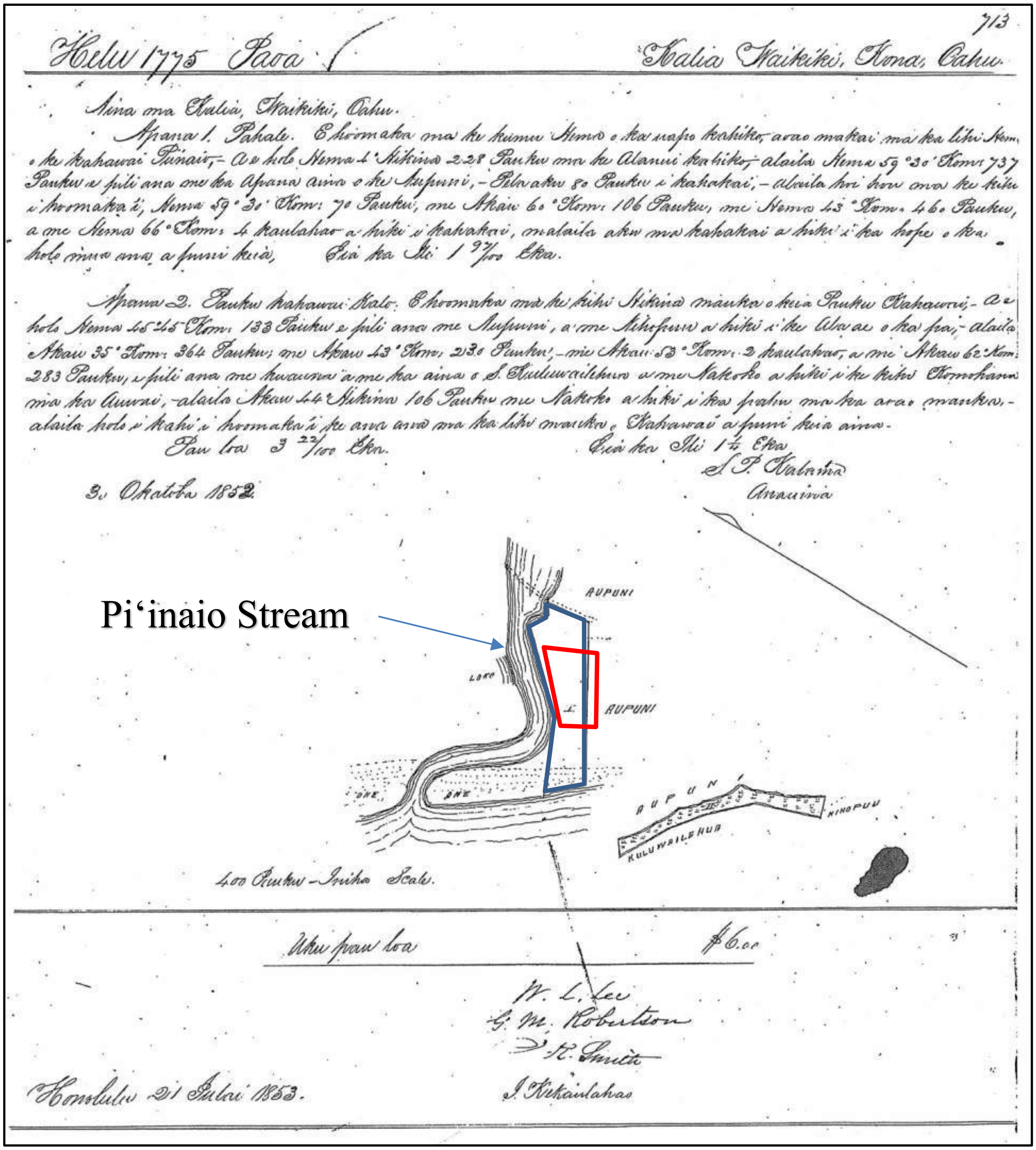

Figure 15. 1852 claim for LCA 1775 to Paoa (outlined in blue), with approximate project area boundaries outlined in red; note the close proximity of Pi‘inaio Stream as it meets the sea.

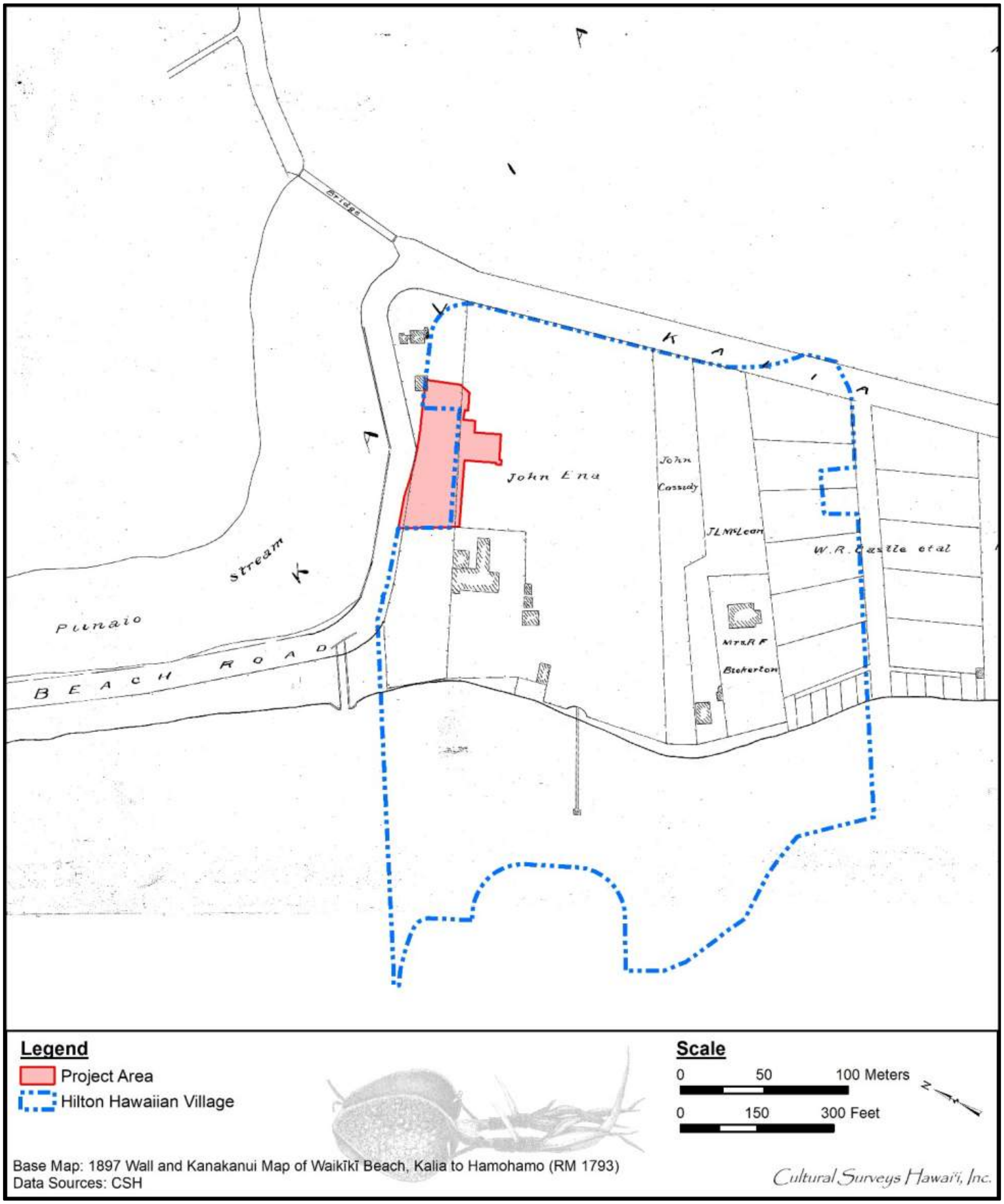

Figure 16. Portion of the 1897 Wall and Kanakanui map of Waikīkī Beach, Kālia to Hamohamo (RM 1793), showing LCAs and land grants within and in the vicinity the project area

As the nineteenth century progressed, Waikīkī became a popular site among foreigners—mostly American—who had settled on O‘ahu. An 1865 article in the *Pacific Commercial Advertiser* mentions a small community that had developed along the beach. The area continued to be popular with *ali‘i*, and several notables had residences there. A visitor to O‘ahu in 1873 described Waikīkī as “a hamlet of plain cottages, whither the people of Honolulu go to revel in bathing clothes, mosquitoes, and solitude, at odd times of the year” (Bliss 1873:195–196).

Other developments during the second half of the nineteenth century, a prelude to changes that would dramatically alter the Waikīkī landscape during the twentieth century, are well documented by Nakamura (1979:19–50), Hibbard and Franzen (1986:8–46), Kanahele (1995:131–155), and Grant (1996:8–34). These changes include the improvement of the road connecting Waikīkī to Honolulu (the route of the present Kalākaua Avenue); the building of a tram line between the two areas; and the opening of Kapi‘olani Park in 1877. Traditional land uses in Waikīkī were abandoned or modified. By the end of the nineteenth century, most of the fishponds that had previously proliferated had been neglected and allowed to deteriorate. The remaining taro fields were planted with rice to supply the growing numbers of immigrant laborers from China and Japan, as well as for shipment to the west coast of the United States.

3.2.3 Twentieth Century to Present

During the first decade of the twentieth century, the U.S. War Department acquired more than 70 acres in the Kālia portion of Waikīkī for the establishment of a military reservation called Fort DeRussy, named in honor of Brigadier General R.E. DeRussy of the Army Corps of Engineers. Hibbard and Franzen summarize activities at Fort DeRussy below:

> On 12 November 1908, a detachment of the 1st Battalion of Engineers from Fort Mason, California, occupied the new post […]
>
> Between 1909 and 1911 the engineers were primarily occupied with mapping the island of O‘ahu. At DeRussy other activities also had to be attended to—especially the filling of a portion of the fishponds which covered most of the Fort. This task fell to the Quartermaster Corps, and they accomplished it through the use of an hydraulic dredger which pumped fill from the ocean continuously for nearly a year in order to build up an area on which permanent structures could be built. Thus the Army began the transformation of Waikīkī from wetlands to solid ground. [Hibbard and Franzen 1986:79]

The traditional Hawaiian fishpond complexes of Paweo and Kaipuni, approximately 150 m northeast/east of the current project area, were filled in with the development of Fort DeRussy (Figure 17). By 1914 (Figure 18), there were western-style dwellings—likely bungalows—within Parcels 004, 005, and 006 of the current project area. A land court application map (Figure 19) indicates the owners of these dwellings to be Mary Simson, Kekai Kuihala Mahaulu, and Duke Kahanamoku, the Native Hawaiian Olympic swimmer and renowned surfer (discussed in Section 3.2.2 above). An apparent relative of Duke’s on the maternal side of his family, Henry Paoa, is shown as the owner of the Parcel 007 portion of the project area; however, no buildings or structures are indicated.

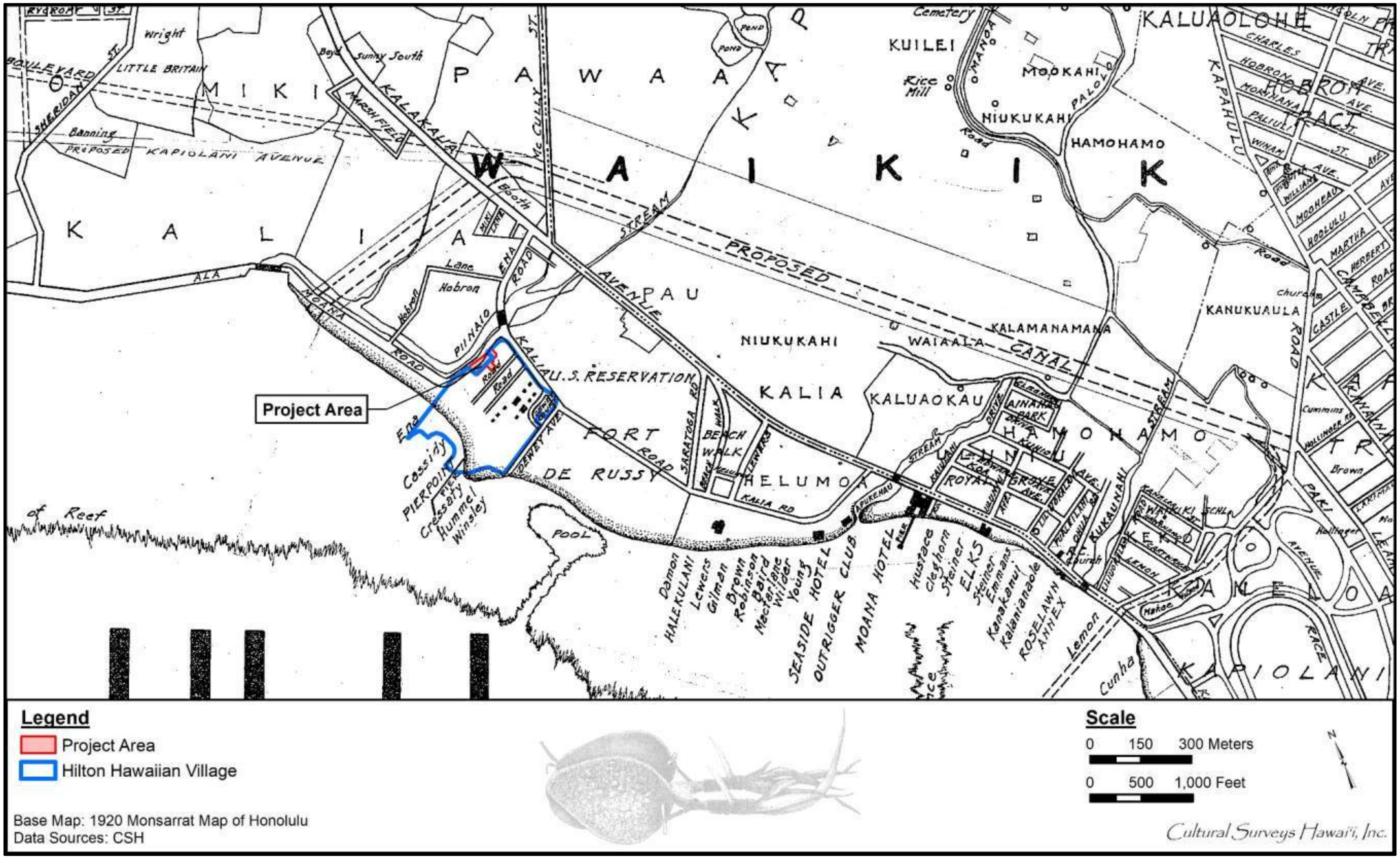

Figure 17. Portion of 1920 Monsarrat map of Honolulu showing the project area; note the advancing Waikīkī shoreline and that the Kaipuni and Paweo fishpond complexes have been filled in as part of Fort DeRussy; the proposed Ala Wai Canal alignment is indicated with dashed lines

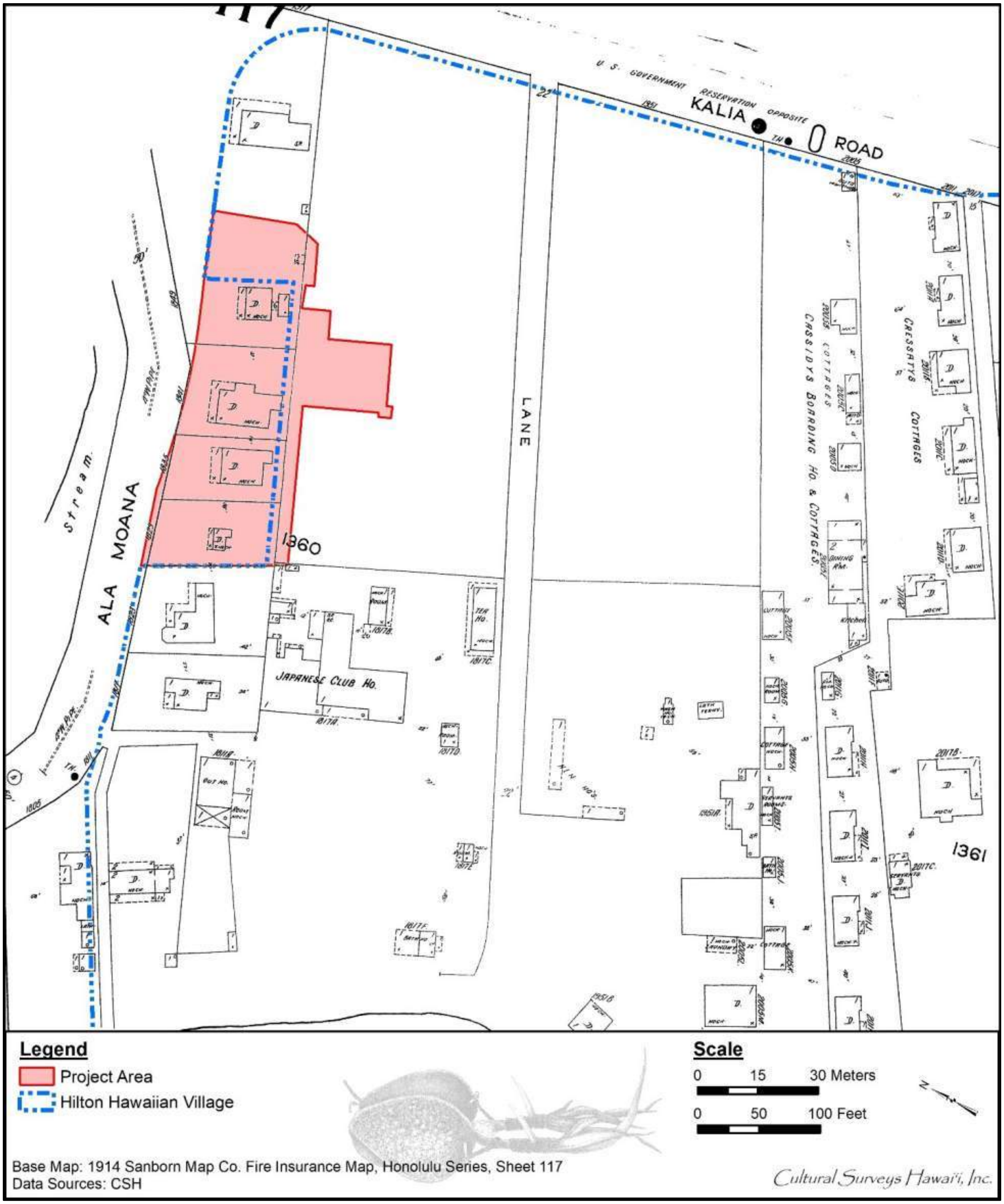

Figure 18. 1914 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 117, showing dwellings (“D”) within Parcels 004, 005, and 006 of the project area

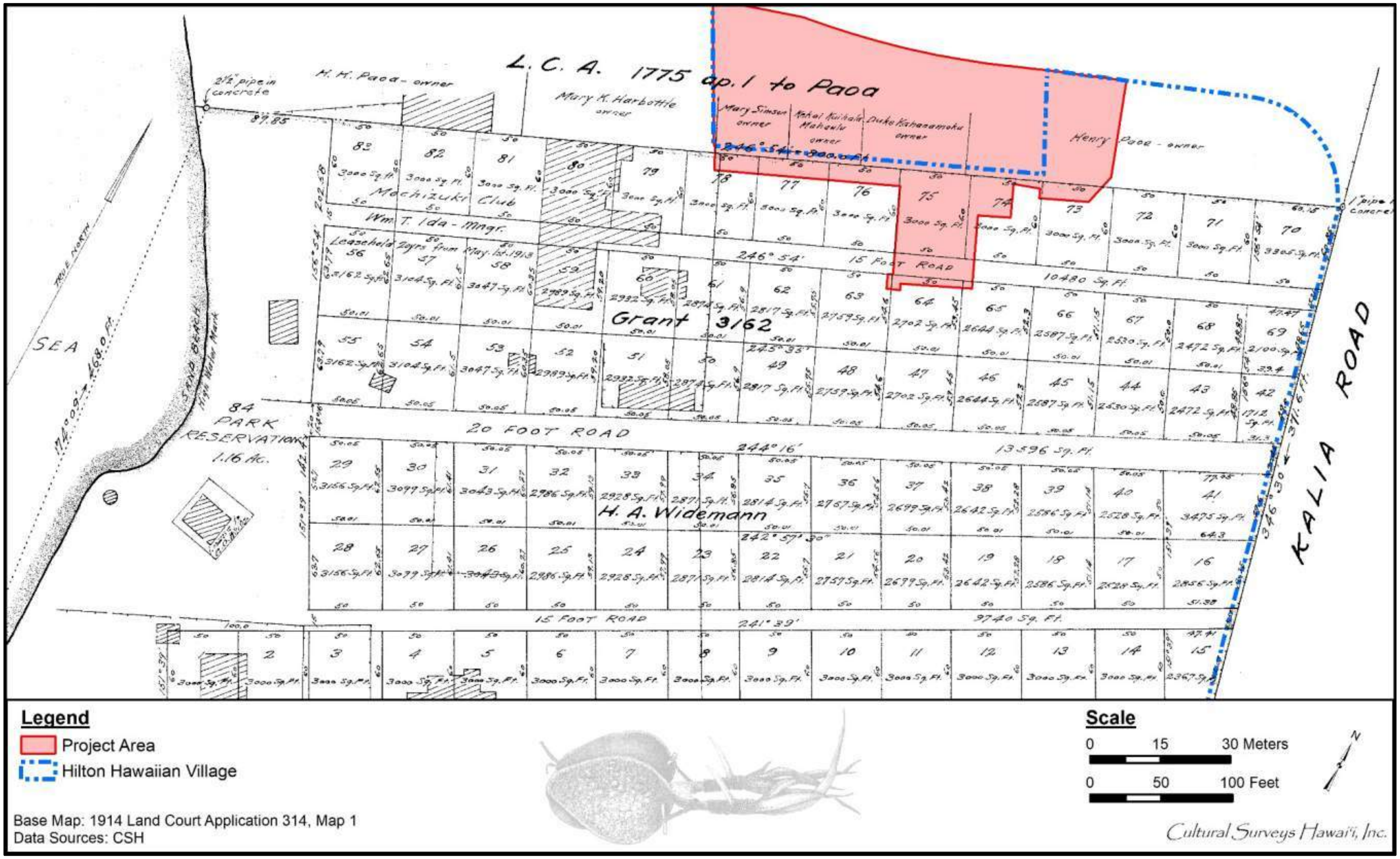

Figure 19. 1914 Land Court Application 314, Map 1, showing property owners within the project area; these included Mary Simson, Kekai Kuihala Mahaulu, Duke Kahanamoku, and Henry Paoa

During the 1920s, the Waikīkī landscape was transformed when construction of the Ala Wai Drainage Canal—begun in 1921 and completed in 1928—resulted in the draining and filling in of the remaining ponds and irrigated fields of Waikīkī. It was also at this time that Piʻinaio Stream, just north of the current project area, was filled. The canal was one element of a plan to urbanize Waikīkī and the surrounding districts:

> The [Honolulu city] planning commission began by submitting street layout plans for a Waikīkī reclamation district. In January 1922 a Waikīkī improvement commission resubmitted these plans to the board of supervisors, which, in turn, approved them a year later. From this grew a wider plan that eventually reached the Kapahulu, Mōʻiliʻili, and McCully districts, as well as lower Makiki and Mānoa.
>
> The standard plan for new neighborhoods, with allowances for local terrain, was to be that of a grid, with 80-foot-wide streets crossing 70-foot-wide avenues at right angles so as to leave blocks of house lots about 260 by 620 feet. Allowing for a 10-foot-wide sidewalk and a 10-foot right-of-way [alley] down the center of each block, there would be twenty house lots, each about 60 by 120 feet, in each block. [Johnson 1991:311]

By 1927 (Figure 20), two dwellings had been constructed within the southeastern portion of the current project area (Parcel 009 and 013). The four dwellings constructed within parcels 004–006 by 1914 (see discussion above) were still present at this time, although some appeared to have been renovated/enlarged.

Newly created land tracts following the Ala Wai Canal's construction spurred a rush to development in the 1930s (Figure 21). An article in the *Honolulu Star-Bulletin* in 1938 extolled the area's progress:

> The expansion of apartment and private residence construction is no secret. Examination of building permits will show that more projects have been completed during the past year, and more are now underway in this area, than in any other section of the territory.
>
> These developments are being made by island residents who have recognized the fact that Waikīkī presents the unparalleled possibility for safe investment with excellent return. [Newton 1939:10]

The entrance of the United States into World War II following the Japanese bombing of Pearl Harbor on 7 December 1941 put on hold plans for the development of Waikīkī as a tourist destination. Until the war's end in 1945, the tourist trade was non-existent "since the Navy controlled travel to and from Hawaiʻi and did not allow pleasure trips" (Brown 1989:141). Brown describes the transformation of Waikīkī into a recreation area for military personnel:

> It was not the same Waikīkī as before the war, though; barbed wire barricades now lined its sands, and there were other changes too. Fort DeRussy became a huge recreation center, with a dance hall called Maluhia that attracted thousands of men at a time. The Moana Hotel continued to function, but many other establishments and private homes in the area were taken over by the military. [Brown 1989:141]

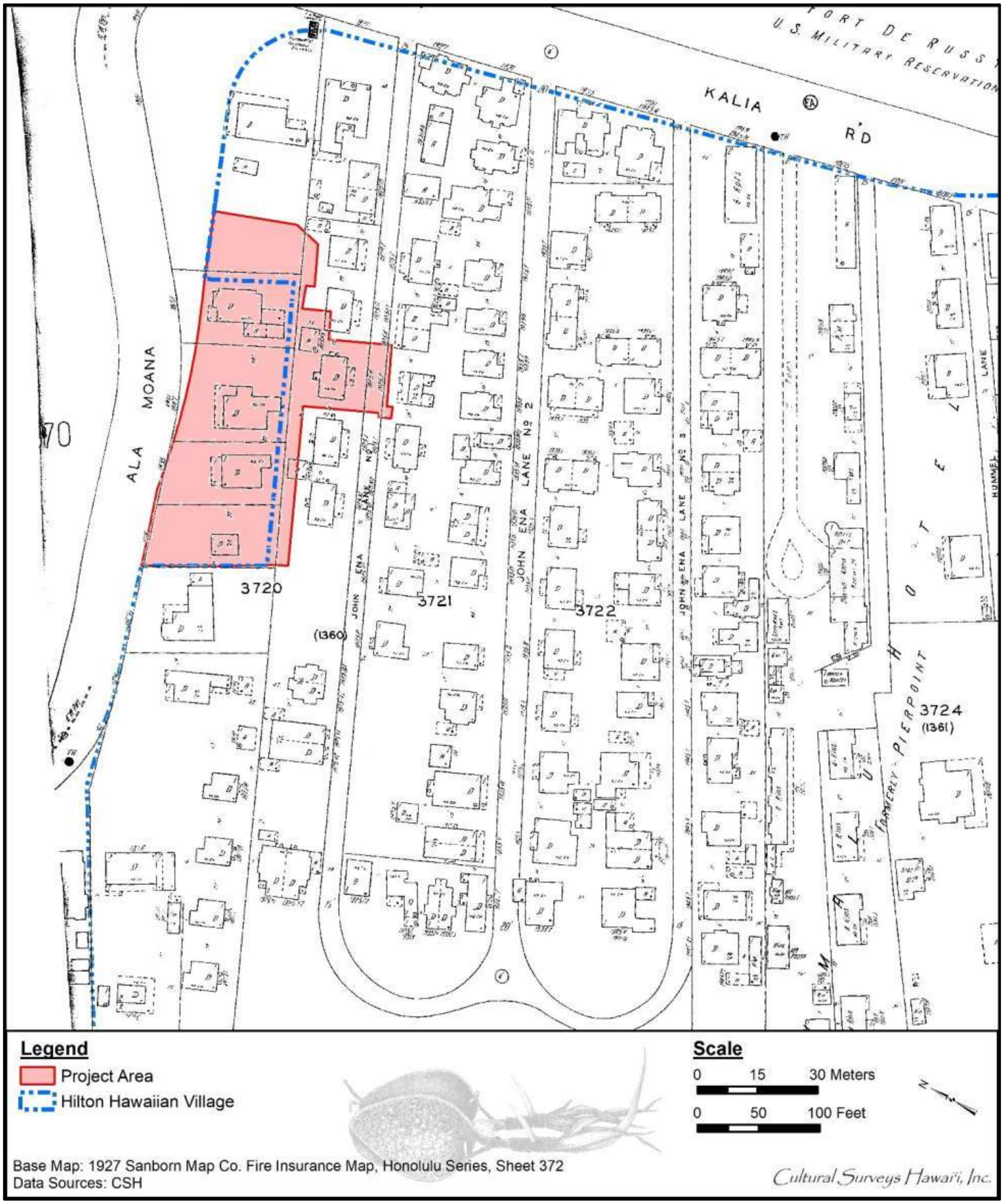

Figure 20. 1927 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 372, showing dwellings ("D") within Parcels 004–006 and 009

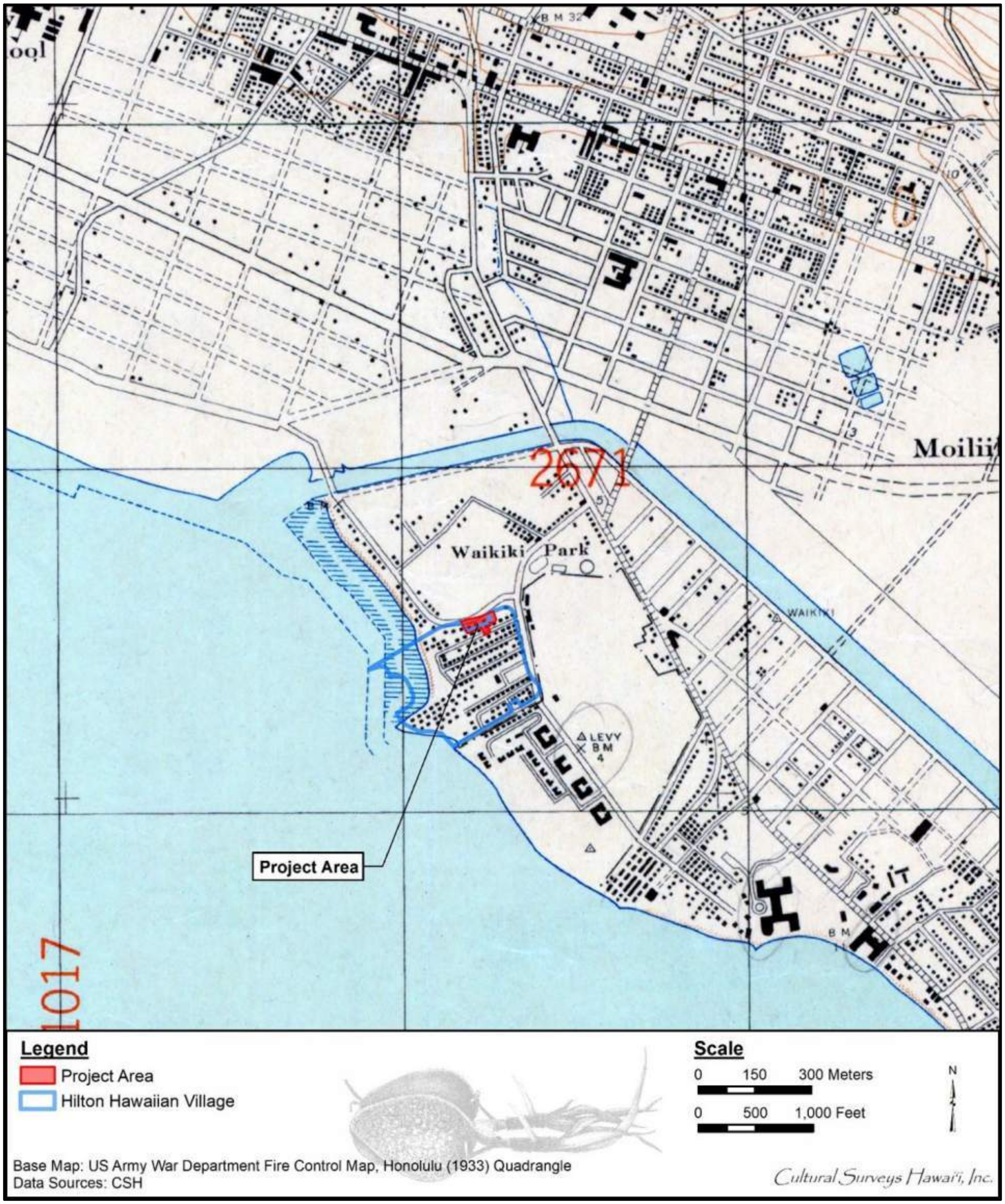

Figure 21. Portion of a 1933 U.S. Army War Department fire control map, Honolulu quadrangle, showing residential development within and surrounding the project area; note the Ala Wai Canal has been completed, and Piʻinaio Stream has been filled

By the mid-1950s, there were more than 50 hotels from the Kālia area to the Diamond Head end of Kapiʻolani Park. However, the Waikīkī population was not limited to transient tourists and included 11,000 permanent residents living in 4,000 single-family dwellings and apartments in stucco or frame buildings. A 1950 Sanborn map (Figure 22) indicates dwellings within all project area parcels, as well as an apartment building within Parcel 004. A 1954 aerial photograph (Figure 23) appears to show the same buildings as the 1950 map.

However, all of the dwellings in the southeastern portion of the project area (within Parcels 009 and 013) and one of the dwellings in Parcel 007 had been demolished by 1956 (Figure 24). In addition, a duplex within Parcel 004 had been replaced with an apartment building. A resort called "Hawaiian Village," owned by Henry J. Kaiser, had been established southeast of the project area; Conrad Hilton would purchase this hotel in 1961. The three buildings within Parcel 004 were renovated into the current layout in the 1980s (Figure 25).

By 1966 (Figure 26), the project area has been asphalt paved. The modern shoreline, including the Hilton lagoon, can be seen on a 1966 aerial photograph and a 1969 map (see Figure 26 and Figure 27). The Kobe Steakhouse building within Parcel 006 is also visible on the 1966 aerial photograph. The last decades of the twentieth century up to the present day saw the development of the HHV campus into its current configuration and the transition of land use within the project area from residential to commercial.

3.3 Archaeological and Historic Properties

A discussion of previously identified archaeological resources in the project area vicinity is included in this CIA to inform understandings of land and local communities from the initial Hawaiian discovery and settlement of the islands through the historic era, and to provide additional context for the historic documentation, traditional cultural practices, and oral histories associated with the project area and vicinity.

Previous archaeological studies within and adjacent to the project area show abundant remnants of past historical land use, including artifacts and features from the mid-1800s through the mid-1900s. Two previously identified historic properties are partially within the current project area: SIHP #s -2870 and -6399. SIHP # -2870 comprises historical cultural layers with associated features and human remains; its interpolated boundaries extend into the southeastern portion of the current project area. SIHP # -6399 comprises five features, three of which are within the southern portion of the current project area; these comprise a pit of indeterminate function, a post-Contact refuse pit, and a latrine or refuse pit.

Archaeological historic properties (orange polygons) and burial sites (red triangles) documented during these studies are shown in Figure 28 and summarized in Table 1.

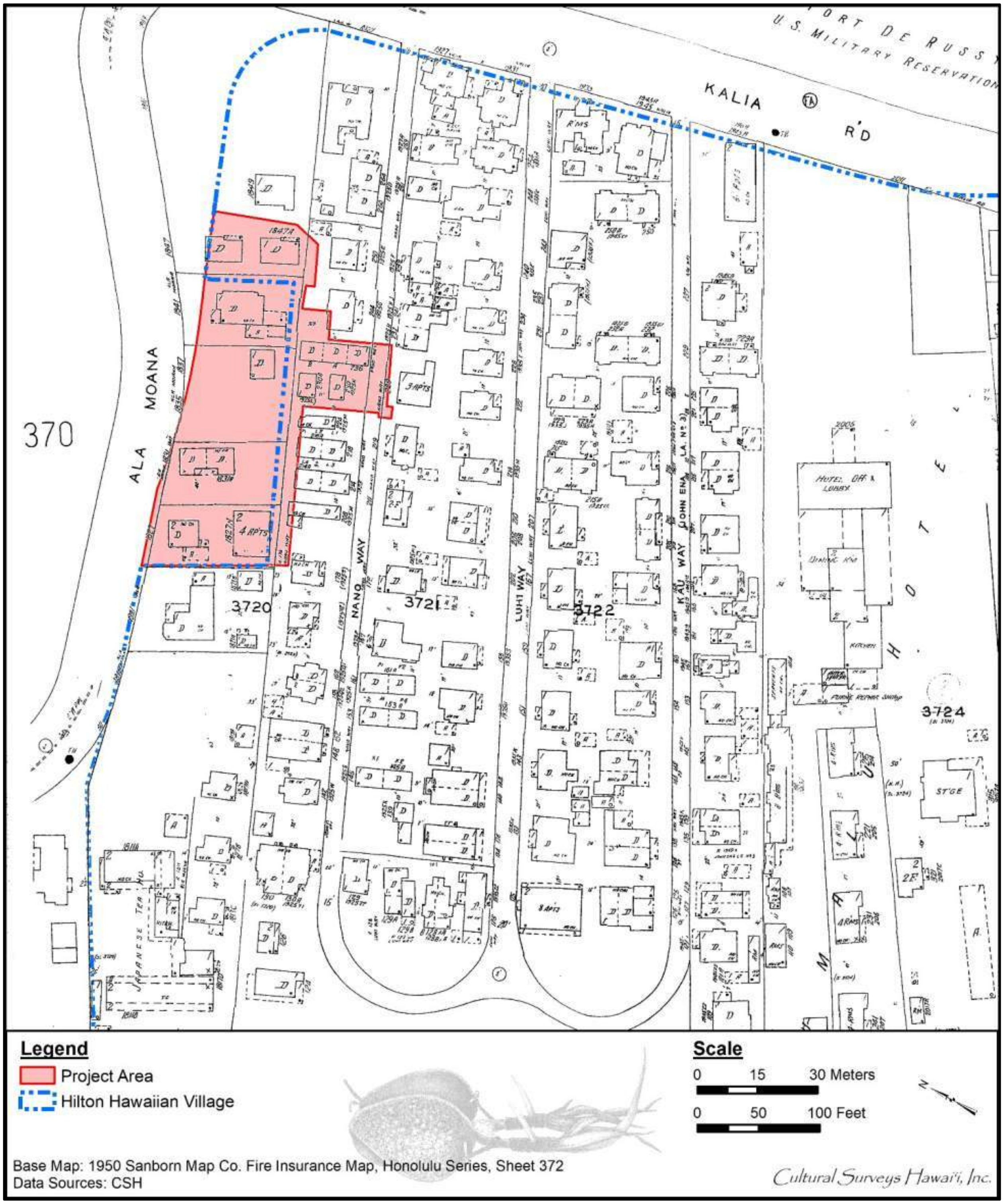

Figure 22. 1950 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 372, showing dwellings ("D") and/or apartment buildings ("APTS") within all project area parcels; some have adjacent garages or car ports ("A")

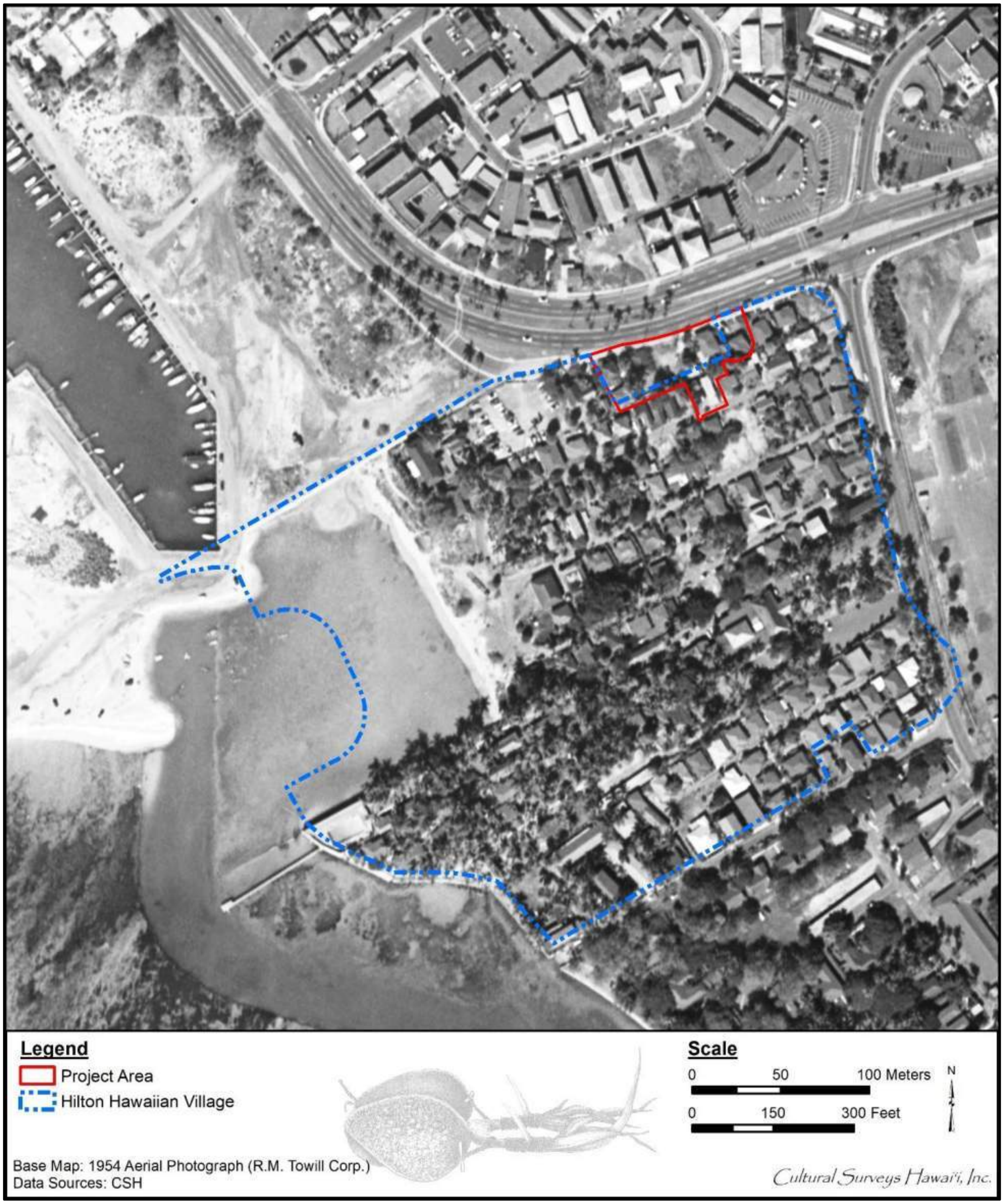

Figure 23. 1954 RM Towill aerial photograph of the project area; the buildings within the project area appear to be consistent with those shown on the 1950 Sanborn map (see Figure 22 above)

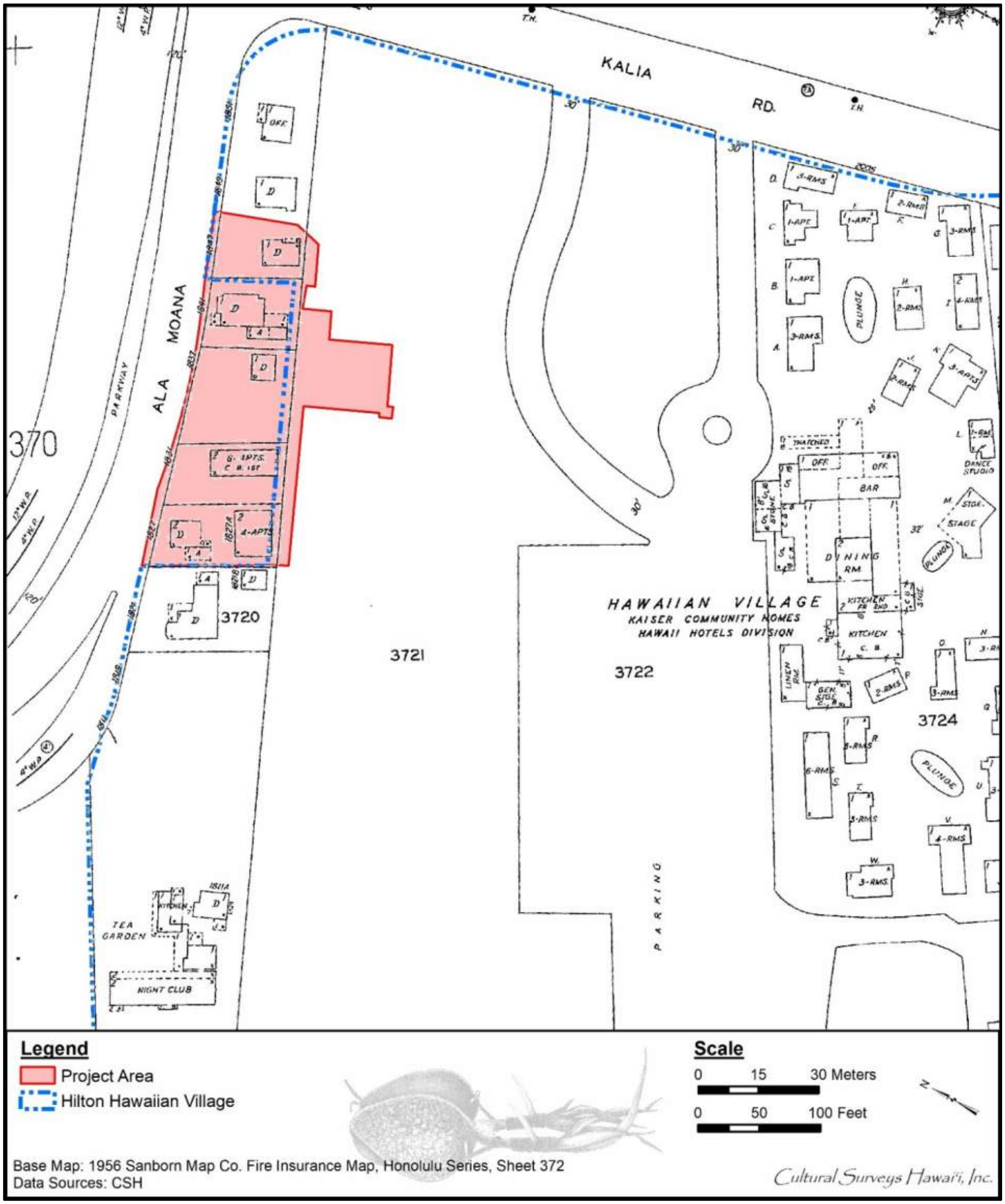

Figure 24. 1956 Sanborn Map Company Fire Insurance Map, Honolulu Series, Sheet 372, showing that all of the dwellings in the southeastern portion of the project area have been demolished; the "Hawaiian Village" hotel southeast of the project area would later be purchased by Conrad Hilton

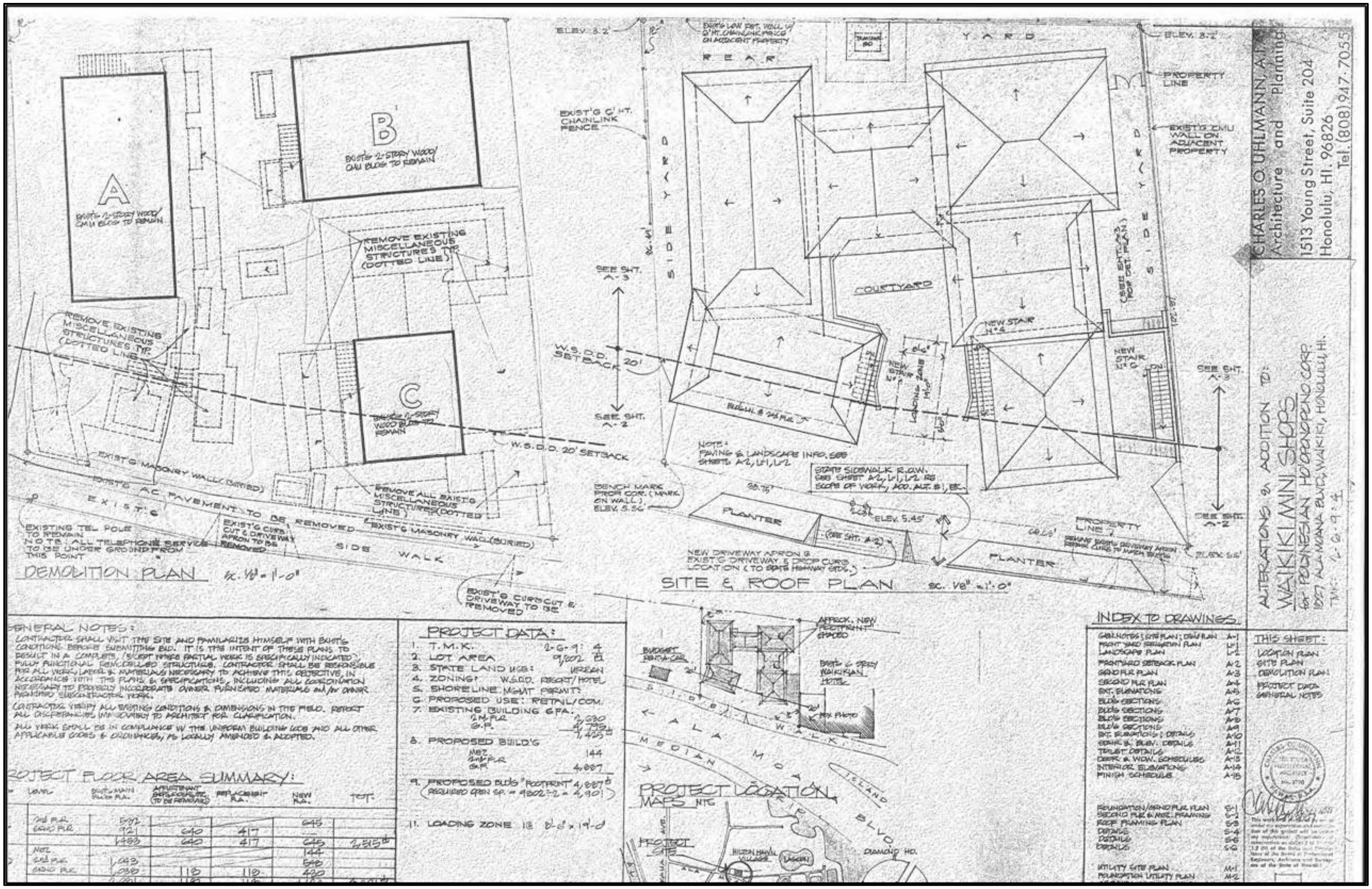

Figure 25. 1987 demolition plan for Parcel 004, showing the three buildings (labeled A–C, on left) that were renovated into the present layout of the Waikīkī Mini Shops (on right) (figure provided by G70)

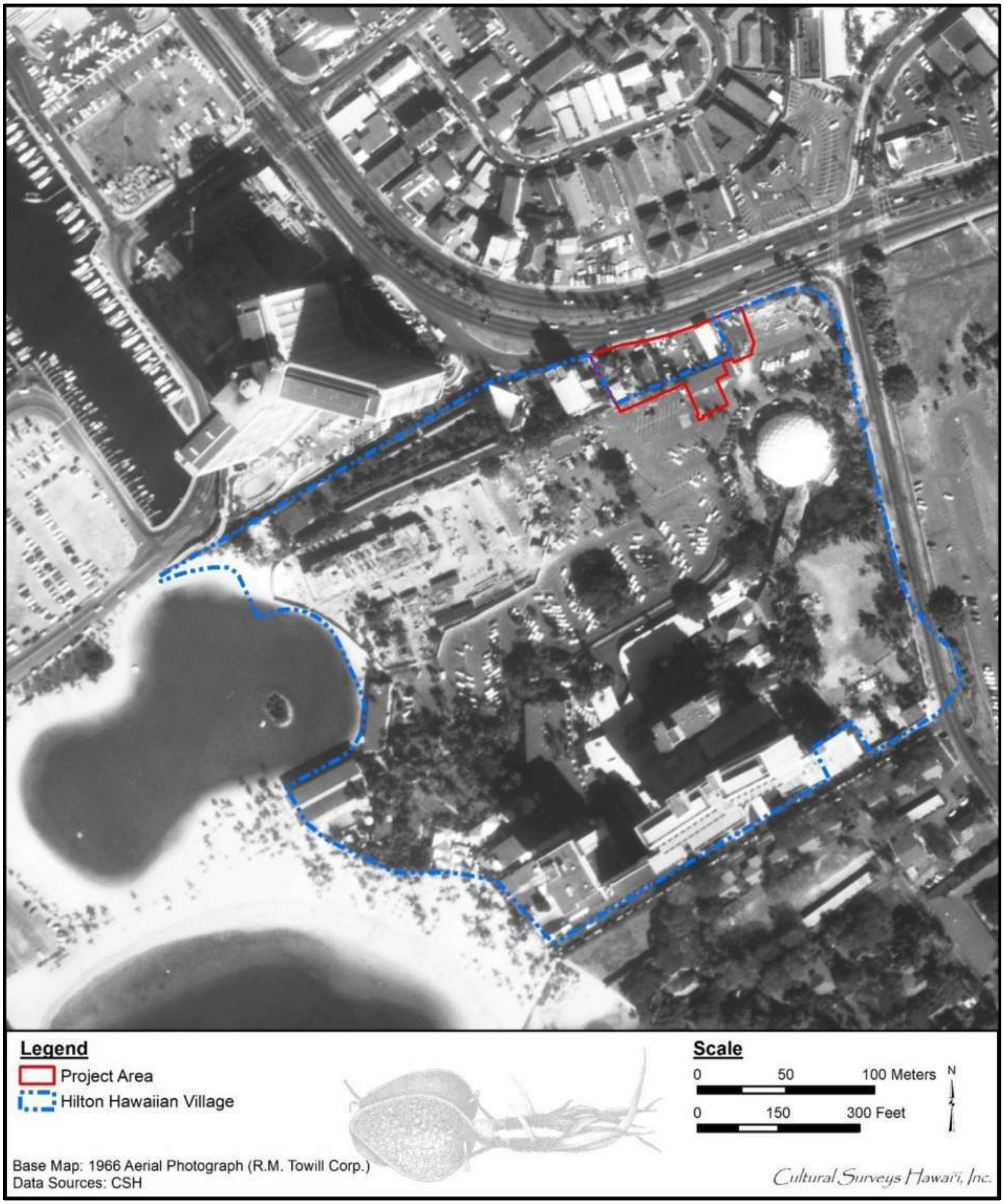

Figure 26. 1966 RM Towill aerial photograph showing the project area has been asphalt paved; note the modern shoreline, including Hilton Lagoon, is present

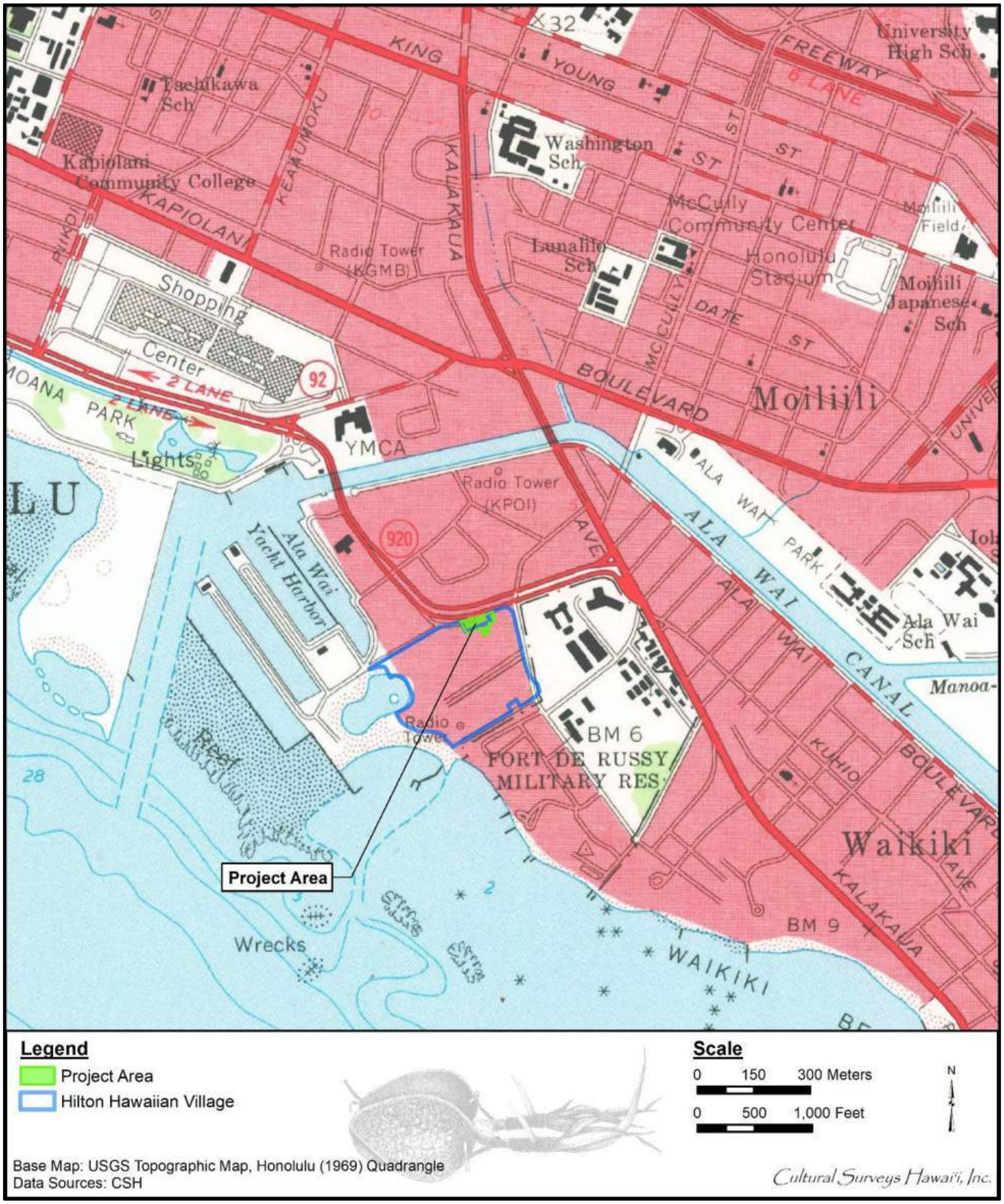

Figure 27. Portion of the 1969 Honolulu USGS topographic quadrangle showing the project area and modern shoreline

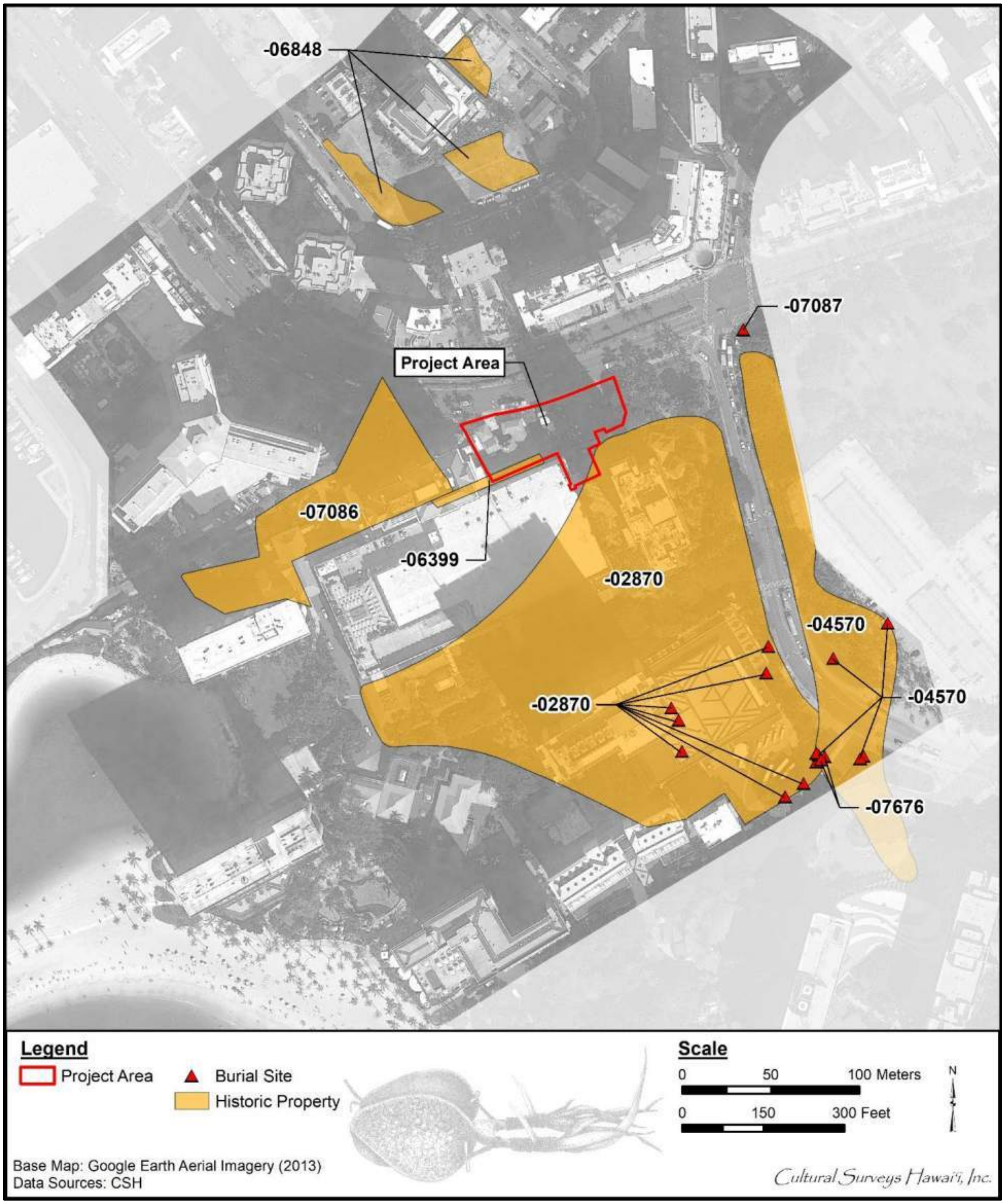

Figure 28. 2013 Google Earth aerial imagery with overlay of historic properties within and in the vicinity of the project area

3.3.1 Discussion and Overview of Archaeological Historic Properties in the Project Area Vicinity

Table 1. Archaeological historic properties in the project area vicinity

State Inventory of Historic Places (SIHP) Number	Type	Significance	Reference
50-80-14-2870	Burials, subsurface features	Burials 1–3, historic Native Hawaiian burials, and Feas. 1–3, filled pits, trenches, and/or ditch (Neller 1980); 15 subsurface features including 11 historic pits (Hurlbett et al. 1992); buried A horizon; no associated features identified (Tulchin et al. 2011); Fea. 4, pit feature (Yucha and Hammatt 2014); Feas. 8–26, including four inadvertent discoveries of human skeletal remains (Sroat et al. 2019 [draft]; Fea. 5, bottle concentration, and Fea. 6, trash pit (Krause et al. 2022). The interpolated boundaries of this historic property extend into the southeast portion of the current project area	Neller 1980; Hurlbett et al. 1992; Tulchin et al. 2011; Yucha and Hammatt 2014; Sroat et al. 2019 (draft); Krause et al. 2022
50-80-14-4570	Burials, subsurface features	Fea. 8, 27–34 individuals in a common pit (Carlson et al. 1994); historic trash pit, four fire pits, an ash lens, and an unknown number of human burials (Denham and Pantaleo 1997); Fea. 12, partial human burial (Yucha and Hammatt 2014)	Carlson et al. 1994; Denham and Pantaleo 1997; Yucha and Hammatt 2014

50-80-14-4574	Burials, subsurface features	Fishpond deposits (Loko Paweo I), three historic trash pits, and two human burials	Denham and Pantaleo 1997
50-80-14-4966	Burials, subsurface features	Traditional Hawaiian features and burials (MNI = 5) in the DH portion of Fort DeRussy; note SIHP # -4966 is outside area shown in Figure 28	Denham and Pantaleo 1997
50-80-14-6399	Historical archaeological features	Five features including refuse pits, a probable latrine or privy, and a fire pit; three of these, Features 1–3, are within the current project area.	Putzi and Cleghorn 2002
50-80-14-6848	Subsurface features	Firepit	O’Hare et al. 2006
50-80-14-7086	Historic trash feature	Historic trash feature complex along north side of the HHV campus	Mooney et al. 2009
50-80-14-7087	Burials	Disturbed human burial near the intersection of Kālia Rd and Ala Moana Blvd	Mooney et al. 2009
50-80-14-7676	Burials	Three areas of previously disturbed fragmented human remains (SIHP # -7676 Features A–C)	Yucha and Hammatt 2014
No SIHP #	Historical archaeological features	Remnants of Loko Kaipuni fishpond complex also documented along Ala Moana Boulevard and Kalākaua Avenue and a basalt alignment of indeterminate age	Putzi and Cleghorn 2002

Section 4 Consultation Results

4.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with NHO, agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupuaʻa* of Waikīkī. CSH initiated its outreach effort in January 2022 through letters, emails, and/or telephone calls. CSH completed the community consultation in August 2022.

4.2 Community Outreach Letter

Letters along with maps and aerial photographs (Appendix A) of the project areas were mailed with the following text:

> *Aloha mai kāua*,
>
> With this letter, Cultural Surveys Hawaiʻi (CSH) humbly requests your *manaʻo* and *ʻike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within the Waikīkī Ahupuaʻa.
>
> Consultation with traditional cultural practitioners, *kūpuna*, *kamaʻāina*, and Hawaiʻi's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawaiʻi. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawaiʻi's children of their history for generations to come.
>
> Project Description
>
> At the request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc., CSH is conducting a cultural impact assessment (CIA) for the Ala Moana Boulevard (AMB) Tower project, to be added to the Hilton Hawaiian Village Campus, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013. Located along Ala Moana Boulevard and the northern boundary of the Hilton Hawaiian Village (HHV) campus, these parcels are currently utilized as follows:
>
> - Parcel 004: ABC Store and other commercial shops and restaurants
> - Parcel 005: Paradise Rent-a-Car
> - Parcel 006: vacant restaurant building
> - Portions of Parcels 007, 009, and 013: adjacent landscaped and paved areas, part of the HHV Campus
>
> The project area is bounded to the north by Ala Moana Boulevard, to the southeast by HHV's Kālia Tower, to the southwest by HHV's parking structure, and to the west by HHV's Grand Waikikian Tower. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and 2013 and 2020 aerial

photographs (Figure 3 and Figure 4). A utility corridor (including a gas line, electrical duct bank, water line, storm drain, and telephone cable) is within the adjacent portions of TMK parcels 007, 009, and 013 (Figure 5).

Construction of a new resort tower will involve the demolition of existing buildings and structures. Associated ground disturbance will include structural footing installation, utility installation, and landscaping. Surface grading may be required for roadway improvements and parking area installation. As is common with urban redevelopment projects, project construction could extend a short way into adjacent sidewalks and streets that are outside the HHV Campus property, for example for utility connections.

Purpose of this Study

The purpose of a CIA is to gather information on Hawai‘i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and the Waikīkī Ahupua‘a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts of the proposed project on the specific identified resources, practices, and beliefs in the project area and throughout the Waikīkī Ahupua‘a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to appropriately respect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figures 1 through 5) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and the Waikīkī Ahupua‘a
- Your specific traditional cultural practice and its connection to the proposed project area and the Waikīkī Ahupua‘a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and the Waikīkī Ahupua‘a
- Referrals to other *kūpuna*, *kama‘āina*, and traditional cultural practitioners knowledgeable about the proposed project area and the Waikīkī Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and the Waikīkī Ahupua‘a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and the Waikīkī Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and the Waikīkī Ahupua‘a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area and will be part of the public record. The study will be included as an appendix to the project's Supplemental Environmental Impact Statement (SEIS) which is being prepared for the proposed project; the SEIS and CIA will be available for future access through the State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP) (https://planning.hawaii.gov/erp) and at the State Historic Preservation Division Library (https://dlnr.hawaii.gov/shpd/about/research-resources-library).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that should be considered in assessing the impacts of proposed future projects. If you engage in consultation, and the mana‘o and ‘ike you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together: talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms.

Your knowledge of the resources and potential effects of the project on traditional practices in the project area and the Waikīkī Ahupua‘a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage for your written statement on request.

CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

If you have questions regarding consultation, or are interested in participating in this study, please contact […].

Mahalo nui loa for your time and attention to this request for consultation.

4.3 Community Outreach Table

Table 2. Community Outreach Table

Name	Affiliation	Comments
Barr, Winifred "Niniaulani"	*Kama‘āina* of Kālia; Harbottle Descendant	CSH reached out via email 26 January 2022 CSH called 17 February 2022: *Ms. Barr said she will return phone call when she has time*. Letter and Figures sent via email 22 February 2022 Followed up 4 April 2022 Ms. Barr called CSH 25 May 2022

		Summary of interview sent for review 26 May 2022 Summary approved 2 August 2022 (See Appendix C)
Brown, Desoto	Bishop Museum Archivist Specializes in 20th century Waikīkī, Waikīkī developing for tourists	Letter and Figures sent via USPS 18 February 2022 Letter and Figures sent via email 22 February 2022 Krystal Kakimoto replied on behalf of Bishop Museum Archives via email on 22 February 2022 and provided links to Bishop Museum's archives online catalog, HEN collection, and archaeological databases. CSH replied via email 22 February 2022
Finley, Robert J.	Chair, Waikīkī Neighborhood Board No. 9	Letter and Figures sent via USPS 18 February 2022 Letter and Figures sent via email 22 February 2022 Mr. Finley forwarded letter and figures to other board members 22 February 2022
Norman, Carolyn "Keala"	Cultural Descendant	Letter and Figures sent via USPS 18 February 2022 Letter and Figures sent via email 22 February 2022 Ms. Norman replied via email: 22 February 2022 CSH replied via email 22 February 2022 Ms. Norman submitted written testimony 14 March 2022 (See Appendix C)
Paoa, Robert "Clarke"	*Kamaʻāina* of Kālia	Mr. Paoa emailed CSH 26 January 2022 Phone interview conducted 26 January 2022 Interview summary sent for review 14 February 2022 Interview summary approved 16 February 2022 (See Appendix C)
Sanders, Malia	Director, Native Hawaiian Hospitality Association (NAHHA)	Letter and Figures sent via USPS 18 February 2022 Letter and Figures sent via email 22 February 2022 Letter and Figures sent via email 1 April 2022 NAHHA replied via email 1 April 2022 recommending CSH reach out to Peter Young and Joe Recca Letter and Figures sent to Peter Young via email 22 February 2022 and 1 April 2022 Letter and Figures sent to Joe Recca via USPS 18 February 2022 and 31 March 2022 CSH replied to NAHHA via email 1 April 2022

4.4 Kamaʻāina Interview Discussions

4.4.1 Robert Paoa

4.4.1.1 Interview synthesis (biographical data, broad discussion of interview topics covered and insights offered)

On 26 January 2022, CSH spoke with Mr. Robert Clarke Kauhiwai Paoa via telephone to discuss the CIA for the Ala Moana Boulevard (AMB) Tower project and his experiences growing up in the *ahupua'a* of Waikīkī and the *'ili* of Kālia. A summary of Mr. Paoa's interview is included in Appendix C.

Mr. Paoa was born on 5 October 1937 to Malcolm H. Paoa and Ellen Clarke Paoa. He was born in Kālia in a cottage that was built by his maternal grandfather, Robert F. Clarke, in 1920. The cottage was located on the site of the present 'Ilikai Hotel. From 1940 through 1968, Mr. Paoa lived in Kālia at 1841 Ala Moana Boulevard, the site of the Kobe Steakhouse.

Mr. Paoa provided CSH with the history of his *'ohana* and their lands in Kālia which was originally awarded to his great grandfather, Paoa, in 1852 during the Māhele. The land was initially given to Paoa "by his mother, Makuahine who was given the land by a sibling named Nali'ikipi which came about through the Kuhina Nui, Kina'u." For Mr. Paoa's full statement on his *'ohana* and their lands in Kālia, see Appendix C.

Mr. Paoa also recommended researching a book titled *Talking Hawai'i's Story: Oral Histories of Island People*, which includes an interview with his uncle, Fred Ho'olae Paoa, who was interviewed by Warren Nishimoto for the University of Hawai'i Center for Oral Histories (UHCOH) in 1985 (Kodama-Nishimoto et al. 2009:211–215). The UHCOH also interviewed Mr. Paoa's aunts, Mary Ellen Kealohapau'ole (Paoa) Clarke in 1985 (Mary Clarke in UHCOH 1985:2:633–664) and Adelaide Keli'ihoalani Ka'ai McKinzie in 1986 (Adelaide McKinzie in UHCOH 1985:3:1151–1209). In their interviews with UHCOH, Fred Ho'olae Paoa, Mary Clarke, and Adelaide McKinzie describe growing up in Kālia and the abundance of marine resources that were available prior to the construction of the Ala Wai Canal.

4.4.1.2 Individual's knowledge of traditional cultural practices of the past within the proposed project area and greater *ahupua'a* (e.g., gathering, agriculture, Hawaiian herbal medicine, marine and freshwater resources)

4.4.1.2.1 Marine Resources

Mr. Paoa described the abundance of marine resources that were once available in Kālia. Mr. Paoa noted that the area was abundant with *kala* (Unicorn surgeon fish, *Naso brevirostris*) and mullet (*Mugil cephalus*). He recalled that many people would fish off-shore. He mentioned that his uncle, Fred Ho'olae Paoa, used to go fishing with his father, Henry Ho'olae Paoa, a well-known fisherman who had his own canoes and fishing gear. Fred Ho'olae Paoa mentioned that his father caught "kala, mullets, weke [goatfish; *Mullidae*], et cetera" and also went diving on the weekends for "uhus [parrot fish; *Scarus perspicillatus*], kūmūs [goatfish; *Parupeneus porphyreus*], oh, big fishes" (Fred Ho'olae Paoa in Kodama-Nishimoto et al. 2009:211–212). Ms. Clarke also mentioned that the area was abundant with *akule* (*Trachurops crumenophthalmus*) (Mary Clarke in UHCOH 1985:2:638). She also recalled that her father has "a big fishing stone his father gave him" (Mary Clarke in UHCOH 1985:2:638).

Mr. Paoa noted that back then people did not overfish, they only took what they needed. Fred Ho'olae Paoa also noted that "the custom in those days for the neighbors to share their catch with their relatives and friends" (Fred Ho'olae Paoa in Kodama-Nishimoto et al. 2009:211–212).

Mr. Paoa recalled observing mantis shrimp (*Stomatopod*) and *'alamihi* crab in the Hilton Hawaiian Village's lagoon when it was still open to the ocean. Mr. Paoa and Ms. McKinzie noted that Kālia was famous for the *'alamihi* crabs (Adelaide McKinzie in UHCOH 1985:3:1181).

Mr. Paoa and Fred Hoʻolae Paoa also mentioned that prior to the dredging of the Ala Wai Canal in the 1920s, Piʻināiʻo Stream was full of *ʻōpae* (shrimp) and *ʻoʻopu* (Hawaiian freshwater goby; *Lentipes concolor*) (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213). Fred Hoʻolae Paoa also recalled using *ʻoʻopu* as bait to fish for *pāpio* (young stage of growth of *ulua*; *Caranx ignobilis*) (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213). Mr. Paoa also noted that duck farmers were raising ducks farther up Piʻināiʻo Stream.

Mr. Paoa recalled that the shoreline along Kālia was also abundant with *limu*. He mentioned that following Kona storms when the wind and rain would break up the *limu līpoa*, the whole area would smell like *līpoa*. He also stated that gathering *limu* was "a kind of social thing where the woman would get together and talk story." He recalled that "several aunties used to go to gather *limu* just off the present [Hilton] Hawaiian Village" and they would bring the *limu* "near the shore where the women would spend time cleaning it."

Ms. Clarke also recalled her mother would "go out and get all different kind of limu. They had all different varieties. There was a green limu. You know, seaweed, flat" (Mary Clarke in UHCOH 1985:2:646). She also mentioned that her mother also caught *manini* (*Acanthurus triostegus*), squid, and crabs (Mary Clarke in UHCOH 1985:2:646).

Ms. McKinzie mentioned that Kālia was famous for *limu ʻeleʻele* (*Enteromorpha prolifera*). Fred Hoʻolae Paoa also recalled gathering "all these different types of limu" offshore of Fort DeRussy and Pierpoint (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213). He also mentioned that there were a "lot of wana [sea urchin; *Diadema paucispinum* and *Echinothrix diadema*] out there, just inside the reef" (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213).

Mr. Paoa, Fred Hoʻolae Paoa, Ms. Clarke, and Ms. McKinzie discussed the impact on marine resources following the construction of the Ala Wai Canal. Mr. Paoa stated that following the construction of the Ala Wai Canal, dredged coral was used to fill areas including Piʻināiʻo Stream and the numerous *loko iʻa* in Kālia. Ms. McKinzie mentioned there was an abundance of "big cowry shells" in areas where coral fill was deposited. She recalled, "all the shells would come in, beautiful shapes. The place would be packed full of people looking for shells" (Adelaide McKinzie in UHCOH 1985:3:1182).

Fred Hoʻolae Paoa recalled gathering clams "[j]ust off the shoreline at low tide" prior to the dredging of the area (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213). Ms. Clarke also mentioned that prior to the construction of the Ala Wai Canal, she gathered clams and *limu* along the beach where Kaiser Hospital is now located (Mary Clarke in UHCOH 1985:2:653).

Ms. Clarke noted that "place was loaded with squid, you know. But after the canal, no more" (Mary Clarke in UHCOH 1985:2:652). She also recalled that the area along the front of the ʻIlikai Hotel was "[f]illed with crabs," but, "[t]oday, nothing" (Mary Clarke in UHCOH 1985:2:653).

4.4.1.2.2 Recreational Activities

Mr. Paoa recalled swimming in the ocean around the pier near the former Niumalu Hotel which was located where the Hilton Hawaiian Village is now. Ms. McKinzie also swam at the pier fronting the Niumalu Hotel which she referred to the pier as "Cassidy pier" (Adelaide McKinzie in UHCOH 1985:3:1180). She also swam at the beach fronting Prince Kūhiō's home which is now known as Kūhiō Beach (Adelaide McKinzie in UHCOH 1985:3:1176). She also swam in the area across Kapiʻolani Park where there were homes along the beach. Ms. Clarke also recalled learning to swim in the ocean near their home in Kālia (Mary Clarke in UHCOH 1985:2:635).

Fred Hoʻolae Paoa recalled surfing in Waikīkī. He also mentioned playing "surfboard polo" which he described as "like water polo, except you're on a surfboard" (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:214). He also earned money "teaching surfboard lessons, swimming lessons, ʻukulele [lessons]" to tourists (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:215).

4.4.1.3 Individual's knowledge of cultural sites and *wahi pana* within the proposed project area and greater *ahupuaʻa*

Mr. Paoa stated that, "In 1951, The Territorial Highway Dept. condemned a large section of the Paoa property for widening of Ala Moana Rd. This action reduced the land significantly." He recalled that during the widening of Ala Moana Boulevard, road crews encountered *iwi kupuna* fronting their home. He noted that "the bones were reburied where they were found."

4.4.2 Keala Norman

4.4.2.1 Interview synthesis (biographical data, broad discussion of interview topics covered and insights offered)

On 14 March 2022, Keala Norman provided CSH with written testimony regarding the CIA for the Ala Moana Boulevard (AMB) Tower project. Ms. Norman discussed her *ʻohana*'s "direct ties and connection" to Kālia, Waikīkī and shared *moʻolelo* that have been passed down from her mother, Kahili Keaweamahi Kawainui Norman, and grandmother, Alice Keaweamahi. Ms. Norman's testimony is included in it's entirety in Appendix C.

Ms. Norman's *ʻohana* has "blood ties to O'ahu prior to Kamehameha's rule over all the islands." Her *kūpuna* has LCAs throughout Oʻahu including Waikīkī, Kou (Honolulu), and Kalihi. Ms. Norman's "great, great, great grandfather was part of Kamehameha's entourage." When Kamehameha moved to Oʻahu, Ms. Norman's great, great, great grandfather and his *ʻohana* settled in Kālia, Waikīkī. Ms. Norman's "great grandfather, grandmother, and mother along with my mother's siblings, Kimo, Napua, Frankie, Nancy, Abraham, Sharleen, and Michael were born and raised in Kalia, Waikiki."

4.4.2.2 Individual's knowledge of traditional cultural practices of the past within the proposed project area and greater *ahupuaʻa* (e.g., gathering, agriculture, Hawaiian herbal medicine, marine and freshwater resources)

4.4.2.2.1 Lāʻau Lapaʻau

Ms. Norman's great grandfather, "Steamboat" Bill Keaweamahi was the first lifeguard of Waikīkī. He was given the nickname "Steamboat" because he was a "fast swimmer, like a steamboat." As a lifeguard, Tutu Steamboat patrolled the area between "where the Ilikai hotel is located to Kaimana beach" and is "said to have saved many lives." Ms. Norman noted that Tutu Steamboat was a practitioner of Laʻau Kahea (a type of faith healing of broken or crushed bones or sprains) and *lomilomi* (massage) which he used to "help save some people's lives on the beach."

Ms. Norman also recalled that her grandmother would recommend swimming in the ocean at Waikīkī when they were sick because "she said that the ocean is healing."

4.4.2.2.2 Recreational Activities

Tutu Steamboat was also the “eldest of the very first group of the famous ‘Waikiki Beach Boys.’” His younger brother, Tough Bill Keaweamahi, was also a “well-known Waikiki Beach Boy.” Tutu Steamboat and his brothers were involved in Hui Nalu O Hawai‘i Canoe Club at it’s inception. Ms. Norman noted that, “Hui Nalu was first a swim and surf club that all the Keaweamahi brothers, 4 of them and the Kahanamoku brothers, 4 or 5 of them were a part of. They all competed in swim meets and surf meets and then later canoe paddling regattas.” Ms. Norman’s mother, Kahili, and some of her siblings also paddled for Hui Nalu. Canoes have been named after the Keaweamahi and Paoa *‘ohanas*. Duke Kahanamoku’s mother was a Paoa and the Kahanamoku’s lived on *‘āina* which belonged to the Paoa ‘Ohana.

Ms. Norman mentioned that Princess Ka‘iulani attended a *lu‘au* (feast) celebrating Tutu Steamboat’s first birthday. She stated, “The Princess gave my great grandfather a mug made entirely of silver for his birthday. On the mug the Princess engraved my great grandfather’s name and saying that it was given to him from Princess Ka’iulani.” Ms. Norman also noted that, “Princess Ka‘iulani used to ride her horse back and forth on the shores of Waikiki” and her Tutu Steamboat recalled seeing “the ghost of Ka’iulani riding her horse on the beach” when he was a lifeguard. Ms. Norman also mentioned that “Prince David Kalakaua Kawananakoa, the son of Prince David La’amea Kawananakoa used to frequently visit my Tutu and his brothers.”

4.4.2.2.3 Marine Resources

Tutu Steamboat fished and gathered *limu* in Waikīkī. Ms. Norman’s mother remembered “walking down to the beach with her mother and Aunties to gather limu for lunch and dinner.” She pointed out that, “Back then the limu was abundant and clean.” She also mentioned “seeing and passing the Kahanamoku’s house on the way to the beach” and recalled “how they used to throw rocks at the dates on the date [*Phoenix dactylifera*] trees that once lined the street in the now Fort DeRussy area to eat as a snack on their way home from the beach.”

4.4.2.3 Individual’s knowledge of cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a*

Ms. Norman mentioned that her Tutu Steamboat and Tutu Tough Bill’s ashes have been “scattered in the waters off Waikiki, the sands of their birth, one hanau.”

4.4.3 Winifred “Niniaulani” Barr

4.4.3.1 Interview synthesis (biographical data, broad discussion of interview topics covered and insights offered)

On 25 May 2022, CSH spoke with Winifred “Niniaulani” Barr via telephone to discuss the CIA for the Ala Moana Boulevard (AMB) Tower project and her experience growing up in Kālia and Waikīkī. Ms. Barr retired as an Administrative Assistant after 20 years of service in the Deans office of the Shidler College of Business at University of Hawai‘i at Mānoa (UHM). Currently, she is the Program Coordinator with the Osher Lifelong Learning Institute at UHM (OLLI-UHM). OLLI-UHM is a “member-based learning community of adults age 50+” that offers “non-credit, college-level courses, workshops, lectures, events, and other activities to encourage older individuals to engage their minds, enrich their lives, and serve the community” (OLLI-UHM 2021). A summary of Ms. Barr’s interview is included in Appendix C.

Ms. Barr grew up in Kālia. When she was a child, she lived with her *'ohana*, the Harbottles, in one of the four homes her grandfather had on their property, which was located in the area that is now the HHV. Her grandfather had one son and eight daughters, including Ms. Barr's mother. Ms. Barr lived in Kālia until her early teens when her family leased their property to Henry J. Kaiser and moved to Kaimuki.

Ms. Barr described the landscape of the project area prior to the construction of the Hilton Hawaiian Village. She recalled that the area consisted of three lanes called 1st Lane, 2nd Lane, and 3rd Lane. She noted that the Paoa, Kahanamoku, and Harbottle 'Ohana lived on 1st Lane. She referred to the area as the "dog patch." Her Uncle Duke Kahanamoku's home was located "towards the beach" from her home. She also noted that the Niumalu Hotel was located where the HHV is currently located and there was a Japanese restaurant in the location where the Grand Waikikian Hotel is now.

Ms. Barr also discussed the abundance of marine resources that were available in the ocean off Kālia. She also mentioned that Waikīkī was a popular destination for the *ali'i*.

4.4.3.2 Individual's knowledge of traditional cultural practices of the past within the proposed project area and greater *ahupua'a* (e.g., gathering, agriculture, Hawaiian herbal medicine, marine and freshwater resources)

4.4.3.2.1 Marine Resources

Ms. Barr noted that prior to the construction of the HHV, there was no lagoon, it was open to the ocean. She remembered when her uncles would come home after fishing, they would clean and cook the fish they caught. After her *'ohana* moved away from Kālia, her cousins still went fishing every weekend in the area where the lagoon is.

Her *'ohana* also gathered *limu* along the shore. She noted that *limu manauea* (*Gracilaria coronopifolia*), also referred to as *ogo*, was abundant in the area. She mentioned that she enjoys eating *limu 'ele'ele* in stew, however, she noted that it was rare to find *limu 'ele'ele* in the area.

4.4.3.3 Individual's knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and greater *ahupua'a*

Ms. Barr also mentioned that the *ali'i* had homes and vacationed in the area of Waikīkī around Kapi'olani Park. She noted that the area is known as the "Gold Coast."

Section 5 Cultural Practices and Cultural Resources Identified During Consultation as Associated with the Project Area/ Greater *Ahupuaʻa*

5.1 Subsistence and Gathering

Interviewee Robert Paoa recalled that his *ʻohana* raised chickens and had a vegetable garden at their home. He also noted that duck farmers were raising ducks farther up Piʻinaio Stream.

In her interview with UHCOH (1985:3:1151–1209), Adelaide McKinzie also recalled her mother saying, "if you (went) visiting any family out there you'll hear pigs, dogs, chickens making noise, and ducks" (Adelaide McKinzie in UHCOH 1985:3:1184).

Keala Norman mentioned that the street near Fort DeRussy was lined with date trees. She also recalled that her mother "used to throw rocks at the dates […] to eat as a snack on their way home from the beach."

5.2 Marine Resources

Robert Paoa recalled that many people would fish off-shore. He noted that the area was abundant with *kala* and mullet.

In their interviews with UHCOH (Kodama-Nishimoto et al. 2009:211–215; UHCOH 1985:2:633–664; UHCOH 1985:3:1151–1209), Fred Hoʻolae Paoa, Mary Clarke, and Adelaide McKenzie also discussed the abundance of marine resources in Kālia. Fred Hoʻolae Paoa mentioned that his father, Henry Hoʻolae Paoa, caught *kala*, mullets, *weke*, *uhu*, and *kūmū* (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:211–212). Fred Hoʻolae Paoa also recalled catching *ʻoʻopu* which he used as bait to fish for *pāpio* (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213). Ms. Clarke also mentioned that the area was also abundant with *akule* (Mary Clarke in UHCOH 1985:2:638). She also noted that her mother caught *manini*, squid, and crabs (Mary Clarke in UHCOH 1985:2:646).

Ms. McKinzie mentioned that Kālia was famous for *ʻalamihi* crabs (Adelaide McKinzie in UHCOH 1985:3:1181). Mr. Paoa also recalled observing *ʻalamihi* crabs and mantis shrimp in the Hilton Hawaiian Village's lagoon when it was still open to the ocean.

Mr. Paoa also noted that the shoreline along Kālia was also abundant with *limu*. He mentioned that the whole area would smell like *līpoa* after Kona storms when the wind and rain would break up the *līpoa*. He also recalled that his aunties gathered *limu* "just off the present [Hilton] Hawaiian Village."

Fred Hoʻolae Paoa recalled gathering *limu* and *wana* offshore of Fort DeRussy and Pierpoint (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213).

Mary Clarke mentioned that her mother would "go out and get all different kind of limu. They had all different varieties" (Mary Clarke in UHCOH 1985:2:646).

Ms. McKinzie also noted that Kālia was famous for *limu ʻeleʻele* (Adelaide McKinzie in UHCOH 1985:3:1181).

Ms. Norman mentioned that her Tutu “Steamboat” Bill Keaweamahi fished and gathered *limu* in Waikīkī. Her mother also gathered *limu* with “her mother and Aunties.” She noted that *limu* was “abundant and clean.”

Mr. Paoa stated that following the construction of the Ala Wai Canal in the 1920s, the numerous *loko i‘a* in Kālia and Pi‘ināi‘o Stream were filled with dredged coral. He mentioned that prior to the dredging of the Ala Wai Canal, Pi‘ināi‘o Stream was full of *‘ōpae* and *‘o‘opu*.

Fred Ho‘olae Paoa recalled gathering clams “[j]ust off the shoreline at low tide” prior to the dredging of the area (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:213). Ms. Clarke mentioned that prior to the construction of the canal, she gathered clams and *limu* along the beach where Kaiser Hospital is now located (Mary Clarke in UHCOH 1985:2:653). She noted that “place was loaded with squid, you know. But after the canal, no more” (Mary Clarke in UHCOH 1985:2:652). She also recalled that the area along the front of the ‘Ilikai Hotel was “[f]illed with crabs,” but, “[t]oday, nothing” (Mary Clarke in UHCOH 1985:2:653).

Ms. McKinzie noted that there was an abundance of “big cowry shells” in areas where coral fill was deposited. She stated, “all the shells would come in, beautiful shapes. The place would be packed full of people looking for shells” (Adelaide McKinzie in UHCOH 1985:3:1182).

Ms. Barr recalled her uncles went fishing in the ocean where the HHV lagoon is now. She pointed out that that prior to the construction of the HHV, there was no lagoon, it was open to the ocean. When her uncles would come home after fishing, they would clean and cook the fish they caught. She also noted that after her *‘ohana* moved away from Kālia, her cousins still went fishing every weekend in the area where the lagoon is.

Ms. Barr also mentioned that her *‘ohana* also gathered *limu* along the shore. She noted that *limu manauea* was abundant in the area. *Limu manauea* is also known by the Japanese name *ogo*, She mentioned that she enjoys eating *limu ‘ele‘ele* in stew, however, she noted that it was rare to find *limu ‘ele‘ele* in the area.

5.3 Recreational Activities

Mr. Paoa and Ms. McKinzie recalled swimming in the ocean around the pier near the former Niumalu Hotel which was located where the Hilton Hawaiian Village is now. Ms. McKinzie referred to the pier as “Cassidy pier” (Adelaide McKinzie in UHCOH 1985:3:1180). She also swam at the beach which was fronting Prince Kūhiō’s home and the beach in the area across Kapi‘olani Park (Adelaide McKinzie in UHCOH 1985:3:1176). Ms. Clarke also recalled learning to swim in the ocean near their home in Kālia (Mary Clarke in UHCOH 1985:2:635).

Fred Ho‘olae Paoa recalled surfing and playing “surfboard polo” in Waikīkī. He described “surfboard polo” as “like water polo, except you’re on a surfboard” (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:214). He also taught “surfboard lessons, swimming lessons, ‘ukulele [lessons]” to tourists (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:215).

Tutu Steamboat and his younger brother, Tough Bill Keaweamahi, were part of the “Waikiki Beach Boys.” Tutu Steamboat, his brothers, along with the Kahanamoku brothers, were also involved in Hui Nalu O Hawai‘i Canoe Club. They also competed in “swim meets and surf meets and then later canoe paddling regattas.” Ms. Norman’s mother, Kahili, and some of her siblings also paddled for Hui Nalu. Canoes have been named after the Keaweamahi and Paoa *‘ohanas*. Ms.

Norman also noted that “I believe there are newer canoes named after our ohana still there on Waikiki beach being used today to take tourist out on rides.”

Ms. Norman also mentioned that, “Princess Ka‘iulani used to ride her horse back and forth on the shores of Waikiki.” Her Tutu Steamboat recalled seeing “the ghost of Ka’iulani riding her horse on the beach” when he was a lifeguard.

Ms. Barr mentioned that the area of Waikīkī around Kapi‘olani Park is known as the “Gold Coast.” She noted that the *ali‘i* had homes and vacationed in that area.

5.4 *Lā‘au Lapa‘au*

Ms. Norman’s Tutu Steamboat was the first lifeguard of Waikīkī. He patrolled the area between “where the Ilikai hotel is located to Kaimana beach” and is “said to have saved many lives.” Tutu Steamboat was a practitioner of La‘au Kahea and *lomilomi* which he used to “help save some people’s lives on the beach.”

Ms. Norman’s grandmother recommended swimming in the ocean at Waikīkī when they were sick because “she said that the ocean is healing.”

5.5 Burials

Mr. Paoa stated that road crews encountered *iwi kupuna* fronting their home (1841 Ala Moana Boulevard) during the widening of Ala Moana Boulevard in 1951. He noted that “the bones were reburied where they were found.”

Ms. Norman mentioned that her Tutu Steamboat and Tutu Tough Bill’s ashes have been “scattered in the waters off Waikiki, the sands of their birth, one hanau.”

Section 6 Summary and Recommendations

6.1 Summary of Cultural Practices and Resources Identified during Background Research and Consultation

6.1.1 Subsistence and Gathering

Located near the southeastern coast of O‘ahu and extending *mauka* toward the Ko‘olau Mountain Range, the *ahupua‘a* of Waikīkī traditionally was a center of chiefly residence, in addition to being a center of agricultural and aquacultural activities. Historic documents from the late eighteenth century are amongst the first written observations of the Waikīkī environment; included in these observations are notes on the area's agricultural and aquacultural practices. Captain George Vancouver, arriving at "Whyteete" in 1792, described the area in detail. His written observations provide key insight into the types of resource extraction occurring in Waikīkī during the early post-Contact period. He noted numerous, large villages, in "good repair" situated in an extremely fecund area. This area was "interspersed with deep, though not extensive valleys; which, with the plains near the sea-side, presented a high degree of cultivation and fertility" (Vancouver 1798:161).

A vast system of irrigated taro fields was constructed across the littoral plain from Waikīkī to the lower valleys of Mānoa and Pālolo in approximately AD 1400. This field system was an impressive feat of engineering, using a design traditionally attributed to the chief Kalamakua. It took advantage of streams descending from the valleys of Makiki, Mānoa, and Pālolo. The *lo‘i kalo* (irrigated taro patch), in combination with coconut groves and numerous fishponds along the Waikīkī shoreline, enabled the growth of a sizeable population.

Archibald Menzies (1920), a naturalist accompanying Vancouver's expedition, noted the numerous types of vegetation being collected as food resource. These edible plant foods (besides the aforementioned "eddo or taro root") included yams, *‘uala* (sweet potato; *Ipomoea batatas*) and *kapa* (identified by Menzies as the cloth plant). Menzies also noted the cultivation of *kō* (sugarcane) and *kī* (ti; (*Cordyline terminalis*) on the sloped banks associated with *lo‘i kalo* and *loko i‘a*.

The *‘ili* of Kālia was situated amidst the two most intensely populated and cultivated areas on southeastern O‘ahu—Waikīkī and Honolulu (or Kou). During pre-Contact times, Hawaiians used the lowland marshes, wetlands, salt pans, and coral reef flats for gathering *pili* (*Heteropogon contortus*) grass (Thrum 1922:639), salt making and farming of fishponds, in addition to limited wetland taro agriculture (Kotzebue 1817).

Previous archaeological studies (Neller 1980; Hurlbett et al. 1992; Carlson et al. 1994; Denham and Pantaleo 1997; Putzi and Cleghorn 2002; O'Hare et al. 2006; Mooney et al. 2009; Tulchin et al. 2011; Yucha and Hammatt 2014; Sroat et al. 2019 (draft); Krause et al. 2022) have documented pre- and post-Contact subsurface cultural layers, buried fishpond remnants, ditches, remains of extensive wetland agriculture, and trash pits within and in the vicinity of the project area.

Interviewee Robert Paoa recalled that his *‘ohana* raised chickens and had a vegetable garden at their home. In her interview with UHCOH (1985:3:1151–1209), Adelaide McKinzie also recalled her mother saying, “if you (went) visiting any family out there you’ll hear pigs, dogs, chickens making noise, and ducks” (Adelaide McKinzie in UHCOH 1985:3:1184).

Keala Norman mentioned that the street near Fort DeRussy was lined with date trees. She also recalled that her mother “used to throw rocks at the dates […] to eat as a snack on their way home from the beach.”

6.1.2 Marine Resources

Waikīkī was noted for its aquaculture. Menzies (1920) noted the numerous ponds within the Kālia portion of Waikīkī:

> Here and there we met with ponds of considerable size, and besides being well stocked with fish, they swarmed with water fowl of various kinds such as ducks, coots, water hens, bitterns, plovers and curlews. [Menzies 1920:23–24]

Historic maps and images depict numerous *loko i‘a* in Waikīkī. Historic documents describe Waikīkī having several hundred artificial freshwater ponds that extended a mile inland from the shoreline. Remnants of Loko Kaipuni fishpond complex (no SIHP #) and fishpond deposits associated with Loko Paweo I (50-80-14-4574) have been documented in the vicinity of the project area (Denham and Pantaleo 1997; Putzi and Cleghorn 2002).

Interviewee Robert Paoa stated that following the construction of the Ala Wai Canal in the 1920s, the numerous *loko i‘a* in Kālia and Pi‘ināi‘o Stream were filled with dredged coral. He mentioned that prior to the dredging of the Ala Wai Canal, Pi‘ināi‘o Stream was full of *‘ōpae* and *‘o‘opu*. He also noted that duck farmers were raising ducks farther up the stream.

Mr. Paoa recalled that many people would fish off-shore. He noted that the area was abundant with *kala* and mullet. He also recalled observing mantis shrimp and *‘alamihi* crab in the Hilton Hawaiian Village’s lagoon when it was still open to the ocean.

Ms. Barr also mentioned that prior to the construction of the HHV, there was no lagoon, it was open to the ocean. She recalled her uncles went fishing in the area and when they came home, they would clean and cook the fish they caught. She also mentioned that her cousins still went fishing every weekend in the area where the lagoon is after her *‘ohana* moved away from Kālia.

Mr. Paoa recalled that the shoreline along Kālia was also abundant with *limu*. He recalled that the whole area would smell like *līpoa* after Kona storms when the wind and rain would break up the *līpoa*. He mentioned that his aunties gathered *limu* “just off the present [Hilton] Hawaiian Village.”

In his interview with UHCOH (Kodama-Nishimoto et al. 2009:211–215), Fred Ho‘olae Paoa also discussed the abundance of marine resources in Kālia. He mentioned that his father, Henry Ho‘olae Paoa, caught *kala*, mullets, *weke*, *uhu*, and *kūmū* (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:211–212). He also noted “the custom in those days for the neighbors to share their catch with their relatives and friends” (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:211–212). Fred Ho‘olae Paoa also recalled using *‘o‘opu* as bait to fish for *pāpio* (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:213).

Fred Ho‘olae Paoa also recalled gathering “all these different types of limu” offshore of Fort DeRussy and Pierpoint (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:213). He also mentioned that there were a "lot of wana out there, just inside the reef" (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:213). He also recalled gathering clams "[j]ust off the shoreline at low tide" prior to the dredging of the area (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:213).

Ms. Barr also mentioned that her *‘ohana* also gathered *limu* along the shore. She noted that *limu manauea* was abundant in the area. *Limu manauea* is also known by the Japanese name *ogo*, She mentioned that she enjoys eating *limu ‘ele‘ele* in stew, however, she noted that it was rare to find *limu ‘ele‘ele* in the area.

In her interview with UHCOH (1985:2:633–664), Mary Clarke discussed the impacts on marine resources following the construction of the Ala Wai Canal. She mentioned that prior to the construction of the canal, she gathered clams and *limu* along the beach where Kaiser Hospital is now located (Mary Clarke in UHCOH 1985:2:653). She noted that "place was loaded with squid, you know. But after the canal, no more" (Mary Clarke in UHCOH 1985:2:652). She also recalled that the area along the front of the ‘Ilikai Hotel was "[f]illed with crabs," but, "[t]oday, nothing" (Mary Clarke in UHCOH 1985:2:653).

Ms. Clarke also mentioned that the area was also abundant with *akule* (Mary Clarke in UHCOH 1985:2:638). She recalled that her father, Henry Ho‘olae Paoa, had "a big fishing stone his father gave him" (Mary Clarke in UHCOH 1985:2:638). Her mother also caught *manini*, squid, and crabs and would "go out and get all different kind of limu. They had all different varieties." (Mary Clarke in UHCOH 1985:2:646).

Ms. McKinzie mentioned that Kālia was famous for *limu ‘ele‘ele* and *‘alamihi* crabs (Adelaide McKinzie in UHCOH 1985:3:1181). She also recalled that there was an abundance of "big cowry shells" in areas where coral fill was deposited following the dredging of the Ala Wai Canal. She stated, "all the shells would come in, beautiful shapes. The place would be packed full of people looking for shells" (Adelaide McKinzie in UHCOH 1985:3:1182).

Ms. Norman's Tutu "Steamboat" Bill Keaweamahi also fished and gathered *limu* in Waikīkī. Ms. Norman's mother mentioned that *limu* was "abundant and clean." She recalled "walking down to the beach with her mother and Aunties to gather limu for lunch and dinner."

6.1.3 Recreational Activities

The sport of *he‘e nalu* or surfing was well known at Waikīkī. Reverence for the sport is evidenced by the construction and dedication of Papa‘ena‘ena Heiau (a *po‘okanaka* class *heiau*). This *heiau* figured largely in the cultural practice of surfing. The *mo‘olelo* of Kalamakua and His Romantic Meeting with Keleanuinoho‘ana‘api‘api also attests to the ancient significance of the sport within Waikīkī:

> Kalamakua, who was celebrated for the large taro patches he constructed and maintained at Waikīkī, recognized her as the famous surfer Kelea, a chiefess originally from Maui [Kelea, a chiefess and skilled surfer who entered the waves at Waikīkī]. When she emerged from the waves, he offered her his feathered cape (a sign of high rank) and made her his *ali‘i wahine mō‘ī.* [Feeser and Chan 2006:82]

Following Western Contact, surfing declined in Waikīkī. It was not until the beginning of the twentieth century that the sport began experiencing a revival.

Fred Hoʻolae Paoa discussed of surfing in Waikīkī. He recalled, "We used to surf there on these waves about [three or four feet] high. Catch ʻem out by the point to the pier, come on in with the surfboards." (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:214). He also mentioned playing "surfboard polo" (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:214). He described "surfboard polo" as "like water polo, except you're on a surfboard" (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:214). He also earned money "teaching surfboard lessons, swimming lessons, ʻukulele [lessons]" to tourists (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:215).

Mr. Paoa recalled swimming in the ocean around the pier near the former Niumalu Hotel which was located where the Hilton Hawaiian Village is. He noted that prior to the white sand being brought in, the shore along Kālia consisted of coral reef.

Ms. McKinzie also swam at the pier fronting the Niumalu Hotel which she referred to the pier as "Cassidy pier" (Adelaide McKinzie in UHCOH 1985:3:1180). She noted that "Cassidy pier" went "all the way out almost to the reef and cleared up so we would go out there and swim" (Adelaide McKinzie in UHCOH 1985:3:1180). She added that, "All the piers were cleared for swimming. They had no rocks, you can dive" (Adelaide McKinzie in UHCOH 1985:3:1180).

Ms. McKinzie also swam at the beach fronting Prince Kūhiō's home which is now known as Kūhiō Beach (Adelaide McKinzie in UHCOH 1985:3:1176). She noted that Kūhiō Beach had a pier with "a little house with a bench right around and a roof" where the "prince and princess had friends sometimes or swimming parties" (Adelaide McKinzie in UHCOH 1985:3:1178). She noted, "The water was clean, all clean, no rocks. They cleared all the reef away, so that people could swim without getting cut" (Adelaide McKinzie in UHCOH 1985:3:1178). She also swam in the area across Kapiʻolani Park where there were homes along the beach.

Ms. Clarke also recalled learning to swim in the ocean near their home in Kālia (Mary Clarke in UHCOH 1985:2:635).

Tutu Steamboat and his younger brother, Tough Bill Keaweamahi, were part of the "Waikiki Beach Boys." The Keaweamahi brothers and the Kahanamoku brothers, were also involved in Hui Nalu O Hawaiʻi Canoe Club. They competed in "swim meets and surf meets and then later canoe paddling regattas." Ms. Norman's mother, Kahili, and some of her siblings also paddled for Hui Nalu. Ms. Norman also noted that canoes have been named after the Keaweamahi and Paoa *ʻohanas*. She also noted that there are newer canoes on Waikīkī Beach that are named after her *ʻohana* that are still being used today to take tourist out on rides.

Ms. Norman also mentioned that, "Princess Kaʻiulani used to ride her horse back and forth on the shores of Waikiki." Her Tutu Steamboat recalled seeing "the ghost of Ka'iulani riding her horse on the beach" when he was a lifeguard.

Ms. Barr mentioned that the area of Waikīkī around Kapiʻolani Park was popular with the *aliʻi* had homes and vacationed in that area. She noted that this area is known as the "Gold Coast."

6.1.4 Religious Practices and Burials

Previous archaeological studies conducted within and in the vicinity of the project area have documented numerous burial sites including SIHP # 50-80-14-2870 (Neller 1980; Hurlbett et al. 1992; Tulchin et al. 2011; Yucha and Hammatt 2014; Sroat et al. 2019 (draft); Krause et al. 2022),

-4570 (Carlson et al. 1994; Denham and Pantaleo 1997; Yucha and Hammatt 2014), -4574 (Denham and Pantaleo 1997), -4966 (Denham and Pantaleo 1997), -7087 (Mooney et al. 2009), and -7676 (Yucha and Hammatt 2014). The interpolated boundaries of SIHP # -2870 extend into the current project area. Mooney et al. (2009) inadvertently discovered a previously disturbed human burial (SIHP # 50-80-14-7087) outside the current project area on the *mauka* side of the intersection of Ala Moana Boulevard and Kālia Road. The remains consisted of a near complete cranium and cranial fragments. They were preserved in place.

Mr. Paoa stated that in 1951, road crews encountered *iwi kupuna* fronting their home (1841 Ala Moana Boulevard) during the widening of Ala Moana Boulevard. He noted that “the bones were reburied where they were found.”

A previous oral history account also indicates that one known burial has occurred at sea, in the area of the current Ala Wai Small Boat Harbor (eastern portion of the harbor, near the current location of the Ilikai Hotel). In an interview conducted by UHCOH, Mr. Earl Kalikolehua Vida described the location of an old Hawaiian fisherman’s home at the end of Hobron Lane and along the shoreline. Identifying the fisherman as John Kaimi and noting his extraordinary skill in the water, Mr. Vida recalled burying Kaimi in the offshore waters of Kālia. This custom appears to have an ancient antecedent, as Mary Kawena Pukui has documented a practice involving the removal of “the *pela* (flesh) from the corpse and sinking it into the sea” (Pukui et al. 1972:134).

Ms. Norman mentioned that her Tutu Steamboat and Tutu Tough Bill’s ashes have been “scattered in the waters off Waikiki, the sands of their birth, one hanau.”

Several *heiau* stood in Waikīkī Ahupua‘a, however, these *heiau* were not within or in close proximity to the current project area. Waikīkī was home to four *heiau* of *po‘okanaka* class associated with human sacrifice: Papa‘ena‘ena Heiau, Kapua Heiau, Helumoa Heiau, and Kūpalaha Heiau. In addition, sacrificial drowning of *kauwā*, an outcast caste, took place at several sites on O‘ahu including Waikīkī. It should be noted, however, that due to the long land use history of the Waikīkī areas, including several land reclamation events, there may be conflicting information in regard to the location of the original shoreline.

While Waikīkī Ahupua‘a was a location for *heiau* dedicated to human sacrifice, it was also a location for healing. In Waikīkī, a *wahi pana* known as Kawehewehe functioned as a tangible space for healing and the removal of illnesses. The removal of physical and spiritual illness is implied in this *wahi pana*’s name, as the word “*wehe*” (in Kawehewehe) translates as “to remove” (Pukui et al. 1974:383). The healing pond of Kawehewehe was located in the vicinity of the current Saratoga Road. The healing beach also known as Kawehewehe was located nearby, in the area fronting the current Halekulani Hotel. Traditionally, the sick were brought to this healing beach area where they would proceed to bathe in the healing waters of the ocean. As part of the healing ritual, the ill would wear *lei* made of *limu kala* and by submerging themselves in the water and releasing the *lei* from their neck, they would also release illness from their body.

Four large *pōhaku*, commonly called Nā Pōhaku ‘Ola Kapaemāhū a Kapuni or the Wizard Stones of Kapaemāhū, also constituted a religious site within Waikīkī (Thrum 1906:139–141). The Wizard Stones of Kapaemāhū were unearthed in the late 1800s at Ainahau, the private estate of Archibald Cleghorn, and his wife and daughter, the princesses Likelike and Ka‘iulani. *Mo‘olelo* asserts that four soothsayers from the court of a Tahitian king came to Hawai‘i and helped heal many people. Four large stones were collected from Kaimukī, brought to Waikīkī, and erected in the locations of the wizard's habitation and bathing places in the sea (Thrum 1906:139–141). The chief of the wizards, Kapaemāhū, named his stone after himself, and a virtuous young chiefess was sacrificed and placed beneath the stone. These *pōhaku* remain visible to this day, and are located at Kūhiō Beach Park (Thrum 1906:139–141).

Ms. Norman's Tutu Steamboat was the first lifeguard of Waikīkī. He is "said to have saved many lives" while patrolling the area between "where the Ilikai hotel is located to Kaimana beach" Tutu Steamboat was a practitioner of La‘au Kahea and *lomilomi* which he used to "help save some people's lives on the beach."

Pukui et al. (1973:157) defines *lā‘au kāhea* as "the "calling" medicine." *Lā‘au kāhea* "not only administered *lā‘au* [medicine], plant medicines, it called (*kāhea*) directly and specifically on the gods, asking them to help the patient" (Pukui et al. 1973:157). *Lā‘au kāhea* "healed through the *mana* of prayers, of the plants, and of the *kahuna*" (Pukui et al. 1973:157). It also "made full use of *hō‘upu‘upu* (suggestion)" and "positive thinking," and required that patients believed "completely in the *kahuna* and his *mana*" (Pukui et al. 1973:157).

Ms. Norman's grandmother "said that the ocean is healing" and recommended swimming in the ocean at Waikīkī when they were sick.

6.2 Summary of Community Outreach and Kama‘āina Perspectives

6.2.1 Comments/thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua‘a*

No immediately discernible or readily known impacts to ongoing traditional cultural practices and natural resources within the proposed project area and Waikīkī Ahupua‘a were identified during the consultation process.

6.2.2 Comments/thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a*

No immediately discernible or readily known impacts to cultural sites and *wahi pana* within the proposed project area and Waikīkī Ahupua‘a were identified during the consultation process.

Table 3. Past and present cultural resources associated with the project area and vicinity identified during consultation

Consultee	Project Area Affiliation	Past Resource/Type/Area	Present Resource/Type/Area	Concerns/Opinions
Robert Paoa	*Kama‘āina* of Kālia	Marine resources		Robert Paoa recalled that many people would fish off-shore. He noted that the area was abundant with *kala* and mullet. Mr. Paoa also noted that the shoreline along Kālia was also abundant with *limu*. His aunties gathered *limu* “just off the present [Hilton] Hawaiian Village.” He mentioned that prior to the dredging of the Ala Wai Canal, Pi‘ināi‘o Stream was full of *‘ōpae* and *‘o‘opu*.

Consultee	Project Area Affiliation	Past Resource/Type/Area	Present Resource/Type/Area	Concerns/Opinions
Robert Paoa	*Kama‘āina* of Kālia	Burial practices		Mr. Paoa stated that *iwi kupuna* were encountered fronting their home (1841 Ala Moana Boulevard) during the widening of Ala Moana Boulevard in 1951. He noted that “the bones were reburied where they were found.”
Robert Paoa	*Kama‘āina* of Kālia	Recreational activities		Mr. Paoa recalled swimming in the ocean around the pier near the former Niumalu Hotel which was located where the Hilton Hawaiian Village is now.
Keala Norman	Cultural Descendant	Burial practices		Ms. Norman mentioned that her *‘ohana*’s ashes have been “scattered in the waters off Waikiki, the sands of their birth, one hanau.”

Consultee	Project Area Affiliation	Past Resource/Type/Area	Present Resource/Type/Area	Concerns/Opinions
Keala Norman	Cultural Descendant	*Lā‘au Lapa‘au*		Ms. Norman’s Tutu Steamboat was a practitioner of La‘au Kahea and *lomilomi* which he used to “help save some people’s lives on the beach.” Ms. Norman’s grandmother recommended swimming in the ocean at Waikīkī when they were sick because “she said that the ocean is healing.”
Keala Norman	Cultural Descendant	Marine resources		Ms. Norman mentioned that her *‘ohana* fished and gathered *limu* in Waikīkī. She noted that *limu* was “abundant and clean.”
Keala Norman	Cultural Descendant	Healing practices		Ms. Norman’s Tutu Steamboat practiced La‘au Kahea and *lomilomi*. He used those practices to “help save some people’s lives on the beach.” Ms. Norman’s grandmother recommended swimming in the ocean at Waikīkī when they were sick because “she said that the ocean is healing.”

Consultee	Project Area Affiliation	Past Resource/Type/Area	Present Resource/Type/Area	Concerns/Opinions
Keala Norman	Cultural Descendant	Recreational activities		Ms. Norman’s ‘ohana were part of the “Waikiki Beach Boys” and the Hui Nalu O Hawai‘i Canoe Club
Winifred “Niniaulani” Barr	*Kama‘āina* of Kālia; Harbottle Descendant	Marine resources		Ms. Barr recalled that her *‘ohana* went fishing in the ocean where the HHV lagoon is now. Her *‘ohana* also gathered *limu* along the shore. She noted that *limu manauea* was abundant in the area. She also mentioned that it was rare to find *limu ‘ele‘ele* in the area.

6.3 Assessment of Impacts Posed to Cultural Practices and Cultural Resources

6.3.1 Individual's comments or thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupuaʻa*

No immediately discernible or readily known impacts to ongoing traditional cultural practices and natural resources within the proposed project area and Waikīkī Ahupuaʻa were identified during the consultation process.

6.3.2 Comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupuaʻa*

No immediately discernible or readily known impacts to cultural sites and *wahi pana* within the proposed project area and Waikīkī Ahupuaʻa were identified during the consultation process.

6.3.3 Assessment of Impacts Posed to Cultural Practices and Cultural Resources, integrating perspectives from consultation, and evidence from background research

The *ahupuaʻa* of Waikīkī traditionally was a center of chiefly residence, in addition to being a center of agricultural and aquacultural activities. A vast system of irrigated taro fields was constructed across the littoral plain from Waikīkī to the lower valleys of Mānoa and Pālolo in approximately AD 1400. This field system took advantage of streams descending from the valleys of Makiki, Mānoa, and Pālolo. The *loʻi kalo*, in combination with coconut groves and numerous fishponds along the Waikīkī shoreline, enabled the growth of a sizeable population.

The *ʻili* of Kālia was one of eight important fisheries along the Waikīkī coast. The fishing grounds from the reef to the shore were so rich they were *kapu* to anyone but the king and his representatives during certain seasons (Maly and Maly 2003:244). Kālia was also known for a fishing technique used to catch schools of mullet. Interviewees also discussed the abundance of marine resources of Waikīkī and Kālia, however, no immediately discernible or readily known impacts to marine resources within the proposed project area and Waikīkī Ahupuaʻa were identified during the consultation process.

The offshore waters of Kālia were also used for sport of *heʻe nalu* or surfing. Many of these areas no longer exist, as dredging and land filling have destroyed the ancient breaks. Reverence for the sport is evidenced by the construction and dedication of Papaʻenaʻena Heiau (a *poʻokanaka* class *heiau*). Interviewees also recalled swimming, surfing, and paddling in the ocean off Waikīkī and Kālia, however, no immediately discernible or readily known impacts to recreational activities were identified during the consultation process.

Several *heiau* stood in Waikīkī Ahupuaʻa, however, these *heiau* were not within or in close proximity to the current project area. Waikīkī Ahupuaʻa was also a location for healing. The healing pond of Kawehewehe was located in the vicinity of the current Saratoga Road. The healing beach also known as Kawehewehe was located nearby, in the area fronting the current Halekulani Hotel. Another site associated with healing is Nā Pōhaku ʻOla Kapaemāhū a Kapuni or the Wizard Stones of Kapaemāhū. According to *moʻolelo*, four soothsayers from the court of a Tahitian king came to Hawai'i and helped heal many people. These *pōhaku* remain visible to this day, and are located at Kūhiō Beach Park (Thrum 1906:139–141).

Ms. Norman mentioned that her grandmother "said that the ocean is healing" and recommended swimming in the ocean at Waikīkī when they were sick. Her Tutu Steamboat was also a practitioner of La'au Kahea and *lomilomi* which he used to "help save some people's lives on the beach" when he was the first lifeguard of Waikīkī. No immediately discernible or readily known impacts to healing practices within the proposed project area and Waikīkī Ahupua'a were identified during the consultation process.

Located near the mouth of Pi'inaio Stream, the traditional Hawaiian fishpond complexes of Paweo and Kaipuni were approximately 150 m northeast and east of the project area, respectively. Likely constructed in the pre-Contact period, these fishponds were used into the later 1800s before being filled in with the development of the U.S. Army's Fort DeRussy in the early 1900s. The project area was adjacent to what was likely the shifting seaward-most portions of Pi'inaio Stream as it met the prograding shoreline at Kālia. Pi'inaio Stream was filled in with the construction of the Ala Wai Canal between 1921 and 1927. By the early 1900s, there were western-style dwellings (likely bungalows) in the project area, one of which was owned by famed Native Hawaiian Olympian and surfer Duke Kahanamoku. Into the 1950s, the buildings within the project area were one- and two-story dwellings, some labeled as apartments. The later 1950s through the 1980s saw the development of the HHV campus. During this period, land use within the project area changed from residential to commercial.

The results of prior archaeological investigations within and adjacent to the project area show abundant remnants of past historical land use, including artifacts and features from the mid-1800s through the mid-1900s. Two previously identified historic properties are partially within the current project area: SIHP #s -2870 and -6399. SIHP # -2870 comprises historical cultural layers with associated features and human remains; its interpolated boundaries extend into the southeastern portion of the current project area. SIHP # -6399 comprises five features, three of which are within the southern portion of the current project area; these comprise a pit of indeterminate function, a post-Contact refuse pit, and a latrine or refuse pit.

Previous archaeological studies have also documented numerous burial sites in the vicinity of the project area. Mr. Paoa also recalled that *iwi kupuna* were encountered fronting their home (1841 Ala Moana Boulevard) during the widening of Ala Moana Boulevard in 1951. He stated that "the bones were reburied where they were found." A previous oral history account also indicated that one known burial has occurred at sea, in the area of the current Ala Wai Small Boat Harbor (eastern portion of the harbor, near the current location of the Ilikai Hotel). Ms. Norman also mentioned that her Tutu Steamboat and Tutu Tough Bill's ashes have been "scattered in the waters off Waikiki, the sands of their birth, one hanau."

Notably, these prior studies have not documented evidence of traditional Hawaiian land use. The potentially dynamic hydrological environment along Pi'inaio Stream, where the drainage shifted periodically based on flow rates and changing shoreline conditions, may at least partially explain the lack of evidence for traditional Hawaiian land use. The results of prior archaeological investigations also show the project area and its immediate vicinity have been subject to prior ground disturbance related to twentieth century development.

No immediately discernible or readily known impacts to cultural sites and *wahi pana* within the proposed project area and Waikīkī Ahupua‘a were identified during the consultation process.

6.3.4 Discussion of impacts to historic properties (i.e., cultural resources) identified during background research and consultation

Based on available information there is potential for subsurface archaeological deposits within the project area. As project-related ground disturbance is likely to be widespread throughout much, if not all of the project area, there is potential for project effect on archaeological historic properties. Results of prior archaeological investigations within and immediately adjacent to the project area show abundant remnants of past historical land use, including artifacts and features from the 1850s through the 1950s, but do not document evidence of traditional Hawaiian land use—with no traditional Hawaiian features, artifacts, or burials identified. The results of prior archaeological investigations in the vicinity also show the project area and its immediate vicinity have been subject to prior ground disturbance related to twentieth century development.

6.3.5 Discussion of impacts to cultural practices and resources identified during background research and consultation

No immediately discernible or readily known impacts to ongoing traditional cultural practices and natural resources within the proposed project area and Waikīkī Ahupua‘a were identified during the consultation process.

6.4 Mitigation Possibilities Identified During Consultation and Background Research

Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.

In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

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Appendix A Community Outreach Letter

CULTURAL SURVEYS HAWAI‘I
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982

P.O. Box 1114 Kailua, Hawai‘i 96734 Ph: (808) 262-9972 Fax: (808) 262-4950

February 17, 2022

Aloha mai kāua,

With this letter, Cultural Surveys Hawai‘i (CSH) humbly requests your *mana‘o* and *‘ike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within the Waikīkī Ahupua‘a.

Consultation with traditional cultural practitioners, *kūpuna*, *kama‘āina*, and Hawai‘i's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai‘i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai‘i's children of their history for generations to come.

Project Description

At the request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc., CSH is conducting a cultural impact assessment (CIA) for the Ala Moana Boulevard (AMB) Tower project, to be added to the Hilton Hawaiian Village Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013. Located along Ala Moana Boulevard and the northern boundary of the Hilton Hawaiian Village (HHV) campus, these parcels are currently utilized as follows:

- Parcel 004: ABC Store and other commercial shops and restaurants
- Parcel 005: Paradise Rent-a-Car
- Parcel 006: vacant restaurant building
- Portions of Parcels 007, 009, and 013: adjacent landscaped and paved areas, part of the HHV Campus

The project area is bounded to the north by Ala Moana Boulevard, to the southeast by HHV's Kālia Tower, to the southwest by HHV's parking structure, and to the west by HHV's Grand Waikikian Tower. The project area is depicted on a portion of the 1998 Honolulu U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and 2013 and 2020 aerial photographs (Figure 3 and Figure 4). A utility corridor (including a gas line, electrical duct bank, water line, storm drain, and telephone cable) is within the adjacent portions of TMK parcels 007, 009, and 013 (Figure 5).

Construction of a new resort tower will involve the demolition of existing buildings and structures. Associated ground disturbance will include structural footing installation, utility installation, and landscaping. Surface grading may be required for roadway improvements and parking area installation. As is common with urban redevelopment projects, project construction could extend a short way into adjacent sidewalks and streets that are outside the HHV Campus property, for example for utility connections.

CIA for the AMB Tower Project, to be Added to the HHV Campus

Page 2

Purpose of this Study

The purpose of a CIA is to gather information on Hawai'i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and the Waikīkī Ahupua'a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts of the proposed project on the specific identified resources, practices, and beliefs in the project area and throughout the Waikīkī Ahupua'a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to appropriately respect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figures 1 through 5) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and the Waikīkī Ahupua'a
- Your specific traditional cultural practice and its connection to the proposed project area and the Waikīkī Ahupua'a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and the Waikīkī Ahupua'a
- Referrals to other *kūpuna*, *kama'āina*, and traditional cultural practitioners knowledgeable about the proposed project area and the Waikīkī Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and the Waikīkī Ahupua'a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and the Waikīkī Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and the Waikīkī Ahupua'a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area and will be part of the public record. The study will be included as an appendix to the project's Supplemental Environmental Impact Statement (SEIS) which is being prepared for the proposed project; the SEIS and CIA will be available for future access through the State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP) (https://planning.hawaii.gov/erp) and at the State Historic Preservation Division Library (https://dlnr.hawaii.gov/shpd/about/research-resources-library).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that should be considered in assessing the impacts of proposed future projects. If you engage in consultation, and the *manaʻo* and *ʻike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together: talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms.

Your knowledge of the resources and potential effects of the project on traditional practices in the project area and the Waikīkī Ahupuaʻa focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage for your written statement on request.

CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

If you have questions regarding consultation, or are interested in participating in this study, please contact Kellen Tanaka by email at ktanaka@culturalsurveys.com or phone at (808) 262-9972 or Chantellee Spencer at cspencer@culturalsurveys.com.

Mahalo nui loa for your time and attention to this request for consultation.

Yours with much *aloha* and appreciation,

Kellen Tanaka

CSH Cultural Researcher

Appendix B Permissions/Release Forms

B.1 Robert Paoa Authorization Form

Cultural Surveys Hawai‘i, Inc.
Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President

P.O. Box 1114 Kailua, Hawai‘i 96734 Ph: (808) 262-9972 Fax: (808) 262-4950

Job code: WAIKIKI 278 ktanaka@culturalsurveys.com www.culturalsurveys.com

AUTHORIZATION AND RELEASE FORM

Cultural Surveys Hawai‘i (CSH) appreciates the generosity of the *kūpuna* and *kama‘āina* who are sharing their knowledge of cultural and historic places, experiences of past and present cultural practices. At the request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc., Cultural Surveys Hawai‘i (CSH) is conducting a Cultural Impact Assessment (CIA) for the Ala Moana Boulevard (AMB) Tower Project, to be Added to the Hilton Hawaiian Village Campus, Waikīkī Ahupua‘a, Honolulu (Kona) District, O‘ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013.

We understand our responsibility in respecting the wishes and concerns of the interviewees participating in our study. Here are the procedures we promise to follow:

1. The interview will not be tape-recorded without your knowledge and explicit permission.
2. You will have the opportunity to review the written transcript or notes of our interview with you. At that time you may make any additions, deletions or corrections you wish.
3. You will be given a copy of the interview transcript or notes for your records.
4. You will be given a copy of this release form for your records.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for reports on cultural sites and practices, historic documentation, and/or academic purposes.
2. You agree that the interview shall be made available to the public.
3. If a photograph is taken during the interview, you consent to the photograph being included in any report/s or publication/s generated by this cultural study.

I, ROBERT CLARKE KAUHIWAI PAOA agree to the procedures outlined above and, by my
(Please print your name here)
signature, give my consent and release for this interview and/or photograph to be used as specified.

Robert C. K. Paoa
(Signature)

February 9, 2022
(Date)

B.2 Keala Norman Authorization Form

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Cultural Surveys Hawai'i, Inc.
Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President

P.O. Box 1114 Kailua, Hawai'i 96734 Ph: (808) 262-9972 Fax: (808) 262-

Job code: WAIKIKI 278 ktanaka@culturalsurveys.com www.culturalsurveys.c

AUTHORIZATION AND RELEASE FORM

Cultural Surveys Hawai'i (CSH) appreciates the generosity of the *kūpuna* and *kama'āina* who are sha their knowledge of cultural and historic places, experiences of past and present cultural practices. A request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, SMK, Inc., Cultural Surveys Hawai'i (CSH) is conducting a Cultural Impact Assessment (CIA) for the Moana Boulevard (AMB) Tower Project, to be Added to the Hilton Hawaiian Village Campus, Wa Ahupua'a, Honolulu (Kona) District, O'ahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and

We understand our responsibility in respecting the wishes and concerns of the interviewees participati our study. Here are the procedures we promise to follow:

1. The interview will not be tape-recorded without your knowledge and explicit permission.
2. You will have the opportunity to review the written transcript or notes of our interview with yo At that time you may make any additions, deletions or corrections you wish.
3. You will be given a copy of the interview transcript or notes for your records.
4. You will be given a copy of this release form for your records.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for reports on cultura sites and practices, historic documentation, and/or academic purposes.
2. You agree that the interview shall be made available to the public.
3. If a photograph is taken during the interview, you consent to the photograph being included in report/s or publication/s generated by this cultural study.

I, Keala Norman, agree to the procedures outlined above and, by my
(Please print your name here)
signature, give my consent and release for this interview and/or photograph to be used as specified.

(Signature)

3/14/22
(Date)

1 of 2 3/14/2022, 4:41 PM

B.3 Winifred "Niniaulani" Barr Authorization Form

Cultural Surveys Hawaiʻi, Inc.
Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President

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

Job code: WAIKIKI 278 ktanaka@culturalsurveys.com www.culturalsurveys.com

AUTHORIZATION AND RELEASE FORM

Cultural Surveys Hawaiʻi (CSH) appreciates the generosity of the *kūpuna* and *kamaʻāina* who are sharing their knowledge of cultural and historic places, experiences of past and present cultural practices. At the request of G70, on behalf of Park Ala Moana LLC, Hilton Hawaiian Village Beach Resort & Spa, and SMK, Inc., Cultural Surveys Hawaiʻi (CSH) is conducting a Cultural Impact Assessment (CIA) for the Ala Moana Boulevard (AMB) Tower Project, to be Added to the Hilton Hawaiian Village Campus, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Oʻahu TMKs: [1] 2-6-009:004–006 and portions of 007, 009, and 013.

We understand our responsibility in respecting the wishes and concerns of the interviewees participating in our study. Here are the procedures we promise to follow:

1. The interview will not be tape-recorded without your knowledge and explicit permission.
2. You will have the opportunity to review the written transcript or notes of our interview with you. At that time you may make any additions, deletions or corrections you wish.
3. You will be given a copy of the interview transcript or notes for your records.
4. You will be given a copy of this release form for your records.

For your protection, we need your written confirmation that:

1. You consent to the use of the complete transcript and/or interview quotes for reports on cultural sites and practices, historic documentation, and/or academic purposes.
2. You agree that the interview shall be made available to the public.
3. If a photograph is taken during the interview, you consent to the photograph being included in any report/s or publication/s generated by this cultural study.

I, Winifred Niniaulani Barr, agree to the procedures outlined above and, by my
(Please print your name here)
signature, give my consent and release for this interview and/or photograph to be used as specified.

Winifred Niniaulani Barr
(Signature)

August 2, 2022
(Date)

Appendix C Consultee Interview Transcripts

C 1 Robert Paoa Summary

On 26 January 2022, Cultural Surveys Hawai‘i (CSH) spoke with Mr. Robert Clarke Kauhiwai Paoa via telephone to discuss the cultural impact assessment (CIA) for the Ala Moana Boulevard (AMB) Tower project and to learn of his experience growing up in the *ahupua‘a* (land division usually extending from the mountains to the sea) of Waikīkī and the *‘ili* (land division smaller than an *ahupua‘a*) of Kālia.

Mr. Paoa was born on 5 October 1937. His parents were Malcolm H. Paoa and Ellen Clarke Paoa. He was born in Kālia in a cottage that his maternal grandfather, Robert F. Clarke, built for their *‘ohana* (family) in 1920. The cottage was located on the site of the present ‘Ilikai Hotel which was part of the Hobron Estate. From 1940 through 1968, Mr. Paoa lived in Kālia at 1841 Ala Moana Boulevard, the site of the Kobe Steakhouse. From 1956 to 1992, he worked for the federal government, Hawaii National Guard, Maintenance Division.

Mr. Paoa provided CSH with the history of the Paoa *‘ohana* and their lands in Kālia which was originally awarded to his great grandfather, Paoa, in 1852 during the Māhele:

> THE STORY ABOUT THE PAOA FAMILY AND THE KALIA LANDS
>
> The story begins with the birth of a man named, PAOA. The pronunciation is Powuh since the name does not have an okina, however today most people pronounce the name, Pa‘oa which is incorrect.
>
> Paoa was born in 1807. We think that his father’s name was, Ho‘olae Paoa and his mother was, Hi‘ika‘alani. Since this was during the reign of Kamehameha I the kapu system was still in force and no schools were available at the time. Hence, Paoa was illiterate and couldn’t read or write. The land where he lived was in Kalia and was given him to live on by his mother, Makuahine who was given the land by a sibling named Nali‘ikipi which came about through the Kuhina Nui, Kina‘u.
>
> In 1848, the government decided to grant parcels of land to the ali‘i and commoners but kept land for the king. In the testimony, Kalaeone, a relative told about Paoa living on the property since he was given it by his mother, Makuahine. Helu 7033 Pala pa la Sila Nui is the document that grants land to Paoa under Kuleana Helu 1775. Paoa received the grant on October 30, 1852. Many recipients failed to file for their land so the legislature allowed more time for them to file. However, the case with Paoa continued to lapse so that on November 17, 1877, King Kalakaua signed the Palapala Nui finally granting Paoa the land in Kalia. Kalia is an ili, one of many in the ahupua‘a of Waikiki. On October 20, 1893, Paoa and others met with a C. Brown and H.M. von Holt and deeded his property to Ho‘olae all lands that lie in Kalia, Kauamoa and Piliamo‘o. The reason for deeding these land parcels, in turn for Ho‘olae placing in my hand one dollar, is for my tremendous love for him, he is a direct descendent of mine, therefore, all of these aforementioned land

> parcels, the utility and things there on the land will be conveyed to Hoʻolae and his heirs (estate) after and for all time. Paoa, being illiterate signed with an X.
>
> It appears that Paoa had three siblings, Lonokahikini, Kalaeone and Kahune. He was married to a woman named, Kekaua and had three children with her. He then took another woman named, Mele, and had two daughters, Luʻukia Keakealani Paoa Okuu born in 1858, Julia Paʻakonia Lonokahikini Paoa Kahanamoku, born in 1866 and a son, Henry Hoʻolae Paoa, born in 1874. Henry Hoʻolae Paoa married Florence Kamakaopiʻopʻo Bridges and they had twelve children, six sons and six daughters.
>
> On March 6, 1901, Hoʻolae and wife sold a parcel of land to Mary K. Harbottle and hsb. Isaac H. Harbottle makai of where the Paoa home stood. On May 6, 1901, Hoʻolae Paoa filed for the building of a one story dwelling at the intersection of Kalia and Beach Rds. Beach Rd. was later renamed, Ala Moana Rd.
>
> Hoʻolae sold more property to his brother in law, Robert K. Pahau who was married to Hoʻolae's wife's sister, Mary Ellen H. Bridges Pahau. On April 8, 1907, the property went to a Mr. Castle. One section was retained by family of R.K. Pahau, the Simerson ohana.
>
> After Duke Kahanamoku became famous a person named Rawlins formed a public subscription and raised money to purchase the property held by Mr. Castle who then sold it. Duke Paoa Kahanamoku then built a family home there for his mother and siblings. This property is on the makai side of the Kobe Steak House.
>
> On October 11, 1918, Hoʻolae then gave another parcel to his first born daughter, Helen Kapuaokaohelo Paoa, Mrs. Leon K. Sterling where they built a large home for their family. Later Helen's sister, Annie Paoa Clark and her husband, Herman Clark moved into the home. After the Clark family moved the property was sold via an agreement of sale by The Bishop & Company the heirs of Hoʻolae Paoa and wife to Dr. George K. Paoa who then resided on the property. Dr. George K. Paoa died in 1939, intestate, and his older brother Henry Kalaeone Paoa then offered the property to other family members. My parents, Malcolm and Ellen Paoa then purchased the home and moved there in June of 1940. In 1951, The Territorial Highway Dept. condemned a large section of the Paoa property for widening of Ala Moana Rd. This action reduced the land significantly.
>
> Our family continued to live on the property but in 1963, the home was badly termite eaten so it was demolished and a two story apartment complex was built. My parents and I lived there until May of 1968 when we moved to Pearl City. My parents had leased the property to Budget Rent A Car who then subleased the site to Kobe Steak House. The original lease was for 55 years.

Mr. Paoa also recommended researching a book titled *Talking Hawaiʻi's Story: Oral Histories of Island People*, which includes an interview with his uncle, Fred Hoʻolae Paoa, who was interviewed by Warren Nishimoto for the University of Hawaiʻi Center for Oral Histories (UHCOH) in 1985 (Kodama-Nishimoto et al. 2009:211–215). The UHCOH also interviewed Mr. Paoa's aunts, Mary Ellen Kealohapauʻole (Paoa) Clarke in 1985 (Mary Clarke in UHCOH

1985:2:633–664) and Adelaide Keli‘ihoalani Ka‘ai McKinzie in 1986 (Adelaide McKinzie in UHCOH 1985:3:1151–1209).

In her interview with UHCOH, Mary Clarke also described the extent of the Paoa *‘ohana*’s land in Kālia: “Well, from Kālia Road down Ala Moana to the beach, right straight down. He owned that (i.e., from the corner of Kālia Road and Ala Moana Beach Road, down past where the Waikikian Hotel today is, to the beach)” (Mary Clarke in UHCOH 1985:2:637).

Ms. Clarke also noted that prior to the condemnation of over half the Paoa lands for the widening of Ala Moana Boulevard in 1951, “Our [original] yard extended up to [what today is] the middle [i.e., medial] strip” of Ala Moana Boulevard (Mary Clarke in UHCOH 1985:2:636).

Mr. Paoa also recalled that during the widening of Ala Moana Boulevard, road crews encountered *iwi kupuna* (ancestral remains) fronting their home. He noted that “the bones were reburied where they were found.”

Mr. Paoa described growing up in Kālia. He recalled that Kālia was “a wonderful area where many part Hawaiian families lived, many were all related.” He also noted that Kālia had “a mix of Japanese, Chinese and mixed races when I was growing up.” He recalled that his *‘ohana* raised chickens and had a vegetable garden at their home.

In her interview with UHCOH, Adelaide McKinzie also recalled her mother saying, “if you (went) visiting any family out there you’ll hear pigs, dogs, chickens making noise, and ducks” (Adelaide McKinzie in UHCOH 1985:3:1184).

Ms. McKinzie also described the landscape of Kālia, prior to the construction of the Ala Wai Canal, as a “mud flat.” She noted,

> The rest of it was all mud flat, all muddy. So that’s why Kālia was known those days as Kālia mud flat. […] From Cassidy, where the Hilton Lagoon is now. From (there all the) way down to the [Ala Wai] Yacht Harbor was mud flat. [Adelaide McKinzie in UHCOH 1985:3:1181]
>
> […] That whole area, all mud flat until far out. Nobody could swim (there), because it was mostly mud. And the Pi‘ināi‘o Stream emptied out there. [Adelaide McKinzie in UHCOH 1985:3:1182]

She also mentioned that “where the Ala Wai [Canal] is [today] was all swamp. All that area was swamp down to Kalakaua. As far as I know, I remember all that. There were no houses, just a few houses here and there but was all swamp with those tall weedy things and ducks” (Adelaide McKinzie in UHCOH 1985:3:1184).

Mr. Paoa stated that following the construction of the Ala Wai Canal, dredged coral was used to fill areas including Pi‘ināi‘o Stream and the numerous *loko i‘a* (fishponds) in Kālia. He noted that despite the ground in the area consisting of coral fill, as a child he would play games such as baseball, tag, and hide and seek while barefoot. Fred Ho‘olae Paoa and Ms. Clarke also recalled children playing baseball in their neighborhood when they were growing up in Kālia (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009: 215; Mary Clarke in UHCOH 1985:2:636).

Mr. Paoa also mentioned going swimming in the ocean around the pier near the former Niumalu Hotel. The Niumalu Hotel was located where the Hilton Hawaiian Village is currently and consisted of bungalows and cottages. He noted that prior to the white sand being brought in, the shore along Kālia consisted of coral reef. He also recalled that before the creation of Ala Moana Park, boats had to travel through the channel between the coral reef and the shoreline to get to Kālia.

Ms. McKinzie and her friends also swam at the pier fronting the Niumalu Hotel. She referred to the pier as “Cassidy pier” since the pier and hotel were owned by the Cassidy family (Adelaide McKinzie in UHCOH 1985:3:1180). She recalled the pier went “all the way out almost to the reef and cleared up so we would go out there and swim” (Adelaide McKinzie in UHCOH 1985:3:1180). She added that, “All the piers were cleared for swimming. They had no rocks, you can dive” (Adelaide McKinzie in UHCOH 1985:3:1180).

Ms. McKinzie and her friends also swam at the beach fronting Prince Kūhiō’s home which is now known as Kūhiō Beach (Adelaide McKinzie in UHCOH 1985:3:1176). She noted that Kūhiō Beach had a pier with “a little house with a bench right around and a roof” where the “prince and princess had friends sometimes or swimming parties” (Adelaide McKinzie in UHCOH 1985:3:1178). She noted, “The water was clean, all clean, no rocks. They cleared all the reef away, so that people could swim without getting cut” (Adelaide McKinzie in UHCOH 1985:3:1178). She also recalled Princess Kalaniana‘ole’s household servants would give the neighborhood kids “cookies and milk” (Adelaide McKinzie in UHCOH 1985:3:1177). She also swam in the area across Kapi‘olani Park where there were homes along the beach.

Ms. Clarke also recalled learning to swim in the ocean near their home in Kālia:

> […] We only swam right near the shoreline. Then after a while, Sam and Bill would take us out until we learned to swim. Then from there, we went to the Pierpoint. That’s Cassidy’s [residence]. Duke’s [Duke Kahanamoku] father used to take us there with him. Then when we learned how to swim, we were allowed to go to Fort DeRussy where we could dive (from the diving boards). But we very seldom went to the Moana [Hotel area]. Only when we wanted to surf, we’d go out there. [Mary Clarke in UHCOH 1985:2:635]

She also mentioned that her brothers, Fred, Malcom, and Melvin, used to “go out Waikiki and surf, and take tourists out” to earn money for their schoolbooks (Mary Clarke in UHCOH 1985:2:646). Her brother, Fred Ho‘olae Paoa, earned money “teaching surfboard lessons, swimming lessons, ‘ukulele [lessons]” (Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:215). He recalled,

> I think I was out [at] the beach there as a beach boy, [age] fifteen, sixteen, [with] my cousins Bill Kahanamoku, Sam, Duke, David. When they went out on the canoes, take the tourists out—this is summertime—I got to get on the canoes with them as a second captain. We’d charge tourists for going out, [about] a dollar a head. And then, we took [gave] surfboard lessons. I think we charged two dollars or two and a half [dollars] an hour. [Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:215]

Fred Ho‘olae Paoa also shared stories of surfing and playing “surfboard polo”:

> We used to surf there on these waves about [three or four feet] high. Catch ‘em out by the point to the pier, come on in with the surfboards. It was one small board like

> an ironing board. Not the regular redwood boards. [Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:214]
>
> [Surfboard polo] is a rough game, very rough. We played it quite a bit. It's just like water polo, except you're on a surfboard. You have the ball, you throw it from the board. They have a goalkeeper there. He's sitting on the board and he's reaching for it [the ball]. You could sit up or you could paddle [in a prone position]. If the ball is thrown at a distance, you just go for it and paddle. But it's dangerous because these boards are pointed and they're heavy. [Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:214]

Kālia had an abundance of marine resources. Mr. Paoa recalled that many people would fish off-shore. He shared stories from his uncle, Fred Ho‘olae Paoa, who used to go fishing with his father, Henry Ho‘olae Paoa, a well-known fisherman who had his own canoes and fishing gear. He noted there were large schools of *kala* (Unicorn surgeon fish, *Naso brevirostris*) with as many as 200 fish. He also mentioned that Kālia had "plenty mullet" (*Mugil cephalus*). He pointed out that back then people did not overfish, they only took what they needed. When they would return from fishing, they did not sell the fish, they shared them with everybody from Kālia. Fred Ho‘olae Paoa described fishing with his father:

> My dad, he had nets. He was quite a fisherman. Catching kala, mullets, weke [goatfish; *Mullidae*], et cetera. Sometimes we catch about a hundred, a hundred fifty kala, and never sold them. We gave it to the neighbors, Hawaiians, whoever. That was the custom in those days for the neighbors to share their catch with their relatives and friends. [Fred Ho‘olae Paoa in Kodama-Nishimoto et al. 2009:211–212]

Ms. Clarke also mentioned that her father "went fishing a lot" (Mary Clarke in UHCOH 1985:2:649). She recalled,

> […] he had two huge canoes, and one small one. He had a huge one (which) he (used for) fishing. He'd stand on the beach and look out. That place was noted for akule [*Trachurops crumenophthalmus*] way out. Nothing but akule. You know where the ‘Ilikai [Hotel] is [now]? You look out. There was no [Ala Wai] Canal [near] there. He had this huge canoe, and he only used that to go fishing. Then he had a little one, where my brother Henry and ‘Tough Bill' [Keaweamahi], used just to ride around that area. When he sees fish, he'd call some Hawaiian men. Oh, they were big men. Four of them. They all get in and they'd go fishing. When they come back—never fail—he'd get the fish. [Mary Clarke in UHCOH 1985:2:638]
>
> He'd lay it down in the big pan, and each man had (his share). And every Hawaiian along the shoreline had, like Kaimi, Espinda, and I don't know if there were some more. And he'd give them fish. He never lost a (catch). [Mary Clarke in UHCOH 1985:2:638]

She also recalled that her father has "a big fishing stone his father gave him."

> He had a big fishing stone his father gave him that was stolen from him. And he always said he knew who had it, but he wouldn't come out with it. He said, ‘That's all right. They take my stone, they never [will] catch a fish.' […] It's a fishing stone.

> I don't know what it was, but I think in those days, Hawaiians had all kinds of beliefs. He never missed a (catch). [Mary Clarke in UHCOH 1985:2:638]

Henry Hoʻolae Paoa also went diving on the weekends for "uhus [parrot fish; *Scarus perspicillatus*], kūmūs [goatfish; *Parupeneus porphyreus*], oh, big fishes" (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:212).

Mr. Paoa recalled when the Hilton Hawaiian Village's lagoon was open to the ocean, he observed mantis shrimp (*Stomatopod*) and *ʻalamihi* crab (*Metopograpsus thukuhar*) which was famous in Kālia. Ms. McKinzie also noted that Kālia was famous for the *ʻalamihi* crabs. "ʻAlamihi. Yeah. That place was famous for ʻAlamihi because (of the mud). They had little holes and they make all those little crackly sounds" (Adelaide McKinzie in UHCOH 1985:3:1181).

Mr. Paoa also mentioned that prior to the dredging of the Ala Wai Canal in the 1920s, Piʻināiʻo Stream was full of *ʻōpae* (shrimp) and *ʻoʻopu* (Hawaiian freshwater goby; *Lentipes concolor*). He also noted that duck farmers were raising ducks farther up the stream. Fred Hoʻolae Paoa also described gathering *ʻōpae* and *ʻoʻopu* from Piʻināiʻo Stream: "[…] We used to get underneath the shrubs and weeds along the side of the stream. Then you catch ʻōpaes, [or] shrimps, ʻoʻopus, (chuckles) anything you can find in there" (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213).

He also recalled using *ʻoʻopu* as bait to fish for *pāpio* (young stage of growth of *ulua*; *Caranx ignobilis*):

> We used to catch also another type of ʻoʻopu for bait. They were very small and they live in the mud off the shore. They form little holes in the mud. So, by inserting your fingers in the tiny holes in the mud, this type of ʻoʻopu is easily caught. We put [it on a hook] on a long cord with a little weight on it. Just throw it and then retrieve the line to catch pāpios (chuckles) that way. [Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213]

He also traded *ʻoʻopu* and coconuts for ice cream cones:

> We sold—we didn't sell, we swapped— ʻoʻopus for ice cream cones (Laughs). And we swapped coconuts. There's a man that came out and sold ice cream in a wagon. We give him a whole bunch of coconuts for one cone or a string of ʻoʻopus for one cone. Big deal, we made. (Laughs.) [Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:215]

The shoreline along Kālia was also abundant with *limu* (seaweed). Mr. Paoa recalled that following Kona storms when the wind and rain would break up the *limu līpoa*, the whole area would smell like *līpoa*. He stated that gathering *limu* was "a kind of social thing where the woman would get together and talk story." He recalled that "several aunties used to go to gather *limu* just off the present [Hilton] Hawaiian Village" and they would bring the *limu* "near the shore where the women would spend time cleaning it."

Ms. Clarke also recalled her mother "always went down, got seaweed. […] She'd go out and get all different kind of limu. They had all different varieties. There was a green limu. You know, seaweed, flat" (Mary Clarke in UHCOH 1985:2:646). Her mother also caught *manini* (*Acanthurus triostegus*), squid, and crabs.

> […] she'd take her spear, she'll get squid. Then she'll come out to pick up crabs. She had a big bucket. […] She'd get that squid or manini in the hole. Oh, I used to be nervous when she used to do that, but nothing [happened]. Just a few. And then she'd cover that [bucket]. Then she come up, she'll get her crabs. Kuhonu [*Portunus sanguinolentus*], the big white crabs. Or the black ʻalamihis. Only the crabs, you had to clean it at home. […] [Mary Clarke in UHCOH 1985:2:646]

Ms. McKinzie also mentioned that Kālia was famous for *limu ʻeleʻele* (*Enteromorpha prolifera*). She stated,

> You know this limu ʻeleʻele? Seaweed, the black one that they have. That place was famous for that. When the tide (began) to come up, you('d) see the people going out. 'Cause the limu floats so they only cut the top of the limu. They don't pull the whole thing. They cut (the) top and leave the bottom right in the mud because it'll grow again. They pick enough for (home use). [Adelaide McKinzie in UHCOH 1985:3:1181]

Fred Hoʻolae Paoa also recalled gathering "all these different types of limu" offshore of Fort Derussy and Pierpoint (Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213). He also stated,

> Get lot of wana [sea urchin; *Diadema paucispinum* and *Echinothrix diadema*] out there, just inside the reef. We used to put them in a bag. As the waves come on the seashore, we just roll them to break off all the spines. And then, break open the shell to get to the meat by using either a spoon or your thumb. [Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213]

Fred Hoʻolae Paoa, Ms. Clarke, and Ms. McKinzie all discussed the impacts on marine resources following the construction of the Ala Wai Canal. Ms. Clarke noted that prior to the construction of the canal:

> That place was loaded with squid, you know. But after the canal, no more. And this menpachi [*Myripristis berndti*]. […] Oh, akule. All that whole area. And out Waikiki by the Moana was kala. You know what kala is? The rough skin. That fish used to eat only līpoa [*Dictyopteris plagiogramma* and *D. australis*], that very strong-smelling seaweed. They used to catch that. […] [Mary Clarke in UHCOH 1985:2:652]

She also recalled, "But that was all mud in front there by the ʻIlikai, all muddy. And Gardie Harbottle and I used to walk from one end, from Cassidy's, right through. Get crab with a basket. Filled with crabs. Today, nothing" (Mary Clarke in UHCOH 1985:2:653).

Fred Hoʻolae Paoa recalled gathering clams "[j]ust off the shoreline at low tide" prior to the dredging of the area.

> […] we dug up coral sediment with picks and shovels to get the clams that were embedded. There was actually a lot of mud in the bottom there in that area, but I think it's the result of the stream that enters [the ocean] there. We found calms there for several years until the entire area was dredged [in the 1920s]. [Fred Hoʻolae Paoa in Kodama-Nishimoto et al. 2009:213]

Ms. Clarke also stated,

> […] And by [where] Kaiser's [Hospital is now], we used to get clams all along the beach there, and seaweed, long just like hair and green. That's all gone after the canal was . . . No more crabs, no more nothing. Terrible. [Mary Clarke in UHCOH 1985:2:653]

Ms. McKinzie also mentioned there was an abundance of "big cowry shells" in areas where coral fill was deposited. She recalled, "all the shells would come in, beautiful shapes. The place would be packed full of people looking for shells" (Adelaide McKinzie in UHCOH 1985:3:1182).

C 2 Keala Norman Written Testimony

<u>Cultural Impact Assessment for AMB Project</u>

Ohana Norman have blood ties to O'ahu prior to Kamehameha's rule over all the islands. Our kupuna [elders] have LCA's throughout O'ahu, Waikiki, Kou, and Kalihi which are just some of the areas. But, this testimony speaks specifically about our direct ties and connection to Kalia, Waikiki and the mo'olelo [stories] that has been past down from my mother Kahili Keaweamahi Kawainui Norman and our grandmother Alice Keaweamahi.

My great, great, great grandfather was part of Kamehameha's entourage. He and his family (my great, great grandfather) moved and relocated to Waikiki, O'ahu when Kamehameha moved to O'ahu.

My great, great grandfather settled and raised his family in Kalia, Waikiki where he had lived during the days of Kamehameha and where my great grandfather, grandmother, and mother along with my mother's siblings, Kimo, Napua, Frankie, Nancy, Abraham, Sharleen, and Michael were born and raised in Kalia, Waikiki. My mother's youngest siblings Ka'anohi and Samuel were born and raised in Kewalo.

My great grandfather, "Steamboat" Bill Keaweamahi was the first lifeguard of Waikiki. He was also the eldest of the very first group of the famous "Waikiki Beach Boys". Steamboat was the nickname given to him because he was a fast swimmer, like a steamboat. Tutu [grandfather] Steamboat's area to patrol as a lifeguard was from where the Ilikai hotel is located to Kaimana beach. Tutu Steamboat was said to have saved many lives as a lifeguard. He was a practitioner of La'au Kahea [a type of faith healing of broken or crushed bones or sprains] and lomilomi [massage]. He had used these cultural practices to help save some people's lives on the beach. Tutu Steamboat not only lived and worked in Waikiki but, they played, fished and gathered limu [seaweed] there.

When my great, grandfather Steamboat turned a year old, a baby lu'au [feast] was held in celebration of his first birthday and Princess Ka'iulani attended. The Princess gave my great grandfather a mug made entirely of silver for his birthday. On the mug the Princess engraved my great grandfather's name and saying that it was given to him from Princess Ka'iulani. I remember seeing this mug that was in my grandmother's stand-alone cabinet with glass doors that had a lock and key. It was said that Princess Ka'iulani used to ride her horse back and forth on the shores of Waikiki. It was told to us growing up that when Tutu Steamboat was a lifeguard, he would see the ghost of Ka'iulani riding her horse on the beach.

Tutu Steamboat and his brothers were all watermen. Tutu Steamboat's younger brother was also a well-known Waikiki Beach Boy. His name was Tough Bill Keaweamahi.

Tutu Steamboat was also involved with Hui Nalu at its inception. Hui Nalu was first a swim and surf club that all the Keaweamahi brothers, 4 of them and the Kahanamoku brothers, 4 or 5 of them were a part of. They all competed in swim meets and surf meets and then later canoe paddling regattas. My mother Kahili and some of her siblings also paddled for Hui Nalu.

When Duke Kahanamoku became famous, there were a lot of photos being taken of Duke. A photographer wanted Duke to pose as though he was diving into the pool. We have a picture of one of my great granduncles with his teammates photo bombing Duke Kahanamoku.

The Kahanamokus lived on aina [land] belonging to the Paoa ohana [family]. Duke Kahanamoku's mother was a Paoa. There were canoes named after our ohana Keaweamahi and there was a canoe named after the Paoa ohana. I believe there are newer canoes named after our ohana still there on Waikiki beach being used today to take tourist out on rides.

The ashes of my Tutu Steamboat and Tutu Tough Bill have been scattered in the waters off Waikiki, the sands of their birth, one hanau [birthplace].

We have a picture of my grandmother when she was a year old lying on the back of her Aunty wading on the banks of the Ala Wai near the property where they lived. When we were sick, my grandmother would always tell us to go swimming at Waikiki because she said that the ocean is healing.

My mother remembers growing up in Waikiki. She remembers seeing and passing the Kahanamoku's house on the way to the beach. She remembers how they used to throw rocks at the dates on the date trees that once lined the street in the now Fort DeRussy area to eat as a snack on their way home from the beach.

Growing up there in Waikiki, my mother remembers walking down to the beach with her mother and Aunties to gather limu for lunch and dinner. Back then the limu was abundant and clean.

Prince David Kalakaua Kawananakoa, the son of Prince David La'amea Kawananakoa used to frequently visit my Tutu and his brothers. My mom remembered how handsome Prince David was. She remembered how Prince David used to visit them at their home and then his visits suddenly stopped.

[The definitions of the Hawaiian words in Ms. Norman's testimony are taken from the Hawaiian Dictionary (Pukui and Elbert 1986).]

C 3 Winifred "Niniaulani" Barr Summary

On 25 May 2022, Cultural Surveys Hawaiʻi, Inc. (CSH) spoke with Winifred Barr via telephone to discuss the Cultural Impact Assessment (CIA) for the Ala Moana Boulevard (AMB) Tower project and her experience growing up in Kālia and Waikīkī. Ms. Barr retired as an Administrative Assistant after 20 years of service in the Deans office of the Shidler College of Business at University of Hawaiʻi at Mānoa (UHM). Currently, she is the Program Coordinator with the Osher Lifelong Learning Institute at UHM (OLLI-UHM). OLLI-UHM is a "member-based learning community of adults age 50+" that offers "non-credit, college-level courses, workshops, lectures, events, and other activities to encourage older individuals to engage their minds, enrich their lives, and serve the community" (OLLI-UHM 2021).

Ms. Barr grew up in Kālia. When she was a child, she lived with her *'ohana* (family), the Harbottles, in one of the four homes her grandfather had on their property, which was located in the area that is now the Hilton Hawaiian Village (HHV). Her grandfather had one son and eight daughters, including Ms. Barr's mother. She recalled that her *'ohana* would gather at their home in Kālia for a *lū'au* (feast) to celebrate and pray for the New Year.

She also recalled that the area consisted of three lanes called 1st Lane, 2nd Lane, and 3rd Lane. She noted that the Paoa, Kahanamoku, and Harbottle 'Ohana lived on 1st Lane. She referred to the area as the "dog patch." Her Uncle Duke Kahanamoku's home was located "towards the beach" from her home. She also noted that the Niumalu Hotel was located where the HHV is currently located and there was a Japanese restaurant in the location where the Grand Waikikian Hotel is now. Ms. Barr lived in Kālia until her early teens when her family leased their property to Henry J. Kaiser and moved to Kaimuki.

Ms. Barr discussed the abundance of marine resources that were available in the ocean off Kālia. She noted that prior to the construction of the HHV, there was no lagoon, it was open to the ocean. She remembered when her uncles would come home after fishing, they would clean and cook the fish they caught. After her *'ohana* moved away from Kālia, her cousins still went fishing every weekend in the area where the lagoon is.

Her *'ohana* also gathered *limu* (seaweed) along the shore. She noted that *limu manauea* (*Gracilaria coronopifolia*), also referred to as *ogo*, was abundant in the area. She mentioned that she enjoys eating *limu 'ele'ele* (*Enteromorpha prolifera*) in stew, however, she noted that it was rare to find *limu 'ele'ele* in the area.

She also mentioned that the *ali'i* (royalty) had homes and vacationed in the area of Waikīkī around Kapi'olani Park. She noted that the area is known as the "Gold Coast."

Appendix D

Hilton Hawaiian Village
AMB Tower Pedestrian Wind Study
RWDI
August 23, 2022

REPORT

HILTON HAWAIIAN VILLAGE AMB TOWER

HONOLULU, HAWAII

PEDESTRIAN WIND STUDY
RWDI # 1900238
August 23, 2022

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EXECUTIVE SUMMARY

RWDI was retained to conduct a pedestrian wind assessment for the proposed Hilton Hawaiian Village AMB Tower in Honolulu, Hawaii (Image 1). Based on our wind-tunnel testing for the proposed development under the Existing and Proposed configurations (Images 2A and 2B, respectively), and the local wind records (Image 3), the potential wind comfort and safety conditions are predicted as shown on site plans in Figures 1A through 3B, while the associated wind speeds are listed in Table 1. These results can be summarized as follows:

- With the proposed development in place, overall wind conditions across the site are expected to be improved compared to the existing conditions.
- Wind conditions on and around the existing site are appropriate at most areas throughout the year. Higher wind speeds and uncomfortable conditions occur through the passageway between Kalia Tower and Mid-Pacific Conference Center.
- With the proposed project in place, wind speeds in the surrounding areas are expected to remain suitable for intended pedestrian use throughout the year and the project will not result in significant impacts. The existing uncomfortable locations through the passageway are predicted to be alleviated after the addition of the proposed tower.
- Calm wind conditions are expected at most areas around the tower perimeter including the entrance locations, throughout the year. However, uncomfortable conditions are expected near the northeast corner of the tower.
- Wind conditions at most above-grade locations on Level 3 amenity deck and Level 8 pool deck are predicted to be comfortable for passive use year-round.
- Introduction of the proposed project is predicted to improve wind conditions on the rooftop amenity at the west end of Mid-Pacific Conference Center, where conditions suitable for passive use are expected throughout the year.
- Wind speeds at the grade level and most above-grade locations are predicted to meet the pedestrian wind safety criterion, with exceptions of two locations near the northeast end on the roof of Level 8 podium. However, these higher wind speeds at this level might be acceptable as these areas are not accessible to general public.

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1 INTRODUCTION

RWDI was retained to conduct a pedestrian wind assessment for the proposed Hilton Hawaiian Village AMB Tower in Honolulu, Hawaii. This report presents the project objectives, approach and the main results from RWDI's assessment and provides conceptual wind control measures, where necessary.

1.1 Project Description

The project (site shown in Image 1) is located at the southwest corner of the intersection of Ala Moana Boulevard and Kalia Road. It consists of a 36-story hotel tower that connects to the existing Kalia Tower through a 8-story podium.

1.2 Objectives

The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed. This quantitative assessment was based on wind speed measurements on a scale model of the project and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared to appropriate criteria for gauging wind comfort and safety in pedestrian areas. The assessment focused on critical pedestrian areas, including building entrances, public sidewalks, and outdoor amenity areas.

Image 1: Aerial View of Site and Surroundings (Photo Courtesy of Google™ Earth)

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:300 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

A - Existing:	Existing site with existing surroundings (Image 2A), and
B - Proposed:	Proposed project with existing surroundings (Image 2B).

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1200ft radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modeled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 73 specially designed wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 5 ft above local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in a 10-degree increments. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site, and reviewed by the project team.

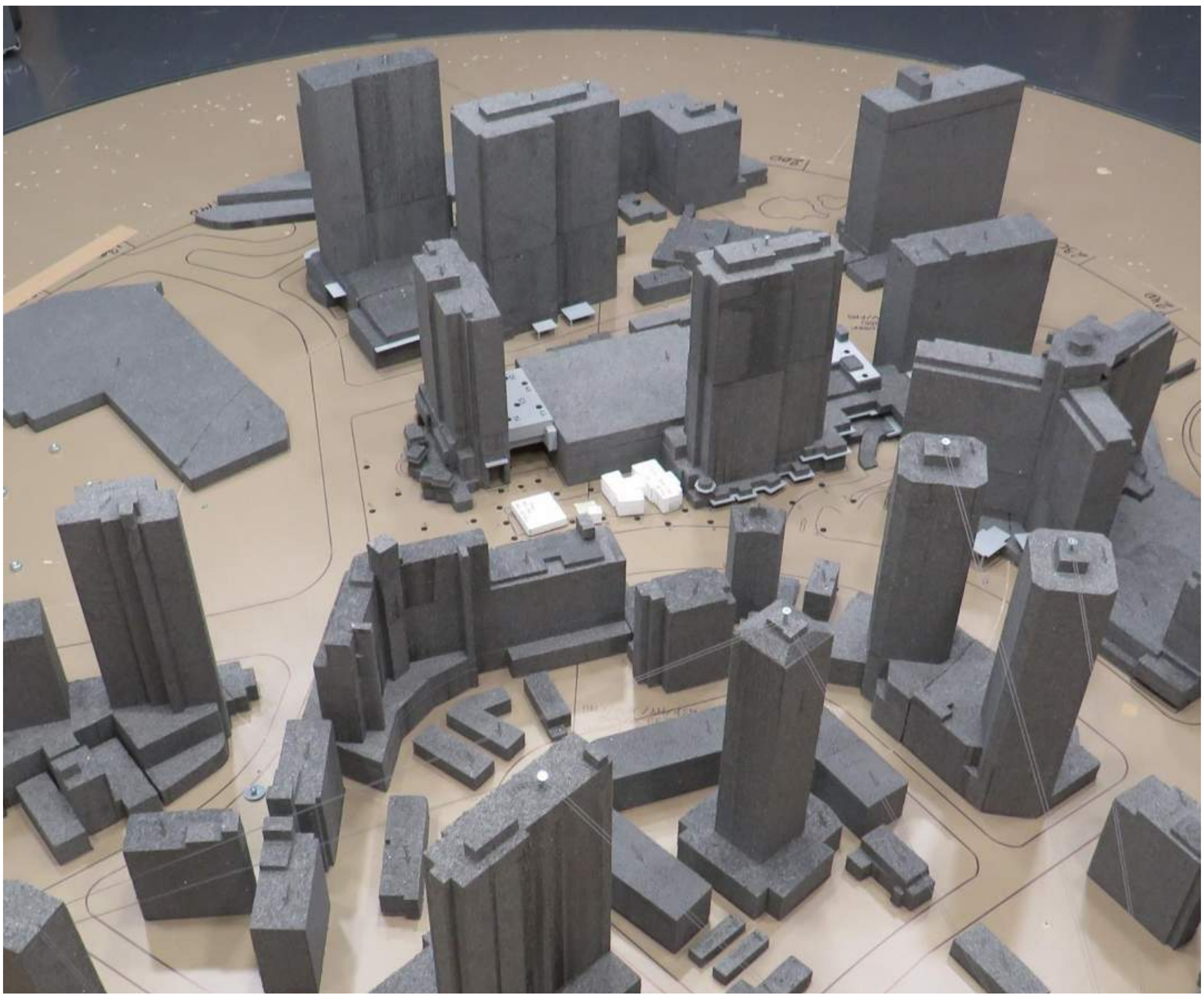


Image 2A: Wind Tunnel Study Model – Existing Configuration

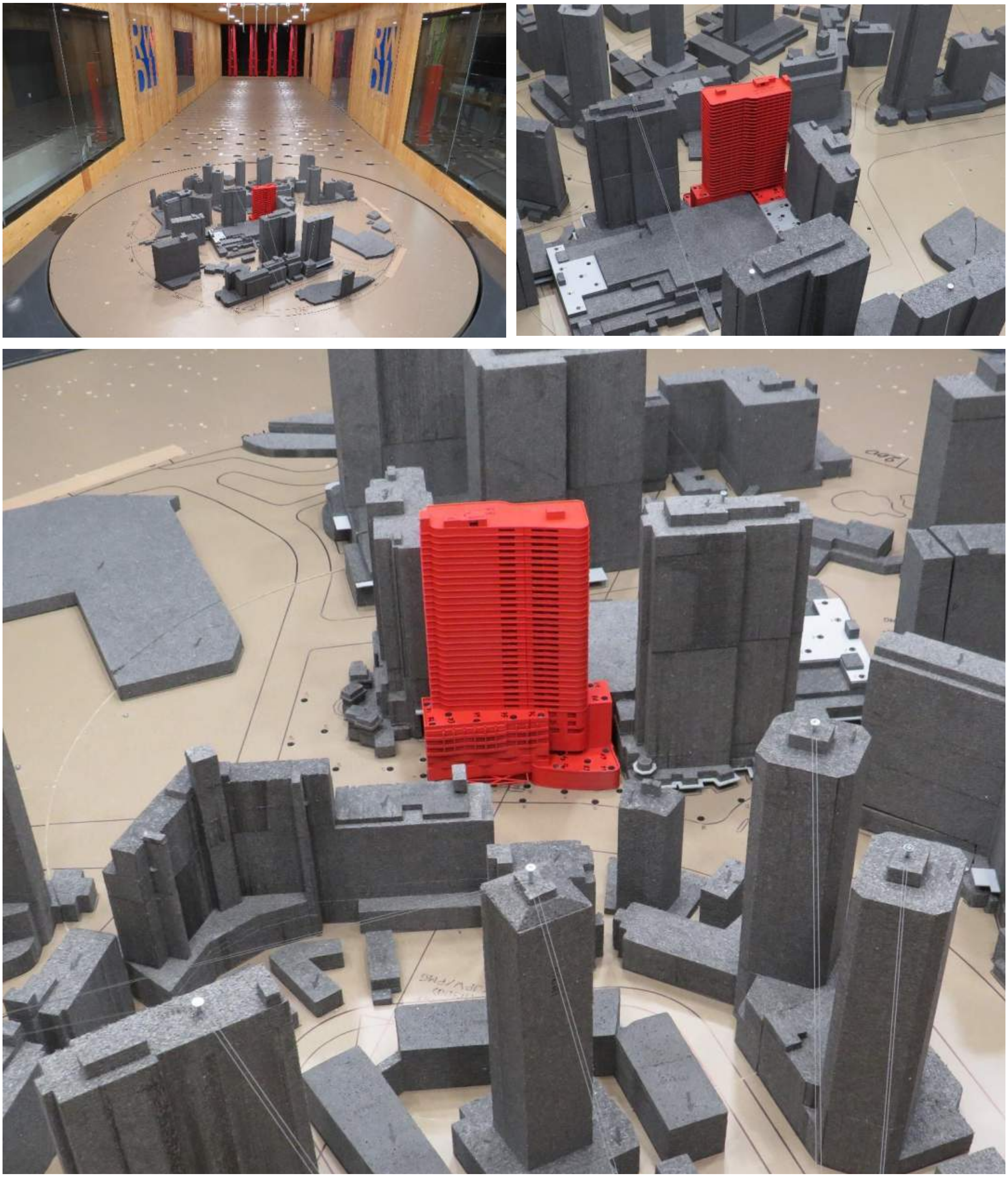
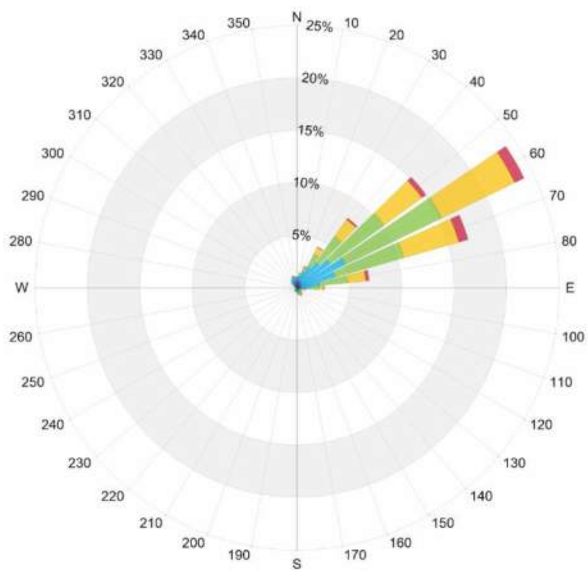


Image 2B: Wind Tunnel Study Model – Proposed Configuration

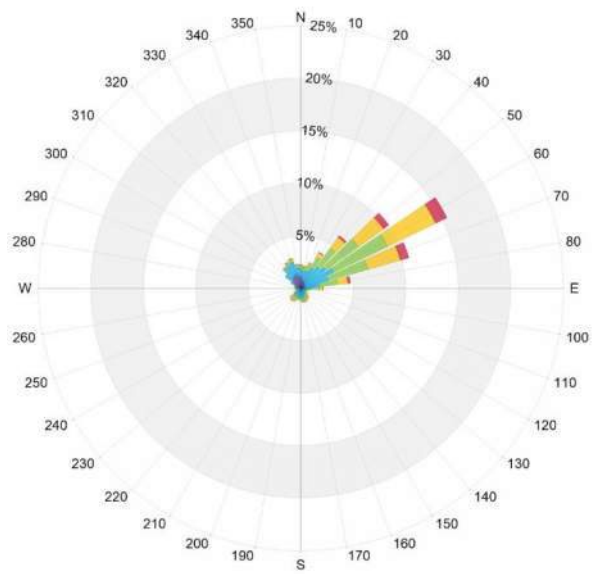
2.2 Meteorological Data

Wind statistics recorded at Honolulu International Airport between 1989 and 2019, inclusive, were analyzed for the Summer (May through October) and Winter (November through April) seasons. Image 3 graphically depicts the directional distributions of wind frequencies and speeds for these two seasons. Winds from the northeastern directions are predominant in the throughout the year as indicated by the wind roses. Strong winds of a mean speed greater than 15mph measured at the airport (at an anemometer height of 30 ft) occur for 25.9% and 19.8% of the time during the summer and winter seasons, respectively, and they are primarily from the northeastern directions.

Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the wind criteria for pedestrian comfort and safety.



Summer (May – October)



Winter (November – April)

Wind Speed (mph)	Probability (%) Summer	Winter
Calm	3.6	7.2
1-5	9.3	15.1
6-10	26.4	30.9
11-15	34.8	27.0
16-20	23.1	16.4
>20	2.8	3.4

Image 3: Directional Distribution of Winds Approaching Honolulu International Airport between 1989 and 2019

2.2 RWDI Pedestrian Wind Criteria

The RWDI pedestrian wind criteria, which have been developed by RWDI through research and consulting practice since 1974, are used in the current study. These criteria have been widely accepted by municipal authorities as well as by the building design and city planning community. Regional differences in wind climate and thermal conditions as well as variations in age, health, clothing, etc. can affect a person's perception of the wind climate. Therefore, comparisons of wind speeds for the existing and proposed building configurations are the most objective way in assessing local pedestrian wind conditions. In general, the combined effect of mean and gust speeds on pedestrian comfort can be quantified by a Gust Equivalent Mean (GEM).

Comfort Category	GEM Speed (mph)	Description
Sitting	≤ 6	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away
Standing	≤ 8	Gentle breezes suitable for main building entrances, bus stops, and other places where pedestrians may linger
Strolling	≤ 10	Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza or park
Walking	≤ 12	Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering
Uncomfortable	> 12	Strong winds of this magnitude are considered a nuisance for all pedestrian activities, and wind mitigation is typically recommended

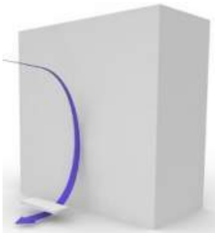
Notes:
(1) GEM Speed = max (Mean Speed, Gust Speed/1.85) and Gust Speed = Mean Speed + 3*RMS Speed;
(2) Wind conditions are considered to be comfortable if the predicted GEM speeds are within the respective thresholds for at least 80% of the time between 6:00 and 23:00. Nightly hours between 0:00 and 5:00 are excluded from the wind analysis for comfort since limited usage of outdoor spaces is anticipated.

Safety Criterion	Gust Speed (mph)	Description
Exceeded	> 56	Excessive gust speeds that can adversely affect a pedestrian's balance and footing. Wind mitigation is typically required.

Notes:
(1) Based on an annual exceedance of 9 hours or 0.1% of the time for 24 hours a day; and,
(2) Only gust speeds need to be considered in the wind safety criterion. These are usually rare events, but deserve special attention in city planning and building design due to their potential safety impact on pedestrians.

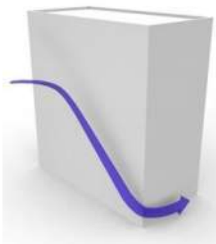
2.3 Generalized Wind Flows

In our discussion of wind conditions, reference may be made to the following generalized wind flows (Image 4):



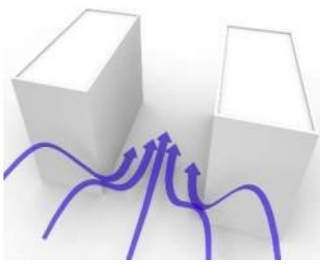
DOWNWASHING

Tall buildings tend to intercept the stronger winds at higher elevations and redirect them to the ground level. This is often the main cause for wind accelerations around large buildings at the pedestrian level.



CORNER ACCELERATION

When winds approach at an oblique angle to a tall façade and are deflected down, a localized increase in the wind activity or corner acceleration can be expected around the exposed building corners at pedestrian level.



CHANNELING EFFECT

When two buildings are situated side by side, wind flow tends to accelerate through the space between the buildings due to channeling effect caused by the narrow gap.

Image 4: Generalized Wind Flows

If these building/wind combinations occur for prevailing winds, there is a greater potential for increased wind activity. Design details such as; setting back a tall tower from the edges of a podium, deep canopies close to ground level, wind screens, tall trees with dense landscaping, etc. (Image 5) can help reduce wind speeds. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings.

Podium/tower setback, canopy, landscaping and wind screens (left to right)

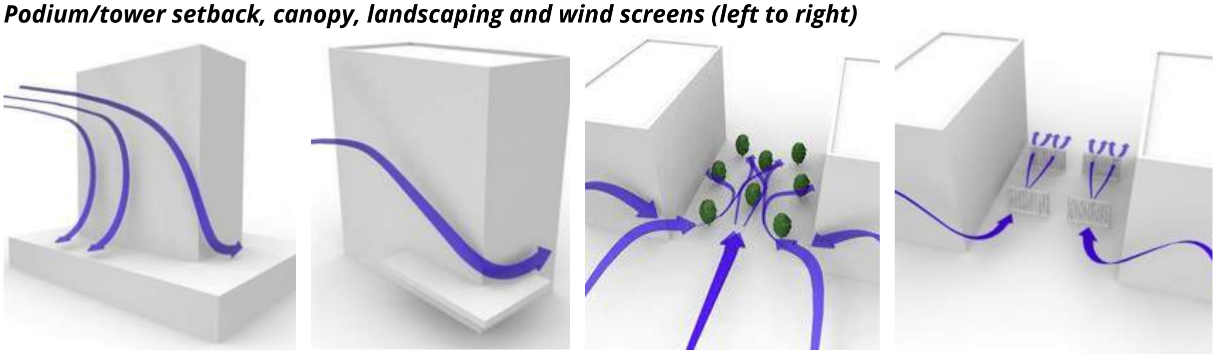


Image 5: Common Wind Control Measures

3 RESULTS AND DISCUSSION

The predicted wind conditions are shown on site plans in Figures 1A through 3B located in the "Figures" section of this report. These conditions and the associated wind speeds are also represented in Table 1, located in the "Tables" section of this report.

Wind conditions comfortable for walking or strolling are appropriate for sidewalks and walkways as pedestrians will be active and less likely to remain in one area for prolonged periods of time. Lower wind speeds conducive to standing are preferred at main entrances where pedestrians are apt to linger. Wind speeds comfortable for sitting are preferred for areas intended for passive activities. The following is a detailed discussion of the suitability of the predicted wind conditions for the anticipated pedestrian use of each area of interest.

3.1 Existing Configuration

3.1.1 Grade Level (Locations 1 through 44)

Overall, wind conditions conducive to intended pedestrian activities can be expected at most locations across the existing site, with conditions comfortable for walking or better throughout the year (see Figures 1A and 2A). Due to downwashing and channeling effect of northeasterly winds, uncomfortable wind conditions occur along the passageway between Kalia Tower and Mid-Pacific Conference Center (Locations 14-16, 18, and 20 in Figure 1A during the summer; Locations 15, 16 and 18 in Figure 2A during the winter).

3.1.2 Above-grade Levels (Locations 45 through 57)

On the existing pool deck at the 8th level of Kalia Tower, suitable wind conditions that are comfortable for sitting or standing are present throughout the year (Figures 1A and 2A). Existing wind conditions on the rooftop amenity terrace of the Conference Center are suitable for standing and strolling (Figures 1A and 2A).

Wind speeds that meet the safety criterion are identified at all test locations in the Existing Configuration (see Figure 3A).

3.2 Proposed Configuration

It predicted that the proposed project will not result in significant impacts to the existing wind conditions. With the project in place, overall wind conditions across the site are expected to be improved compared to the existing conditions. Following is a detailed breakdown of the predicted wind conditions on and around the proposed development.

3.2.1 Grade Level (Locations 1 through 44)

Wind conditions at all locations around the project site, including the main entrance situated at Location 1, are expected to be suitable for the intended pedestrian usages throughout the year. One exception is predicted at the northeast corner of the proposed tower (Location 4 in Figures 1B and 2B), where uncomfortable conditions are expected, due to downwahsing and corner acceleration of prevailing winds from the northeast. Lower wind speeds at this area could be achieved if desired by installing a canopy along the east façade of the tower to deflect winds accelerating down the façade away from the ground (see Image 6 for examples). In addition, the existing landscaping at the intersection of Ala Moana Boulevard and Kalia Road, which were not included in the wind tunnel test, are expected to help reduce the wind speeds in this area.

With the introduction of the proposed tower, high wind speeds through the channel between Kalia Tower and the Conference Center are predicted to be alleviated, with uncomfortable wind conditions now anticipated at one isolated area (Location 14 in Figures 1B and 2B), which might be considered acceptable as this location is primarily used as service dock.

Wind conditions that meet the safety criterion are predicted at all locations at grade level in the Proposed Configuration (see Figure 3B).


Image 6: Design strategies for wind control near corner

3.2.2 Above-grade Levels (Locations 45 through 73)

On the Level 8 pool deck that connects the existing Kalia Tower and proposed tower, wind conditions are predicted to continue to be suitable for sitting or standing throughout the year, which are conducive to the intended passive use of this area. Slightly higher wind speeds with conditions comfortable for strolling are identified at Location 60 during the summer (see Figure 1B). If lower wind speeds on this pool deck are desired, the design team may consider wind mitigation options such as partition walls along sitting areas, as well as hard, and/ or soft landscaping features. Examples of these wind control features can be found in Image 7.

Appropriate wind conditions that are suitable for sitting or standing can be expected on Level 3 amenity deck of the proposed tower, to the benefits of its downwind location. Due to higher elevation and exposure to prevailing winds from the northeast, elevated wind activity is predicted on the roof of the Level 8 podium, with uncomfortable and potentially unsafe conditions anticipated at certain locations towards the northeast end (Locations 67-69 in Figures 1B and 2B for uncomfortable conditions; Locations 68 and 69 in Figure 3B for safety exceedances). However, these higher wind speeds at this level might be acceptable as these areas are not accessible to general public. If pedestrian access cannot be restricted for this area on the podium, wind mitigation options such as raised railing (minimum height of 6ft), large canopy, as well as hard or soft landscaping features can be considered to reduce the wind speeds accordingly. Examples of these wind control features can be found in Image 8.

Due to the protection provided by the proposed tower, the Conference Center will be sheltered from prevailing northeastern winds, and improved wind conditions that are comfortable for sitting or standing are expected on its rooftop amenity (Figures 1B and 2B).

Wind speeds at all areas above grade, except for Locations 68 and 69 on the roof of the Level8 podium, are expected to satisfy the pedestrian safety criterion (see Figure 3B).

Image 7: Design strategies for wind control on pool deck

Image 8: Design strategies for wind control on podium roof

4 APPLICABILITY OF RESULTS

The wind conditions presented in this report pertain to the model of the proposed Hilton Hawaiian Village AMB Tower constructed using the drawings and information listed below. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

File Name	File Type	Date Received (dd/mm/yyyy)
HHV-composite-A20_Central	Revit	20/09/2021
HHV-podium-A20_Central	Revit	20/09/2021
HHV-struct-A20_Central	Revit	20/09/2021
HHV-T3-A20_Central	Revit	20/09/2021
Site Base-A20	Revit	20/09/2021
Grand Waikikian_Shell_A20_Aug 16 2016	Revit	22/09/2021

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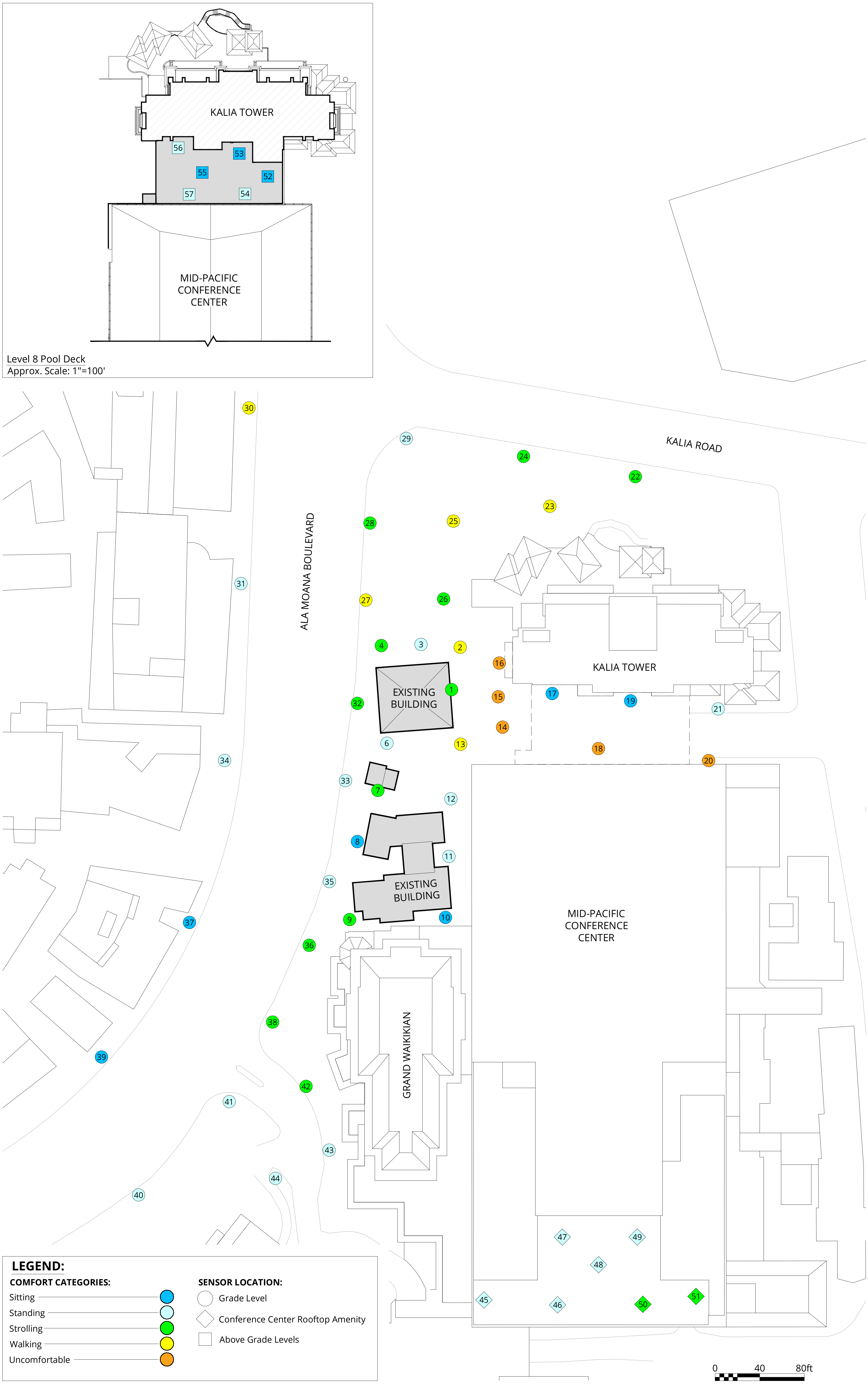
FIGURES

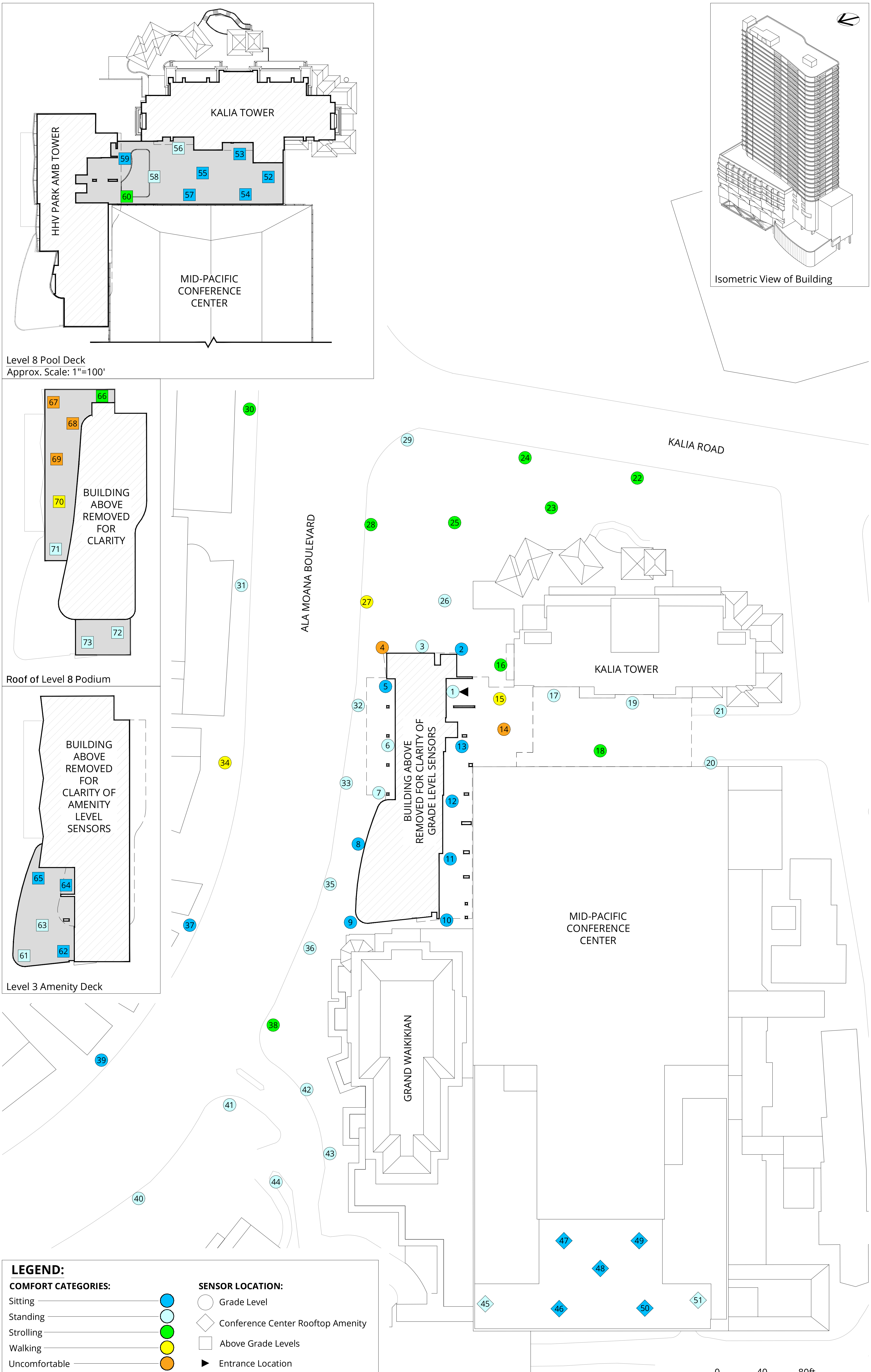


Pedestrian Wind Comfort Conditions
Existing Configuration
Summer (May to October, 6:00 to 23:00)

Hilton Hawaiian Village - Park AMB Tower - Honolulu, HI

Project #1900238

Drawn by: GRE	Figure: 1A
Approx. Scale:	1"=80'
Date Revised:	Nov. 3, 2021



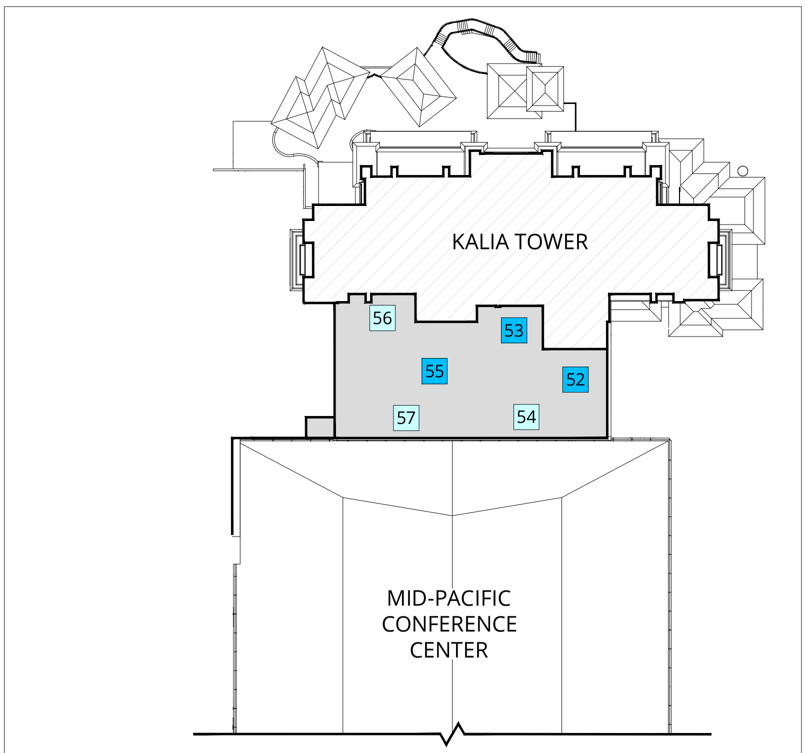
Pedestrian Wind Comfort Conditions
Proposed Configuration
Summer (May to October, 6:00 to 23:00)

Hilton Hawaiian Village - Park AMB Tower - Honolulu, HI

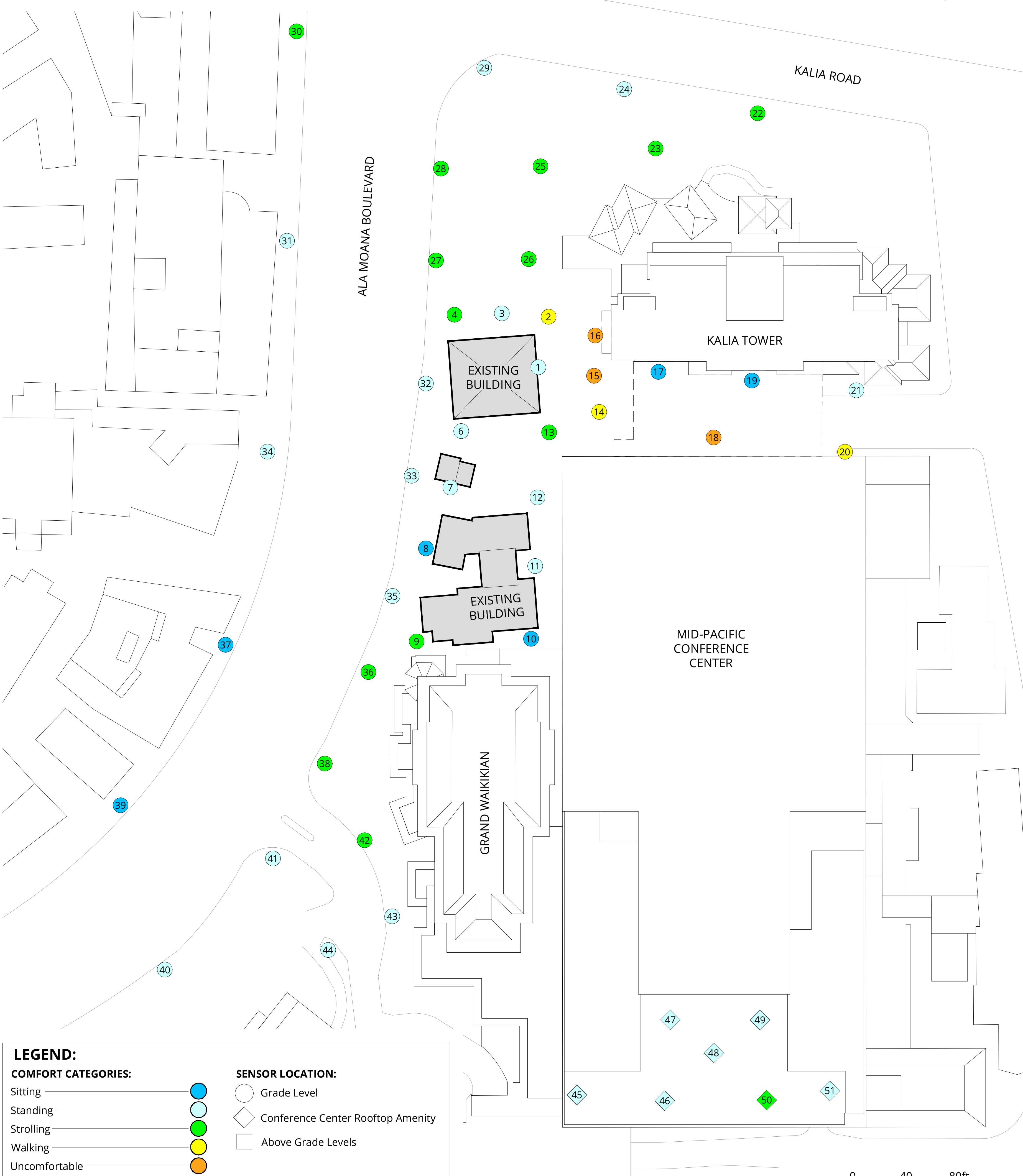
True North

Project #1900238

Drawn by: GRE	Figure: 1B
Approx. Scale:	1"=80'
Date Revised:	Nov. 3, 2021



Level 8 Pool Deck
Approx. Scale: 1"=100'



LEGEND:

COMFORT CATEGORIES:
- Sitting
- Standing
- Strolling
- Walking
- Uncomfortable

SENSOR LOCATION:
- Grade Level
- Conference Center Rooftop Amenity
- Above Grade Levels

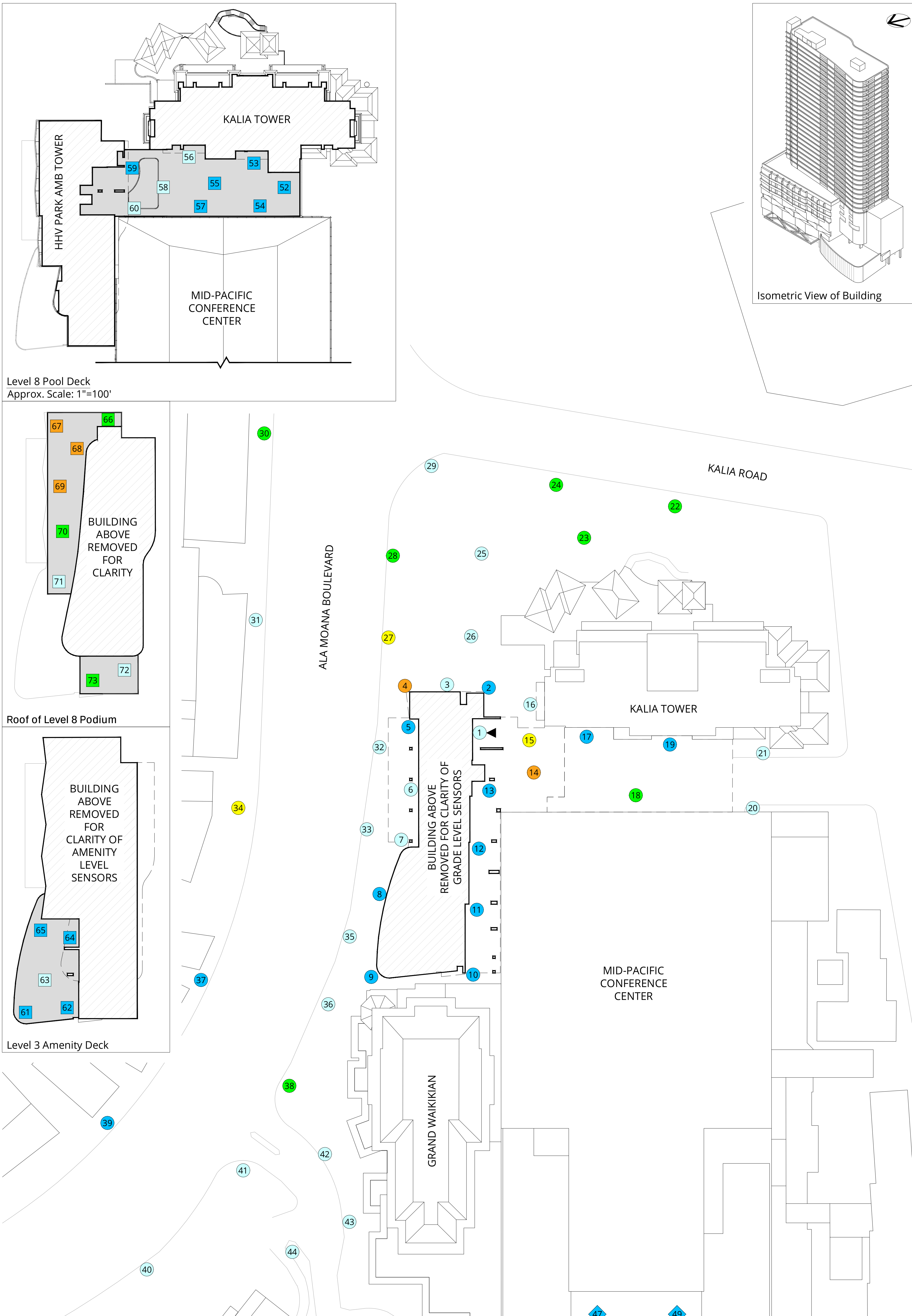
Pedestrian Wind Comfort Conditions
Existing Configuration
Winter (November to April, 6:00 to 23:00)

Hilton Hawaiian Village - Park AMB Tower - Honolulu, HI

True North

Project #1900238

Drawn by:	GRE	Figure:	2A
Approx. Scale:	1"=80'		
Date Revised:	Nov. 3, 2021		



LEGEND:

COMFORT CATEGORIES:	SENSOR LOCATION:
Sitting	Grade Level
Standing	Conference Center Rooftop Amenity
Strolling	Above Grade Levels
Walking	Entrance Location
Uncomfortable	

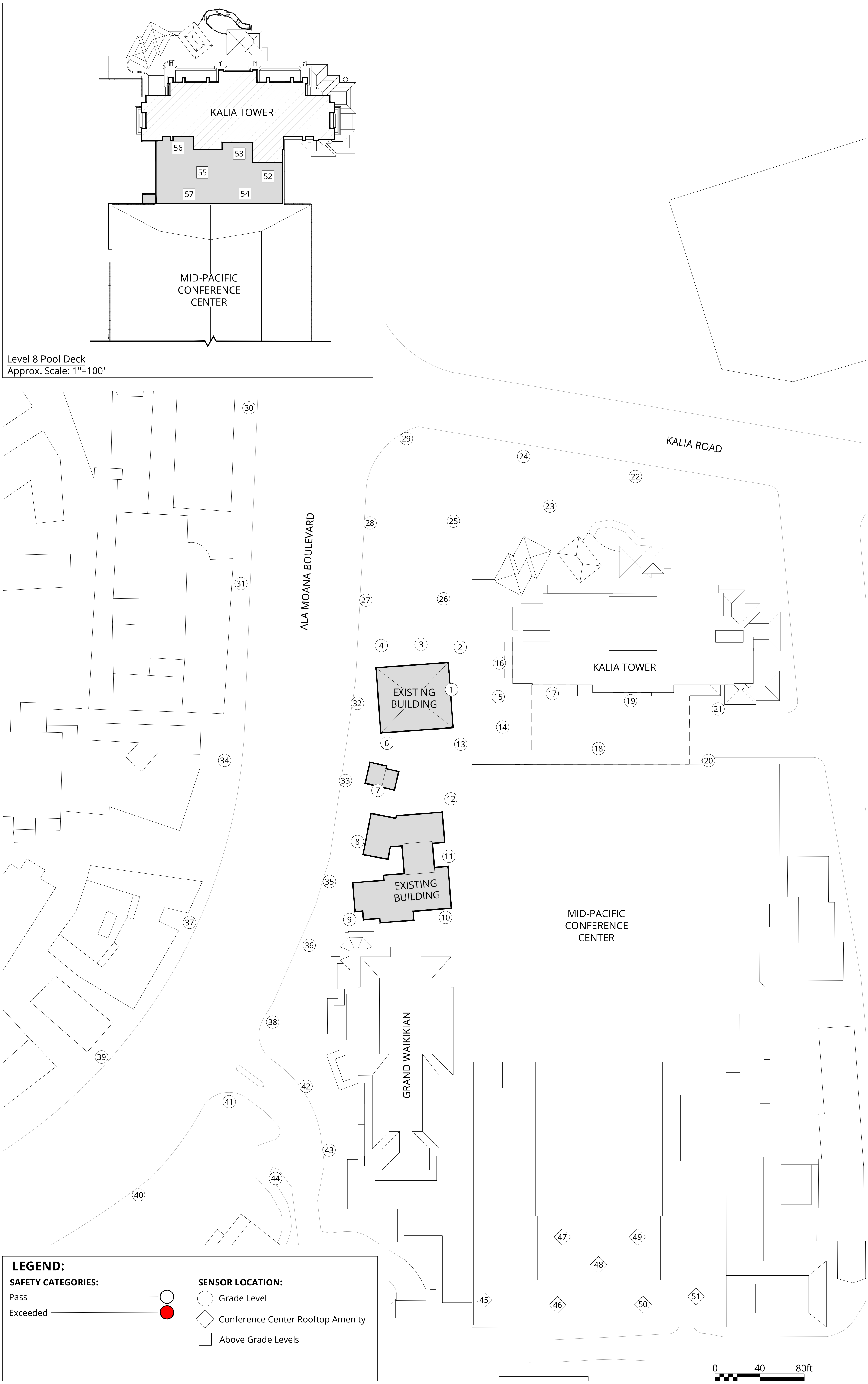
Pedestrian Wind Comfort Conditions
Proposed Configuration
Winter (November to April, 6:00 to 23:00)

Hilton Hawaiian Village - Park AMB Tower - Honolulu, HI

True North

Project #1900238

Drawn by: GRE Figure: 2B
Approx. Scale: 1"=80'
Date Revised: Nov. 3, 2021



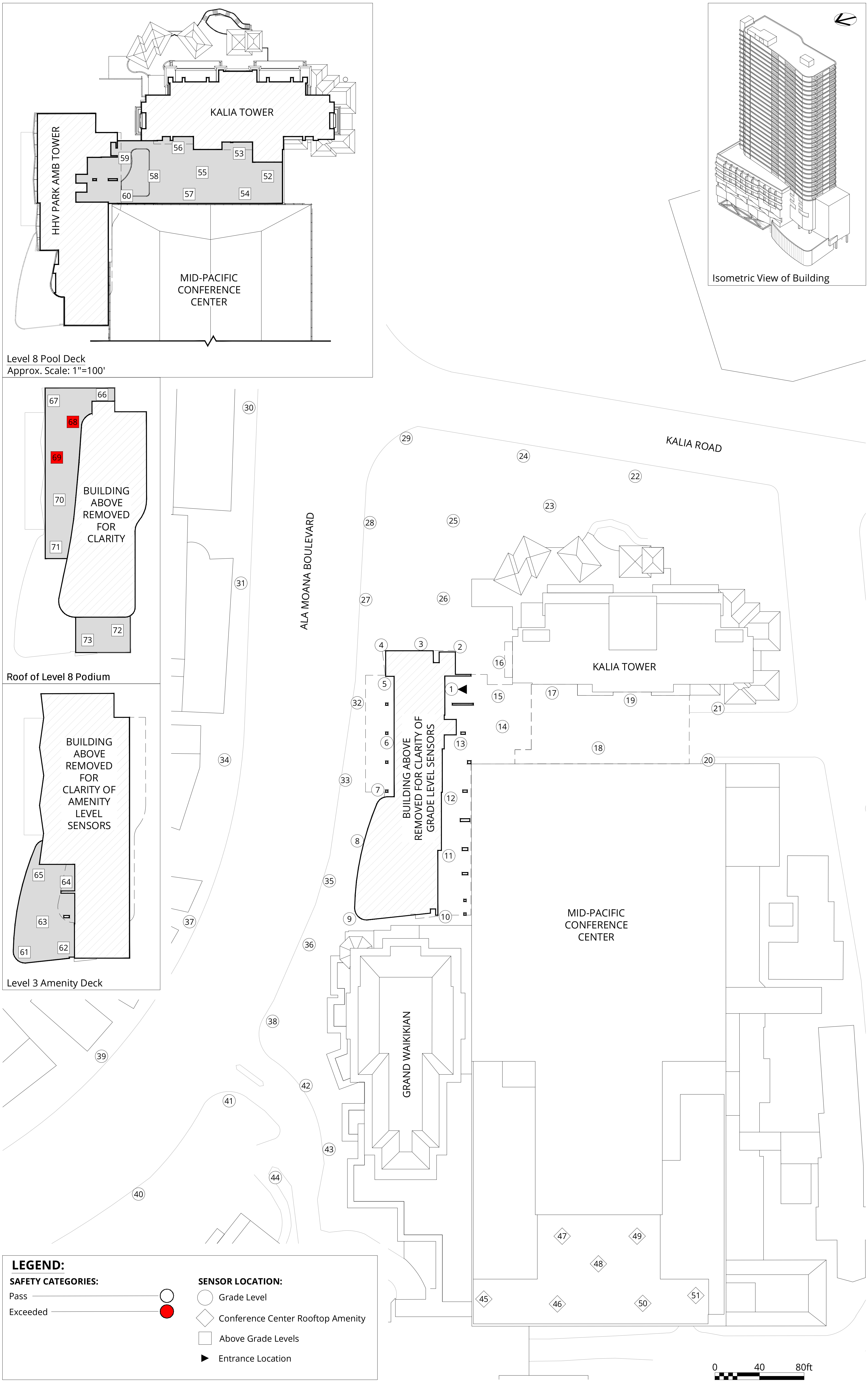
Pedestrian Wind Safety Conditions
Existing Configuration
Annual (January to December, 0:00 to 23:00)

Hilton Hawaiian Village - Park AMB Tower - Honolulu, HI

True North

Project #1900238

Drawn by:	GRE	Figure:	3A
Approx. Scale:	1"=80'		
Date Revised:	Nov. 3, 2021		



Pedestrian Wind Safety Conditions
Proposed Configuration
Annual (January to December, 0:00 to 23:00)

Hilton Hawaiian Village - Park AMB Tower - Honolulu, HI

True North

Project #1900238

Drawn by:	GRE	Figure:	3B
Approx. Scale:	1"=80'		
Date Revised:	Nov. 3, 2021		

TABLES

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
1	Exisiting Proposed	9 7	Strolling Standing	8 7	Standing Standing	30 23	Pass Pass
2	Exisiting Proposed	12 6	Walking Sitting	11 6	Walking Sitting	36 22	Pass Pass
3	Exisiting Proposed	8 7	Standing Standing	8 7	Standing Standing	27 24	Pass Pass
4	Exisiting Proposed	10 15	Strolling Uncomfortable	10 14	Strolling Uncomfortable	35 42	Pass Pass
5	Exisiting Proposed	- 6	- Sitting	- 6	- Sitting	- 22	- Pass
6	Exisiting Proposed	8 8	Standing Standing	8 7	Standing Standing	28 27	Pass Pass
7	Exisiting Proposed	9 7	Strolling Standing	8 7	Standing Standing	30 26	Pass Pass
8	Exisiting Proposed	6 6	Sitting Sitting	6 6	Sitting Sitting	25 24	Pass Pass
9	Exisiting Proposed	10 6	Strolling Sitting	10 6	Strolling Sitting	35 22	Pass Pass
10	Exisiting Proposed	6 4	Sitting Sitting	6 4	Sitting Sitting	24 18	Pass Pass
11	Exisiting Proposed	7 3	Standing Sitting	7 4	Standing Sitting	26 19	Pass Pass
12	Exisiting Proposed	8 4	Standing Sitting	8 4	Standing Sitting	28 19	Pass Pass
13	Exisiting Proposed	12 3	Walking Sitting	10 3	Strolling Sitting	37 13	Pass Pass
14	Exisiting Proposed	13 16	Uncomfortable Uncomfortable	12 14	Walking Uncomfortable	39 42	Pass Pass
15	Exisiting Proposed	16 12	Uncomfortable Walking	14 11	Uncomfortable Walking	44 33	Pass Pass
16	Exisiting Proposed	14 9	Uncomfortable Strolling	13 8	Uncomfortable Standing	40 30	Pass Pass
17	Exisiting Proposed	6 7	Sitting Standing	6 6	Sitting Sitting	23 22	Pass Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
18	Exisiting	15	Uncomfortable	14	Uncomfortable	43	Pass
	Proposed	10	Strolling	9	Strolling	27	Pass
19	Exisiting	6	Sitting	6	Sitting	26	Pass
	Proposed	7	Standing	6	Sitting	22	Pass
20	Exisiting	14	Uncomfortable	12	Walking	44	Pass
	Proposed	8	Standing	7	Standing	29	Pass
21	Exisiting	7	Standing	7	Standing	27	Pass
	Proposed	7	Standing	7	Standing	29	Pass
22	Exisiting	10	Strolling	9	Strolling	32	Pass
	Proposed	10	Strolling	9	Strolling	33	Pass
23	Exisiting	11	Walking	10	Strolling	37	Pass
	Proposed	10	Strolling	9	Strolling	32	Pass
24	Exisiting	9	Strolling	8	Standing	30	Pass
	Proposed	10	Strolling	9	Strolling	32	Pass
25	Exisiting	12	Walking	10	Strolling	36	Pass
	Proposed	9	Strolling	8	Standing	31	Pass
26	Exisiting	10	Strolling	10	Strolling	34	Pass
	Proposed	7	Standing	7	Standing	23	Pass
27	Exisiting	11	Walking	10	Strolling	34	Pass
	Proposed	12	Walking	11	Walking	36	Pass
28	Exisiting	10	Strolling	10	Strolling	32	Pass
	Proposed	9	Strolling	9	Strolling	30	Pass
29	Exisiting	8	Standing	8	Standing	30	Pass
	Proposed	7	Standing	7	Standing	29	Pass
30	Exisiting	12	Walking	10	Strolling	40	Pass
	Proposed	10	Strolling	9	Strolling	36	Pass
31	Exisiting	8	Standing	8	Standing	29	Pass
	Proposed	7	Standing	7	Standing	30	Pass
32	Exisiting	9	Strolling	8	Standing	30	Pass
	Proposed	7	Standing	7	Standing	28	Pass
33	Exisiting	8	Standing	8	Standing	32	Pass
	Proposed	7	Standing	7	Standing	28	Pass
34	Exisiting	8	Standing	8	Standing	29	Pass
	Proposed	12	Walking	11	Walking	35	Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
35	Exisiting Proposed	8 8	Standing Standing	8 7	Standing Standing	30 27	Pass Pass
36	Exisiting Proposed	10 8	Strolling Standing	10 8	Strolling Standing	33 30	Pass Pass
37	Exisiting Proposed	5 5	Sitting Sitting	6 5	Sitting Sitting	22 21	Pass Pass
38	Exisiting Proposed	10 10	Strolling Strolling	10 9	Strolling Strolling	34 34	Pass Pass
39	Exisiting Proposed	6 5	Sitting Sitting	6 6	Sitting Sitting	26 24	Pass Pass
40	Exisiting Proposed	8 7	Standing Standing	8 7	Standing Standing	31 31	Pass Pass
41	Exisiting Proposed	8 8	Standing Standing	8 8	Standing Standing	31 31	Pass Pass
42	Exisiting Proposed	10 8	Strolling Standing	10 8	Strolling Standing	34 31	Pass Pass
43	Exisiting Proposed	7 7	Standing Standing	7 7	Standing Standing	29 29	Pass Pass
44	Exisiting Proposed	8 8	Standing Standing	8 8	Standing Standing	29 29	Pass Pass
45	Exisiting Proposed	7 7	Standing Standing	7 7	Standing Standing	30 30	Pass Pass
46	Exisiting Proposed	8 6	Standing Sitting	8 6	Standing Sitting	31 31	Pass Pass
47	Exisiting Proposed	7 6	Standing Sitting	7 6	Standing Sitting	27 26	Pass Pass
48	Exisiting Proposed	7 6	Standing Sitting	7 6	Standing Sitting	30 30	Pass Pass
49	Exisiting Proposed	7 5	Standing Sitting	7 6	Standing Sitting	25 25	Pass Pass
50	Exisiting Proposed	10 6	Strolling Sitting	9 7	Strolling Standing	33 30	Pass Pass
51	Exisiting Proposed	9 7	Strolling Standing	8 7	Standing Standing	30 28	Pass Pass

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
52	Exisiting Proposed	6 6	Sitting Sitting	6 6	Sitting Sitting	28 24	Pass Pass
53	Exisiting Proposed	4 4	Sitting Sitting	4 4	Sitting Sitting	18 16	Pass Pass
54	Exisiting Proposed	7 6	Standing Sitting	7 6	Standing Sitting	28 25	Pass Pass
55	Exisiting Proposed	6 5	Sitting Sitting	6 6	Sitting Sitting	29 27	Pass Pass
56	Exisiting Proposed	7 8	Standing Standing	7 8	Standing Standing	29 30	Pass Pass
57	Exisiting Proposed	7 6	Standing Sitting	7 6	Standing Sitting	29 27	Pass Pass
58	Exisiting Proposed	- 8	- Standing	- 8	- Standing	- 30	- Pass
59	Exisiting Proposed	- 6	- Sitting	- 6	- Sitting	- 21	- Pass
60	Exisiting Proposed	- 9	- Strolling	- 8	- Standing	- 30	- Pass
61	Exisiting Proposed	- 7	- Standing	- 6	- Sitting	- 22	- Pass
62	Exisiting Proposed	- 5	- Sitting	- 6	- Sitting	- 21	- Pass
63	Exisiting Proposed	- 7	- Standing	- 7	- Standing	- 25	- Pass
64	Exisiting Proposed	- 6	- Sitting	- 6	- Sitting	- 13	- Pass
65	Exisiting Proposed	- 6	- Sitting	- 6	- Sitting	- 21	- Pass
66	Exisiting Proposed	- 10	- Strolling	- 10	- Strolling	- 38	- Pass
67	Exisiting Proposed	- 15	- Uncomfortable	- 14	- Uncomfortable	- 50	- Pass
68	Exisiting Proposed	- 18	- Uncomfortable	- 16	- Uncomfortable	- 59	- Exceeded

Table 1: Pedestrian Wind Comfort and Safety Conditions

Location	Configuration	Wind Comfort				Wind Safety	
		Summer		Winter		Annual	
		Speed (mph)	Rating	Speed (mph)	Rating	Speed (mph)	Rating
69	Exisiting	-	-	-	-	-	-
	Proposed	17	Uncomfortable	16	Uncomfortable	57	Exceeded
70	Exisiting	-	-	-	-	-	-
	Proposed	12	Walking	10	Strolling	39	Pass
71	Exisiting	-	-	-	-	-	-
	Proposed	7	Standing	7	Standing	24	Pass
72	Exisiting	-	-	-	-	-	-
	Proposed	7	Standing	7	Standing	37	Pass
73	Exisiting	-	-	-	-	-	-
	Proposed	8	Standing	9	Strolling	34	Pass

Season	Months	Hours
Summer	May - October	6:00 - 23:00 for comfort
Winter	November - April	6:00 - 23:00 for comfort
Annual	January - December	0:00 - 23:00 for safety

Configurations	
Existing	Existing site and surroundings
Proposed	Project with existing surroundings

Comfort Speed (mph)	
(20% Seasonal Exceedance)	
≤ 6	Sitting
7 - 8	Standing
9 - 10	Strolling
11 - 12	Walking
> 12	Uncomfortable

Safety Speed (mph)	
(0.1% Annual Exceedance)	
≤ 56	Pass
> 56	Exceeded

Appendix E

Air Quality Technical Report:
Hilton Hawaiian Village AMB Tower
Arcadis
September 2022

Group 70 International, Inc. dba G70

AIR QUALITY TECHNICAL REPORT

Hilton Hawaiian Village AMB Tower

September 2022

AIR QUALITY TECHNICAL REPORT

Hilton Hawaiian Village AMB Tower

Prepared for:

Group 70 International, Inc. dba G70

Prepared by:

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Tel 415 374 2744

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Our Ref.:

Date:

September 2022

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ACRONYMS AND ABBREVIATIONS

CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
GHG	Greenhouse gas

GWP	Global warming potential
MT	Metric tons
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
O_3	Ozone
Pb	Lead
PPM	Parts per million
PM_{10}	Particulate matter less than 10 microns
$PM_{2.5}$	Particulate matter less than 2.5 microns
ROG	Reactive organic gases
SAAQS	State Ambient Air Quality Standards
SO_2	Sulfur dioxide
SOx	Sulfur oxides
USEPA	United States Environmental Protection Agency
yr	Year
$\mu g/m^3$	Micrograms per cubic meters

1 INTRODUCTION

The purpose of this Air Quality Technical Report is to quantify the emissions associated with the proposed Hilton Hawaiian Village AMB Tower (the “Project”) resulting from the construction and operation of the proposed Project. During construction, emission sources are assumed to be primarily fugitive dust from vehicle and earth movement, demolition, construction equipment exhaust, and off-gassing of pollutants from applying asphalt paving and architectural coatings. Operational emissions sources are assumed to be from vehicle trips, energy usage, and area source emissions such as landscaping equipment and evaporative emissions from consumer product usage.

2 PROJECT DESCRIPTION

Construction of the proposed Project will provide approximately 515 hotel rooms in a 36-story hotel tower. In addition, the AMB Tower’s eight-story podium will provide amenities and support spaces, including lobby and reception areas, staff office space, employee areas, parking, retail and commercial space, a pool and recreation deck, a bar and other amenities.

3 ENVIRONMENTAL SETTING

The Project location, climate and State of Hawaii ambient air quality standards are summarized in the following sections.

3.1 Project Location

The Project site is located in Honolulu, Oahu on three-parcels of land at 1831, 1835, and 1841 Ala Moana Boulevard totaling approximately 0.46 acres. The site is surrounded by the Hilton Hawaiian Village which is a self-contained resort that includes accommodations, shops, restaurants, and recreational amenities.

3.2 Climate

Hawaii is comprised of several islands with diverse topography, but is generally classified as mountainous. These factors contribute to a mixture of climate regimes that exist within the island chain. Diverse climates can exist within relatively short distances on the same island due to topographical effects on wind direction and speed and rainfall patterns.

Oʻahu is the third-largest of the Hawaiian Islands. The Koʻolau Range, at an average elevation of 2,000 feet, parallels the northeastern coast. The Waiʻanae Mountains, somewhat higher in elevation, parallel the west coast. Honolulu International Airport, the business and Waikīkī districts, and a number of Honolulu’s residential areas lie along the southern coastal plain.

The predominant winds that affect the island are the trade winds that generally flow from the northeast, although its average frequency varies from 80 to 90 percent during the summer to only 50 percent in January. Lighter southeasterly winds prevail in the cooler winter months, with occasional strong wind events from winter storms.

The moderate temperature range is associated with the small seasonal variation in energy received from the sun and the tempering effect of the surrounding ocean. Honolulu International Airport has recorded temperatures as high as the lower 90s and as low as the lower 50s.

Heavy mountain rainfall sustains agricultural irrigation and Honolulu's water supply. The high elevations of the Koʻolau Mountains are extremely wet year-round, averaging over 200 inches per year. Oʻahu is driest along the coast west of the Waiʻanae Mountains, where rainfall drops to about 20 inches a year. Daytime showers, usually light, often occur while the sun continues to shine.

Intense rains in the October to April winter season sometimes causes serious flash flooding. Thunderstorms are infrequent and usually mild, and hail seldom occurs. Infrequently, a small tornado or waterspout may cause some damage. Only a few tropical cyclones have struck Hawaiʻi, although others have come near enough for their outlying winds, waves, clouds, and rain to affect the islands.

3.3 Ambient Air Quality

The ambient air quality in an area can be characterized in terms of whether it complies with National Ambient Air Quality Standards (NAAQS) and State Ambient Air Quality Standards (SAAQS), where applicable. The Clean Air Act (42 U.S.C. 7401 et seq.) requires the U.S. Environmental Protection Agency (USEPA) to set national standards for emissions that are considered harmful to public health and the environment (criteria pollutants). The seven criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), ozone (O_3) and particulate matter (PM_{10} and $PM_{2.5}$). Based on air monitoring data, Hawaii is currently classified as attainment for all Federal and State standards. **Table 1** presents the NAAQS and SAAQS for each criteria pollutant and the 2019 attainment designations for the State of Hawaii.

Table 1. Air Quality Standards Attainment Status for Hawaii

Parameter		State Standard		Federal Standard		Ambient Air Quality
Ozone	8-Hour	0.08 ppm	Attainment	0.070ppm	Attainment	0.053 ppm
Carbon Monoxide	1-Hour	9 ppm	Attainment	35 ppm	Attainment	1.4 ppm
	8-Hour	4.4 ppm	Attainment	9 ppm	Attainment	
Nitrogen Dioxide	1-Hour	--		0.100 ppm	Attainment	0.028 ppm
	Annual	0.04 ppm	Attainment	0.053 ppm	Attainment	
Sulfur Dioxide	1-Hour	--		0.075 ppm	Attainment	0.006 ppm
	3-Hour	0.5 ppm	Attainment	--		
	24-Hour	0.14 ppm	Attainment	--		
	Annual	0.03 ppm	Attainment	--		
Particulate Matter (PM_{10})	24-Hour	150 µg/m^3	Attainment	150 µg/m^3	Attainment	35 µg/m^3

	Annual	50 $\mu g/m^3$	Attainment	--		
Particulate Matter – Fine ($PM_{2.5}$)	24-Hour	--		35 $\mu g/m^3$	Attainment	6.7 $\mu g/m^3$
	Annual	--		12 $\mu g/m^3$	Attainment	

Notes:
-- = no standard available
$\mu g/m^3$ = micrograms per cubic meter
ppm = parts per million

Carbon monoxide, sulfur dioxide, PM_{10} and $PM_{2.5}$ air quality measurements recorded at Honolulu HDOH site
Ozone air quality measurements recorded at Sand Island HDOH site
NO_2 air quality measurements recorded at Kapolei HDOH site
Sources: HAR 11-59; Ambient Air Quality Standards; 40 CFR Part 50; National Primary and Secondary Ambient Air Quality Standard; State of Hawaiʻi Department of Health: State of Hawaiʻi Annual Summary 2019 Air Quality Data.

3.4 Greenhouse Gas

Greenhouse gases (GHGs) are compounds in the Earth's atmosphere which play a critical role in determining temperature near the Earth's surface. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and several chlorofluorocarbons. GHGs are commonly quantified in the equivalent mass of CO_2, denoted CO_2e, which takes into account the global warming potential (GWP) of each individual GHG compound.

4 AIR QUALITY ANALYSIS

Air quality emissions for the Project are discussed in greater specificity below for construction and operations. Detailed emissions calculations are provided in Appendix A.

4.1 Construction

For the Project, construction air quality impacts would be intermittent and short term. Construction would generate emissions of the criteria pollutants as well as GHGs. Emissions were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. The CalEEMod model provides a platform to calculate construction emissions using equipment emission factors (mass of emissions per unit time) from sources such as USEPA, California Air Resources Board (CARB) and site-specific information. CalEEMod also provides default values when site-specific information is not available.

Construction activities on approximately 0.46 acres were estimated to last 30 months and occur in six phases: demolition, site preparation, grading, structure construction, paving, and architectural coatings. Construction activities, projected start date, projected duration, construction equipment, and assumptions are included in **Table 2**.

The CalEEMod software allows the user to select pre-programmed "Mitigations" to control certain emissions. The measures selected and assumed to be implemented are:

- Replacing ground cover of area disturbed

- Applying water to disturbed surfaces and haul roads three times a day; and
- Reducing speed on unpaved roads to <15 miles per hour

These measures are common practices that are required by local and state regulations to control dust.

Annual emission calculated from CalEEMod are summarized in **Table 3**. Emissions from the proposed action are minimal due to the relatively small scale and low intensity of construction activities. Modeling assumptions and results are presented in Appendix A.

Table 2. Construction Assumptions by Activity

Activity	Start	Duration	Equipment
Demolition	October 2024	50 days	1 Industrial saw 2 Tractors 1 Rubber-tired dozers
Site Preparation	December 2024	5 days	1 Grader 1 Tractor
Grading	December 2024	10 days	1 Grader 1 Rubber-tired dozer 1 Tractor
Structure Construction	January 2025	550 days	1 Crane 2 Forklifts 2 Tractors
Paving	February 2027	25 days	4 Cement mixers 1 Paver 1 Roller 1 Tractor
Architectural Coating	February 2027	25 days	1 Air compressor

Table 3. Estimated Proposed Construction Emissions (Tons per Year)

Construction Year	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2e (MT/yr)
2024	0.022	0.20	0.23	$4.2x10^{-4}$	0.039	0.022	37
2025	0.075	0.73	0.94	$1.6x10^{-3}$	0.042	0.032	146
2026	0.075	0.73	0.94	$1.6x10^{-3}$	0.042	0.032	145
2027	0.26	0.15	0.22	$3.7x10^{-4}$	$9.9x10^{-3}$	$7.2x10^{-3}$	32

CO - carbon dioxide; CO_2e - carbon dioxide equivalent; MT/yr – metric tons per year; NOx - nitrogen oxides; $PM_{2.5}$ - particulate matter less than 2.5 microns; PM_{10} - particulate matter less than 10 microns; ROG - reactive organic gases; SO_2 – sulfur dioxide

4.2 Operations

For the Project, the primary air quality considerations associated with operational activities at the Site are on-site area and stationary sources and mobile sources. CalEEMod was used to estimate emissions from on-site area and stationary sources as well as mobile sources that would occur during long-term Project operations.

Project annual emissions are presented in **Table 4**.

Table 4. Summary of Operational Emissions (Tons per Year)

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2e (MT/yr)
Area	0.11	$5.0x10^{-5}$	$5.6x10^{-3}$	0.00	$2.0x10^{-5}$	$2.0x10^{-5}$	0.012
Stationary	$4.7x10^{-3}$	0.042	0.036	$2.5x10^{-4}$	$3.2x10^{-3}$	$3.2x10^{-3}$	99
Mobile	1.6	1.8	14	0.028	3.1	0.85	2,611
Waste/Water	--	--	--	--	--	--	201
TOTAL	1.7	1.9	14	0.028	3.1	0.85	2,912

CO - carbon dioxide; CO_2e - carbon dioxide equivalent; MT/yr – metric tons per year; NOx - nitrogen oxides; PM_{10} - particulate matter less than 10 microns; $PM_{2.5}$ – particulate matter less than 2.5 microns; ROG - reactive organic gases; SO_2 – sulfur dioxide; Tons/yr – tons per year

Results indicate that criteria pollutants and GHG emissions will increase with operational activities but the quantity would not be large enough to result in significant negative impacts to air quality.

5 CONCLUSIONS

The Project will involve demolition, site preparation, grading, structure construction, paving, and architectural coatings that will generate short term impact to air quality. Maximum annual emissions of criteria pollutants from construction activities are projected at less than 1 tons per year. These impacts will be localized and temporary and can be mitigated by construction best management practices.

In the long term, air quality could be impacted by on-site area and stationary sources and mobile sources. Maximum operational emissions of criteria pollutants from construction activities are projected range from 0.028 tons per year for SO_2 to 14 tons per year for CO. Long-term air quality impacts from these emissions are not expected to be significant.

6 REFERENCES

California Air Pollution Control Officers Association (CAPCOA). 2020. California Emissions Estimator Model. CalEEMod Version 2020.4.0

State of Hawaii Department of Health (HDOH). 2001. HAR 11-59: Ambient Air Quality Standards.

State of Hawaii Department of Health. 2020. State of Hawaii Annual Summary 2019 Air Quality Data. July

United States Environmental Protection Agency (USEPA). 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standard. https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed December 2021.

APPENDIX A

Air Quality Calculations

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Park AMB Tower

Statewide , Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	515.00	Room	0.32	14,717.00	0
Free-Standing Discount store	5.97	1000sqft	0.14	5,970.00	0
Enclosed Parking Structure	86.00	Space	0.00	34,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	54
Climate Zone	13			**Operational Year**	2027
Utility Company	Statewide Average				
CO2 Intensity (lb/MWhr)	453.21	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - high rise hotel towers with ABC store

Construction Phase - Late 2024 begin construction, 30 month duration

Demolition - removal of Kobe Steakhouse, office building and 3 retail stores

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	100.00	550.00
tblConstructionPhase	NumDays	10.00	50.00
tblConstructionPhase	NumDays	2.00	10.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	5.00	25.00
tblConstructionPhase	NumDays	1.00	5.00
tblGrading	AcresOfGrading	7.50	1.50
tblGrading	AcresOfGrading	2.50	0.50
tblLandUse	LandUseSquareFeet	747,780.00	14,717.00
tblLandUse	LotAcreage	17.17	0.32
tblLandUse	LotAcreage	0.77	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0220	0.2023	0.2299	4.2000e-004	0.0300	8.8000e-003	0.0388	0.0138	8.3100e-003	0.0221	0.0000	37.1854	37.1854	7.4900e-003	2.0000e-004	37.4329
2025	0.0749	0.7336	0.9452	1.6300e-003	0.0109	0.0316	0.0425	2.9500e-003	0.0291	0.0321	0.0000	144.3018	144.3018	0.0426	1.2200e-003	145.7318
2026	0.0748	0.7333	0.9437	1.6300e-003	0.0109	0.0316	0.0425	2.9500e-003	0.0291	0.0321	0.0000	143.9709	143.9709	0.0426	1.1900e-003	145.3915
2027	0.2575	0.1548	0.2163	3.7000e-004	3.1600e-003	6.7800e-003	9.9300e-003	8.5000e-004	6.3300e-003	7.1800e-003	0.0000	31.7459	31.7459	8.2000e-003	1.6000e-004	31.9986
Maximum	**0.2575**	**0.7336**	**0.9452**	**1.6300e-003**	**0.0300**	**0.0316**	**0.0425**	**0.0138**	**0.0291**	**0.0321**	**0.0000**	**144.3018**	**144.3018**	**0.0426**	**1.2200e-003**	**145.7318**

Mitigated Construction

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0220	0.2023	0.2298	4.2000e-004	0.0300	8.8000e-003	0.0388	0.0138	8.3100e-003	0.0221	0.0000	37.1854	37.1854	7.4900e-003	2.0000e-004	37.4328
2025	0.0749	0.7336	0.9452	1.6300e-003	0.0109	0.0316	0.0425	2.9500e-003	0.0291	0.0321	0.0000	144.3017	144.3017	0.0426	1.2200e-003	145.7316
2026	0.0748	0.7333	0.9437	1.6300e-003	0.0109	0.0316	0.0425	2.9500e-003	0.0291	0.0321	0.0000	143.9707	143.9707	0.0426	1.1900e-003	145.3914
2027	0.2575	0.1548	0.2163	3.7000e-004	3.1600e-003	6.7800e-003	9.9300e-003	8.5000e-004	6.3300e-003	7.1800e-003	0.0000	31.7459	31.7459	8.2000e-003	1.6000e-004	31.9986
Maximum	**0.2575**	**0.7336**	**0.9452**	**1.6300e-003**	**0.0300**	**0.0316**	**0.0425**	**0.0138**	**0.0291**	**0.0321**	**0.0000**	**144.3017**	**144.3017**	**0.0426**	**1.2200e-003**	**145.7316**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	10-1-2024	12-31-2024	0.2244	0.2244
2	1-1-2025	3-31-2025	0.1992	0.1992
3	4-1-2025	6-30-2025	0.2012	0.2012
4	7-1-2025	9-30-2025	0.2034	0.2034
5	10-1-2025	12-31-2025	0.2037	0.2037
6	1-1-2026	3-31-2026	0.1991	0.1991
7	4-1-2026	6-30-2026	0.2011	0.2011
8	7-1-2026	9-30-2026	0.2033	0.2033
9	10-1-2026	12-31-2026	0.2036	0.2036
10	1-1-2027	3-31-2027	0.4141	0.4141

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

		Highest	0.4141	0.4141

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1075	5.0000e-005	5.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Energy	4.6700e-003	0.0424	0.0356	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	98.8127	98.8127	4.7200e-003	1.3100e-003	99.3213
Mobile	1.6275	1.8052	13.7612	0.0277	3.1010	0.0220	3.1231	0.8288	0.0206	0.8493	0.0000	2,565.8021	2,565.8021	0.1868	0.1358	2,610.9524
Waste						0.0000	0.0000		0.0000	0.0000	62.4481	0.0000	62.4481	3.6906	0.0000	154.7126
Water						0.0000	0.0000		0.0000	0.0000	4.2849	28.1749	32.4598	0.4422	0.0106	46.6843
Total	**1.7397**	**1.8476**	**13.8023**	**0.0280**	**3.1010**	**0.0253**	**3.1263**	**0.8288**	**0.0238**	**0.8526**	**66.7330**	**2,692.8005**	**2,759.5335**	**4.3243**	**0.1478**	**2,911.6822**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1075	5.0000e-005	5.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Energy	4.6700e-003	0.0424	0.0356	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	98.8127	98.8127	4.7200e-003	1.3100e-003	99.3213
Mobile	1.6275	1.8052	13.7612	0.0277	3.1010	0.0220	3.1231	0.8288	0.0206	0.8493	0.0000	2,565.8021	2,565.8021	0.1868	0.1358	2,610.9524
Waste						0.0000	0.0000		0.0000	0.0000	62.4481	0.0000	62.4481	3.6906	0.0000	154.7126
Water						0.0000	0.0000		0.0000	0.0000	4.2849	28.1749	32.4598	0.4422	0.0106	46.6843
Total	**1.7397**	**1.8476**	**13.8023**	**0.0280**	**3.1010**	**0.0253**	**3.1263**	**0.8288**	**0.0238**	**0.8526**	**66.7330**	**2,692.8005**	**2,759.5335**	**4.3243**	**0.1478**	**2,911.6822**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	10/1/2024	12/9/2024	5	50	
2	Site Preparation	Site Preparation	12/10/2024	12/16/2024	5	5	
3	Grading	Grading	12/17/2024	12/30/2024	5	10	
4	Building Construction	Building Construction	1/1/2025	2/9/2027	5	550	
5	Paving	Paving	2/10/2027	3/16/2027	5	25	
6	Architectural Coating	Architectural Coating	2/25/2027	3/31/2027	5	25	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 31,031; Non-Residential Outdoor: 10,344; Striped Parking Area: 0 (Architectural

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	34.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	8.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6400e-003	0.0000	3.6400e-003	5.5000e-004	0.0000	5.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.1369	0.1849	3.0000e-004		6.2600e-003	6.2600e-003		5.9800e-003	5.9800e-003	0.0000	26.0518	26.0518	4.7200e-003	0.0000	26.1697
Total	**0.0154**	**0.1369**	**0.1849**	**3.0000e-004**	**3.6400e-003**	**6.2600e-003**	**9.9000e-003**	**5.5000e-004**	**5.9800e-003**	**6.5300e-003**	**0.0000**	**26.0518**	**26.0518**	**4.7200e-003**	**0.0000**	**26.1697**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.1700e-003	5.3000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	0.9541	0.9541	3.0000e-005	1.5000e-004	0.9997
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.4000e-004	5.7700e-003	2.0000e-005	1.9900e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5310	1.5310	4.0000e-005	4.0000e-005	1.5447

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**7.0000e-004**	**2.6100e-003**	**6.3000e-003**	**3.0000e-005**	**2.2800e-003**	**3.0000e-005**	**2.3100e-003**	**6.1000e-004**	**3.0000e-005**	**6.4000e-004**	**0.0000**	**2.4851**	**2.4851**	**7.0000e-005**	**1.9000e-004**	**2.5444**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6400e-003	0.0000	3.6400e-003	5.5000e-004	0.0000	5.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.1369	0.1849	3.0000e-004		6.2600e-003	6.2600e-003		5.9800e-003	5.9800e-003	0.0000	26.0518	26.0518	4.7200e-003	0.0000	26.1697
Total	**0.0154**	**0.1369**	**0.1849**	**3.0000e-004**	**3.6400e-003**	**6.2600e-003**	**9.9000e-003**	**5.5000e-004**	**5.9800e-003**	**6.5300e-003**	**0.0000**	**26.0518**	**26.0518**	**4.7200e-003**	**0.0000**	**26.1697**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	2.1700e-003	5.3000e-004	1.0000e-005	2.9000e-004	2.0000e-005	3.1000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	0.9541	0.9541	3.0000e-005	1.5000e-004	0.9997
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	4.4000e-004	5.7700e-003	2.0000e-005	1.9900e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5310	1.5310	4.0000e-005	4.0000e-005	1.5447

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**7.0000e-004**	**2.6100e-003**	**6.3000e-003**	**3.0000e-005**	**2.2800e-003**	**3.0000e-005**	**2.3100e-003**	**6.1000e-004**	**3.0000e-005**	**6.4000e-004**	**0.0000**	**2.4851**	**2.4851**	**7.0000e-005**	**1.9000e-004**	**2.5444**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2500e-003	0.0140	9.7300e-003	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.1370	2.1370	6.9000e-004	0.0000	2.1543
Total	**1.2500e-003**	**0.0140**	**9.7300e-003**	**2.0000e-005**	**2.7000e-004**	**5.0000e-004**	**7.7000e-004**	**3.0000e-005**	**4.6000e-004**	**4.9000e-004**	**0.0000**	**2.1370**	**2.1370**	**6.9000e-004**	**0.0000**	**2.1543**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0766	0.0766	0.0000	0.0000	0.0772

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**3.0000e-005**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0766**	**0.0766**	**0.0000**	**0.0000**	**0.0772**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2500e-003	0.0140	9.7300e-003	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	2.1370	2.1370	6.9000e-004	0.0000	2.1543
Total	**1.2500e-003**	**0.0140**	**9.7300e-003**	**2.0000e-005**	**2.7000e-004**	**5.0000e-004**	**7.7000e-004**	**3.0000e-005**	**4.6000e-004**	**4.9000e-004**	**0.0000**	**2.1370**	**2.1370**	**6.9000e-004**	**0.0000**	**2.1543**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0766	0.0766	0.0000	0.0000	0.0772

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**3.0000e-005**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0766**	**0.0766**	**0.0000**	**0.0000**	**0.0772**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0234	0.0000	0.0234	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5700e-003	0.0487	0.0277	7.0000e-005		2.0000e-003	2.0000e-003		1.8400e-003	1.8400e-003	0.0000	6.1900	6.1900	2.0000e-003	0.0000	6.2401
Total	**4.5700e-003**	**0.0487**	**0.0277**	**7.0000e-005**	**0.0234**	**2.0000e-003**	**0.0254**	**0.0125**	**1.8400e-003**	**0.0143**	**0.0000**	**6.1900**	**6.1900**	**2.0000e-003**	**0.0000**	**6.2401**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	7.0000e-005	9.2000e-004	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2450	0.2450	1.0000e-005	1.0000e-005	0.2472

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**1.1000e-004**	**7.0000e-005**	**9.2000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2450**	**0.2450**	**1.0000e-005**	**1.0000e-005**	**0.2472**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0234	0.0000	0.0234	0.0125	0.0000	0.0125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5700e-003	0.0487	0.0277	7.0000e-005		2.0000e-003	2.0000e-003		1.8400e-003	1.8400e-003	0.0000	6.1900	6.1900	2.0000e-003	0.0000	6.2401
Total	**4.5700e-003**	**0.0487**	**0.0277**	**7.0000e-005**	**0.0234**	**2.0000e-003**	**0.0254**	**0.0125**	**1.8400e-003**	**0.0143**	**0.0000**	**6.1900**	**6.1900**	**2.0000e-003**	**0.0000**	**6.2401**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	7.0000e-005	9.2000e-004	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.2450	0.2450	1.0000e-005	1.0000e-005	0.2472

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**1.1000e-004**	**7.0000e-005**	**9.2000e-004**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2450**	**0.2450**	**1.0000e-005**	**1.0000e-005**	**0.2472**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0719	0.7154	0.9172	1.4900e-003		0.0315	0.0315		0.0290	0.0290	0.0000	130.8859	130.8859	0.0423	0.0000	131.9442
Total	**0.0719**	**0.7154**	**0.9172**	**1.4900e-003**		**0.0315**	**0.0315**		**0.0290**	**0.0290**	**0.0000**	**130.8859**	**130.8859**	**0.0423**	**0.0000**	**131.9442**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4000e-004	0.0165	5.5500e-003	7.0000e-005	2.5800e-003	1.0000e-004	2.6900e-003	7.5000e-004	1.0000e-004	8.5000e-004	0.0000	7.2386	7.2386	1.3000e-004	1.0600e-003	7.5569
Worker	2.5700e-003	1.6600e-003	0.0225	7.0000e-005	8.3000e-003	4.0000e-005	8.3400e-003	2.2100e-003	4.0000e-005	2.2500e-003	0.0000	6.1773	6.1773	1.7000e-004	1.6000e-004	6.2307
Total	**3.0100e-003**	**0.0182**	**0.0280**	**1.4000e-004**	**0.0109**	**1.4000e-004**	**0.0110**	**2.9600e-003**	**1.4000e-004**	**3.1000e-003**	**0.0000**	**13.4159**	**13.4159**	**3.0000e-004**	**1.2200e-003**	**13.7876**

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0719	0.7154	0.9172	1.4900e-003		0.0315	0.0315		0.0290	0.0290	0.0000	130.8858	130.8858	0.0423	0.0000	131.9440
Total	**0.0719**	**0.7154**	**0.9172**	**1.4900e-003**		**0.0315**	**0.0315**		**0.0290**	**0.0290**	**0.0000**	**130.8858**	**130.8858**	**0.0423**	**0.0000**	**131.9440**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.4000e-004	0.0165	5.5500e-003	7.0000e-005	2.5800e-003	1.0000e-004	2.6900e-003	7.5000e-004	1.0000e-004	8.5000e-004	0.0000	7.2386	7.2386	1.3000e-004	1.0600e-003	7.5569
Worker	2.5700e-003	1.6600e-003	0.0225	7.0000e-005	8.3000e-003	4.0000e-005	8.3400e-003	2.2100e-003	4.0000e-005	2.2500e-003	0.0000	6.1773	6.1773	1.7000e-004	1.6000e-004	6.2307
Total	**3.0100e-003**	**0.0182**	**0.0280**	**1.4000e-004**	**0.0109**	**1.4000e-004**	**0.0110**	**2.9600e-003**	**1.4000e-004**	**3.1000e-003**	**0.0000**	**13.4159**	**13.4159**	**3.0000e-004**	**1.2200e-003**	**13.7876**

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0719	0.7154	0.9172	1.4900e-003		0.0315	0.0315		0.0290	0.0290	0.0000	130.8859	130.8859	0.0423	0.0000	131.9442
Total	**0.0719**	**0.7154**	**0.9172**	**1.4900e-003**		**0.0315**	**0.0315**		**0.0290**	**0.0290**	**0.0000**	**130.8859**	**130.8859**	**0.0423**	**0.0000**	**131.9442**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0164	5.4600e-003	7.0000e-005	2.5800e-003	1.0000e-004	2.6900e-003	7.5000e-004	1.0000e-004	8.5000e-004	0.0000	7.0984	7.0984	1.3000e-004	1.0400e-003	7.4106
Worker	2.4200e-003	1.5000e-003	0.0211	7.0000e-005	8.3000e-003	4.0000e-005	8.3400e-003	2.2100e-003	4.0000e-005	2.2400e-003	0.0000	5.9866	5.9866	1.5000e-004	1.6000e-004	6.0367
Total	**2.8500e-003**	**0.0179**	**0.0266**	**1.4000e-004**	**0.0109**	**1.4000e-004**	**0.0110**	**2.9600e-003**	**1.4000e-004**	**3.0900e-003**	**0.0000**	**13.0850**	**13.0850**	**2.8000e-004**	**1.2000e-003**	**13.4473**

Mitigated Construction On-Site

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0719	0.7154	0.9172	1.4900e-003		0.0315	0.0315		0.0290	0.0290	0.0000	130.8858	130.8858	0.0423	0.0000	131.9440
Total	**0.0719**	**0.7154**	**0.9172**	**1.4900e-003**		**0.0315**	**0.0315**		**0.0290**	**0.0290**	**0.0000**	**130.8858**	**130.8858**	**0.0423**	**0.0000**	**131.9440**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0164	5.4600e-003	7.0000e-005	2.5800e-003	1.0000e-004	2.6900e-003	7.5000e-004	1.0000e-004	8.5000e-004	0.0000	7.0984	7.0984	1.3000e-004	1.0400e-003	7.4106
Worker	2.4200e-003	1.5000e-003	0.0211	7.0000e-005	8.3000e-003	4.0000e-005	8.3400e-003	2.2100e-003	4.0000e-005	2.2400e-003	0.0000	5.9866	5.9866	1.5000e-004	1.6000e-004	6.0367
Total	**2.8500e-003**	**0.0179**	**0.0266**	**1.4000e-004**	**0.0109**	**1.4000e-004**	**0.0110**	**2.9600e-003**	**1.4000e-004**	**3.0900e-003**	**0.0000**	**13.0850**	**13.0850**	**2.8000e-004**	**1.2000e-003**	**13.4473**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.7100e-003	0.0768	0.0984	1.6000e-004		3.3800e-003	3.3800e-003		3.1100e-003	3.1100e-003	0.0000	14.0414	14.0414	4.5400e-003	0.0000	14.1549
Total	**7.7100e-003**	**0.0768**	**0.0984**	**1.6000e-004**		**3.3800e-003**	**3.3800e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**14.0414**	**14.0414**	**4.5400e-003**	**0.0000**	**14.1549**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7400e-003	5.8000e-004	1.0000e-005	2.8000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.7456	0.7456	1.0000e-005	1.1000e-004	0.7785
Worker	2.4000e-004	1.5000e-004	2.1400e-003	1.0000e-005	8.9000e-004	0.0000	8.9000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.6238	0.6238	2.0000e-005	2.0000e-005	0.6289
Total	**2.9000e-004**	**1.8900e-003**	**2.7200e-003**	**2.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.3694**	**1.3694**	**3.0000e-005**	**1.3000e-004**	**1.4073**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Off-Road	7.7100e-003	0.0768	0.0984	1.6000e-004		3.3800e-003	3.3800e-003		3.1100e-003	3.1100e-003	0.0000	14.0414	14.0414	4.5400e-003	0.0000	14.1549
Total	**7.7100e-003**	**0.0768**	**0.0984**	**1.6000e-004**		**3.3800e-003**	**3.3800e-003**		**3.1100e-003**	**3.1100e-003**	**0.0000**	**14.0414**	**14.0414**	**4.5400e-003**	**0.0000**	**14.1549**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.7400e-003	5.8000e-004	1.0000e-005	2.8000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	0.7456	0.7456	1.0000e-005	1.1000e-004	0.7785
Worker	2.4000e-004	1.5000e-004	2.1400e-003	1.0000e-005	8.9000e-004	0.0000	8.9000e-004	2.4000e-004	0.0000	2.4000e-004	0.0000	0.6238	0.6238	2.0000e-005	2.0000e-005	0.6289
Total	**2.9000e-004**	**1.8900e-003**	**2.7200e-003**	**2.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.3694**	**1.3694**	**3.0000e-005**	**1.3000e-004**	**1.4073**

3.6 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	7.0500e-003	0.0615	0.0878	1.4000e-004		2.7300e-003	2.7300e-003		2.5600e-003	2.5600e-003	0.0000	11.7511	11.7511	3.4200e-003	0.0000	11.8367
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.0500e-003**	**0.0615**	**0.0878**	**1.4000e-004**		**2.7300e-003**	**2.7300e-003**		**2.5600e-003**	**2.5600e-003**	**0.0000**	**11.7511**	**11.7511**	**3.4200e-003**	**0.0000**	**11.8367**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	4.2900e-003	1.0000e-005	1.7900e-003	1.0000e-005	1.8000e-003	4.8000e-004	1.0000e-005	4.8000e-004	0.0000	1.2532	1.2532	3.0000e-005	3.0000e-005	1.2634
Total	**4.9000e-004**	**3.0000e-004**	**4.2900e-003**	**1.0000e-005**	**1.7900e-003**	**1.0000e-005**	**1.8000e-003**	**4.8000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.2532**	**1.2532**	**3.0000e-005**	**3.0000e-005**	**1.2634**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Off-Road	7.0500e-003	0.0615	0.0878	1.4000e-004		2.7300e-003	2.7300e-003		2.5600e-003	2.5600e-003	0.0000	11.7511	11.7511	3.4200e-003	0.0000	11.8367
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.0500e-003**	**0.0615**	**0.0878**	**1.4000e-004**		**2.7300e-003**	**2.7300e-003**		**2.5600e-003**	**2.5600e-003**	**0.0000**	**11.7511**	**11.7511**	**3.4200e-003**	**0.0000**	**11.8367**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.0000e-004	4.2900e-003	1.0000e-005	1.7900e-003	1.0000e-005	1.8000e-003	4.8000e-004	1.0000e-005	4.8000e-004	0.0000	1.2532	1.2532	3.0000e-005	3.0000e-005	1.2634
Total	**4.9000e-004**	**3.0000e-004**	**4.2900e-003**	**1.0000e-005**	**1.7900e-003**	**1.0000e-005**	**1.8000e-003**	**4.8000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.2532**	**1.2532**	**3.0000e-005**	**3.0000e-005**	**1.2634**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating	0.2397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1400e-003	0.0143	0.0226	4.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	3.1916	3.1916	1.7000e-004	0.0000	3.1959
Total	**0.2419**	**0.0143**	**0.0226**	**4.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.7000e-004**	**0.0000**	**3.1959**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	4.8000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1392	0.1392	0.0000	0.0000	0.1404
Total	**5.0000e-005**	**3.0000e-005**	**4.8000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1392**	**0.1392**	**0.0000**	**0.0000**	**0.1404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Archit. Coating	0.2397					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1400e-003	0.0143	0.0226	4.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	3.1916	3.1916	1.7000e-004	0.0000	3.1959
Total	**0.2419**	**0.0143**	**0.0226**	**4.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**3.1916**	**3.1916**	**1.7000e-004**	**0.0000**	**3.1959**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	4.8000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1392	0.1392	0.0000	0.0000	0.1404
Total	**5.0000e-005**	**3.0000e-005**	**4.8000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1392**	**0.1392**	**0.0000**	**0.0000**	**0.1404**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.6275	1.8052	13.7612	0.0277	3.1010	0.0220	3.1231	0.8288	0.0206	0.8493	0.0000	2,565.8021	2,565.8021	0.1868	0.1358	2,610.9524
Unmitigated	1.6275	1.8052	13.7612	0.0277	3.1010	0.0220	3.1231	0.8288	0.0206	0.8493	0.0000	2,565.8021	2,565.8021	0.1868	0.1358	2,610.9524

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Free-Standing Discount store	317.13	422.44	359.45	527,370	527,370
Hotel	4,305.40	4,217.85	3064.25	7,819,328	7,819,328
Total	4,622.53	4,640.29	3,423.70	8,346,698	8,346,698

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Free-Standing Discount store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Free-Standing Discount store	0.539862	0.060038	0.184193	0.129104	0.025174	0.006677	0.011747	0.011396	0.000800	0.000462	0.026022	0.000939	0.003
Hotel	0.539862	0.060038	0.184193	0.129104	0.025174	0.006677	0.011747	0.011396	0.000800	0.000462	0.026022	0.000939	0.003

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	52.6333	52.6333	3.8300e-003	4.6000e-004	52.8676
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	52.6333	52.6333	3.8300e-003	4.6000e-004	52.8676
NaturalGas Mitigated	4.6700e-003	0.0424	0.0356	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	46.1793	46.1793	8.9000e-004	8.5000e-004	46.4537
NaturalGas Unmitigated	4.6700e-003	0.0424	0.0356	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	46.1793	46.1793	8.9000e-004	8.5000e-004	46.4537

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Free-Standing Discount store	13253.4	7.0000e-005	6.5000e-004	5.5000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7073	0.7073	1.0000e-005	1.0000e-005	0.7115

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hotel	852114	4.5900e-003	0.0418	0.0351	2.5000e-004		3.1700e-003	3.1700e-003		3.1700e-003	3.1700e-003	0.0000	45.4721	45.4721	8.7000e-004	8.3000e-004	45.7423
Total		**4.6600e-003**	**0.0424**	**0.0356**	**2.5000e-004**		**3.2200e-003**	**3.2200e-003**		**3.2200e-003**	**3.2200e-003**	**0.0000**	**46.1793**	**46.1793**	**8.8000e-004**	**8.4000e-004**	**46.4537**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Free-Standing Discount store	13253.4	7.0000e-005	6.5000e-004	5.5000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7073	0.7073	1.0000e-005	1.0000e-005	0.7115
Hotel	852114	4.5900e-003	0.0418	0.0351	2.5000e-004		3.1700e-003	3.1700e-003		3.1700e-003	3.1700e-003	0.0000	45.4721	45.4721	8.7000e-004	8.3000e-004	45.7423
Total		**4.6600e-003**	**0.0424**	**0.0356**	**2.5000e-004**		**3.2200e-003**	**3.2200e-003**		**3.2200e-003**	**3.2200e-003**	**0.0000**	**46.1793**	**46.1793**	**8.8000e-004**	**8.4000e-004**	**46.4537**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Free-Standing Discount store	72953.4	14.9972	1.0900e-003	1.3000e-004	15.0640
Hotel	183079	37.6361	2.7400e-003	3.3000e-004	37.8036

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total		**52.6333**	**3.8300e-003**	**4.6000e-004**	**52.8676**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Free-Standing Discount store	72953.4	14.9972	1.0900e-003	1.3000e-004	15.0640
Hotel	183079	37.6361	2.7400e-003	3.3000e-004	37.8036
Total		**52.6333**	**3.8300e-003**	**4.6000e-004**	**52.8676**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated	0.1075	5.0000e-005	5.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Unmitigated	0.1075	5.0000e-005	5.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0240					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0830					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1000e-004	5.0000e-005	5.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Total	**0.1075**	**5.0000e-005**	**5.5600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0109**	**0.0109**	**3.0000e-005**	**0.0000**	**0.0116**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0240					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Consumer Products	0.0830					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.1000e-004	5.0000e-005	5.5600e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0109	0.0109	3.0000e-005	0.0000	0.0116
Total	**0.1075**	**5.0000e-005**	**5.5600e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0109**	**0.0109**	**3.0000e-005**	**0.0000**	**0.0116**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	32.4598	0.4422	0.0106	46.6843
Unmitigated	32.4598	0.4422	0.0106	46.6843

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Free-Standing Discount store	0.442213 / 0.271034	1.3851	0.0145	3.5000e-004	1.8523
Hotel	13.0639 / 1.45154	31.0746	0.4277	0.0103	44.8320
Total		**32.4597**	**0.4422**	**0.0106**	**46.6843**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Free-Standing Discount store	0.442213 / 0.271034	1.3851	0.0145	3.5000e-004	1.8523
Hotel	13.0639 / 1.45154	31.0746	0.4277	0.0103	44.8320
Total		**32.4597**	**0.4422**	**0.0106**	**46.6843**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	MT/yr			
Mitigated	62.4481	3.6906	0.0000	154.7126
Unmitigated	62.4481	3.6906	0.0000	154.7126

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Free-Standing Discount store	25.68	5.2128	0.3081	0.0000	12.9145
Hotel	281.96	57.2353	3.3825	0.0000	141.7981
Total		**62.4481**	**3.6906**	**0.0000**	**154.7126**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Free-Standing Discount store	25.68	5.2128	0.3081	0.0000	12.9145

Park AMB Tower - Statewide , Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Hotel	281.96	57.2353	3.3825	0.0000	141.7981
Total		**62.4481**	**3.6906**	**0.0000**	**154.7126**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Arcadis U.S., Inc.

100 Montgomery Street

Suite 300

San Francisco, California 94104

Tel 415 374 2744

Fax 415 374 2745

www.arcadis.com

Appendix F

Tree Assessment at
Hilton Hawaiian Village AMB Tower
Tree Solutions and Environmental Consulting Services, Inc.
July 28, 2022

Tree Solutions and Environmental Consulting Services, Inc.
P.O. Box 10026
Honolulu, Hawaii 96816
808-734-5963

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

Re: Tree Assessment at Hilton Hawaiian Village AMB Tower

The following report addresses trees at the planned site for the Hilton Hawaiian Village AMB Tower. G70 requested Tree Solutions Hawaii to provide an assessment, inventory, and report on trees at the project site. Arborists Steve Nimz and Ilana Nimz assessed the trees on April 1, 2022. Trees were numbered on a map, which corresponds to a spreadsheet that provides:

- Tree Number
- Species
- Attributes (Diameter [in], Height [ft], Spread [ft])
- Condition (Health & Structure [good, fair, poor])
- Mitigation (Remove, Transplant candidate)
- Comments

Six trees and 12 palms were inventoried within the AMB Tower project boundaries. Tree species were plumeria (4 trees) and autograph (2 trees). Palms were coconuts (10 palms) and Traveler's palms (2 clusters). None of the trees and palms were exceptional, historic or native.

Based on the plans, trees and palms #1, 2, 14, 15, 16, 17 and 18 are outside the building footprint, and are candidates for preservation. If these trees and palms hinder construction, they may be transplanted or removed. Autograph trees #14 and 16 have good health and structure and are candidates for transplant, but may be considered for removal due to low species value.

Preservation candidates #14-18

The coconuts were all in good health. While palms #9, 10 and 15 had minor trunk wounds/scars, all were considered to be candidates for transplant based on health and size.

Coconuts #1-5 are transplant candidates

Traveler's palms (#8 and 13) are not transplant candidates and are recommended for removal. Plumeria trees (#6, 7, 11, 12) are in fair to poor condition and are recommended for removal.

Plumeria and Travelers palms to be removed. Trunk scars are circled on coconuts #9 and #10

Based on our assessment, removal of the identified trees and palms will not have significant impacts to the overall landscape of the area.

If you have any questions, please contact our office at 808-734-5963.
Respectfully,

Steve Nimz	Ilana Nimz
ASCA Consulting Arborist, #WE-0314AM	Arborist, #WE-11029AT
ISA Tree Risk Assessment Qualified	ISA Tree Risk Assessment Qualified

Arborist Disclosure Statement:
Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Conditions are often hidden within trees and below ground. Any tree, whether it has visible weaknesses or not, will fail if the forces applied exceed the strength of the tree or its parts. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services, such as property boundaries, property ownership, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborists. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. In assessing and managing trees, we should strive to strike a balance between the risk that a tree poses and the benefits that individuals and communities derive from trees. It is impossible to maintain trees free of risk; some level of risk must be accepted to experience the benefits that trees provide.

Appendix G

Environmental Due Diligence Summary, Hilton Hawaiian Village Ala Moana Tower ENPRO Environmental July 26, 2022

environmental
ENPRO

July 26, 2022

Ms. Tracy Camuso
G70
111 South King Street, Suite 170
Honolulu, Hawaii 96813

Re: Environmental Due Diligence Summary
Hilton Hawaiian Village Ala Moana Tower 3 Site
Honolulu, Hawaii
ENPRO Project Number 2205-00150-CSL

Dear Ms. Camuso,

This letter summarizes the environmental due diligence work completed by ENPRO Environmental at the Hilton Hawaiian Village Ala Moana tower site from 2017 to 2021.

ENPRO reviewed the following reports and summarized as follows:

- *Hazardous Materials Pre-Assessment Survey, Hilton Hawaiian Village Tower 3 Site,* ENPRO Environmental, April 26, 2017
- *Phase I Environmental Site Assessment, Hilton Hawaiian Village Tower 3 Site,* ENPRO Environmental, May 11, 2017
- *Elevator Hydraulic Fluid Sampling, ABC Marketplace, 1831 Ala Moana Boulevard, Honolulu, Hawaii,* ENPRO Environmental, August 21, 2017
- *Phase II Geotechnical Boring Sampling, Paradise Rent-a-Car, 1835 Ala Moana Boulevard, Honolulu, Hawaii,* ENPRO Environmental, August 21, 2017
- *Phase II Subsurface Soil and Groundwater Sampling, Paradise Rent-A-Car, 1835 Ala Moana Boulevard, Honolulu, Hawaii,* ENPRO Environmental, August 21, 2017
- *Soil Screening and Analysis, Kobe Steakhouse, Honolulu, Hawaii,* ENPRO Environmental, March 3, 2022

Hazardous Materials Pre-Assessment Survey

On April 26, 2017, ENPRO Environmental completed an assessment and inventory of hazardous materials at the following Hilton Hawaiian Village Tower 3 properties:

- Kobe Steakhouse

  - Paradise Rent-A-Car
  - Goofy's Café & Dine
  - Lulu's Hair Salon
  - ABC Store
  - Aloha Healing Arts
  - Sacred Art Tattoo
  - Magokoro Restaurant
  - South Sea Aquatics
  - Lucky Shop
  - ABC Marketplace

- Materials surveyed included suspect asbestos-containing materials (ACM), paint (lead), arsenic-containing canec board, and fluorescent light ballasts and mercury-containing light tubes. Suspect materials were inventoried for future assessment and select samples of suspect ACM and suspect LCP were collected for analysis. Building roofs were not assessed.

- All samples collected and analyzed for suspect ACM did not have asbestos.
- Lead containing paint was not present.
- Canec was not present.
- Approximately 180 fluorescent light ballasts and 260 light tubes were inventoried. Future evaluation should confirm whether the ballasts have PCB capacitors and fluorescent light tubes to be mercury-containing.

Phase I Environmental Site Assessment

On May 11, 2017, ENPRO completed a Phase 1 Environmental Site Assessment of the ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse.

ENPRO identified three recognized environmental conditions and recommended:

- soil sampling for pesticides,
- soil and groundwater sampling at a former underground tank at 1835 Ala Moana Boulevard, Paradise Rant-A-Car
- sampling the elevator hydraulic oil for PCBs on the ABC Marketplace property, and
- sampling soil for oil following the removal of the in-ground hydraulic lift equipment at 1831 Ala Moana Boulevard, Paradise Rent-A-Car

Phase II Elevator Hydraulic Fluid Sampling, ABC Marketplace

On August 21, 2017, ENPRO sampled hydraulic fluid from the elevator located at the ABC Marketplace project site. The results of the laboratory analyses indicated no PCBs.

ENPRO's concluded that when the elevator is removed from service, the oil can be managed as non-PCB containing.

Phase II Geotechnical Boring Sampling, Paradise Rent-A-Car

On August 21, 2017, ENPRO completed a Phase II investigation of subsurface soils at the Paradise Rent-A-Car location. ENPRO collected groundwater and soil samples from two borings. Soil samples were at two depths: 2 ½ - 3 feet below ground surface (bgs), and 5 - 5 ½ feet bgs.

The laboratory analysis of soil and groundwater did not detect contaminants of potential concern at levels above the State of Hawaii Department of Health Environmental Action Levels.

Phase II Subsurface Soil and Groundwater Sampling, Paradise Rent-A-Car

On August 21, 2017, ENPRO completed a Phase II investigation where three borings were developed into temporary monitoring wells at the Paradise Rent-A-Car project site. Two soil samples and one groundwater sample were collected from each boring.

Laboratory analysis indicated that none of the contaminants of potential concern were detected in either the soil or groundwater samples. Based on the results of the laboratory analyses, ENPRO conclude that no further investigation was warranted.

Soil Screening and Analysis, Kobe Steakhouse

In anticipation of an archeological investigation within the interior of the Kobe Steakhouse, ENPRO collected and analyzed soil samples from eight trenches and analyzed for petroleum hydrocarbons, organochlorine pesticides, arsenic and lead. Analytical results determined none of the soil sampled exceeded regulatory limits for commercial use.

Based on the environmental work performed, the following has been determined:

- Structures at the site did not have asbestos
- Paint on structures did not have detectable levels of lead
- Light fixtures will need further evaluation
- All groundwater and soil sampling has not detected contaminants of potential concern above regulatory levels.
- Soils from shallow trenches from the interior of the Kobe Steakhouse did not exceed regulatory limits for commercial use.

All environmental assessments have confirmed that the project will not result in adverse impacts to the property.

Please contact me at 808-748-2111 if you have any questions regarding this summarization.

Sincerely,

Kahana Yokoyama
Project Manager

Appendix H

Phase 1 Environmental Site Assessment, Hilton Hawaiian Village Ala Moana Tower
ENPRO Environmental
May 11, 2017

Prepared for:

G70 Design
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813

Phase I Environmental Site Assessment

Hilton Hawaiian Village Tower 3 Site

1831, 1835, and 1841 Ala Moana Boulevard
Honolulu, Hawaii

Prepared by:

ENPRO Environmental
151 Hekili Street, Suite 210
Kailua, Hawaii 96734

808.262.0909
808.262.4449 (fax)
www.enproenvironmental.com

ENPRO Environmental Contact:

Kimberly Rottas
Environmental Technician
808.748.2114
krottas@enproenvironmental.com

ENPRO Project Number: 1704-00197-PH1
Date of Report: May 11, 2017
On-Site Investigation: April 12 and 13, 2017

PROJECT AT A GLANCE™

Assessment Component	Not Requested	Acceptable (†)	Routine Solution	Phase II ESA	Estimated Cost (‡)	Report Reference Section	
						Project Site	Adjoining Property
Historical Review		X					
Regulatory Review		X					
Operations		X					
Hazardous Materials				**(1)**		**7.2**	
Underground Storage Tanks				**(2)**		**6.2.1, 7.5.1**	
Aboveground Storage Tanks		X					
Solid Waste		X					
Surface Areas		X					
Wells		(N/A)					
PCBs				**(3)**		**7.7.2, 8.1**	
Asbestos	X						
Lead Based Paint	X						
Lead in Drinking Water	X						
Radon	X						
Mold	X						
Significant Data Gaps							

BOLD = Identified issues. Numbers [(1) (2) (3)] reference Action Items listed on the following page.

(†) = Based on this preliminary study, it appears that further investigation in this area is not a priority concern for this site at the present time.

(‡) = Costs depicted are for investigation/program development activities. Remediation costs, if required, will be identified as a result of investigation/program development activities

Conditions noted in the Project at a Glance™ table represent the overall conditions of the property. More specific details on assessment components may be included in the text of this report; therefore the Project at a Glance™ should not be used as a stand-alone document.

ACTION ITEMS

Based on our investigation, ENPRO has concluded that there is sufficient risk to warrant additional investigation. ENPRO has identified the following action items and makes the following recommendations:

(1) Due to the age of the buildings, there is a reasonable potential that pesticides may have been applied for termite control beneath the slab foundations. This is not considered to be a *recognized environmental condition*, but it may be a concern at the time the building slab is removed.

ENPRO recommends sampling sub-slab soils for pesticide content.

(2) Site assessment documentation was lacking for the removal of the 1,000-gallon and 3,000-gallon gasoline underground storage tanks (USTs) from 1835 Ala Moana Boulevard (see Section 6.2.1). This is considered to be a *recognized environmental condition* because an undetected leak may have occurred.

ENPRO recommends soil and groundwater sampling be conducted around the former UST and piping locations at 1835 Ala Moana Boulevard.

(3) An elevator with in-ground hydraulic lift equipment is present on the ABC Marketplace property located at 1831 Ala Moana Boulevard. Interviews with people knowledgeable of the property indicate that the hydraulic oil has never been sampled for polychlorinated biphenyls (PCBs). This is considered to be a *recognized environmental condition* because an undetected leak may have occurred.

ENPRO recommends sampling the hydraulic oil for PCBs and sampling the surrounding soil for oil following the removal of the in-ground hydraulic lift equipment.

Further details regarding ENPRO's conclusions and recommendations may be found in Section 1.1 and Section 9.1 of this report.

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

G70 Design (G70) retained ENPRO Environmental (ENPRO) to conduct a Phase I Environmental Site Assessment of the ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse located at 1831, 1835, and 1841 Ala Moana Boulevard, respectively, in Honolulu, Hawaii (the "project site"). The objective of this assessment was to provide an independent, professional opinion regarding *recognized environmental conditions* (RECs), as defined by the American Society for Testing and Materials (ASTM), associated with the project site.

This assessment was performed under the conditions of, and in accordance with ENPRO's Proposal Number 17C-0061-HNL dated March 14, 2017, the *ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and *All Appropriate Inquiries* (AAI) which includes 40 CFR Part 312, §312.21 and §312.31. Any exceptions, additions to, or deletions from the ASTM or AAI practice, details of the work performed, sources of information, and findings are presented in the report.

The project site consists of three separate parcels, as follows:

- ABC Marketplace is 9,802 square feet and currently owned by the following:
  - Leighton Jong
  - Lincoln Jong
  - Lambert Jong
  - Lori Toda
  - Jason Jong
  - Erin Jong
  - Rebecca Jong
  - Robyn Jong
  - Brian Jong
  - Kasey Jong
  - Danielle Toda
  - David Toda
  - Lauren Toda
  - Lindsey Toda

- Paradise Rent-A-Car is 5,977 square feet and currently owned by 1835 Ala Moana, LLC.

- Kobe Steakhouse is 4,362 square feet and currently owned by SMK, Inc.

The historical research presented in this report has established the use of the property since 1914, when the properties were depicted as part of a residential tract on a historical Sanborn fire insurance map.

1.1 FINDINGS AND CONCLUSIONS

ASTM E-1527-13 defines three categories of *recognized environmental conditions (RECs)* which may impact the project site.

- A REC is defined as the presence or likely presence of any hazardous substance or petroleum product in, on, or at the property: 1) due to any release to the environment, 2) under conditions indicative of a release to the environment, or 3) under conditions that pose a material threat of a future release to the environment

- Historical RECs (H-RECs) are defined as a past release of any hazardous substance or petroleum product that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authorities or meeting *unrestricted* use criteria established by a regulatory authority, without subjecting the property to any required controls

- Controlled RECs (C-RECs) are defined as a REC resulting from a past release that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place, subject to the implementation of required controls, such as property use restrictions, activity and use limitations (AULs), institutional controls, or engineering controls

Additionally, ASTM E-1527-13 allows for the identification of *de minimis conditions*. A *de minimis condition* is defined as a condition that generally does not represent a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies.

We have performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527-13 of the ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse located at 1831, 1835, and 1841 Ala Moana Boulevard, respectively, in Honolulu, Hawaii, the *property*. Any exceptions to, or deletions from, this practice are described in Section 2.6 of this *report*.

This assessment has revealed no evidence of *recognized environmental conditions (RECs)* in connection with the *property* except for the following:

- Former underground storage tanks on site.

  This is considered to be a *recognized environmental condition* because an undetected leak may have occurred. See Sections 6.2.1 and 7.5.1 for additional information.

- In-ground hydraulic lift equipment on site.

  This is considered to be a *recognized environmental condition* because an undetected leak may have occurred. See Sections 7.2.2 and 8.1 for additional information.

The following environmental conditions, which are not considered *recognized environmental conditions,* as defined by ASTM, were observed during the assessment:

- Suspect pesticide application beneath slab
- Suspect asbestos containing building materials
- Suspect lead containing paint
- Ecologically sensitive areas

1.2 CONTINUED VIABILITY STATEMENT

An Environmental Site Assessment meeting or exceeding the requirements of ASTM E 1527-13 and completed less than 180 days prior to the date of acquisition of the property, or (for transactions not involving an acquisition) the date of the intended transaction, is presumed to be valid. The period of validity may be extended to one year from the date of the investigation, provided that the following components of the inquiries are conducted or updated within 180 days of the date of purchase or the date of the intended transaction:

(i) *Interviews* with *owners*, *operators*, and *occupants*;

(ii) Searches for recorded environmental cleanup liens;

(iii) Reviews of federal, tribal, state, and local government records;

(iv) Visual inspections of the *property* and of *adjoining properties*; and

(v) The declaration by the *environmental professional* responsible for the assessment or update

2.0 Introduction

G70 (the Client) retained ENPRO to conduct a Phase I Environmental Site Assessment of the ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse located at 1831, 1835, and 1841 Ala Moana Boulevard, respectively, in Honolulu, Hawaii (the "project site").

2.1 Location and Legal Description

The project site is in a mixed use commercial and resort setting (Figures 1 and 2). The longitude and latitude for the project site address are in Table 1.

The project site is further described by the City and County of Honolulu Real Property Tax Office as Tax Map Keys (TMK) (1) 2-6-009: 004 (ABC Marketplace), (1) 2-6-009: 005 (Paradise Rent-A Car), and (1) 2-6-009: 006 (Kobe Steakhouse). The project site is located in an area zoned "ResMix: Resort Mixed Use Precinct."

Table 1

Location and Legal Description of Project Site

Location Description	Project Site
Address	1831, 1835, 1841 Ala Moana Boulevard in Honolulu, Hawaii
TMK	(1) 2-6-009: 004, (1) 2-6-009: 005, and (1) 2-6-009: 006
Latitude (North)	21.284321 - 21° 17' 4''
Longitude (West)	-157.836714 - 157° 50' 12''
Elevation	Less than ten feet above sea level
Distance and Direction to Surface Waters	Hilton Lagoon, 730 feet to the southwest Ala Wai Boat Harbor, 780 feet to the west Pacific Ocean, 1,190 feet to the south Ala Wai Canal, 1,355 feet to the north

2.2 Site and Vicinity General Characteristics

The project site is located near the south shore of the island of Oahu. The project site included three roughly rectangular parcels totaling approximately 20,140 square feet.

On-site structures were constructed over the entire project site. Primary access to the site was from Ala Moana Boulevard.

2.3 PURPOSE

The objective of this environmental site assessment is to provide an independent, professional opinion regarding recognized environmental conditions, as defined by the American Society for Testing and Materials (*ASTM, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation: E 1527-13*), associated with the project site. The term *recognized environmental condition* is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property; 1) due to any release to the environment, 2) under conditions indicative of a release to the environment, or 3) under conditions that pose a material threat of a future release. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition determined to be *de minimis* is not a *recognized environmental condition*.

Recognized environmental conditions (RECs) which have been subject to previous investigation to delineate the extent of contamination and/or have been subject to remediation may be further classified as *historical RECs (H-RECs)* or *controlled RECs (C-RECs)*, in accordance with *ASTM, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation: E 1527-13*, if they meet the following requirements:

- *H-RECs* are defined as a past release of any hazardous substance or petroleum product that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authorities or meeting *unrestricted* use criteria established by a regulatory authority, without subjecting the property to any required controls

- *C-RECs* are defined as a *REC* resulting from a past release that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place, subject to the implementation of required controls, such as property use restrictions, activity and use limitations (AULs), institutional controls, or engineering controls

2.4 DETAILED SCOPE OF SERVICES

This assessment was performed under the conditions of, and in accordance with ENPRO's Proposal Number 17C-0061-HNL dated March 14, 2017, and in accordance with the *ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and *All Appropriate Inquiries* (AAI) which includes 40 CFR Part 312, §312.21 and §312.31. The scope of services in conducting this assessment included:

Records Review

- A review of environmental records, including regulatory agency reports, permits, registrations, and consultant's reports for evidence of *recognized environmental conditions* available from the property owner or site contact.
- An investigation of historical use of the project site by examining locally available aerial photographs, fire insurance maps, property tax files, recorded land title records, USGS topographical maps, building department records, zoning/land use records and/or other readily available historical information for evidence of prior land use that could have led to *recognized environmental conditions*.
- A review of an environmental database search report of federal and state regulatory agency records pertinent to the project site and offsite facilities located within ASTM-specified search distances from the project site.
- A review of regulatory agency files and records if the property, or any of the adjoining properties, is identified on one or more of the standard environmental record sources in the database search, to determine if a *REC*, *H-REC*, *C-REC*, or *de minimis* condition exists at the property in connection with the listing.
- A review of readily available information describing the general geology and topography of the project site, local groundwater characteristics, sources of water, power and sewer, and proximity to ecologically sensitive receptors that may be impacted by *recognized environmental conditions.*
- A review of title and judicial records for environmental liens and activity and use limitations (AULs) on behalf of the user, to meet the requirements of 40 CFR 312.20 and 312.25.

Site Reconnaissance

- A site walkthrough inspection of the property for visible evidence of *recognized environmental conditions* including existing or potential soil and groundwater contamination, as evidenced by staining or discoloration; stressed vegetation; indications of waste dumping or burial; pits, ponds or lagoons; containers of hazardous substances or petroleum products; electrical and hydraulic equipment that may contain polychlorinated biphenyls (PCBs), such as transformers or lifts; and underground and aboveground storage tanks.

- A site property line visual assessment of adjacent properties for evidence of potential offsite *recognized environmental conditions* that may affect the project site.

Interviews

- Interviews with available key site personnel regarding current and previous site activities on the property, especially those involving the use of hazardous substances and petroleum products. Required interviews shall include the following persons:
    - The User, defined as the party seeking to use Practice E 1527-13 to complete an environmental assessment of the property. A User has specific obligations for completing a successful application of this practice.
    - The property owner
    - A key site manager, who shall be identified by the owner, *prior to the site visit,* as a person with good knowledge of the uses and physical characteristics of the property (for example, a property manager, chief physical plant supervisor, or head maintenance person).
    - Occupants
    - Past users, when available
    - Neighbors, where the property is abandoned and the *environmental professional* determines there is evidence of potential unauthorized uses of the property.

Interviews are summarized in Section 8 of this report. Completed property questionnaires are presented in the Appendix.

2.5 SIGNIFICANT ASSUMPTIONS

ENPRO, in part, has relied on information supplied by the Client or the Client's agent(s), listed in Section 8.0, and assumes such information to be factual.

The commercial regulatory database search report, summarizing federal and state regulatory agency records, is provided by a contracted data research firm. The information provided is assumed to be correct unless otherwise noted.

Unless otherwise discovered during review, all other sources of information, whether verbal or written, are assumed to be factual.

2.6 LIMITATIONS AND EXCEPTIONS

Access was not provided to the following areas of the project site:

- Roofs of structures
- The ABC Marketplace elevator mechanical room
- The ABC Marketplace second floor restrooms
- The ABC Store west storage room
- Portions of the parking lots and sidewalks which were obscured by vehicles and dumpsters

No opinion regarding environmental conditions in areas that were not inspected can be formed.

As a matter of necessity, ENPRO relies largely on readily available sources of information such as the Client, public records, interviews, and contracted research firms for recognizing potential environmental liabilities at a project site/facility. Requests for information resources are made to collect relevant data on current and past practices conducted at the project site/facility. ENPRO may not receive all information requested or be able to confirm received information during the course of the environmental site assessment. Therefore, ENPRO shall not be held responsible for errors, omissions, or misrepresentations resulting from missing documentation or from inaccurate information provided by such sources.

2.7 SPECIAL TERMS AND CONDITIONS

ENPRO conducted a Hazardous Materials Pre-Assessment concurrently with this investigation. The purpose of the pre-assessment was to evaluate the potential presence of asbestos-containing building materials, lead containing paint, PCB transformers/ballasts, mercury lamps, underground storage tanks, and canec. See Section 5.4 for further details regarding this Hazardous Materials Pre-Assessment.

3.0 User Provided Information

Per ASTM, the "User" is the party seeking to use Practice ASTM E 1527-13 to perform an environmental site assessment of the property. A user may include a purchaser, a potential tenant, an owner, a lender or a property manager, all associated with the property. According to ASTM, "the user has specific obligations for completing a successful application of this practice." A Property Questionnaire was completed by Mr. Norman Hong, Vice Chairman and Chief Executive Officer of Group 70 International, on behalf of the User (G70). A copy of the completed Property Questionnaire is included in the appendix section of this report. Additional User provided information is detailed in Section 8.2.

3.1 Environmental Cleanup Liens and Activity and Use Limitations Review

On behalf of the User, ENPRO searched the State of Hawaii's Department of Land and Natural Resources Bureau of Conveyances website for environmental liens and activity and use limitations (AULs). The search did not identify any environmental liens or AULs associated with the project site.

3.2 Specialized Knowledge

Mr. Hong did not report any specialized knowledge of any *recognized environmental conditions* in connection with the property.

3.3 Commonly Known or Reasonably Ascertainable Information

The *EDR Radius Map™ Report with Geocheck®* prepared by Environmental Data Resources, Inc (EDR), dated April 12, 2017 indicates the project site is located in a 100-year flood zone.

The City and County of Honolulu Department of Planning and Permitting (DPP) property information sheets depict the project site parcels as located in a tsunami evacuation zone.

Copies of the *EDR Radius Map™ Report with Geocheck®* and DPP property information sheets are included in the appendix section.

3.4 VALUATION REDUCTION FOR ENVIRONMENTAL IMPAIRMENT

Mr. Hong did not provide information on any reduction of valuation due to environmental impairment.

3.5 OBVIOUS INDICATORS OF PRESENCE OR LIKELY PRESENCE OF CONTAMINATION AT THE PROPERTY

Mr. Hong stated he was unaware of obvious indicators that point to the presence or likely presence of contamination at the property.

3.6 REASONS FOR PERFORMING PHASE I ENVIRONMENTAL SITE ASSESSMENT

Mr. Hong stated that the purpose for conducting the Phase I Environmental Site Assessment was for due diligence during the sale of the property.

4.0 Records Review

This section presents a review of physical setting sources, standard and additional environmental records sources, and historical use information on the property and surrounding area.

4.1 PHYSICAL SETTING SOURCES

4.1.1 TOPOGRAPHY

Review of the topographic map published by the U.S. Geological Survey (2013) indicated the following:

The project site was located east of the Ala Wai Boat Harbor, in the Waikiki District of Honolulu, in the southern region of the island of Oahu. The project site elevation was less than ten feet above mean sea level.

No individual structures were depicted on the project site. The project site region was unshaded (white), indicating that the area is not forested.

The project site region was topographically flat. The nearest body of water was the Hilton Lagoon, approximately 730 feet to the southwest of the project site. The Ala Wai Boat Harbor was located approximately 780 feet to the west, the Pacific Ocean was approximately 1,190 feet to the south, and the Ala Wai Canal was approximately 1,355 feet to the north of the project site. The project site was not within 150 meters of a surface water body.

4.1.2 SOILS

A review of the soil type of the area was performed. The soil survey of the island of Oahu is published by the USDA Natural Resources Conservation Service in cooperation with the United States Department of Agriculture (USDA) Soil Conservation Service and University of Hawaii Agricultural Experiment Station. USDA soil survey data is available at http://websoilsurvey.nrcs.usda.gov/app/ and was accessed on April 26, 2017. The following information is pertinent to the project site:

The project site was situated on soil classified as Jaucas sand (JaC).

Jaucas sand consists of excessively drained, calcareous soils that occur as narrow strips on coastal plains, adjacent to the ocean on the islands of Kauai, Oahu, Maui, Molokai, and Lanai. The soils developed in wind- and water-deposited sand from coral and seashells.

Permeability for Jaucas sand is described as high (between 6.3 and 20.0 inches per hour). The soil is described as having a low corrosivity for uncoated steel and concrete.

Jaucus soils are used for pasture, sugarcane, truck crops, alfalfa, recreational areas, wildlife habitat, and urban development. Natural vegetation consists of kiawe, koa haole, bristly foxtail, bermudagrass, fingergrass, and Australian saltbrush.

4.1.3 GEOLOGY/HYDROGEOLOGY

Groundwater beneath the project site occurs in two distinct aquifers within the Palolo Aquifer System of the Honolulu Aquifer Sector. The shallow aquifer is classified as a basal, unconfined, sedimentary aquifer, occurring in non-volcanic lithology. The groundwater status is reported as potentially usable, but not for drinking water, nor is it considered to be ecologically important. The salinity of the groundwater within this aquifer is described as moderate (1000-5000 milligrams per liter Cl^-). The groundwater is further described as replaceable, with a high vulnerability to contamination (Mink and Lau, 1990).

The deeper aquifer is classified as a basal, confined, flank aquifer, occurring in horizontally extensive lavas. The groundwater status is reported as being currently in use for drinking water purposes. The salinity of the groundwater within this aquifer is described as fresh (250 milligrams per liter Cl^-). The groundwater is further described as irreplaceable, with a low vulnerability to contamination (Mink and Lau, 1990).

The hydrogeologic gradient in the vicinity of the project site is anticipated to be slight, with a general trend to the south. Groundwater levels may be influenced by leaking infrastructure, tidal fluctuations, and human activity. The direction and rate of groundwater flow across the project site is expected to be to the south and relatively slow.

5.0 HISTORICAL RECORDS REVIEW

According to *ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, the historical search of the property must cover a period of time back to the property's first developed use, or back to 1940, whichever is earlier.

As part of this assessment, ENPRO reviewed several historical sources of information, including aerial photographs, fire insurance maps, USGS topographic maps, building department records, chain of title documents, property tax records and zoning/land use records. On the earliest reference depicting the project site, the 1914 Sanborn fire insurance map, the area and streets surrounding the project site had already been developed as a housing tract. The project site was divided into four lots and an individual dwelling was depicted on each parcel. Based on common historical knowledge of the development of the island of Oahu, it is ENPRO's opinion that this housing tract represents the first developed use of the project site. It is ENPRO's opinion that any previous use of this property was not likely to have resulted in recognized environmental conditions expected to impact the project site.

5.1 TITLE RECORDS

Readily available records at the City and County of Honolulu Tax Assessor's Office were reviewed to assess past ownership of the project site. Significant ownership transactions are summarized below:

Table 2

Summary of Title Information

Tax Map Key	Date	Property Transaction
(1) 2-6-009: 004	09/23/36	Deeded to Victoria K. Garrida
(1) 2-6-009: 004	05/10/37 to 12/11/61	Many transactions between individuals took place
(1) 2-6-009: 004	12/11/61	Deeded to Monroe Jong and Susan Jong
(1) 2-6-009: 004	05/05/69	Parcel size changed from 4,855 square feet to 9,802 square feet
(1) 2-6-009: 004	12/29/88	Deeded to Monroe Jong Trust and Susan Jong Trust
(1) 2-6-009: 004	10/16/89	Leased to Kona Coast Resort Joint Venture

Table 2 (continued)

Summary of Title Information

Tax Map Key	Date	Property Transaction
(1) 2-6-009: 004	12/18/90	Deeded to Mariposa Properties Limited Partnership
(1) 2-6-009: 004	03/21/06	Leased to Polynesian Management Corporation and SMK, Inc.
(1) 2-6-009: 004	01/24/17	Deeded to Leighton Jong, Lincoln Jong, Lambert Jong, Lori Toda, Jason Jong, Erin Jong, Rebecca Jong, Robyn Jong, Brian Jong, Kasey Jong, Danielle Toda, David Toda, Lauren Toda, and Lindsey Toda
(1) 2-6-009: 005	05/16/13	Owned by Duke Kahanamoku
(1) 2-6-009: 005	12/27/33	Deeded to Bishop Trust Company
(1) 2-6-009: 005	08/01/65	Leased to Budget Rent-A-Car
(1) 2-6-009: 005	12/22/71	Deeded to Nadine Alexander Kahanamoku
(1) 2-6-009: 005	06/25/98	Deeded to University of Hawaii Foundation
(1) 2-6-009: 005	01/28/99	Deeded to Food Pantry, Ltd.
(1) 2-6-009: 005	08/20/14	Deeded to 1835 Ala Moana, LLC
(1) 2-6-009: 006	10/11/32	Owned by Helen K. Sterling
(1) 2-6-009: 006	01/31/52	Parcel size changed from 5,685 square feet to 4,362 square feet
(1) 2-6-009: 006	03/08/63	Deeded to Malcom Paoa, Juanita Paoa, Kainoa Akana, Robert Paoa, and Juanita Hanohano
(1) 2-6-009: 006	07/31/68	Leased to Thomas E Kilmer
(1) 2-6-009: 006	08/01/71	Subleased to Kobe Japanese Steak House (Hawaii), Ltd.
(1) 2-6-009: 006	05/15/89 to 12/15/03	Many transactions between individuals took place
(1) 2-6-009: 006	08/30/10	Deeded to SMK, Inc.

No readily apparent evidence of *recognized environmental conditions* that are expected to impact the project site was noted in the ownership records reviewed.

Copies of the title records reviewed for this project are provided in the appendix.

5.2 HISTORICAL USE INFORMATION ON THE PROPERTY

5.2.1 HISTORICAL MONSARRAT MAP

On the historic 1920 Monsarrat map the project site location was depicted south of Ala Moana Road. No individual structures were depicted at the project site.

5.2.2 HISTORICAL SANBORN MAPS

Sanborn fire insurance map coverage of Oahu included the project site and the following historical maps were reviewed as part of this assessment:

- A 1914 Sanborn map. This map depicted the property as four separate lots, identified as 1823, 1829, 1835, and 1841, from west to east. A large, single story dwelling was depicted near the center of lots 1823, 1835, and 1841, while a smaller single story dwelling was depicted in the center of lot 1829.

- A 1949 Sanborn map. The large dwelling in the center of lot 1827, preciously lot 1823, was replaced with a two-story dwelling on the northern portion of the lot and a two-story, four unit apartment building on the southern portion of the lot. The small dwelling in the center of lot 1831, previously lot 1829, was replaced with a larger, single story duplex. The large dwelling in the center of lot 1835/1837, previously lot 1835, was replaced with a smaller single story dwelling in the southeastern corner of the lot. The dwelling on lot 1841 was very similar to the 1914 map.

- A 1956 Sanborn map. This map was very similar to the 1949 map, with the exception of lot 1831, where the single story duplex was replaced with a two-story, sight unit apartment building.

- A 1975 Sanborn map. This map depicted three separate lots, with lot 1827 and 1831 combined into a single lot. The structures on lot 1827/1831 were very similar to the 1956 map, and an additional small, unnamed structure was depicted in the northeast corner of the lot. The small, single story dwelling on lot 1837, previously 1835/1837, was replaced with a small auto rental office on the northern portion of the lot. The dwelling on lot 1841 was replaced with a large, two-story commercial building.

- A 1977 Sanborn map. This map was very similar to the 1975 map.

- A 1991 Sanborn map. This map was very similar to the 1977 map, with the exception of lot 1827/1831, where the unnamed structure in the northeast corner of the lot was no longer depicted. The structures on all three lots were depicted as designated for commercial use.

- A 1993 Sanborn map. This map was very similar to the 1991 map.

Copies of the Sanborn maps reviewed for this project are provided in the appendix section of this report.

5.2.3 HISTORICAL TOPOGRAPHIC MAPS

The following topographic maps were reviewed as part of this assessment:

- A 1928 topographic map. The scale of this map was one inch equals 1,667 feet. On this map the project site was depicted just south of an unnamed road. Three individual structures were depicted at the project site.
- A 1953 topographic map. The scale of this map was one inch equals 2,000 feet. No structures were depicted at the project site. The project site region was shaded in pink omission tint, indicating a densely built-up area.
- 1954, 1959, 1969, 1970, and 1983 topographic maps. These maps were very similar to the 1953 topographic map.
- A 1998 topographic map. The scale of this map was one inch equals 2,000 feet. No structures were depicted at the project site. The project site region was shaded in gray omission tint, indicating a densely built-up area.
- A 2013 topographic map. The scale of this map was one inch equals 2,000 feet. No structures were depicted at the project site. The project site region was unshaded (white), indicating that the area is not forested.

Copies of the historic topographic maps reviewed for this project are provided in the appendix section of this report.

5.2.4 HISTORICAL AERIAL PHOTOGRAPHS

The following aerial photographs were reviewed as part of this assessment:

- R. M. Towill, dated 1949. The project site appeared to be developed with five residential structures, similar to those depicted on the 1949 Sanborn map. Details of the project site were obscured by poor photographic resolution.

- EDR, dated 1952. The scale of this photograph was approximately one inch equals 500 feet. The project site appeared to be developed for residential use. Details of the project site were obscured by poor photographic resolution.
- R. M. Towill, dated 1964. The project site appeared to be developed with four mixed commercial and residential structures. Details of the project site were obscured by poor photographic resolution.
- EDR, dated 1968. The scale of this photograph was approximately one inch equals 500 feet. Details of the project site were obscured by poor photographic resolution.
- R. M. Towill, dated 1969. The project site appeared to be developed with five mixed commercial and residential structures. Details of the project site were obscured by poor photographic resolution.
- EDR, dated 1975. The scale of this photograph was approximately one inch equals 500 feet. The project site appeared to be developed as depicted in Sanborn maps of similar vintage. Details of the project site were obscured by poor photographic resolution.
- EDR, dated 1978. This photograph was very similar to the 1975 EDR aerial photograph.
- R. M. Towill, dated 1990. The project site appeared to be developed with three commercial structures, similar to what was observed at the time of our site reconnaissance. Details of the project site were obscured by poor photographic resolution.
- EDR, dated 1992. This photograph was very similar to the 1990 R. M. Towill aerial photograph.
- EDR, dated 2000. The scale of this photograph was approximately one inch equals 500 feet. Details of the project site were obscured by poor photographic resolution.
- EDR, dated 2006. This photograph was very similar to the 1990 R. M. Towill aerial photograph.

Copies of the aerial photographs reviewed for this project are provided in the appendix section of this report.

5.3 HISTORICAL USE INFORMATION ON ADJOINING PROPERTIES

5.3.1 HISTORICAL MONSARRAT MAP

On the historic 1920 Monsarrat map, a stream and Ala Moana Road were depicted to the north of the project site. No individual structures were depicted in the area surrounding the project site.

5.3.2 HISTORICAL SANBORN MAPS

Sanborn fire insurance map coverage of Oahu included the areas around the project site and the following historical maps were reviewed as part of this assessment:

- A 1914 Sanborn map. This map depicted Ala Moana [Boulevard] to the north of the project site, with a stream to the north of Ala Moana [Boulevard]. Properties to the east and west of the project site were developed with single story residential dwellings. The property southwest of the project site was depicted with four individual structures and titled “Japanese Club Ho.” No structures were depicted on the property to the southeast of the project site.

- A 1949 Sanborn map. The area to the north of Ala Moana [Boulevard] was developed as a residential tract, consisting primarily of single story dwellings and small, two-story apartment buildings. The properties to the east and west of the project site showed additional residential development. The Japanese Club [House] to the southwest of the project site was replaced with single story residential dwellings, as was the property to the southwest of the project site.

- A 1956 Sanborn map. North of the project site, Ala Moana [Boulevard] appeared to have been widened and the single story dwellings and small apartment buildings were replaced with larger, two-story apartment buildings. The areas to the east and west of the project site appeared very similar to the 1949 map, while no structures were depicted on the properties south of the project site.

- A 1975 Sanborn map. The two-story apartment buildings to the north of Ala Moana [Boulevard] were replaced with two larger apartment buildings, Pomaikan Apartments and Wailana Apartments, and two hotels, the Travelodge at Ala Moana and the Hawaiian Inn. The dwellings to the east of the project site were replaced with a parking lot and the dwellings to the west were replaced with an unnamed 40-room structure. The area south of the project site was developed with the Hilton Hawaiian Village Hotel, five deck parking garage, and the Kaiser Dome auditorium.

- 1977, 1991, and 1993 Sanborn maps. This map was very similar to the 1975 map.

5.3.3 HISTORICAL TOPOGRAPHIC MAPS

The following topographic maps were reviewed as part of this assessment:

- A 1928 topographic map. The scale of this map was one inch equals 1,667 feet. Waikiki Park and an unnamed road were depicted to the north of the project site. Several individual structures were depicted in the area to the east, west, and south of the project site.
- A 1953 topographic map. The scale of this map was one inch equals 2,000 feet. Ala Moana [Boulevard] was depicted north of the project site and an unnamed street was shown to the south. No structures were depicted in the area surrounding the project site. The project site region was shaded in pink omission tint, indicating a densely built-up area.
- A 1954 topographic map. This map was very similar to the 1953 topographic map.
- A 1959 topographic map. The scale of this map was one inch equals 2,000 feet. The unnamed street to the south of the project site was no longer depicted. One round individual structure was depicted to the east of the project site. The project site region was shaded in pink omission tint, indicating a densely built-up area.
- A 1969 topographic map. This map was very similar to the 1959 topographic map, though no individual structures were depicted in the area surrounding the project site.
- A 1970 topographic map. The scale of this map was one inch equals 5,208 feet. This map was very similar to the 1959 map.
- A 1983 topographic map. This map was very similar to the 1969 topographic map.
- A 1998 topographic map. The scale of this map was one inch equals 2,000 feet. A large, rectangular structure was depicted to the south of the project site. The project site region was shaded in gray omission tint, indicating a densely built-up area.
- A 2013 topographic map. The scale of this map was one inch equals 2,000 feet. No structures were depicted in the areas surrounding the project site.

The project site region was unshaded (white), indicating that the area is not forested.

5.3.4 HISTORICAL AERIAL PHOTOGRAPHS

The following aerial photographs were reviewed as part of this assessment:

- R. M. Towill, dated 1949. The areas surrounding the project site appeared to be developed for residential use. A paved road was depicted to the north of the project site. Details of the areas surrounding the project site were obscured by poor photographic resolution.
- EDR, dated 1952. This photograph was very similar to the 1949 R. M. Towill aerial photograph.
- R. M. Towill, dated 1964. A six-lane street was depicted to the north of the project site, and the area north of the street appeared to be developed for mixed commercial and residential use. A high-rise was depicted to the west and a parking lot to the east and south of the project site. Details of the areas surrounding the project site were obscured by poor photographic resolution.
- EDR, dated 1968. The scale of this photograph was approximately one inch equals 500 feet. This photograph was very similar to the 1964 R. M. Towill aerial photograph, though the parking lot appeared to be replaced by two structures, a large high-rise and a spherical building. Details of the areas surrounding the project site were obscured by poor photographic resolution.
- R. M. Towill, dated 1969. This photograph was very similar to the 1968 EDR aerial photograph, though mixed residential and commercial area north of the street appeared to have been redeveloped with large, commercial buildings.
- EDR, dated 1975, 1978, 1985, and 1992, and R. M. Towill, dated 1990. These photographs were very similar to the 1969 R. M. Towill aerial photograph.
- EDR, dated 2000. The scale of this photograph was approximately one inch equals 500 feet. The spherical building to the southeast of the project site was no longer present. Details of the areas surrounding the project site were obscured by poor photographic resolution.
- EDR, dated 2006. This photograph was very similar to the 2000 EDR aerial photograph.

5.4 PREVIOUS ENVIRONMENTAL REPORTS

No previous environmental reports were available for review.

6.0 Regulatory Database Review

6.1 Standard Environmental Record Resources: Federal, State and Local Database Search

The regulatory database search report prepared by Environmental Data Resources, Inc. (EDR) was reviewed to evaluate the project site and listed properties within ASTM-recommended search distances. Federal, state and local databases reviewed are included in the Appendix section of this report.

Project site

The project site was listed in the following databases as identified in the EDR regulatory database search report.

- Resource Conservation and Recovery Act Non-Generator/No Longer Regulated (RCRA NonGen/NLR)
- Hawaii Recovered Government Archive Leaking Underground Storage Tank (HI RGA LUST)
- Facility Index System (FINDS)
- Enforcement and Compliance History Online (ECHO)
- Hawaii Spills (HI SPILLS)
- Hawaii Leaking Underground Storage Tank (HI LUST)
- Hawaii Underground Storage Tank (HI UST)
- Emergency Response Notification System (ERNS)
- Enforcement Compliance History Online (ECHO)

Adjacent and Nearby Properties

The EDR regulatory database search report identified a total of 84 sites within the ASTM minimum search distances from the project site.

Most of the listed sites are not expected to present an environmental concern to the project site because, based upon ENPRO's review:

1. They only hold an operating permit (which does not imply a problem) or,

2. They were identified for past regulatory requirements that require no future action or,
3. They are too distant and/or hydrogeologically down gradient or cross gradient relative to the project site.

The EDR regulatory database search report identified four "orphan" sites within the ASTM minimum search distances from the project site. Based on our review of the orphan sites listed, it is ENPRO's opinion that none of the orphan sites are close enough to the project site to constitute a recognized *environmental condition* expected to impact the property.

6.2 ADDITIONAL ENVIRONMENTAL RECORD RESOURCES: STATE AND LOCAL AGENCY ENVIRONMENTAL RECORD SOURCES

Based on ENPRO's review of the EDR regulatory database search report, regulatory files from the State of Hawaii Department of Health (DOH) were requested and reviewed. Our review considers both proximity to the project site and local hydrogeologic conditions to identify which sites and which environmental violations may be interpreted to have a potential impact to the project site's environmental conditions.

Based on our review of the EDR regulatory database search report, we requested the following regulatory files from the State of Hawaii Department of Health (DOH), Solid and Hazardous Waste Branch (SHWB) and the Hazard Evaluation and Emergency Response (HEER) Office:

- Budget Rent-A-Car, 1837 Ala Moana Boulevard, Facility ID 9-101146
- Hilton Hawaiian Village, 2005 Kalia Road, Facility ID 9-100818

ENPRO additionally requested information on the project site from the City and County of Honolulu Fire Department and reviewed documents from the Honolulu Department of Planning and Permitting.

6.2.1 DEPARTMENT OF HEALTH

The SHWB Underground Storage Tank (UST) Section provided the following:

1) Budget Rent-A-Car, 1837 Ala Moana Boulevard, Facility ID 9-101146

One 1,000-gallon gasoline UST on the southeastern portion of the property and one 3,000-gallon gasoline UST on the southwestern portion of the property were installed in approximately 1966 and 1976, respectively. Both the 1,000-gallon and 3,000-gallon tanks were removed in November 1990 and replaced with a single 10,000-gallon gasoline UST on the southeastern portion of the property, partially overlapping the previous UST footprints. A fuel pump was installed on the eastern border of the property (Figure 7).

The 10,000-gallon UST was removed on March 2, 2004 by M. Nakai Repair Service, Ltd. A site assessment was completed by Masa Fujioka & Associates and none of the soil or groundwater samples contained detectable levels of petroleum hydrocarbon constituents. DOH issued a *No Further Action* letter for the site on May 10, 2004.

It is ENPRO's opinion that the former 1,000-gallon and 3,000 gallon USTs represent a *recognized environmental condition* that may have impacted the project site because insufficient documentation existed for the UST removals and an undetected leak may have occurred.

2) Hilton Hawaiian Village, 2005 Kalia Road, Facility ID 9-100818

Two 12,000-gallon diesel USTs used to supply fuel to the facility's boiler system, were closed and removed from the site on August 18, 2014. DOH SHWB records indicate a site assessment was completed at the time of the removal and no evidence of a leak was detected.

One 6,500-gallon gasoline UST and one 500-gallon diesel UST were located approximately 50 feet and 75 south of Kobe Steakhouse, respectively. Both USTs were closed and removed in November 1990. DOH SHWB records indicate a site assessment was completed at the time of the removal and no evidence of a leak was detected. DOH issued a *No Further Action* letter for the site on November 11, 1991.

It is ENPRO's opinion that this property does not have *recognized environmental conditions* that are expected to affect the project site because the USTs were removed from the facility and site assessments did not indicate evidence of a release from the former USTs. Furthermore, the two 12,000-gallon diesel USTs were sufficiently distant and down-gradient from the project site and a *No Further Action* letter was issued for the 6,500-gallon and 500-gallon USTs.

<u>The SHWB Hazardous Waste Section provided the following:</u>

1) Hilton Hawaiian Village, 2005 Kalia Road, Facility ID 9-100818

Based on our review of the chemical and generator inventories we received, it is our opinion that this property does not have *recognized environmental conditions* that are expected to affect the project site because the property is sufficiently distant and no releases were reported.

The SHWB Solid Waste Section:

The Solid Waste Section of the DOH SHWB did not have any files for any of the locations requested.

The HEER Office provided the following:

1) **Budget Rent-A-Car, 1837 Ala Moana Boulevard**

   Based on our review of the *Tier Two Emergency and Hazardous Chemical Inventory* documentation we received, it is our opinion that this property does not have *recognized environmental conditions* that are expected to affect the project site because no releases were reported and the USTs have been removed from the property.

2) **Hilton Hawaiian Village, 2005 Kalia Road, Facility ID 9-100818**

   Based on our review of the *Tier Two Emergency and Hazardous Chemical Inventory* documentation we received, it is our opinion that this property does not have *recognized environmental conditions* that are expected to affect the project site because the property is sufficiently distant and no releases were reported.

6.2.2 BUILDING, PLANNING, AND/OR ZONING DEPARTMENTS

The City and County of Honolulu Department of Planning and Permitting database was reviewed on April 11, 2017 to obtain historical use information for the project site. Based on our review of the planning and permitting database, evidence of *recognized environmental conditions* associated with the project site was not discovered.

A copy of the records for the project site can be found in the appendix section of this report.

6.2.3 FIRE DEPARTMENT

The Honolulu Fire Department (HFD) was contacted on April 14, 2017 to obtain information regarding any fires, complaints, permits, violations involving hazardous materials use, USTs or above ground storage tanks (ASTs) on record for the project site and/or adjoining properties.

HFD provided UST permits, a UST closure letter, and a UST removal letter for 1837 Ala Moana Boulevard (Budget Rent-A-Car).

HFD reported a vehicle fire (Incident Report #2002-17824) and a dumpster fire (Incident Report #2002-17824) for 1841 Ala Moana Boulevard (Kobe Steakhouse).

No hazardous materials incident responses were associated with the project site.

Based on our review of HFD files, evidence of *recognized environmental conditions* associated with the project site was not discovered.

A copy of the records for the project site can be found in the appendix section of this report.

6.3 VAPOR ENCROACHMENT SCREENING IN PROPERTY INVOLVED IN REAL ESTATE TRANSACTIONS

ENPRO reviewed the regulatory database search provided by EDR and other regulatory records for recorded releases within the recommended radii for vapor encroachment. The EDR provides an initial search of all ASTM E 2600-10 standard government record databases and EDR proprietary historical records related to former dry cleaners, gas stations and manufactured gas plants the 1/3 mile and 1/10 mile approximate minimum distances defined in ASTM E 2600-10 for chemicals of concern (COC)-contaminated sites. This measurement is based upon the distance from the known or suspect contaminated property to the target property boundary polygon. ENPRO's review of EDR's vapor encroachment screening (VES) takes into account the following factors:

- The land use of the *target property* (TP)
- Type of COC
- Location of known or suspect contaminated property is in the area of concern (AOC) having COC
- Characteristics of the soil
- Depth to groundwater
- Vapor conduits that may result in significant preferential pathways
- Cleanup status of contaminated property

Potential vapor encroachment conditions (VECs) evaluated included all *recognized environmental conditions*, including H-RECs and C-RECs with identified releases of petroleum products or other potentially volatile contaminants of concern.

ENPRO's VES did not identify any potential VECs within the recommended radii provided in ASTM E 2600-10 with the potential to impact the project site.

7.0 Site Reconnaissance

Site reconnaissance was performed by Ms. Kimberly Rottas and Mr. Galen Ciszek on April 12 and 13, 2017. The site reconnaissance was conducted on foot. Most areas of the property were available for inspection with the following exceptions:

- The locked men's and women's bathrooms on the second floor of the ABC Marketplace
- Ceiling and wall cavities on all floors, which may contain insulated ducts and piping
- Building roofs
- The elevator shafts and associated control/machine rooms
- Mechanical rooms

No opinion is provided regarding environmental conditions in areas that were not inspected.

7.1 CURRENT USE OF THE PROPERTY

The project site consists of three commercial properties: ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse.

Tenant usage and/or businesses at the ABC Marketplace at the time of our site reconnaissance are listed in Table 3.

Table 3

Tenant Usage and/or Businesses at the Project Site

Tenant or Business Name	Use of Project Site
ABC Store	Retail and grocery
Aloha Healing Arts	Massage parlor
Goofy Café and Dine	Restaurant
Luck Shop	Retail
Lulu's Hair Salon	Salon

Table 3 (continued)

Tenant Usage and/or Businesses at the Project Site

Tenant or Business Name	Use of Project Site
Magokoro Restaurant	Restaurant
Sacred Art Tattoo	Tattoo parlor
South Seas Aquatics	Retail

7.2 DESCRIPTIONS OF STRUCTURES, ROADS & OTHER IMPROVEMENTS

Three buildings were observed at the project site as described below:

- A two-story in-line commercial shopping center, constructed in 1941 and added onto in the following decades
- A single story car rental building, constructed in 1968
- A two-story restaurant, constructed in 1964

There is a reasonable potential that pesticides may have been applied for termite control beneath this slab foundation. This is not considered to be a *recognized environmental condition*, but it may be a concern at the time the building slab is removed.

Mr. Roy Toguchi, Property Manager for SMK, Inc., reported that the following companies/agencies provide project site utilities and service for ABC Marketplace:

Electricity:	Hawaiian Electric Company (HECO)
Gas or other fuel:	Hawaii Gas
Water:	Board of Water Supply
Sewer:	City and County of Honolulu
Refuse:	West Oahu Aggregate
Elevator:	ThyssenKrupp Elevator Service
Grease Trap:	Pacific Biodiesel

Mr. Jay Lebaron, of Paradise Rent-A-Car, reported that the following companies/agencies provide project site utilities and service for Paradise Rent-A-Car

Electricity:	HECO
Water:	Board of Water Supply
Sewer:	City and County of Honolulu
Refuse:	Transported off-site for disposal

Ms. Sonja Hayslip, Office Manager for Kobe Steakhouse, reported that the following companies/agencies provide project site utilities and service for ABC Marketplace:

Electricity:	HECO
Gas or other fuel:	GasCo
Water:	Board of Water Supply
Sewer:	City and County of Honolulu
Refuse:	West Oahu Aggregate
Grease Trap:	Island Pumping

Storm water runoff from the project site flows to the south via sheet flow to storm drains and dry wells, and eventually discharges to the Pacific Ocean.

Wastewater from the project site originates from sinks, toilets, kitchens, and rinsing vehicles and discharges to the sanitary sewer system.

Evidence of additional wastewater discharge sources was not observed at the project site.

7.3 CURRENT USES OF ADJACENT AND NEARBY PROPERTIES

The area surrounding the project site consisted of restaurants and resorts. Adjoining properties were observed from the project site and from public access lands for signs of *recognized environmental conditions* and their potential to pose an environmental concern to the project site. These properties are listed in the following table:

Table 4

Summary of Adjacent and Nearby Property Use

Direction	Name	Use
North	Ala Moana Boulevard Aqua Palms Hotel	Traffic thoroughfare Hotel
South	Hilton Hawaiian Village	Hotel
East	Parking lot Sidewalk/Landscaping	Parking lot Pedestrian walkway
West	Hilton Grand Vacations	Hotel

Table 5 summarizes the site inspection and findings. All features that were observed during the site reconnaissance, or that were discovered to have been historically present at the project site, are noted in the table. Also indicated in the table are items that may present concerns to the project site. Additional information about items noted in the table can be found in the referenced section of this report.

Table 5

Site Inspection Findings

Project Site Environmental Features	Currently / Historically Present	Possible Environmental Concern	Report Section
Hazardous substances or Petroleum Products	Yes	No	7.4
Underground Storage Tank, UST	Yes	Yes	7.5.1
Aboveground Storage Tank, AST	No	No	
Odors	No	No	
Air Emissions *(stacks, hoods, other point sources)*	No	No	
Pools of Liquid	No	No	
Drums	No	No	
Unidentified Substance Containers	No	No	
Electrical Equipment/Possible PCBs	Yes	No	7.7.1
Hydraulic Equipment/Possible PCBs	Yes	Yes	7.7.2
Stains or Corrosion	No	No	
Drains	Yes	No	7.9

Table 5 (Continued)

Site Inspection Findings

Project Site Environmental Features	Currently / Historically Present	Possible Environmental Concern	Report Section
Sumps	No	No	
Pits, Ponds, or Lagoons	No	No	
Stained Soil or Pavement	No	No	
Stressed Vegetation	No	No	
Evidence of Spills or Releases	No	No	
Artificially Filled Areas *(Solid Waste Disposal)*	No	No	
Waste Water	Yes	No	7.9
Wells	Yes	No	7.8
Septic Systems *(cisterns, cess pools)*	No	No	
Dry Cleaning Operations	No	No	
Agricultural Use *(pesticides/herbicides/fungicides)*	No	No	
Oil/Gas Production or Exploration	No	No	
Remedial Activities	No	No	
Other	Yes	No	7.9

7.4 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

Project Site

Small quantities of household cleaning chemicals and carbon dioxide cylinders were observed on site.

None of the hazardous substances observed on the project site during the site reconnaissance appeared to be causing or contributing to any site contamination.

Adjoining or Nearby Sites

The following hazardous substances and/or petroleum products were observed on adjacent properties:

- One 4,000-gallon diesel AST, Hilton Hawaiian Village property to the east of Kobe Steakhouse

- A locked diesel generator room, Hilton Grand Vacations property to the west of ABC marketplace

None of the hazardous substances and/or petroleum products observed on the adjacent properties during the site reconnaissance appeared to be causing or contributing to any site contamination.

7.5 STORAGE TANKS

7.5.1 UNDERGROUND STORAGE TANKS

Project Site

Visual observations for manways, vent pipes, fill connections, concrete pressure dispersion pads, and dispenser pumps were conducted throughout the project site. Evidence of the current existence of USTs was not observed. Evidence indicating the historical existence of USTs was observed on the southern and southwestern portions of the Paradise Rent-A-Car property.

Adjoining or Nearby Sites

Visual observations for manways, vent pipes, fill connections, concrete pressure dispersion pads, and dispenser pumps were conducted throughout the accessible areas of adjacent properties. No evidence of the presence of USTs was noted.

7.5.2 ABOVEGROUND STORAGE TANKS

Project Site

Visual observations for vent pipes, secondary containment walls, or other evidence of aboveground storage tanks were conducted throughout the project site. Evidence indicating historical or current existence of ASTs was not observed.

Adjoining or Nearby Sites

Visual observations for vent pipes, secondary containment walls, or other evidence of aboveground storage tanks were conducted throughout the accessible areas of adjacent properties. One 4,000-gall diesel AST was observed on the adjoining Hilton Hawaiian Village, approximately 300 feet east of Kobe Steakhouse.

7.6 SOLID WASTE

Project Site

At the time of our investigation, non-hazardous solid waste was generated onsite. Waste was in the form of general municipal refuse that was placed into dumpsters located on the project site. The waste was accumulated and transported to an off-site facility for recycling and/or disposal on a regular interval basis.

Adjoining or Nearby Sites

At the time of our investigation, non-hazardous solid waste was observed to be generated on adjoining or nearby site. Waste was in the form of general municipal refuse that was placed into dumpsters located on adjoining sites. The waste was accumulated and transported to an offsite facility for recycling and/or disposal on a regular interval basis.

7.7 POLYCHLORINATED BIPHENYLS (PCBS)

Visual observation for electrical equipment or electrical components that use dielectric fluid, hydraulic lift equipment and fluorescent light ballasts that potentially include PCB-containing fluids was conducted. PCBs (polychlorinated biphenyl) are heavily regulated under the Toxic Substances Control Act (TSCA), which obligates a property owner to clean up any spills occurring on their property.

7.7.1 ELECTRICAL TRANSFORMERS/CAPACITORS

Three vaulted transformers belonging to HECO were observed on the project site. No evidence of leakage and minimal corrosion on the outside of the transformers were noted during the project site reconnaissance.

An inquiry was sent to HECO regarding the PCB content of the vaulted transformers. HECO responded to the inquiry and indicated the transformers were "non-PCB" or "PCB-free."

Since the transformers are owned and operated by HECO, HECO is responsible for remediating any environmental impacts they might cause. Details regarding correspondence with HECO can be found in the appendix section of this report.

No privately-owned transformer equipment was observed within the facility.

7.7.2 HYDRAULIC LIFT EQUIPMENT

One elevator was observed at the ABC Marketplace property at 1831 Ala Moana Boulevard. Interviews with people knowledgeable of the project site history indicated the current presence of in-ground hydraulic lift equipment on the project site.

This is considered to be a *recognized environmental condition* because an undetected leak may have occurred.

7.7.3 FLUORESCENT LIGHT BALLASTS

Fluorescent light fixtures are present at the project site. Many fluorescent light fixtures manufactured prior to 1980 may have contained ballasts with PCBs. Since the project site was constructed before 1980, the potential that the ballasts of these fluorescent lights contain PCBs may be a concern.

7.8 WELLS

Three dry wells were observed at the project site during the assessment, one in the central portion and two in the southern portion of the ABC Marketplace property.

7.9 OTHER OBSERVATIONS

The following describes additional observations of the project site:

Odors:	Not observed
Pools of liquid:	Not observed
Drums:	Not observed
Drains and Sumps:	Not observed
Pits, ponds, lagoons:	Not observed
Stained soil or pavement:	Not observed

Stressed vegetation:	Not observed
Waste water features:	Not observed
Septic systems:	Not observed

Waste water was generated on the Paradise Rent-A-Car property while rinsing vehicles in the parking lot. The vehicles were then hand-buffed with rags. No chemicals were observed to be used during the process.

Eight grease traps were observed at the project site, four to the north of Kobe Steakhouse and four in the central portion of the ABC Marketplace property.

8.0 Interviews

Interviews with individuals having past or present knowledge of the project site, such as owners, key site managers, occupants, and neighbors are routinely conducted to obtain information indicating *recognized environmental conditions* in connection with the property. The following individuals were available to interview:

Table 6

Key Site Interviews

Interviewee Name	Relationship to Property	Length of Time Familiar with Property	Date of Interview
Mr. Roy Toguchi	Property Manager, SMK, Inc.	6 years	04/12/17 and 4/21/17
Mr. Norman Hong	Buyer's Representative	Less than one month	04/26/17
Ms. Sonja Hayslip	Office Manager, Kobe Steakhouse	40 years	04/12/17
Mr. Jay Lebaron	Tenant, Paradise Rent-A-Car	12 years	04/12/17

8.1 KEY SITE MANAGER

Mr. Roy Toguchi, Property Manager for SMK, Inc., was interviewed in person at the time of the site visit on April 12, 2017 and completed a Property Questionnaire supplied by ENPRO Environmental regarding the project site. A copy of the completed Property Questionnaire is included in the appendix section of this report.

Project Site

Mr. Toguchi has been familiar with the project site for approximately six years and indicated the 1831 Ala Moana Boulevard property, currently ABC Marketplace consisted of three separate properties when it was purchased by ABC Stores approximately ten years ago. He indicated the presence of three dry wells and an elevator using in-ground hydraulic lift equipment at the ABC Marketplace property. Mr. Toguchi stated that the hydraulic fluid had not been tested for PCBs, though ThyssenKrupp conducted regular preventative maintenance.

Mr. Toguchi also reported a UST was removed from 1835 Ala Moana Boulevard, currently Paradise Rent-A-Car.

Adjoining and Adjacent Properties

Mr. Toguchi reported no information regarding past or present contamination and/or activities on adjacent properties that may have resulted in contamination of the project site.

8.2 USER

Mr. Norman Hong, Chief Executive Officer of G70 and the buyer's representative, completed a Property Questionnaire supplied by ENPRO Environmental regarding the project site. A copy of the completed Property Questionnaire is included in the appendix section of this report.

Project Site

Mr. Hong has been familiar with the project site for less than one month and reported no information regarding past or present contamination and/or activities on the property that may have resulted in contamination of the project site.

Adjoining and Adjacent Properties

Mr. Hong reported no information regarding past or present contamination and/or activities on adjacent properties that may have resulted in contamination of the project site.

8.3 OCCUPANTS

Ms. Sonja Hayslip, Office Manager for Kobe Steakhouse, was interviewed in person at the time of the site visit on April 12, 2017.

Project Site

Ms. Hayslip has been familiar with the project site for approximately forty years and reported the property housed an apartment building prior to the Kobe Steakhouse, which opened in 1972, when it was owned by a Mr. Gardner and a number of other individuals. Ms. Hayslip did not know if the apartment building was added onto or demolished completely when it was converted to the steakhouse. The property was transferred to the current owners approximately seven years ago. Ms. Hayslip reported no information regarding past or present contamination and/or activities on the property that may have resulted in contamination of the Kobe Steakhouse property.

Adjoining and Adjacent Properties

Ms. Hayslip reported that the property to the west, currently Paradise Rent-A-Car, used to have a gas pump.

Mr. Jay Lebaron, employee of Paradise Rent-A-Car, was interviewed in person at the time of the site visit on April 12, 2017.

Project Site

Mr. Lebaron has been familiar with the project site for approximately twelve years and reported the property was currently owned by ABC stores. Mr. Lebaron reported no information regarding past or present contamination and/or activities on the property that may have resulted in contamination of the Paradise Rent-A-Car property.

Adjoining and Adjacent Properties

Mr. Lebaron reported no information regarding past or present contamination and/or activities on adjacent properties that may have resulted in contamination of the project site.

9.0 Evaluation

This section documents the findings, opinions, and conclusions of the Phase I Environmental Site Assessment. ASTM E 1527-13 does not require the *environmental professional* to provide recommendations regarding identified environmental conditions at the project site. As a service to its clients, ENPRO provides recommendations to further evaluate and/or address environmental concerns in Section 10.1 of this report.

9.1 Findings and Conclusions

We have performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527-13 of the ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse located at 1831, 1835, and 1841 Ala Moana Boulevard, respectively, in Honolulu, Hawaii, the *property*. Any exceptions to, or deletions from, this practice are described in Section 2.6 of this *report*. This assessment has revealed no evidence of *recognized environmental conditions (RECs)* in connection with the *property* except for the following:

- Former underground storage tanks on site.

  This is considered to be a *recognized environmental condition* because an undetected leak may have occurred. See Sections 6.2.1 and 7.5.1 for additional information.

- In-ground hydraulic lift equipment on site.

  This is considered to be a *recognized environmental condition* because an undetected leak may have occurred. See Sections 7.2.2 and 8.1 for additional information.

The following environmental conditions, which are not considered *recognized environmental conditions,* as defined by ASTM, were observed during the assessment:

- Suspect pesticide application beneath slab
- Suspect asbestos containing building materials
- Suspect lead containing paint

- Ecologically sensitive areas

9.2 DATA GAPS

Data gaps are not uncommon in environmental site assessments. A data gap by itself is not inherently significant. The significance is determined by other information and professional experience as to whether the data gap raises reasonable concerns about activities that may present a *recognized environmental condition*. According to *ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and *All Appropriate Inquiries* (AAI) which includes 40 CFR Part 312, §312.21 and §312.31, the Phase I Environmental Site Assessment report shall identify and comment on significant data gaps that affect the ability of the environmental professional to identify *recognized environmental conditions* and identify the sources of information that were consulted to address the data gap.

ENPRO did not encounter any significant data gaps during the performance of this Phase 1 Environmental Site Assessment, although the earliest available historical information was the Sanborn fire insurance map dated 1914 when the project site had already been developed for residential use. Based on common historical knowledge of the development of the island of Oahu, it is ENPRO’s opinion that this housing tract represents the first developed use of the project site and that this data failure does not represent a *significant* data gap because any previous use of this property was not likely to have resulted in *recognized environmental conditions* expected to impact the project site.

9.3 CERTIFICATIONS

ENPRO has completed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Practice E 1527-13 of the ABC Marketplace, Paradise Rent-A-Car, and Kobe Steakhouse located at 1831, 1835, and 1841 Ala Moana Boulevard, respectively, in Honolulu, Hawaii (the “project site”). This assessment was performed at the request of G70 (the “Client”) using the methods and procedures consistent with good commercial and customary practices designed to conform to acceptable industry standards.

The information and opinions rendered in this report are intended for the Client for the purposes stated herein (see Section 2.3). This report is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose except as described below without the advance written consent of ENPRO. ENPRO shall not distribute nor publish this report without the consent of the Client except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented in light of that assignment.

The Client may rely upon this report in evaluating a request for one or more extensions of credit to be secured directly or indirectly by the subject property (including mortgage and mezzanine loans) and the acquisition of the direct or indirect interest in the subject property as applicable.

This report is not for the use or benefit of, nor may it be relied upon by any other person or entity, for any purpose without the advance written consent of ENPRO. In expressing the opinions stated in this report, ENPRO has exercised a degree of skill and care ordinarily exercised by a reasonable prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. Documentation and data provided by the Client, designated representatives of the Client or other interested third parties, or from the public domain, and referred to in the preparation of this assessment, have been used and referenced with the understanding that ENPRO assumes no responsibility or liability for their accuracy.

The independent conclusions represent our professional judgment based on information and data available to us during the course of this assignment. Factual information regarding operations, conditions, and test data provided by the Client or their representatives has been assumed to be correct and complete. The conclusions presented are based on the data provided, observations, and conditions that existed on the date of the site visit.

If you have any questions regarding this report, please contact the ENPRO contact listed on the cover of this report at (808) 748-2114.

Researched by: Kimberly Rottas, Environmental Technician

Surveyed by: Kimberly Rottas, Environmental Technician

Written by: Kimberly Rottas, Environmental Technician

Supervised by: Kenton Beal, Executive Vice President

I declare that to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR Part 312.

I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject *property* (project site). I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Reviewed by:

Kenton Beal
Executive Vice President, ENPRO Environmental

10.0 Non-Scope Services

ASTM E 1527-13 does not require recommendations. A User should consider whether recommendations for additional inquiries or other services are desired. Recommendations are an additional service that may be useful in the User's analysis of the property. Unless otherwise directed by the Client, it is ENPRO's standard practice to include recommendations for addressing all identified *RECs* at the subject property.

ENPRO may also make recommendations regarding conditions identified at the project site which are not considered *RECs*, such as the proper storage of hazardous materials, the potential presence of asbestos containing materials, and the presence of ecological or cultural resources. Except where otherwise specified, there are no legal or regulatory requirements for the Client or the property owner to follow the recommendations presented in this report.

10.1 Recommendations

Based on our investigation, ENPRO has concluded that there is sufficient risk to warrant additional investigation. ENPRO has identified the following action items and makes the following recommendations:

(4) Due to the age of the buildings, there is a reasonable potential that pesticides may have been applied for termite control beneath the slab foundations. This is not considered to be a *recognized environmental condition*, but it may be a concern at the time the building slab is removed.

ENPRO recommends sampling sub-slab soils for pesticide content.

(5) Site assessment documentation was weak for the removal of the 1,000-gallon and 3,000-gallon gasoline underground storage tanks (USTs) from 1835 Ala Moana Boulevard (see Section 6.2.1). This is considered to be a *recognized environmental condition* because an undetected leak may have occurred.

ENPRO recommends soil and groundwater sampling be conducted around the former UST and piping locations at 1835 Ala Moana Boulevard.

(6) An elevator with in-ground hydraulic lift equipment is present on the ABC Marketplace property located at 1831 Ala Moana Boulevard. Interviews with people knowledgeable of the property indicate that the hydraulic oil has never been sampled for polychlorinated biphenyls (PCBs). This is considered to be a

recognized environmental condition because an undetected leak may have occurred.

ENPRO recommends sampling the hydraulic oil for PCBs and sampling the surrounding soil for oil following the removal of the in-ground hydraulic lift equipment.

10.2 ADDITIONAL ENVIRONMENTAL CONCERNS, NON-ASTM

The following environmental conditions were evaluated for the potential to impact the property though they are not considered *recognized environmental conditions* as defined by ASTM.

Asbestos-Containing Materials

In July 1989, under the Toxic Substances Control Act (TSCA), the United States Environmental Protection Agency (USEPA) promulgated an Asbestos Ban Phaseout Rule. Beginning in 1990 and taking effect in three stages, the rule prohibits the importation, manufacture, and processing of ninety-four percent of all remaining asbestos products in the United States over a period of seven years. Presently, asbestos has not been prohibited from all construction building materials. However, in 1991, this rule was vacated and remanded by the Fifth Circuit Court of Appeals. As a result, most of the original ban on the manufacture, importation, processing, or distribution in commerce for the majority of the asbestos-containing products originally covered in the 1989 final rule was overturned.

No sampling for asbestos containing materials was conducted as part of this investigation.

Suspect asbestos containing materials should be sampled and analyzed for possible asbestos content prior to activities (e.g., renovation, demolition,) that may damage or disturb the material. If the materials are asbestos-containing, the building owner must comply with applicable USEPA National Emissions Standards for Hazardous Air Pollutants (NESHAPS), OSHA, state and local regulations.

Radon

Radon is a naturally occurring radioactive gas formed by the decay of uranium in bedrock and soil. The potential adverse health effects associated with radon gas depend on several factors including concentration of the gas and duration of exposure. The concentration of radon gas in a building depends on subsurface soil conditions, the integrity of the building's foundation, and the building's ventilation system.

Due to the geologic composition of basalt bedrock and the soils that derive from them, as well as the composition of marine-related sediments found in Hawaii, the State of Hawaii has been determined to have a low radon potential (G.M. Reimer, U.S. Geological Survey). Therefore, investigation of radon is not recommended for this property.

Lead-Based Paint

There is no commercial property definition of what is a lead-based paint. Regulations specifically addressing lead-based paint include Housing and Urban Development (HUD) (1995) guidelines and the Consumer Product Safety Act (1977). These regulations are for housing and consumer products.

OSHA regulations apply to worker protection during renovation and demolition activities.

Sensitive Ecological Areas

According to the EDR report, the Hilton Lagoon was depicted as sensitive ecological area or federal wetland.

Termiticide Application

There is a reasonable potential that pesticides may have been applied for termite control beneath this slab foundation. This is not considered to be a *recognized environmental condition*, but it may be a concern at the time the building slab is removed.

11.0 REFERENCES

Publications:

Names of Publication:	Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy For Hawaii
Author of Publication:	Mink, J.F. and L.S. Lau
Published by:	Water Resources Research Center, University of Hawaii at Manoa, Honolulu, Hawaii
Date of Publication:	1990
Information Obtained:	Groundwater data

Names of Publication:	Groundwater Well Index
Author of Publication:	State of Hawaii, Department of Natural Resources, Commission on Water Management
Date of Publication:	January 2001
Information Obtained:	Groundwater wells

Names of Publication:	Ownership records and Tax Map Key maps
Author of Publication:	City and County of Honolulu
Information Obtained:	Ownership records

Names of Publication:	Aerial Photograph
Published by:	EDR
Date of Publication:	1952, 1968, 1975, 1978, 1985, 1992, 2000, 2006
Information Obtained:	Historical use

Names of Publication:	Aerial Photograph
Published by:	R. M. Towill
Date of Publication:	1949, 1964, 1969, 1990
Information Obtained:	Historical use

Names of Publication:	Code of Federal Regulations, Title 40, Part 761, Rules for Controlling PCBs under the Toxic Substance Control Act,
Author of Publication:	U.S. Environmental Protection Agency
Date of Publication:	December 14, 1990
Information Obtained:	PCB regulations

Names of Publication:	Soil Survey for the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii
Author of Publication:	Foote, Donald E. et al.
Published by:	U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawaii Agricultural Experiment Station.
Date of Publication:	1972
Information Obtained:	Soil classification

Names of Publication:	The EDR Radius Map Report
Author of Publication:	Environmental Data Resources, Inc.
Date of Publication:	April 12, 2017
Information Obtained:	Regulatory database records

Names of Publication:	Topographic Maps, Honolulu Quadrangle, Hawaii
Author of Publication:	United States Geological Survey (USGS)
Date of Publication:	1928, 1953, 1954, 1959, 1969, 1970, 1983, 1998, 2013
Information Obtained:	Historical use

Contacts:

Agency or Business:	G70 Design
Name/Title of Representative:	Mr. Norman Hong
Location of Agency or Business:	925 Bethel Street, Fifth Floor
Telephone Number:	808-523-5866
Date Information was Received:	April 26, 2017
Information Obtained:	Historical and current property use

Agency or Business:	SMK, Inc.
Name/Title of Representative:	Mr. Roy Toguchi
Location of Agency or Business:	766 Pohukaina Street
Telephone Number:	808-591-2550
Date Information was Received:	April 21, 2017

Agency or Business:	Kobe Steakhouse
Name/Title of Representative:	Ms. Sonja Hayslip
Location of Agency or Business:	1841 Ala Moana Boulevard
Telephone Number:	808-941-4444
Date Information was Received:	April 12, 2017

Agency or Business:	Paradise Rent-A-Car
Name/Title of Representative:	Mr. Jay Lebaron
Location of Agency or Business:	1835 Ala Moana Boulevard
Telephone Number:	808-946-7777
Date Information was Received:	April 12, 2017

Agency or Business:	Solid and Hazardous Waste Branch (SHWB)
Location of Agency or Business:	919 Ala Moana Boulevard
Telephone Number:	808-586-4226
Date Information was Received:	April 25, 2017
Information Obtained:	Regulatory records

Agency or Business:	Hazard Evaluation and Emergency Response (HEER)
Location of Agency or Business:	919 Ala Moana Boulevard
Telephone Number:	808-586-4249
Date Information was Received:	April 19, 2017
Information Obtained:	Regulatory records

12.0 APPENDICES

Site Figures
Site Photographs
Historical Research
Regulatory Records Documentation
Records of Communication/Interview
Qualifications of Environmental Professionals

SITE FIGURES

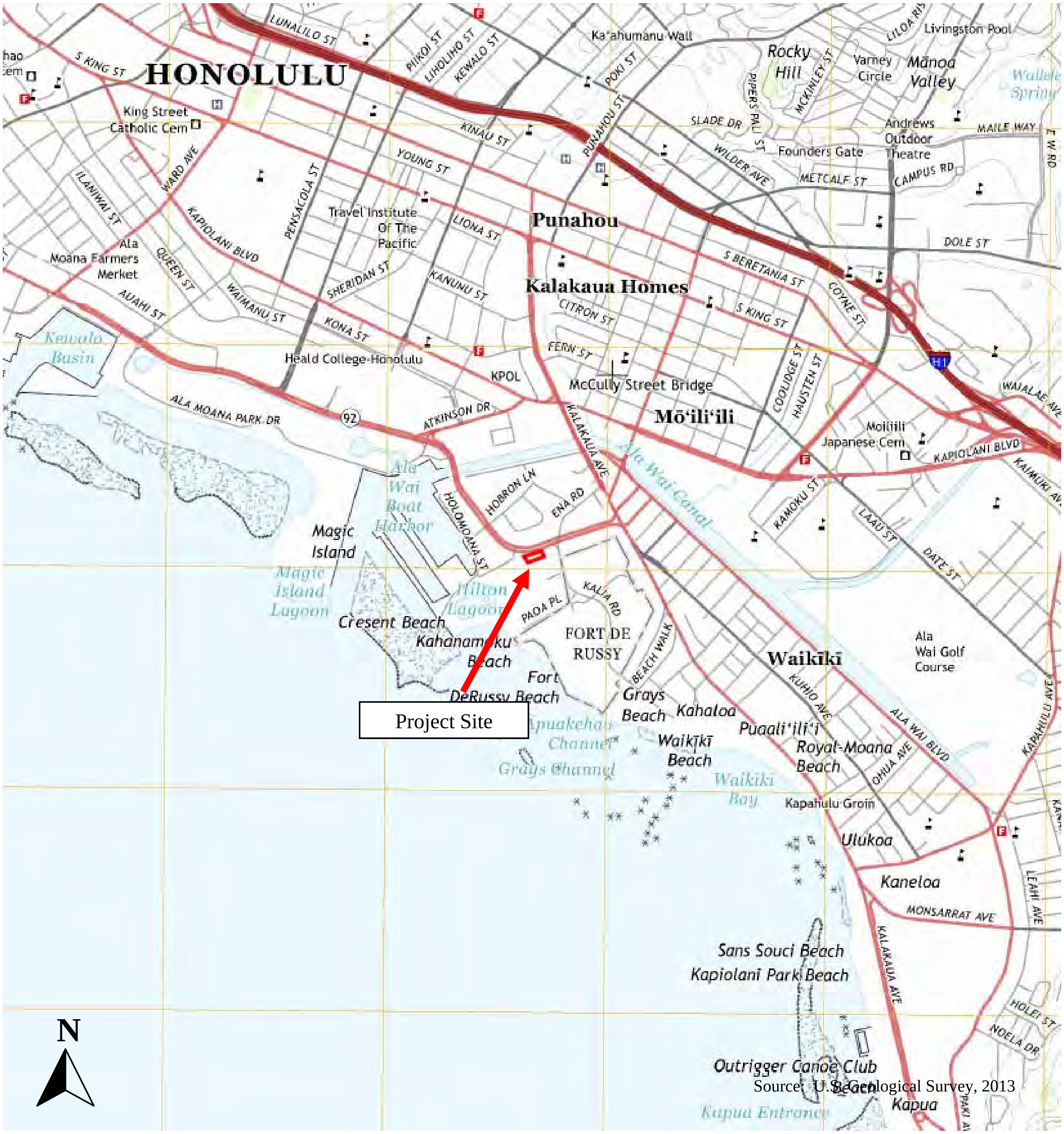


Figure 1
TOPOGRAPHIC MAP

Scale: 1 inch = 2,000 feet

Project Number 1704-00197-PH1
Hilton Hawaiian Village Tower 3 Site

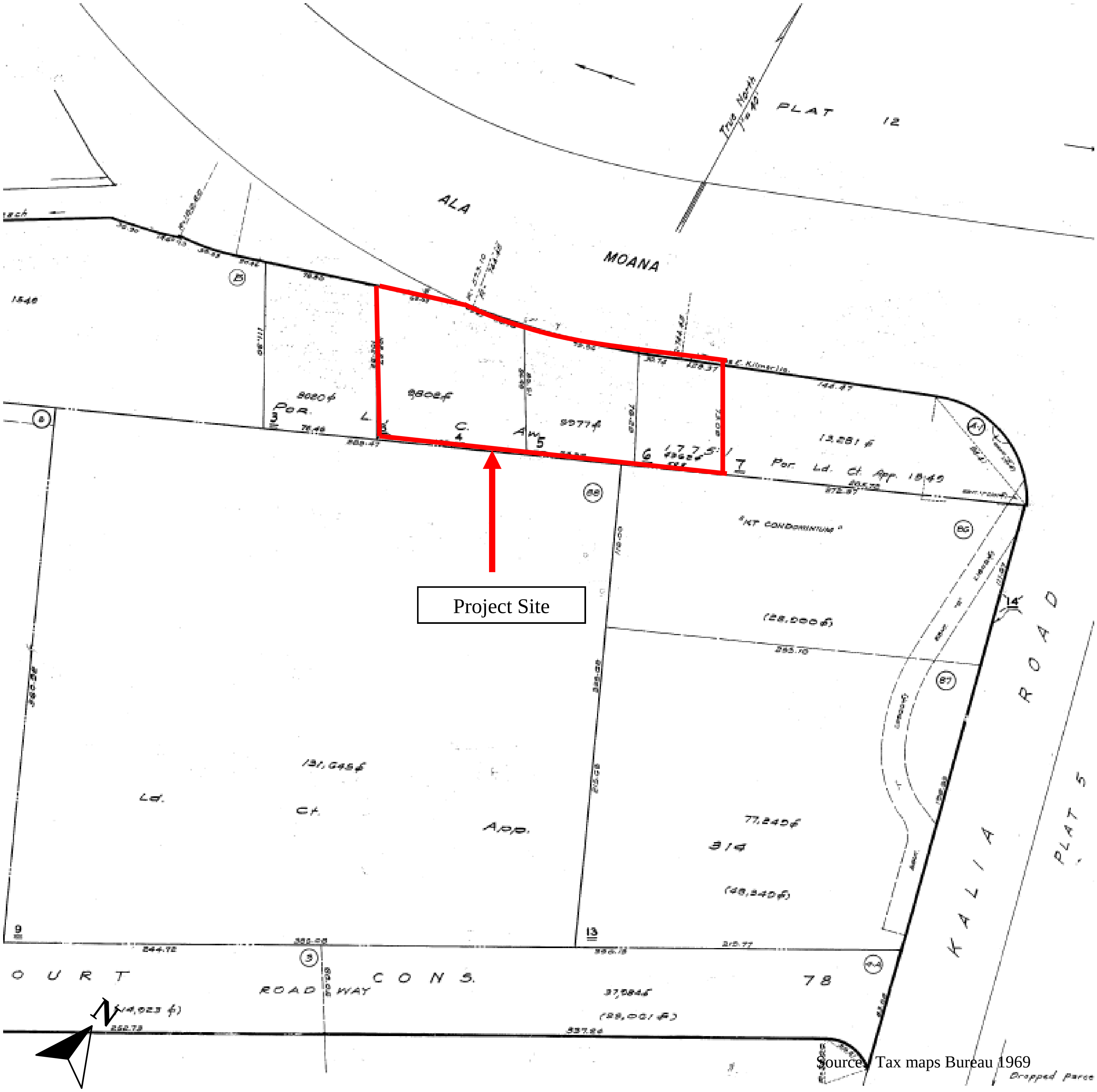


Figure 2
TAX MAP KEY (1) 2-6-009: 004, 005, and 006

Scale: 1 inch = 35 feet

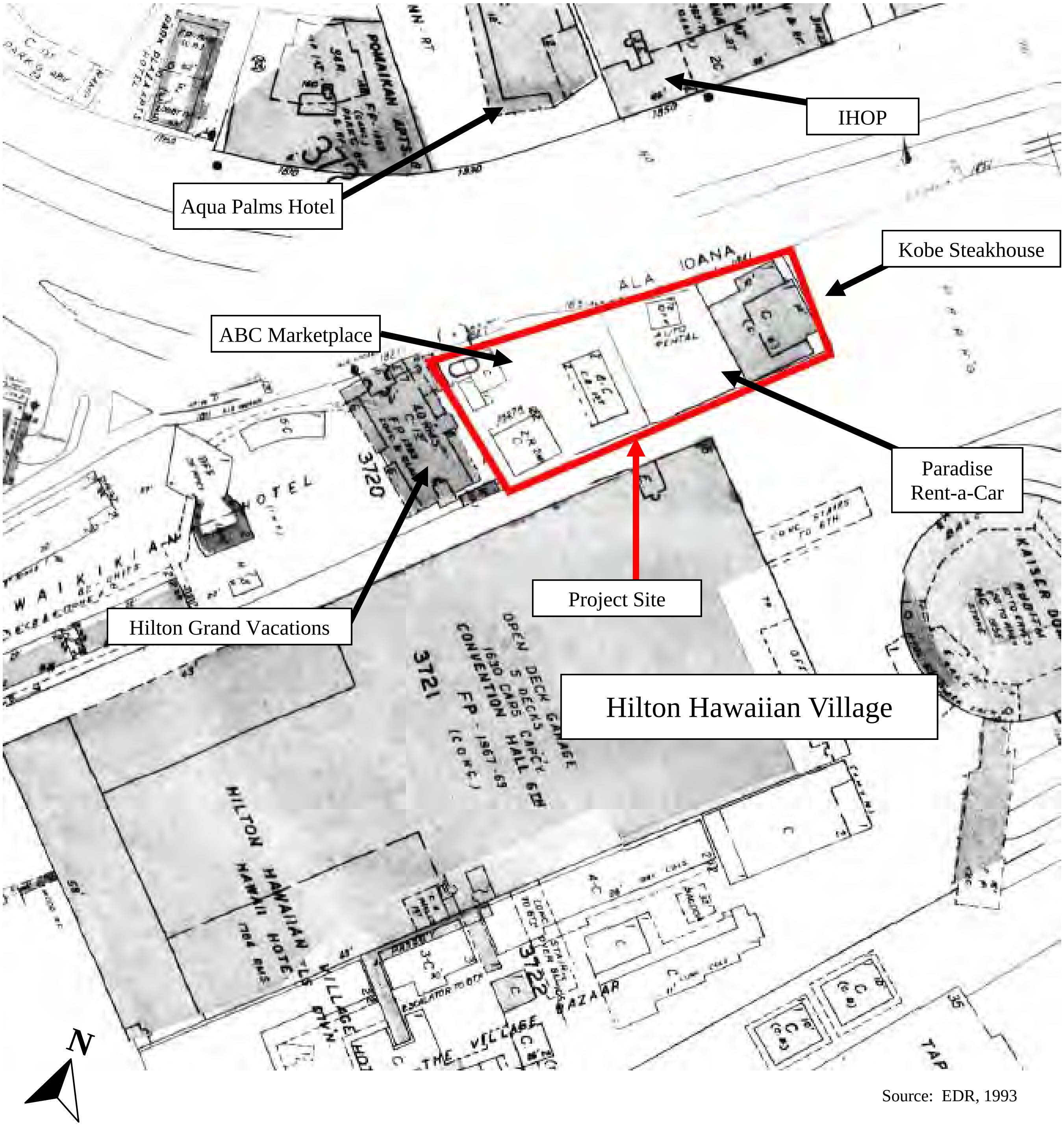
N

Source: M. D. Monsarrat, 1920

Figure 3
MONSARRAT MAP

Scale: 1 inch = Approximately 1,000 feet

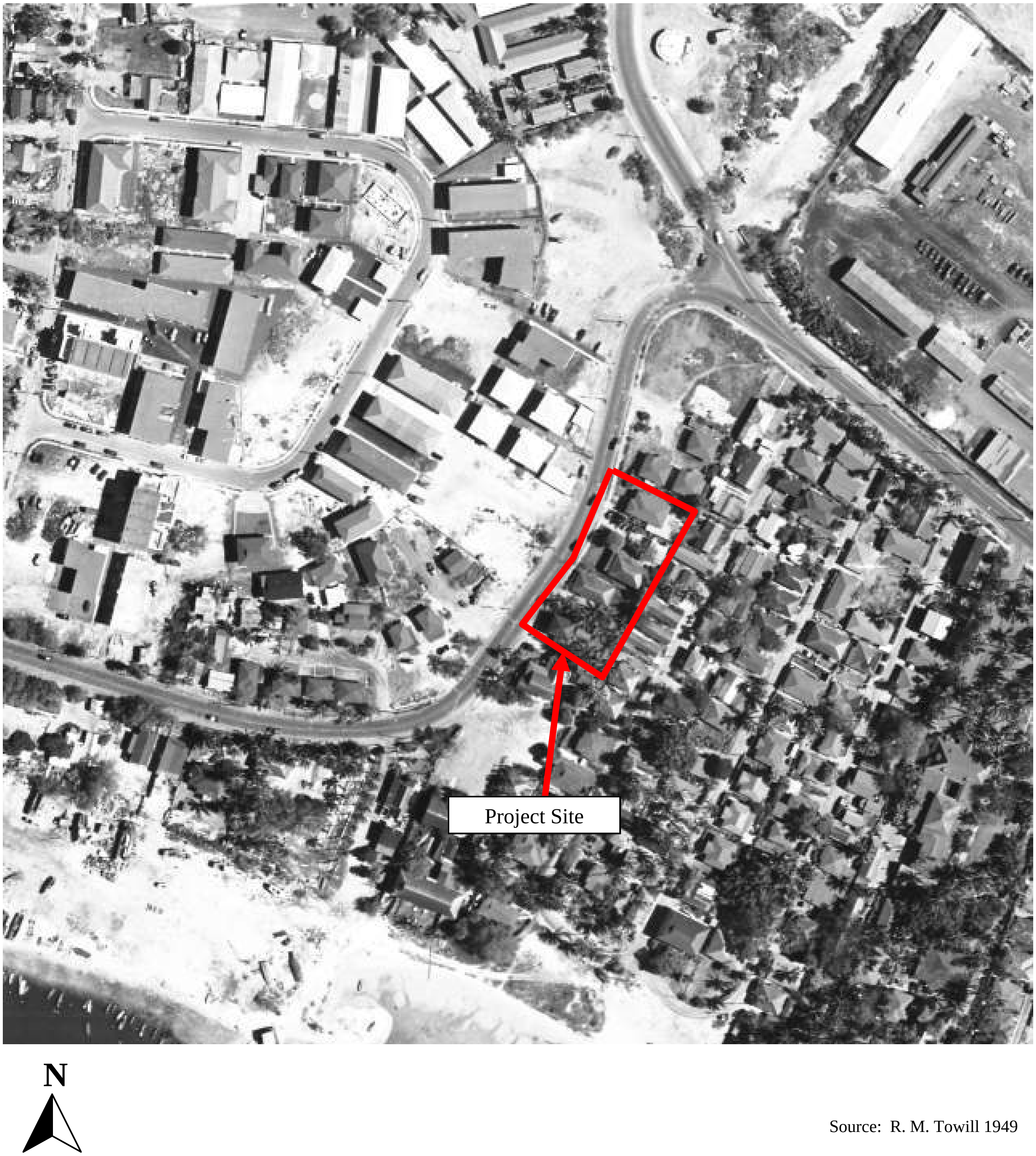
Project Number 1704-00197-PH1
Hilton Hawaiian Village Tower 3 Site



Source: EDR, 1993

Figure 4
SANBORN FIRE INSURANCE MAP, 1993

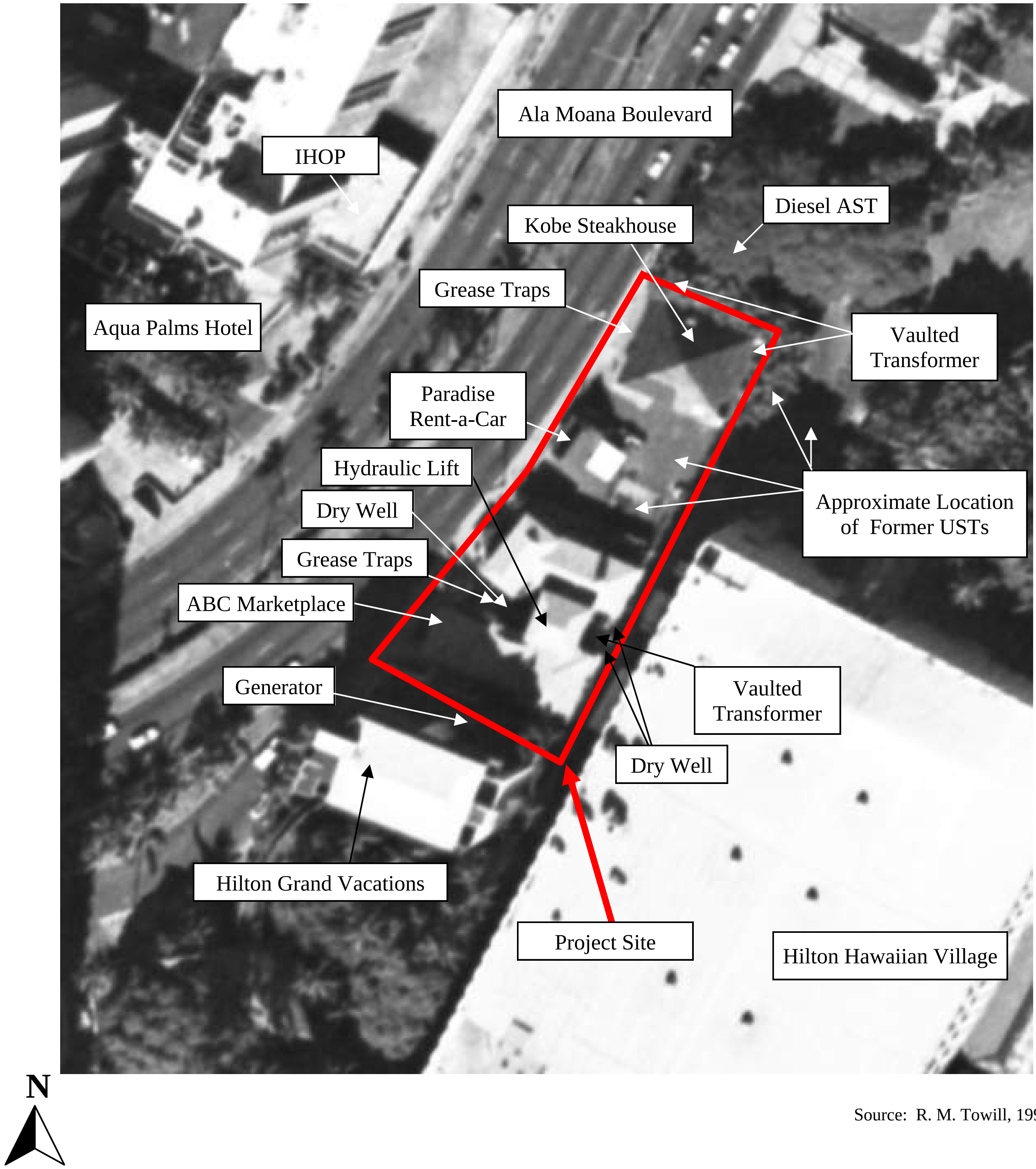
Scale: 1 inch = Approximately 225 feet



Source: R. M. Towill 1949

Figure 5
AERIAL PHOTOGRAPH, 1949

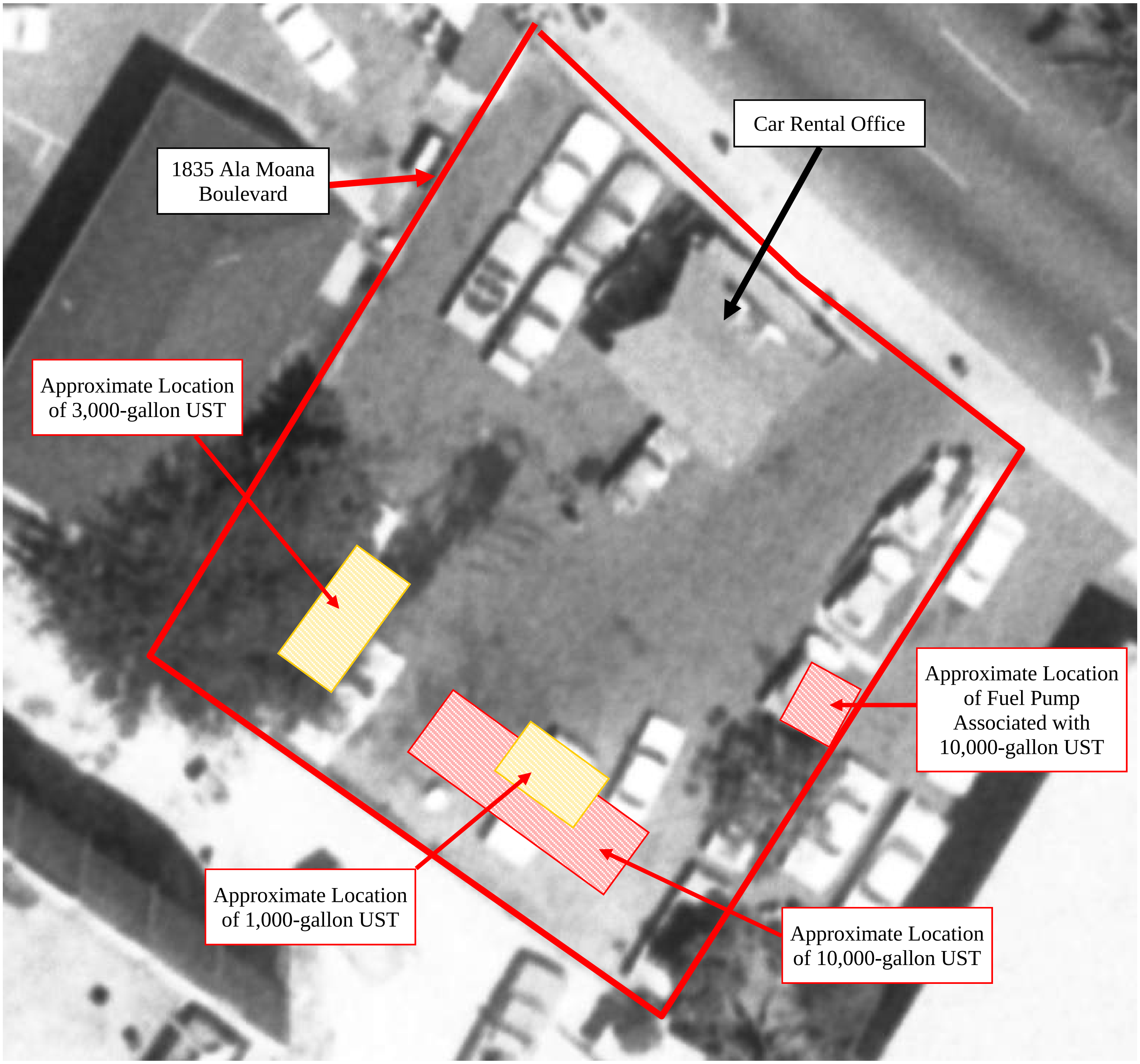
Unknown Scale



Source: R. M. Towill, 1990

Figure 6
AERIAL PHOTOGRAPH, 1990

Unknown Scale



Source: R. M. Towill, 1969 and DOH SHWB UST Section Maps

Figure 7
1835 ALA MOANA BOULEVARD SITE MAP WITH FORMER UST LOCATIONS

Not to Scale

ENPRO environmental

Project Number 1704-00197-PH1
Hilton Hawaiian Village Tower 3 Site

SITE PHOTOGRAPHS

Photo #1

2005 Kalia Road, Facing South

Project Number: 1704-00197-PH1

Hilton Hawaiian Village Tower 3 Site

Date of Photos: April 12 & 13, 2017

Photo #2

4,000-Gallon Diesel Above Ground Storage Tank, Adjacent Property to the East

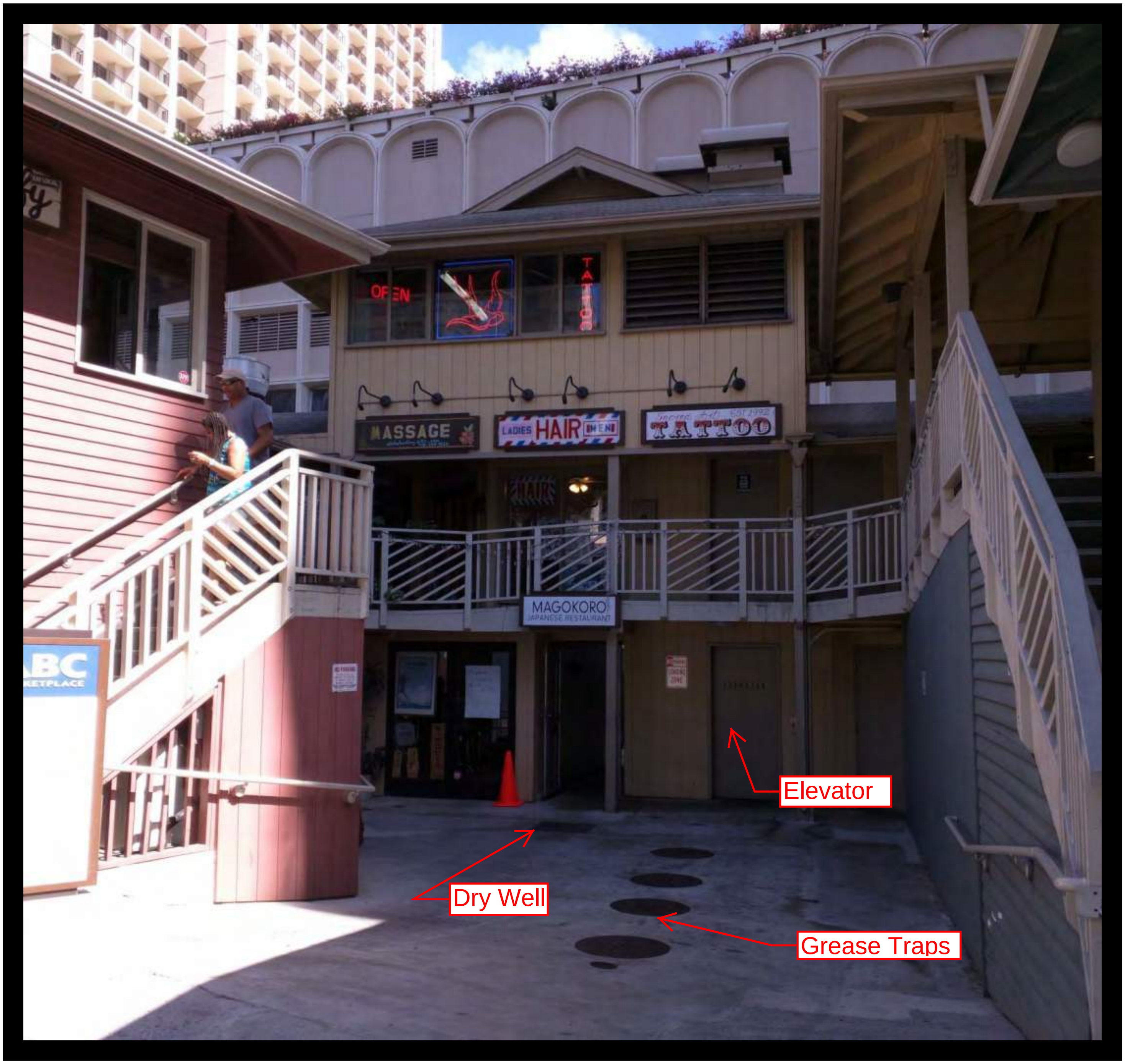


Photo #3

ABC Marketplace Overview with Dry Well, Grease Traps, and Elevator

ENPRO environmental

Project Number: 1704-00197-PH1

Hilton Hawaiian Village Tower 3 Site

Date of Photos: April 12 & 13, 2017

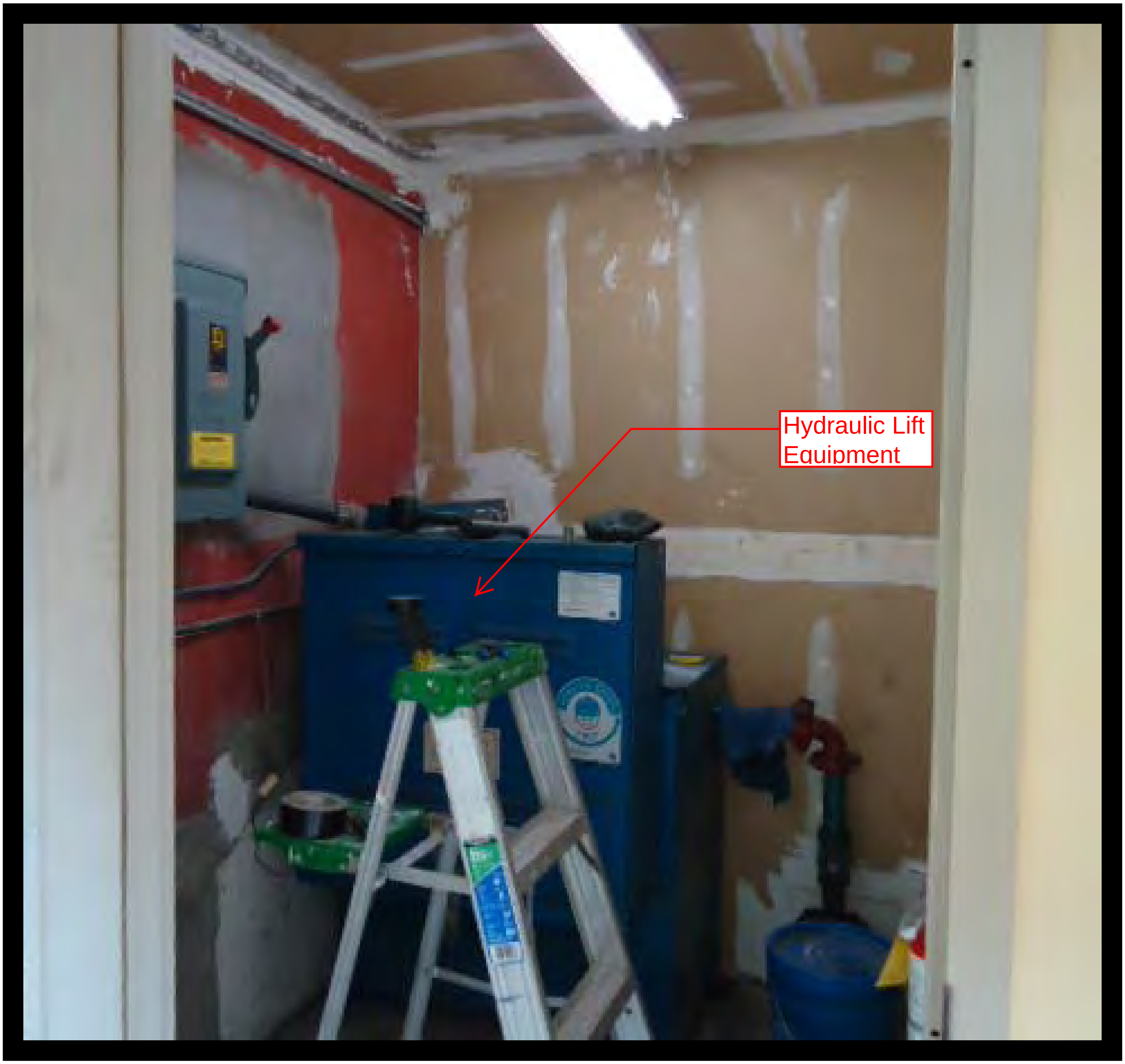


Photo #4

ABC Marketplace, Hydraulic Lift Equipment

Photo #5

Ala Moana Boulevard, Aqua Palms Hotel, and IHOP, Adjacent Properties to the North

environmental ENPRO

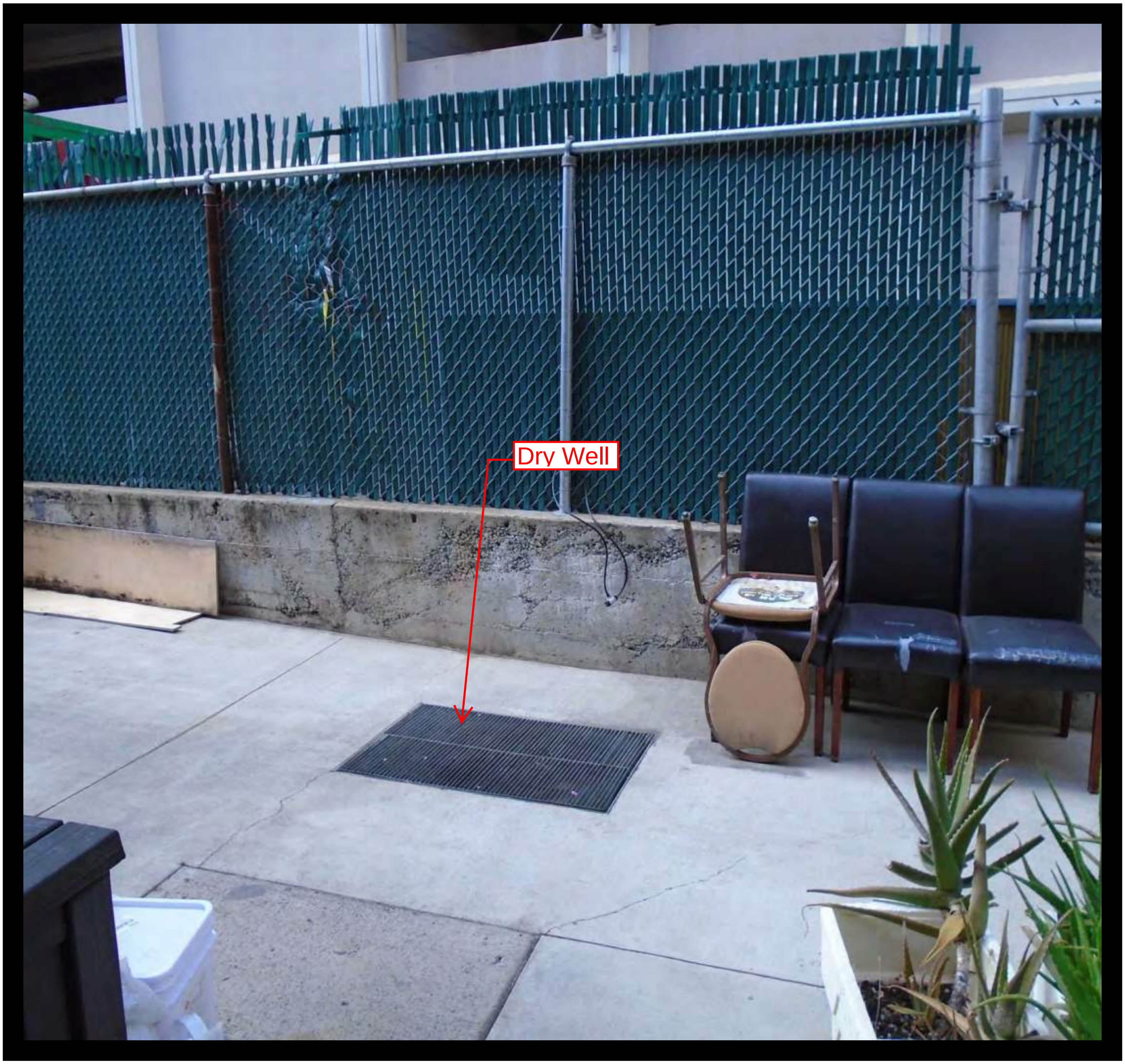


Photo #6

Dry Well, South of ABC Marketplace

Project Number: 1704-00197-PH1
Hilton Hawaiian Village Tower 3 Site
Date of Photos: April 12 & 13, 2017

Photo #7

Hilton Grand Vacations, West of Project Site

Project Number: 1704-00197-PH1

Hilton Hawaiian Village Tower 3 Site

Date of Photos: April 12 & 13, 2017

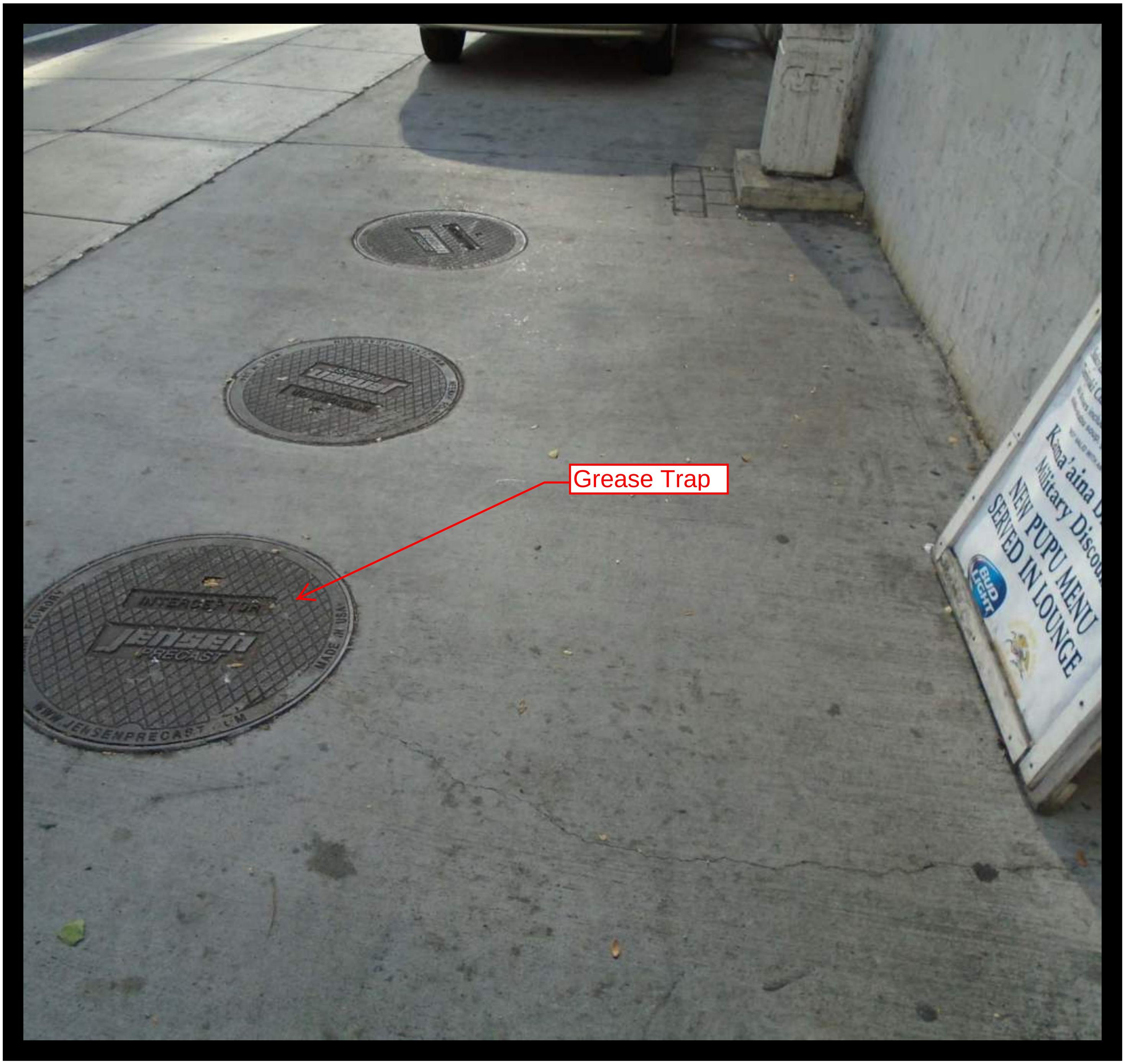


Photo #8

Jensen Precast Interceptor Grease Traps, North of Kobe Steakhouse

Project Number: 1704-00197-PH1
Hilton Hawaiian Village Tower 3 Site
Date of Photos: April 12 & 13, 2017

Photo #9

Kobe Steakhouse, Paradise Rent-A-Car, and Hilton Hawaiian Village (Adjacent Property to the South)

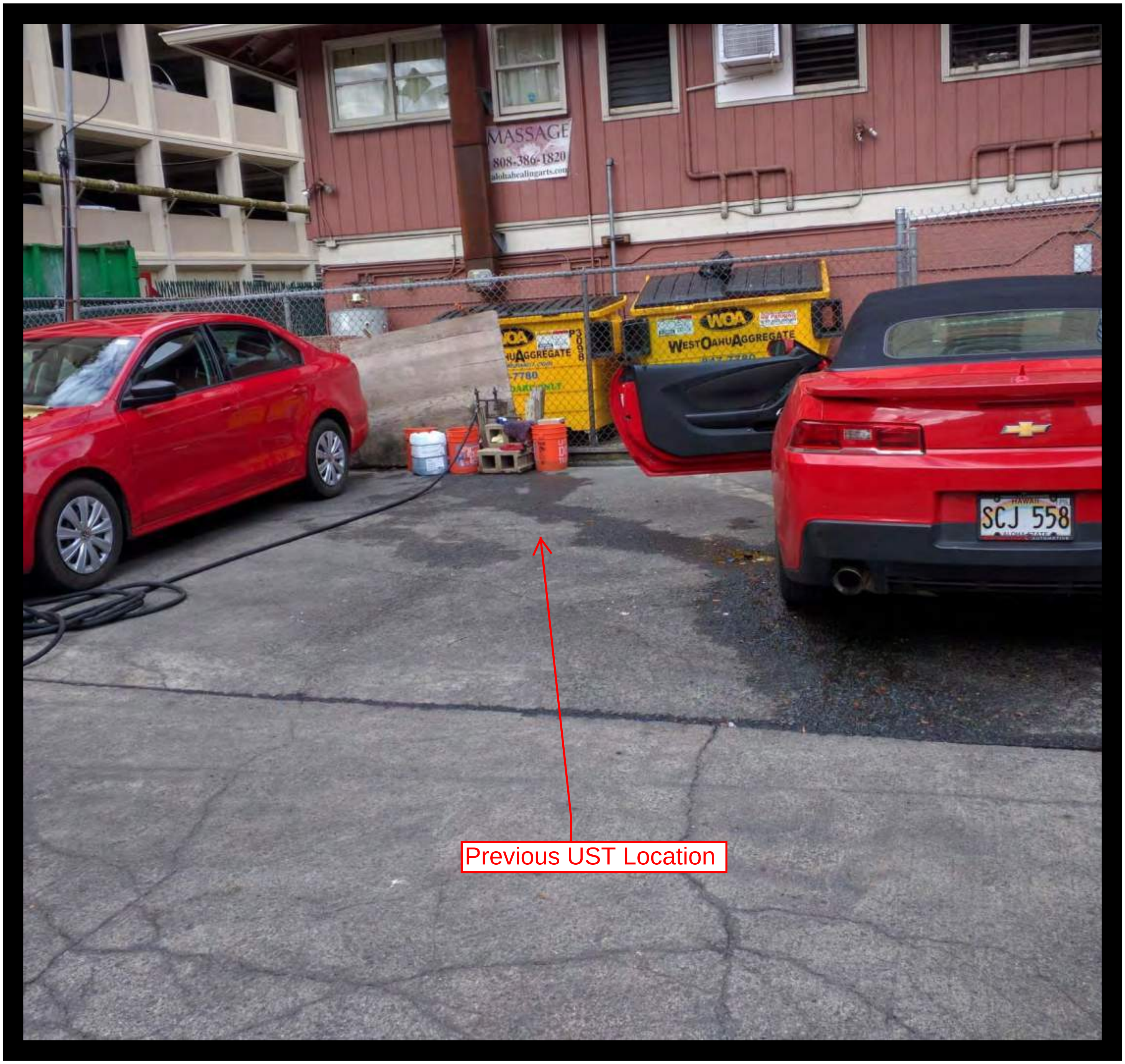


Photo #10

Paradise Rent-A-Car, Previous UST Location

Project Number: 1704-00197-PH1

Hilton Hawaiian Village Tower 3 Site

Date of Photos: April 12 & 13, 2017

Photo #11

Vaulted Transformer, East of Kobe Steakhouse

Project Number: 1704-00197-PH1
Hilton Hawaiian Village Tower 3 Site
Date of Photos: April 12 & 13, 2017

Photo #12

Vaulted Transformer, South of ABC Marketplace

Appendix I

Traffic Impact Report for Park Hotel and Resorts Wilson Okamoto Corporation April 2022

Traffic Impact Report

Park Hotels and Resorts

Prepared for:
G70

Prepared by:
Wilson Okamoto Corporation

April 2022

TRAFFIC IMPACT REPORT

FOR

PARK HOTELS AND RESORTS

Prepared for:

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April 2022

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I. INTRODUCTION

A. Purpose of Study

The purpose of this study is to identify and assess the traffic impacts resulting from the development of the proposed Park Hotels and Resorts project in Waikiki on the island of Oahu. The proposed project entails the demolition of existing commercial uses and the construction of a new hotel tower, which will be integrated with the adjacent Hilton Hawaiian Village development.

B. Scope of Study

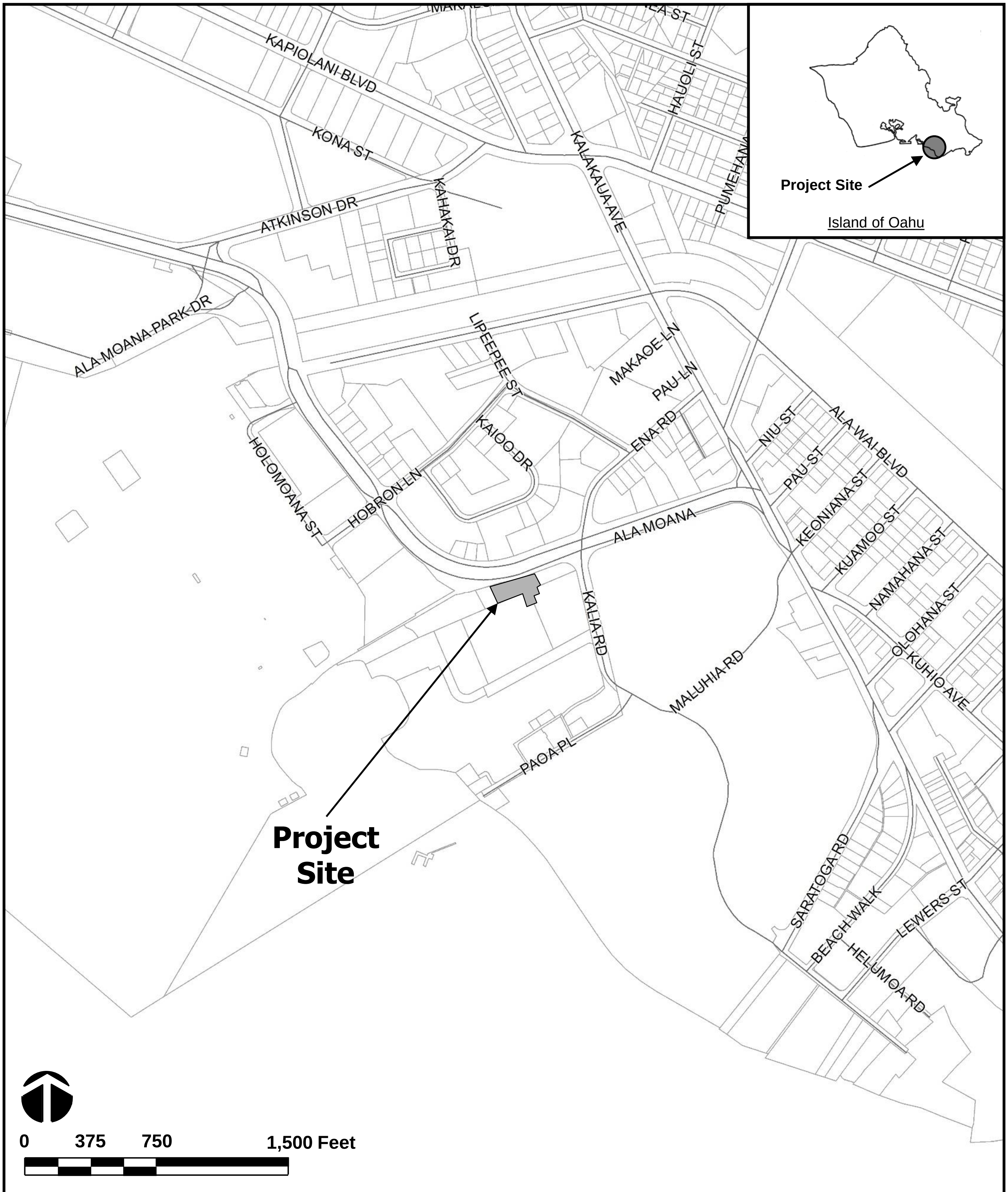
This report presents the findings and conclusions of the traffic study, the scope of which includes:

1. Description of the proposed project.
2. Evaluation of existing roadway and traffic operations in the vicinity.
3. Analysis of future roadway and traffic conditions without the proposed project.
4. Analysis and development of trip generation characteristics for the proposed project.
5. Superimposition of site-generated traffic over future traffic conditions.
6. The identification and analysis of traffic impacts resulting from the proposed project.
7. Recommendations of improvements, if appropriate, that would mitigate the traffic impacts resulting from the proposed project.

II. PROJECT DESCRIPTION

A. Location

The project site for the proposed Park Hotels and Resorts project is located in Waikiki on the island of Oahu and is bounded by Ala Moana Boulevard to the north, the existing Hilton Hawaiian Village (HHV) to the east, south, and west (see Figure 1). The project site is further identified as Tax Map Keys (TMKs): 2-6-009: 004-006. Primary access to the site will be provided via a new porte cochere off Ala Moana Boulevard served by two one-way driveways. Secondary access will be provided via an existing driveway served by an access road along the east side of the project site that currently provides access to the adjacent HHV uses including the parking garage. This existing access road will provide a connection to the existing parking garage for



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PARK HOTELS AND RESORTS

LOCATION MAP AND VICINITY MAP

FIGURE 1

valet operations at the proposed Park Hotels and Resorts project, as well as to its service and loading areas.

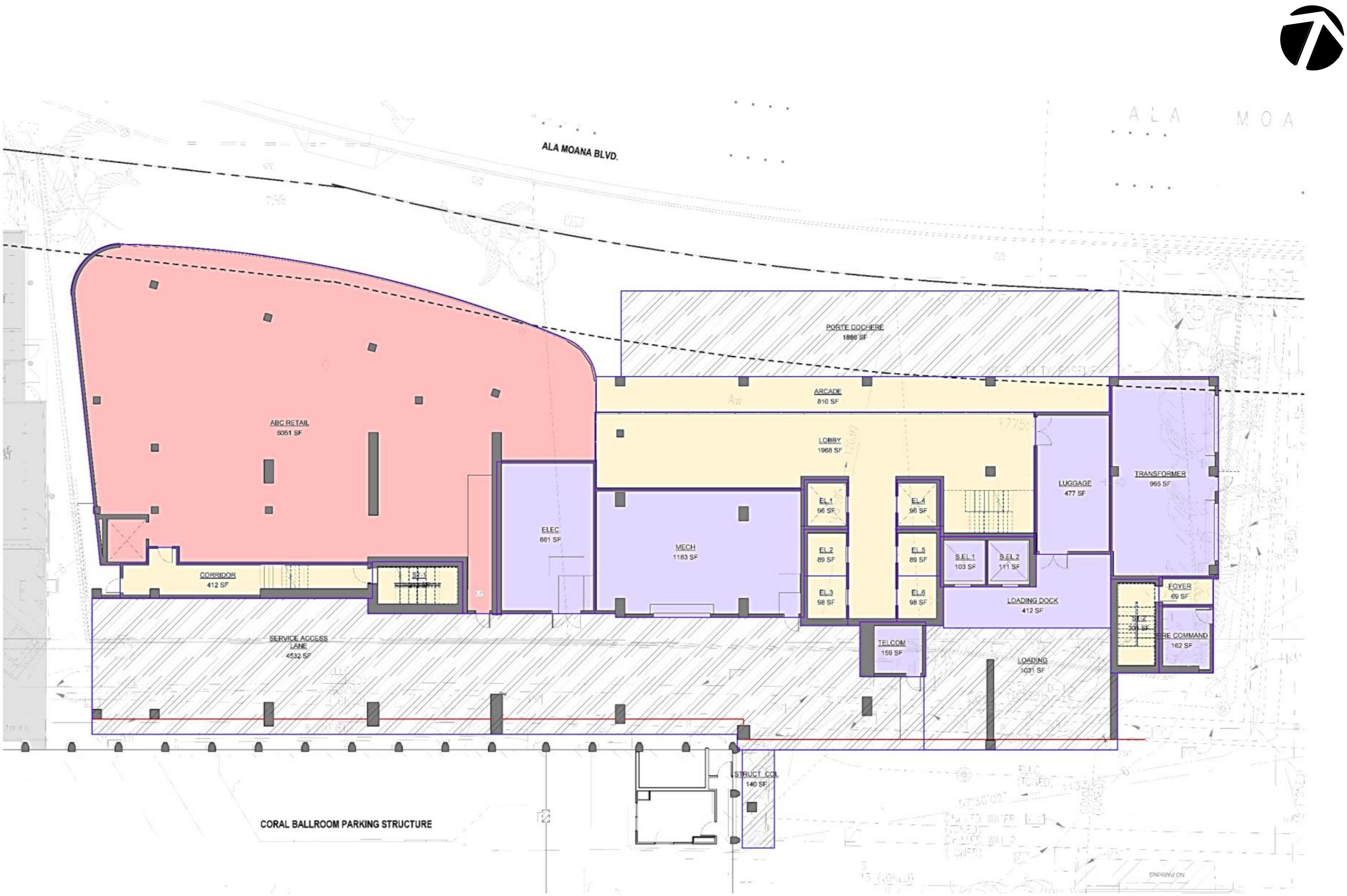
B. Project Characteristics

The existing site for the proposed Park Hotels and Resorts project is comprised of buildings that include a mix of restaurant, retail, and other commercial uses. The proposed project entails the replacement of these buildings with a new hotel tower that will include 515 hotel rooms and retail space. The retail space is expected to provide a larger retail space for an existing ABC store that is being relocated in connection with the proposed redevelopment. In conjunction with the proposed project, the existing driveways off Ala Moana Boulevard serving the current uses will be replaced by two new one-way driveways connected by a porte cochere with valet services for the hotel. Parking for the hotel, valet and self-parking, is expected to be accommodated within the existing, adjacent HHV parking garage. The project is expected to be completed by Year 2027. Figure 2 shows the proposed project site plan.

III. BASELINE TRAFFIC CONDITIONS

A. Area Roadway System

In the vicinity of the project site, Ala Moana Boulevard is a predominantly six-lane, two-way divided State of Hawaii roadway generally oriented in the east-west direction. Northwest of the project site, Ala Moana Boulevard intersects Hobron Lane. At this signalized intersection, the eastbound approach of Ala Moana Boulevard has an exclusive left-turn lane, two through lanes, and a shared through and right-turn lane while the westbound approach includes an exclusive left-turn lane, two through lanes, and a shared through and right-turn lane. Hobron Lane is a predominantly two-lane, two-way roadway that is generally oriented in the north-south direction. It should be noted that the roadway segment south of Ala Moana Boulevard is owned by the State of Hawaii while the roadway segment north of Ala Moana Boulevard is privately-owned. At the intersection with Ala Moana Boulevard, the northbound approach of Hobron Lane includes an exclusive left-turn lane and a shared through and right-turn lane, while the southbound approach includes a shared left-turn and through lane and an exclusive right-turn lane.



PARK HOTELS AND RESORTS

SITE PLAN

FIGURE

2

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East of the intersection with Hobron Lane, Ala Moana Boulevard intersects Kahanamoku Street. At this signalized T-intersection, the eastbound approach of Ala Moana Boulevard includes three through-lanes and a shared through and right-turn lane while the westbound approach consists of an exclusive left-turn lane and three through lanes. Kahanamoku Street is a predominantly two-lane, two-way roadway generally oriented in the north-south direction providing access to adjacent hotel uses. At the intersection with Ala Moana Boulevard, the northbound approach of Kahanamoku Street has an exclusive left-turn lane and an exclusive right-turn lane.

Further east, Ala Moana Boulevard intersects Ena Road and Kalia Road. At this signalized intersection, the eastbound approach of Ala Moana Boulevard has an exclusive left-turn lane, two through lanes, and two channelized right-turn lanes while the westbound approach includes an exclusive left-turn lane, two through lanes, and a shared through and right-turn lane. The southbound leg of the intersection is comprised of Ena Road, a predominantly two-lane, two-way City and County of Honolulu roadway between Kalakaua Avenue and Ala Moana Boulevard. The southbound approach of Ena Road consists of one lane that serves all traffic movements. The northbound of the intersection is comprised of Kalia Road, a predominantly five-lane, two-way roadway generally oriented in the north-south direction. The northbound approach of Kalia Road has an exclusive left-turn lane, a shared left-turn and through lane, and an exclusive right-turn lane.

B. Traffic Volumes and Conditions

1. General

a. Traffic Data

The traffic data used for the purpose of analysis is based on available turning movement counts collected in Year 2017 and supplemented by historical 24-hour traffic data collected by the State of Hawaii Department of Transportation (HDOT) in the vicinity of the project. The manual turning movement count surveys were conducted during the morning peak hours between 6:00 AM and 9:00 AM, and the afternoon peak hours between 3:00 PM and 6:00 PM at the following intersections:

- Ala Moana Boulevard and Hobron Lane
- Ala Moana Boulevard and Kahanamoku Street
- Ala Moana Boulevard and Kalia Road/Ena Road

More recent traffic data is not able to be collected at this time due to the ongoing COVID-19 pandemic that has resulted in significantly decreased traffic volumes and shifted travel pattern. The State of Hawaii Department of Transportation (HDOT) has been tracking traffic volumes along the major roadways and their traffic data indicates that, in general, as of October 2021, traffic volumes in the vicinity of the project are still approximately 10% less than Year 2019 pre-COVID-19 volumes. In addition, an assessment of the most recently available traffic data indicates an increase of approximately 2% between those two years in vicinity of the project prior to the onset of the COVID-19 pandemic. As such, a growth rate of 1.04 was applied to the Year 2017 traffic data to develop baseline traffic counts that represent Year 2021 conditions. Appendix A includes the traffic count data used for this report.

b. Capacity Analysis Methodology

The highway capacity analysis performed in this study is based upon procedures presented in the “Highway Capacity Manual”, Transportation Research Board, 2010, and the “Synchro” software, developed by Trafficware. The analysis is based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic.

LOS is a quantitative and qualitative assessment of traffic operations. Levels of Service are defined by LOS “A” through “F”; LOS “A” representing ideal or free-flow traffic operating conditions and LOS “F” unacceptable or potentially congested traffic operating conditions.

“Volume-to-Capacity” (v/c) ratio is another measure indicating the relative traffic demand to the road carrying capacity. A v/c ratio of one (1.00) indicates that the roadway is operating at or near capacity. A v/c ratio of greater than 1.00 indicates that the traffic demand exceeds the road's carrying capacity. The LOS definitions are included in Appendix B.

2. Baseline Peak Hour Traffic

a. General

Figures 3 and 4 show the baseline (Year 2021) lane configurations and peak period traffic volumes. The AM peak hour of traffic generally occurs between 7:15 AM and 8:15 AM while the PM peak hour of traffic generally occurs between 4:00 PM and 5:00 PM. The analysis is based on these peak hour time periods for each intersection to identify the traffic impacts resulting from the proposed project. LOS calculations are included in Appendix C.

b. Ala Moana Boulevard and Hobron Lane

At the intersection with Hobron Lane, Ala Moana Boulevard carries 1,103 vehicles eastbound and 906 vehicles westbound during the AM peak period. During the PM peak period, the traffic volumes are higher with 1,741 vehicles traveling eastbound and 1,202 vehicles traveling westbound. The eastbound and westbound approaches operate at LOS "D" during both peak periods. Vehicular queues periodically form on the Ala Moana Boulevard approaches of the intersection with the most significant queuing occurring during the PM peak period. During this period, average queue lengths of 6–8 vehicles were observed on both approaches. Most of these queues cleared the intersection after each traffic signal cycle change.

Hobron Lane carries 224 vehicles northbound and 453 vehicles southbound. During the PM peak period, the overall traffic volume is 263 vehicles traveling northbound and 394 vehicles traveling southbound. The northbound approach of Hobron Lane operates at LOS "C" and LOS "D" during the AM and PM peak periods, respectively, while the southbound approach operates at LOS

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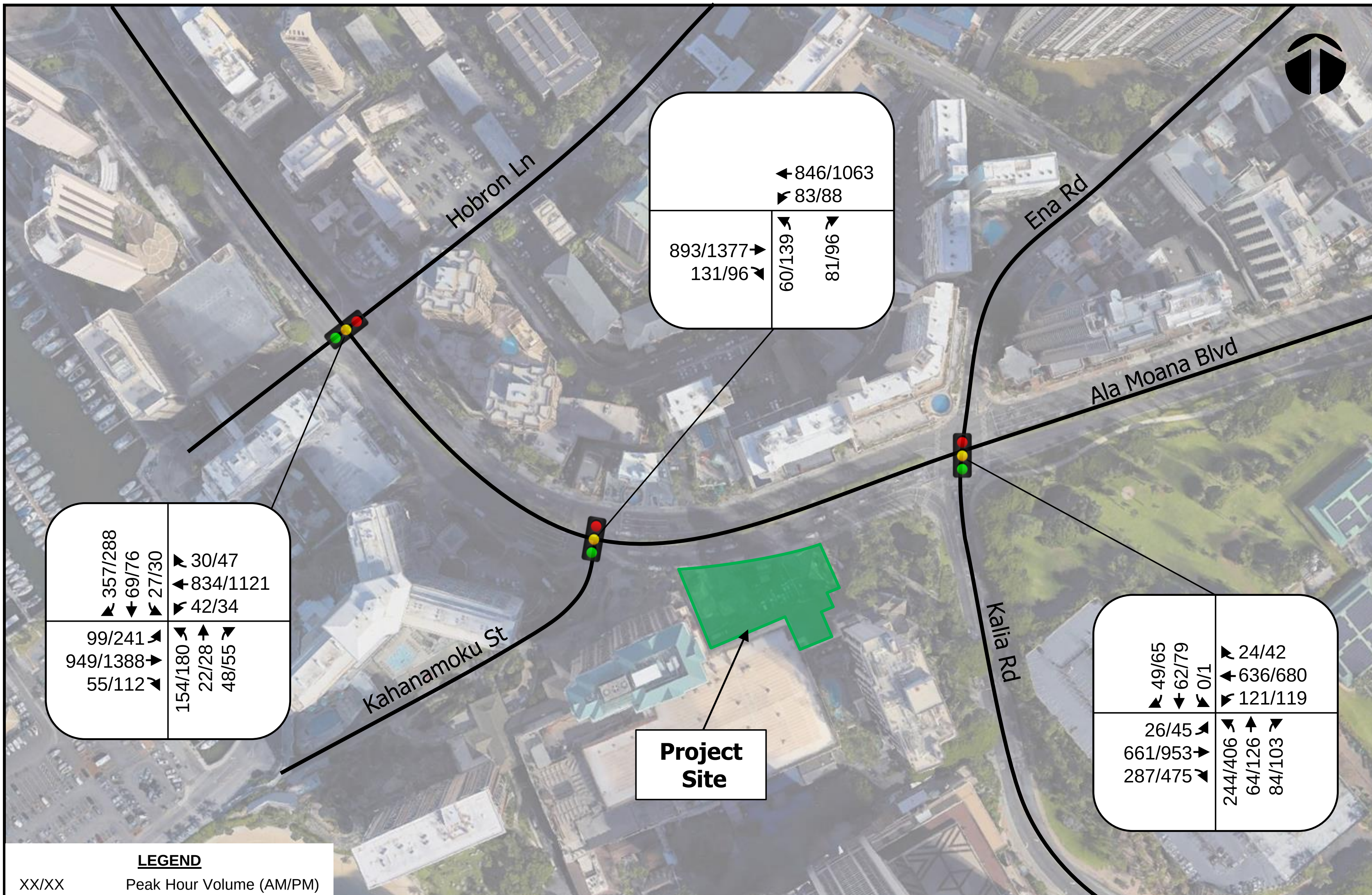
PARK HOTELS AND RESORTS

BASELINE LANE CONFIGURATIONS

FIGURE 3



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PARK HOTELS AND RESORTS

BASELINE PEAK HOURS OF TRAFFIC

FIGURE 4

"E" during both peak periods. The low level of service on the southbound approach is influenced by high volume of through volumes along the main road and the split phasing of the intersection. Vehicular queues periodically form on the Hobron Lane approaches of the intersection with the most significant queuing occurring on the southbound approach. Average queue lengths of 3–5 vehicles were observed during both peak periods. Most of these queues cleared the intersection after each traffic signal cycle change, but vehicles occasionally had to wait for more than one traffic signal cycle length.

c. Ala Moana Boulevard and Kahanamoku Street

At the intersection with Kahanamoku Street, Ala Moana Boulevard carries 1,024 vehicles eastbound and 929 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 1,473 vehicles traveling eastbound and 1,151 vehicles traveling westbound. The eastbound and westbound approaches of Ala Moana Boulevard operate at LOS "A" during both peak periods. Vehicular queues periodically form on the Ala Moana Boulevard approaches with the most significant queuing occurring during the PM peak period. During this period, average queue lengths of 5–6 vehicles were observed on both approaches with eastbound queues from the downstream intersection with Kalia Road/Ena Road and westbound queues from the downstream intersection with Hobron Lane occasionally extending to the intersection. Most of these queues cleared the intersection after each traffic signal cycle change.

Kahanamoku Street carries 141 vehicles and 235 vehicles northbound during the AM and PM peak periods, respectively. The northbound approach operates at LOS "E" during both peak periods. Vehicular queues periodically form on the Kahanamoku Street approach of the intersection with the most significant queuing observed during the PM peak period. Average queue lengths of 3–4 vehicles observed during both peak periods. Most of these queues cleared the intersection after each traffic signal cycle change.

d. Ala Moana Boulevard and Kalia Road and Ena Road

At the intersection with Kalia Road/Ena Road, Ala Moana Boulevard carries 924 vehicles eastbound and 781 vehicles westbound during the AM peak period. During the PM peak period, traffic volumes are higher with 1,473 vehicles traveling eastbound and 841 vehicles traveling westbound. The eastbound approach of Ala Moana Boulevard operates at LOS “D” during both peak periods, while the westbound approach operates at LOS “C” and LOS “D” during the AM and PM peak periods, respectively. Vehicular queues periodically form on the Ala Moana Boulevard approaches of the intersection with the most significant queuing observed on the eastbound approach during the PM peak period. During this period, average queue lengths of 8–10 vehicles were observed on this approach with queues occasionally extending through the upstream intersection with Kahanamoku Street. Most of these queues cleared the intersection after each traffic signal cycle change, but occasionally vehicles had to wait for more than one traffic signal cycle length.

The Kalia Road approach of the intersection carries 392 vehicles and 635 vehicles northbound during the AM and PM peak periods, respectively. The northbound approach operates at LOS “E” during both peak periods. Ena Road carries 111 vehicles southbound during the AM peak period and 145 vehicles during the PM peak period. The southbound approach also operates at LOS “E” during both peak periods. The low levels of service on the side street approaches of Kalia Road and Ena Road are influenced by the split phasing of this intersection. Vehicular queues periodically form on the Kalia Road approach of the intersection with the most significant queuing occurring during the PM peak period. During this period, average queue lengths of 5–7 vehicles were observed with queues occasionally extending through the upstream intersection with Rainbow Drive. Most of these queues cleared the intersection after each traffic signal cycle change.

IV. PROJECTED TRAFFIC CONDITIONS

A. Site-Generated Traffic

1. Trip Generation Methodology

The trip generation methodology used in this study is based upon generally accepted techniques developed by the Institute of Transportation Engineers (ITE) and published in "Trip Generation, 10th Edition," 2017. The ITE trip generation rates are developed empirically by correlating vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per hotel room. It should be noted that the retail space within the hotel is expected to be comparable in size to the total square footage of the existing commercial uses on the west end of the project site. In addition, similar to existing conditions, no on-site parking will be provided for the new space with the majority of patrons expected to originate from adjacent uses using non-motorized methods (walking, biking, etc.). As such, the retail space within the hotel is not expected to generate new trips within the project vicinity. Table 1 summarizes the trip generation characteristics applied to the AM and PM peak hours of traffic

Table 1: Peak Hour Trip Generation

HOTEL INDEPENDENT VARIABLE: # of Rooms = 515		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	143
	EXIT	99
	TOTAL	242
PM PEAK	ENTER	158
	EXIT	151
	TOTAL	309

The trip generation methodology also accounts for multimodal trips. Multimodal trips are trips made utilizing non-motorized modes such as walking and biking, as well as trips made using transit. Given that the proposed development will be located in an area with limited parking, high volumes of pedestrian traffic, and a high density of attractive destinations, guests associated with the project may elect to use alternative modes of transportation rather than drive. As such, the trips generated by the proposed project was adjusted to account for the use of alternate modes of transportation. Table 2 summarizes the adjusted project site trip generation characteristics applied to the AM and PM peak hours of traffic.

Table 2: Adjusted Peak Hour Trip Generation

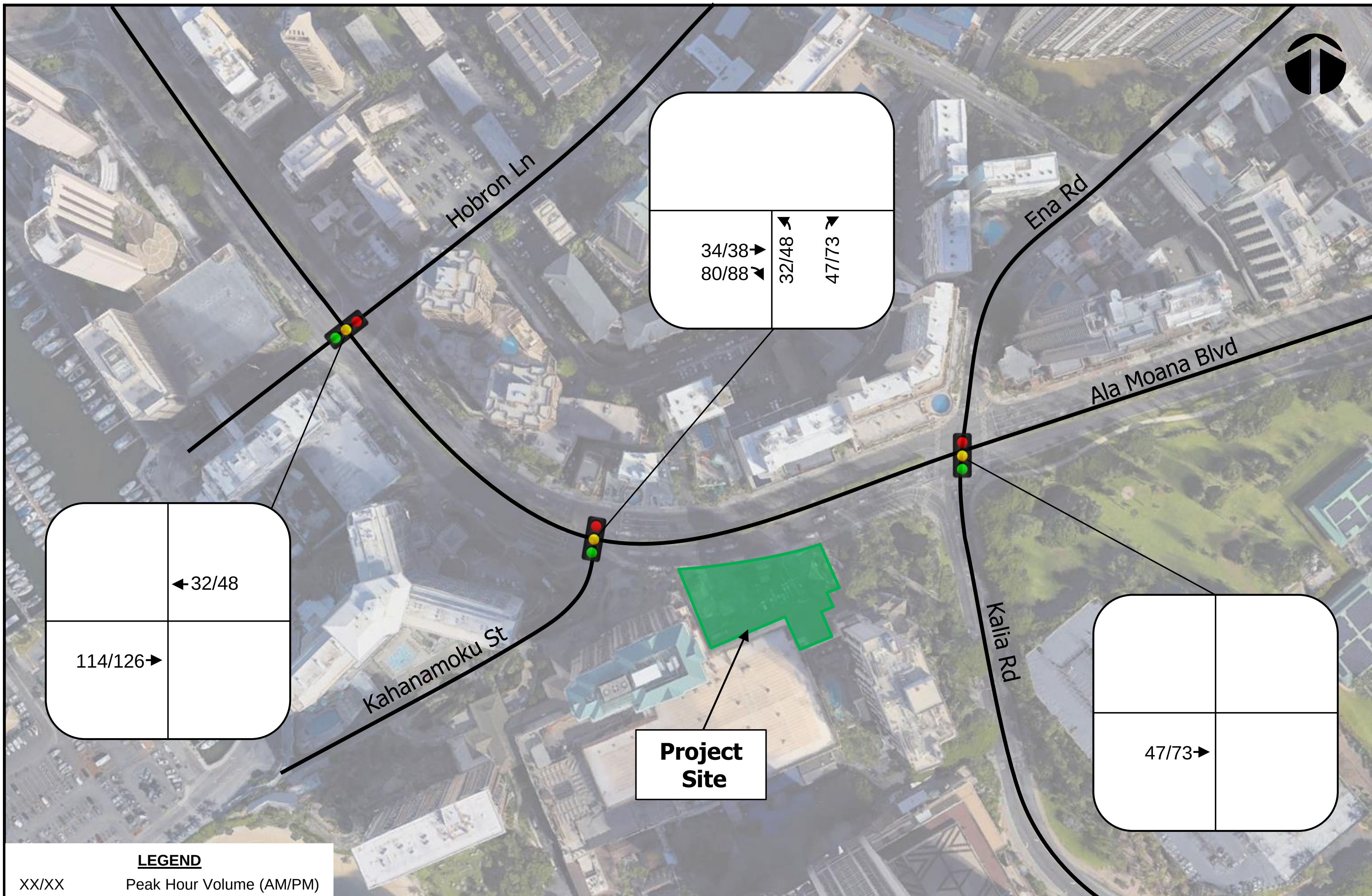
HOTEL INDEPENDENT VARIABLE: # of Rooms = 515		
		PROJECTED TRIP ENDS
AM PEAK	ENTER	114
	EXIT	79
	TOTAL	193
PM PEAK	ENTER	126
	EXIT	121
	TOTAL	247

2. Trip Distribution

Figure 5 shows the distribution of new site-generated traffic during the AM and PM peak periods. As previously discussed, guests to the project may choose to either self-park in the existing, adjacent HHV parking garage or utilize the valet service. Guests who elect to utilize the valet service will access the project's porte cochere via the driveways off Ala Moana Boulevard with their vehicles transferred to the HHV parking garage via the existing access road. Vehicles will be returned to the porte cochere via Rainbow Drive, Kahanamoku Street, and Ala Moana Boulevard. Guests who elect to self-park would access the HHV parking garage via the access off Rainbow Drive. Site-generated vehicles were distributed at the study intersections based upon their assume origin/destination, allowed turning movements, and relative convenience of the available routes.

B. Through Traffic Forecasting Methodology

As previously discussed, an assessment of traffic data collected in Years 2017 and 2018 indicates an increase of approximately 2% along Ala Moana Boulevard



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DISTRIBUTION OF SITE-GENERATED VEHICLES WITH PROJECT

FIGURE 5

between those years. To account for fluctuations in traffic volumes over time, an average annual growth rate of 1% was assumed in the project vicinity to account for ambient growth in traffic. Using Year 2021 as the Base Year, a growth rate factor of 1.04 was applied to the baseline through traffic demands along Ala Moana Boulevard to achieve the projected Year 2027 traffic volumes.

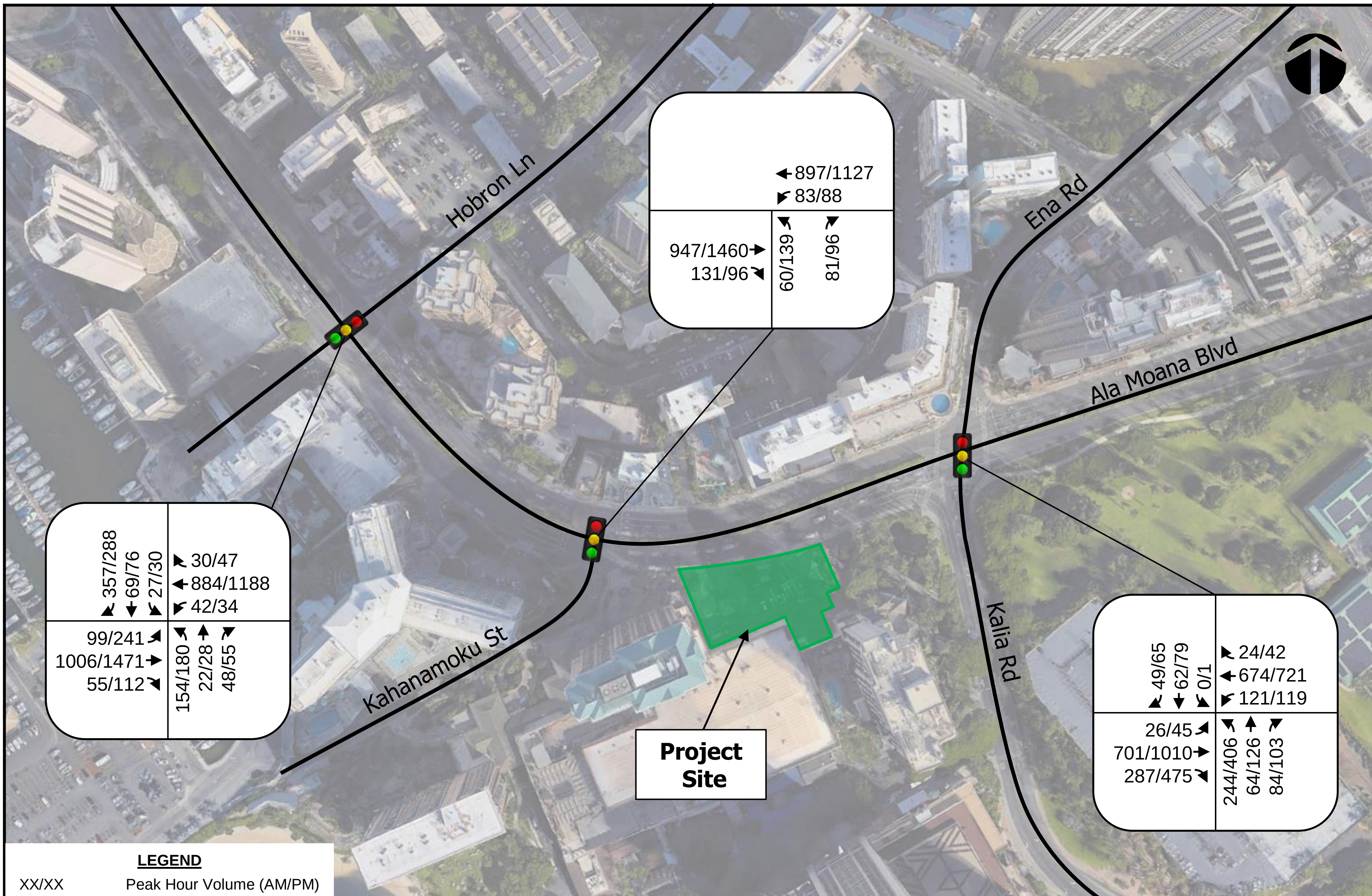
C. Total Traffic Volumes Without Project

The projected Year 2027 AM and PM peak period traffic volumes and operating conditions without the implementation of the Park Hotels and Resorts project are shown in Figure 6 and summarized in Table 3. The analysis incorporates ambient growth in traffic. The baseline levels of service are provided for comparison purposes. LOS calculations are included in Appendix D.

Table 3: Baseline and Projected Year 2027 (Without Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM		PM	
		Base-line	Year 2027 w/out Proj	Base-line	Year 2027 w/out Proj
Ala Moana Blvd/ Hobron Ln	Eastbound	D	D	D	D
	Westbound	D	D	D	D
	Northbound	C	C	D	D
	Southbound	E	E	E	E
Ala Moana Blvd/ Kahanamoku St	Eastbound	A	A	A	A
	Westbound	A	A	A	A
	Northbound	E	E	E	E
Ala Moana Blvd/ Ena Rd/ Kalia Rd	Eastbound	D	D	D	D
	Westbound	C	C	D	D
	Northbound	E	E	E	E
	Southbound	E	E	E	E

Under Year 2027 without project conditions, traffic operations along Ala Moana Boulevard are generally expected to remain similar to baseline conditions. At the intersection with Hobron Lane, the eastbound and westbound approaches of the intersection are expected to continue operating at LOS “D” during both peak periods,



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PARK HOTELS AND RESORTS

YEAR 2027 PEAK HOURS OF TRAFFIC WITHOUT PROJECT

FIGURE 6

whereas the northbound and southbound approaches are expected to continue operating at LOS "E" or better during both peak periods. Similarly, at the intersection with Kalia Road/Ena Road, traffic operations on the eastbound and westbound approaches of the intersection are anticipated to continue operating at LOS "D" or better while the side street approaches are expected to continue operating at LOS "E" during both peak periods. As previously discussed, the low levels of service on the side street approaches are influenced by high volume of through traffic along Ala Moana Boulevard and the split phasing of the northbound and southbound approaches of the intersection. The remaining study intersection at Kahanamoku Street is also anticipated to continue operating similar to baseline conditions.

D. Total Traffic Volumes With Project

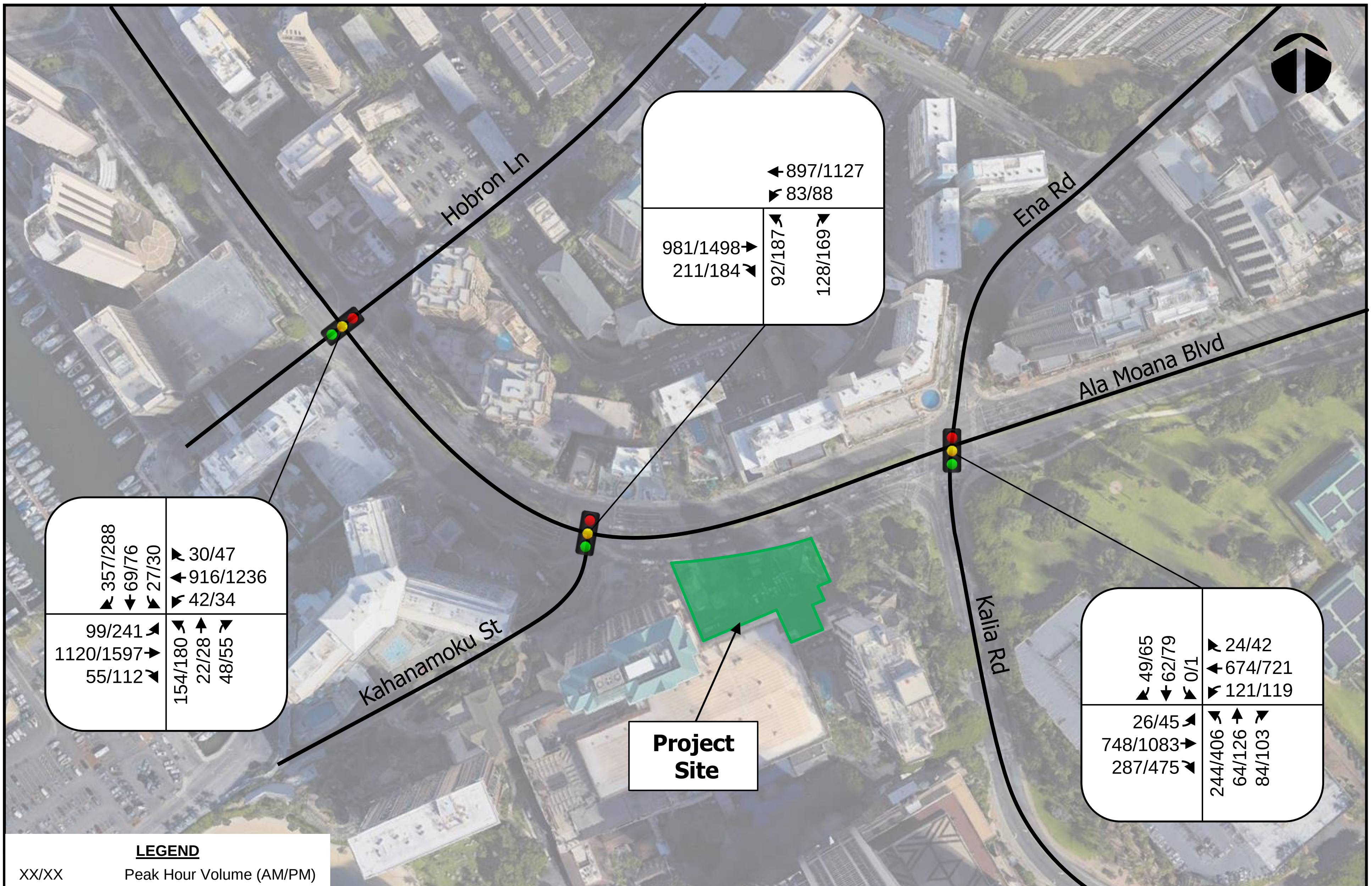
Figure 7 shows the Year 2027 cumulative AM and PM peak hour traffic conditions resulting from the projected external traffic and the development of the proposed Park Hotels and Resorts project. The cumulative volumes include site-generated traffic superimposed over Year 2027 projected traffic demands. The traffic impacts resulting from the proposed project are addressed in the following section.

V. TRAFFIC IMPACT ANALYSIS

The Year 2027 cumulative AM and PM peak hour traffic conditions with the implementation of the proposed Park Hotels and Resorts project are summarized in Table 4. The baseline and projected Year 2027 (Without Project) operating conditions are provided for comparison purposes. LOS calculations are included in Appendix E.

Table 4: Baseline and Projected Year 2027 (Without and With Project) LOS Traffic Operating Conditions

Intersection	Approach/ Critical Movement	AM			PM		
		Base-line	Year 2027		Base-line	Year 2027	
			w/out Proj	w/ Proj		w/out Proj	w/ Proj
Ala Moana Blvd/ Hobron Ln	Eastbound	D	D	D	D	D	D
	Westbound	D	D	D	D	D	D
	Northbound	C	C	D	D	D	D
	Southbound	E	E	E	E	E	E



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PARK HOTELS AND RESORTS

YEAR 2027 PEAK HOURS OF TRAFFIC WITH PROJECT

FIGURE 7

Table 4: Baseline and Projected Year 2027 (Without and With Project) LOS Traffic Operating Conditions (Cont'd)

Intersection	Approach/ Critical Movement	AM			PM		
		Base-line	Year 2027		Base-line	Year 2027	
			w/out Proj	w/ Proj		w/out Proj	w/ Proj
Ala Moana Blvd/ Kahanamoku St	Eastbound	A	A	A	A	A	A
	Westbound	A	A	A	A	A	A
	Northbound	E	E	E	E	E	E
Ala Moana Blvd/ Ena Rd/ Kalia Rd	Eastbound	D	D	D	D	D	D
	Westbound	C	C	C	D	D	D
	Northbound	E	E	E	E	E	E
	Southbound	E	E	E	E	E	E

Under Year 2027 with project conditions, traffic operations in the vicinity of the project are generally expected to remain similar to without project conditions. As previously discussed, the high volume of through traffic along Ala Moana Boulevard and the split phasing at the study intersections contribute to the lower levels of service on the side streets approaches of the intersection. At the intersection with Kahanamoku Street, the Ala Moana Boulevard approaches of the intersection are expected to continue operating at LOS "A" during both peak periods whereas the northbound approach is expected to continue operating at LOS "E" during both peak periods. Traffic operations at the intersections with Hobron Lane and Ena Road/Kalia Road are also anticipated to continue operating at levels of service similar to without project conditions.

VI. MULTIMODAL FACILITIES

A. Pedestrian Facilities

1. Existing Conditions

The project site is located in Waikiki where there is limited parking with a high density of attractive destinations and high pedestrian traffic. Along Ala Moana Boulevard, continuous sidewalks are provided on both sides of the roadway with pedestrian crossings facilitated by curb ramps and protected pedestrian signal phases at the signalized intersections with Hobron Lane and Kalia Road/Ena Road. Although trees and other landscaping features are provided along the sidewalks to increase the attractiveness of these facilities, the overall pedestrian environment is influenced by the presence of high volumes of vehicular traffic along this regional roadway. In addition, pedestrian connectivity and convenient access along this segment of Ala Moana Boulevard is impacted by the long distance between the intersections with Hobron Lane and Ena Road/Kalia Road with no opportunities for midblock crossing within 1,100 feet.

The pedestrian environment improves south of the project site. As previously discussed, the proposed project will be integrated with the HHV development which includes a network of internal pedestrian connections to facilitate access to the various destinations commercial and recreational uses within the resort. The provision of trees that provide intermittent shade and other landscaping treatments as well as wayfinding signs further enhance the resort environment. Further south of the HHV along Kalia Road, there are open green spaces such as the Fort DeRussy Beach Park with pedestrian walkways that lead to other uses within Waikiki.

2. Proposed Conditions

In conjunction with the proposed project, sidewalk modifications are expected along the project site frontage on Ala Moana Boulevard to provide access between on-and off-site uses, as well as a pedestrian connection separate from the sidewalk along roadway. Majority of the visitors are expected to access the project site from the front of the building along Ala Moana Boulevard but as previously discussed, parking will be provided within the HHV parking garage located behind the proposed project. Since a loading area is currently located at-grade between the parking garage and the project site, it's assumed that a connection would be provided between the parking garage structure (by the meeting rooms) and the 5th level of the proposed project via a pedestrian bridge. In the event that a pedestrian bridge cannot be provided, additional consideration should be given to incorporating pavement markings/striping, wayfinding signs, and lighting to increase pedestrian safety and comfort along the pedestrian access on the ground level.

B. Bicycle Facilities

Bicycle facilities in the vicinity of the project are currently limited. The nearest dedicated bike facility is located northeast of the project along Kalakaua Avenue approximately a quarter mile away (see Figure 8). In addition, although there are several bike share stations located within the Waikiki area, the nearest bike share station is located about a quarter mile away from the proposed project. Lack of convenient access to these facilities could dissuade the use of this mode in the vicinity of the project.

There are plans by the City and County of Honolulu to increase the availability of bicycle facilities along the roadways in the project vicinity. These improvements are included in the Oahu Bike Plan published by the City and County of Honolulu Department of Transportation services most recently updated in 2019. These improvements provide for the installation of buffered bike lanes along Ala Moana Boulevard to connect to improved bicycle facilities along Kalakaua Avenue. In addition, Hobron Lane, Ena Road, and Kalia Road are expected to be designated as shared roadways with street signage and "sharrows" (pavement markings used to indicate a shared-use lane) installed to alert motorists to share the roadway with bicyclists. Although the addition of these facilities is expected to increase the availability of bicycle facilities in the vicinity of the project, the timelines for these improvements are not known at this time.

C. Transit Facilities

There are several existing transit resources located in the vicinity of the project. These facilities are provided by "TheBus" which is operated by the Oahu Transit Service (OTS) for the City and County of Honolulu. Within a quarter mile-radius of the project site, there are total of 5 bus stop locations serving 7 unique routes. Access to the nearby bus stops is facilitated by pedestrian facilities along Ala Moana Boulevard and Kalia Road. The provision of transit amenities like bus shelters and/or seating areas are provided at the bus stops helping to provide a more comfortable experience for transit passengers.

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PARK HOTELS AND RESORTS

BICYCLE FACILITIES

FIGURE 8

In addition to services provided by "The Bus," there are several trolley routes that serve the vicinity of the project. These services are provided by Waikiki Trolley, Oli (JTB), Lealea (H.I.S.), and JALPAK with the nearest stops in the vicinity of the project located near the Aqua Palms Waikiki Hotel off Ala Moana Boulevard or at the Ilikai Hotel (see Figure 9). The primary route for trolleys near the project site utilizes Ala Moana Boulevard to travel between Waikiki and outside attractions in Honolulu. In addition, there is a bus terminal located on the ground floor of the Grand Islander tower within the HHV that is served by trolleys, shuttles, and commercial buses.

VII. CONSTRUCTION MANAGEMENT PLAN

A. General

Construction for the proposed project is expected to commence in Year 2025 with the entire project to be completed approximately 30 months later by the Year 2027. The purpose of a Construction Management Plan (CMP) is to detail the anticipated construction activities that will impact the adjacent roadways and identify traffic management strategies that will be implemented to minimize this impact during construction. Since details regarding the construction of the project are still being worked on at this time, the following general recommendations are provided for consideration. The preparation of a more detailed Construction Management Plan should be considered once more specific details regarding construction activities become available.

B. Construction Management Strategies

- Designate parking areas for construction-related vehicles, as well as parking for construction workers and ensure no parking, queueing, or staging of construction-related vehicles occur outside of the designated construction area.

- Monitor ingress and egress of project areas to allow safe passage of pedestrians and ensure effectiveness of management strategies along construction areas.

- Construction materials and equipment should be transferred to/from the project site during off-peak traffic hours to minimize any potential disruption to traffic on adjacent streets.

- Maintain any existing pedestrian, bicycle, and vehicle access/crossings with the highest safety measures during construction.

BUS FACILITIES

Bus Stop (Stop ID)	Bus Route
Ala Moana Blvd + Hobron Ln (880)	20, 23, 42, E
Ala Moana Blvd + Hobron Ln (884)	20, 23, 42, E, W1, W2, W3
Ala Moana Blvd + Opp Kalia Rd (879)	20, 23, 42
Kalia Rd + Maluhia St (878)	20, 23, 42, E
Kalia Rd + Paoa Pl (886)	20, 23, 42, E, W1, W2, W3

LEGEND

- Bus Stop
- Trolley Stop

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PARK HOTELS AND RESORTS

TRANSIT FACILITIES

FIGURE 9

- Implement Best Management Practice (BMP) controls at the construction site to prevent dirt and debris from being carried off-site onto the surrounding roadways.

- Document existing roadway conditions prior to the start of construction and repair any damages as result of the construction of the proposed project. Ensure repairs meet the American with Disabilities Act (ADA) requirements.

- Attend and conduct meetings with community and industry groups, as needed, to provide periodic updates on construction progress and impacts, if any, on the adjoining local street area network.

- Obtain a street usage permit from the appropriate agency for any construction-related work that may require the temporary lane closures along the adjacent roadways.

- Coordinate construction activities with and submit project plans to the Department of Transportation Services—Public Transit Division (PTD) to ensure the project development does not affect public transit services.

C. Traffic Control Plans

The majority of the construction work for proposed project is expected to take place on-site with general work hours occurring between 8:30 AM and 3:00 PM. Occasionally, it may be necessary for construction work to occur during the evening hours, as well as on weekends to minimize impacts to surrounding uses. Should this occur, appropriate clearances and approvals will be obtained to ensure noise disruptions are within acceptable limits. In addition to on-site work, lane closures along Ala Moana Boulevard may be required to facilitate work within the public right-of-way. Since some of the construction activities will affect the surrounding roadways, traffic control plans (TCPs) will be prepared and submitted to the reviewing agencies for approval. The following general guidelines are provided for the closures associated with the project.

- All closures are generally planned within the standard working hours for work along State of Hawaii roadways of 8:30 AM to 3:00 PM. Should closures outside of these hours be required, the necessary approvals from the appropriate reviewing agencies should be obtained. In addition, appropriate traffic control devices for more long-term closures should be implemented to ensure visibility and safety.

- The TCPs should be phased when possible to avoid overlapping closures and simultaneous detours.

- If work is occurring in the same block, the closures should be in line with each other instead of staggered to minimize the weaving of traffic. In addition, any required closures should be coordinated to ensure that simultaneous detours are not required.

- SDOs (Special Duty Officers) should be utilized during working hours to facilitate vehicular traffic flow while temporary traffic control measures are implemented.

- Should 24-hour closures requiring pedestrian detours be required to facilitate work, safe and accessible alternate accommodations that are on the same side of the roadway and in conformance with the American with Disabilities Act (ADA) should be provided. In addition, accommodations to ensure pedestrian safety should be considered including covered walkways and temporary lighting.

- Where possible, consider phasing or minimizing pedestrian closures to maintain access to the maximum feasible during construction

VIII. RECOMMENDATIONS

Based on the analysis of the traffic data, the following are recommendations of this study to be incorporated in the project design.

1. Provide sufficient sight distance for motorists to safely enter and exit the project driveways to ensure pedestrians, bicyclists, and motorists are aware of the presence of each other at these conflict points.

2. Coordinate with the adjacent HHV and provide adequate on-site loading and off-loading service areas within the project site and prohibit off-site loading operations within the public roadways. As previously discussed, the proposed project is expected to be integrated with the HHV development.

3. Coordinate with the adjacent HHV and provide adequate turn-around area for service, delivery, and refuse collection vehicles to maneuver within the project site to avoid vehicle-reversing maneuvers onto public roadways.

4. Provide sufficient turning radii at all project driveways to avoid or minimize vehicle encroachments to oncoming traffic lanes.

5. Clearly delineate the pedestrian route between the project site and the HHV parking garage including provision of adequate signage to direct those who self-park within the parking garage. Ensure these routes are in conformance to the American with Disabilities Act (ADA). As previously discussed, a connection is assumed to be provided between the parking garage structure (by the meeting rooms) and the 5th level of the proposed project via a pedestrian bridge.

6. If pedestrian access between the HHV parking garage and the proposed project is intended to be provided on the ground level, provide adequate pedestrian connections to/from the parking garage that are in conformance with the Americans with Disabilities Act (ADA), clearly delineated with pavement markings/striping and wayfinding signs posted at key decision points to direct visitors to their intended destinations on-site, and adequately lit to increase pedestrian safety at all hours.

7. Provide adequate signage at the project driveways to direct motorists to the parking garage for self-parking or the porte cochere to utilize valet services.

8. Coordinate with the City and County of Honolulu Department of Transportation Services and the State of Hawaii Department of Transportation with regards to their development of bicycle facilities proposed by the City and State bike plans in the vicinity of the project. In addition, consider incorporating bicycle facilities within the project boundaries including designated and secured bicycle parking to encourage the use of alternate modes of transportation and coordinating with Bikeshare Hawaii or other similar entities to explore implementing a bikeshare dock station on-site or in the vicinity.

9. As may be required by the City and County of Honolulu prepare a supplemental traffic assessment to verify projected traffic conditions since updated baseline traffic data could not be collected given the ongoing COVID-19 pandemic.

10. Consider the preparation of a more detailed Construction Management Plan when more information regarding the construction schedule and phasing, as well as traffic circulation, traffic control, and parking during the construction period becomes available.

11. Prepare a Transportation Management Plan as typically required by the City and County of Honolulu which includes traffic circulation, parking, loading, and traffic demand management strategies to minimize the impact of the proposed project on the surrounding roadway network.

IX. CONCLUSION

The proposed Park Hotels and Resorts project entails the replacement of existing uses with a new hotel tower which also include retail space. Primary access to the project site will be provided via a new porte cochere served by two one-way driveways off Ala Moana Boulevard. Parking for the hotel, both for valet and self-parking, is expected to be accommodated within the existing, adjacent HHV parking garage. Traffic operations with the development of the proposed Park Hotels and Resorts project are generally expected to remain similar to without project conditions. As previously discussed, traffic operations at the study intersections are influenced by the high volume of through traffic along the main roadway that accommodates regional flow and the split phasing of the side street approaches. Although traffic operations are generally expected to remain similar to without project conditions, the project is located in a densely developed area with a high volume of pedestrian and vehicular traffic. As such, the preparation of a Construction Management Plan and a Transportation Management Plan is recommended to further minimize potential impacts to the surrounding roadways. With the implementation of the aforementioned recommendations, the proposed project is not expected to have a significant impact on the surrounding roadway network.

APPENDIX A

BASELINE TRAFFIC COUNT DATA

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: FS, GH
Counters: TU-0650, TU-1958
Weather: Clear

File Name : ALA HOB AM
Site Code : 00000001
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	HOBRON LANE Southbound					ALA MOANA BOULEVARD Westbound					HOBRON LANE Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	6	16	30	18	70	3	85	1	48	137	21	1	3	13	38	12	98	13	0	123	368
06:15 AM	5	19	52	19	95	2	86	1	29	118	14	1	6	8	29	12	126	20	0	158	400
06:30 AM	8	15	58	39	120	7	128	2	43	180	28	6	8	39	81	4	179	25	0	208	589
06:45 AM	12	18	56	36	122	6	123	2	82	213	27	6	4	14	51	19	204	21	0	244	630
Total	31	68	196	112	407	18	422	6	202	648	90	14	21	74	199	47	607	79	0	733	1987
07:00 AM	11	12	94	42	159	3	185	12	61	261	44	7	8	26	85	25	201	18	0	244	749
07:15 AM	8	19	80	33	140	7	208	5	65	285	38	3	6	32	79	22	249	5	0	276	780
07:30 AM	2	11	97	55	165	7	195	11	92	305	33	9	8	36	86	25	232	11	0	268	824
07:45 AM	8	25	100	39	172	6	199	7	101	313	39	6	16	58	119	22	216	20	0	258	862
Total	29	67	371	169	636	23	787	35	319	1164	154	25	38	152	369	94	898	54	0	1046	3215
08:00 AM	9	14	80	60	163	22	197	7	113	339	44	4	18	53	119	30	199	19	0	248	869
08:15 AM	8	14	93	65	180	7	174	17	89	287	40	10	15	47	112	21	188	15	0	224	803
08:30 AM	4	14	68	54	140	3	188	9	127	327	37	2	7	44	90	26	236	10	0	272	829
08:45 AM	10	15	54	61	140	7	182	10	119	318	46	4	6	34	90	25	186	18	0	229	777
Total	31	57	295	240	623	39	741	43	448	1271	167	20	46	178	411	102	809	62	0	973	3278
Grand Total	91	192	862	521	1666	80	1950	84	969	3083	411	59	105	404	979	243	2314	195	0	2752	8480
Apprch %	5.5	11.5	51.7	31.3		2.6	63.3	2.7	31.4		42	6	10.7	41.3		8.8	84.1	7.1	0		
Total %	1.1	2.3	10.2	6.1	19.6	0.9	23	1	11.4	36.4	4.8	0.7	1.2	4.8	11.5	2.9	27.3	2.3	0	32.5	

	HOBRON LANE Southbound				ALA MOANA BOULEVARD Westbound				HOBRON LANE Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	8	19	80	107	7	208	5	220	38	3	6	47	22	249	5	276	650
07:30 AM	2	11	97	110	7	195	11	213	33	9	8	50	25	232	11	268	641
07:45 AM	8	25	100	133	6	199	7	212	39	6	16	61	22	216	20	258	664
08:00 AM	9	14	80	103	22	197	7	226	44	4	18	66	30	199	19	248	643
Total Volume	27	69	357	453	42	799	30	871	154	22	48	224	99	896	55	1050	2598
% App. Total	6	15.2	78.8		4.8	91.7	3.4		68.8	9.8	21.4		9.4	85.3	5.2		
PHF	.750	.690	.893	.852	.477	.960	.682	.963	.875	.611	.667	.848	.825	.900	.688	.951	.978

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: FS, GH
Counters: TU-0650, TU-1958
Weather: Clear

File Name : ALA HOB PM
Site Code : 00000001
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	HOBRON LANE Southbound					ALA MOANA BOULEVARD Westbound					HOBRON LANE Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	13	19	71	96	199	9	212	17	103	341	44	5	8	52	109	44	293	14	0	351	1000
03:15 PM	13	17	75	64	169	12	211	15	130	368	52	15	11	67	145	58	251	18	0	327	1009
03:30 PM	8	12	76	82	178	3	233	12	83	331	63	4	15	54	136	32	299	22	0	353	998
03:45 PM	6	21	70	69	166	10	251	11	102	374	46	5	11	64	126	46	305	32	0	383	1049
Total	40	69	292	311	712	34	907	55	418	1414	205	29	45	237	516	180	1148	86	0	1414	4056
04:00 PM	8	14	78	56	156	5	232	7	112	356	90	7	15	75	187	56	278	17	0	351	1050
04:15 PM	8	14	54	102	178	5	289	3	112	409	65	7	9	60	141	67	338	29	0	434	1162
04:30 PM	8	22	78	80	188	9	276	15	103	403	47	7	16	63	133	46	287	22	0	355	1079
04:45 PM	7	22	92	69	190	14	257	14	119	404	34	9	20	84	147	51	327	25	0	403	1144
Total	31	72	302	307	712	33	1054	39	446	1572	236	30	60	282	608	220	1230	93	0	1543	4435
05:00 PM	7	18	64	90	179	6	240	15	122	383	34	5	10	71	120	77	300	36	0	413	1095
05:15 PM	5	28	83	79	195	11	225	8	139	383	48	8	7	103	166	75	258	22	0	355	1099
05:30 PM	6	18	68	62	154	25	245	13	145	428	46	14	14	117	191	72	299	26	0	397	1170
05:45 PM	6	19	76	75	176	18	185	13	113	329	32	11	15	94	152	71	252	23	0	346	1003
Total	24	83	291	306	704	60	895	49	519	1523	160	38	46	385	629	295	1109	107	0	1511	4367
Grand Total	95	224	885	924	2128	127	2856	143	1383	4509	601	97	151	904	1753	695	3487	286	0	4468	12858
Apprch %	4.5	10.5	41.6	43.4		2.8	63.3	3.2	30.7		34.3	5.5	8.6	51.6		15.6	78	6.4	0		
Total %	0.7	1.7	6.9	7.2	16.6	1	22.2	1.1	10.8	35.1	4.7	0.8	1.2	7	13.6	5.4	27.1	2.2	0	34.7	

	HOBRON LANE Southbound				ALA MOANA BOULEVARD Westbound				HOBRON LANE Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	8	14	54	76	5	289	3	297	65	7	9	81	67	338	29	434	888
04:30 PM	8	22	78	108	9	276	15	300	47	7	16	70	46	287	22	355	833
04:45 PM	7	22	92	121	14	257	14	285	34	9	20	63	51	327	25	403	872
05:00 PM	7	18	64	89	6	240	15	261	34	5	10	49	77	300	36	413	812
Total Volume	30	76	288	394	34	1062	47	1143	180	28	55	263	241	1252	112	1605	3405
% App. Total	7.6	19.3	73.1		3	92.9	4.1		68.4	10.6	20.9		15	78	7		
PHF	.938	.864	.783	.814	.607	.919	.783	.953	.692	.778	.688	.812	.782	.926	.778	.925	.959

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: JB, EV
Counters: TU-0652, TU-0653
Weather: Clear

File Name : ALA KAH AM
Site Code : 00000002
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	Southbound	ALA MOANA BOULEVARD Westbound					KAHANAMOKU STREET Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	13	79	0	1	93	10	0	8	19	37	0	78	24	0	102	232
06:15 AM	0	13	87	0	0	100	13	0	13	18	44	0	115	23	0	138	282
06:30 AM	0	10	111	0	0	121	19	0	16	60	95	0	144	37	0	181	397
06:45 AM	0	17	131	0	0	148	19	0	16	51	86	0	202	32	0	234	468
Total	0	53	408	0	1	462	61	0	53	148	262	0	539	116	0	655	1379
07:00 AM	0	14	168	0	0	182	23	0	14	62	99	0	172	43	0	215	496
07:15 AM	0	20	202	0	1	223	14	0	19	67	100	0	228	44	0	272	595
07:30 AM	0	17	201	0	0	218	17	0	15	79	111	0	214	27	0	241	570
07:45 AM	0	24	196	0	1	221	13	0	21	107	141	0	197	31	0	228	590
Total	0	75	767	0	2	844	67	0	69	315	451	0	811	145	0	956	2251
08:00 AM	0	22	214	0	0	236	16	0	26	116	158	0	209	29	1	239	633
08:15 AM	0	20	174	0	2	196	19	0	21	85	125	0	174	27	0	201	522
08:30 AM	0	22	159	0	0	181	21	0	24	97	142	0	209	16	0	225	548
08:45 AM	0	15	196	1	2	214	15	0	19	108	142	0	190	32	1	223	579
Total	0	79	743	1	4	827	71	0	90	406	567	0	782	104	2	888	2282
Grand Total	0	207	1918	1	7	2133	199	0	212	869	1280	0	2132	365	2	2499	5912
Apprch %		9.7	89.9	0	0.3		15.5	0	16.6	67.9		0	85.3	14.6	0.1		
Total %	0	3.5	32.4	0	0.1	36.1	3.4	0	3.6	14.7	21.7	0	36.1	6.2	0	42.3	

	Southbound	ALA MOANA BOULEVARD Westbound				KAHANAMOKU STREET Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	20	202	0	222	14	0	19	33	0	228	44	272	527
07:30 AM	0	17	201	0	218	17	0	15	32	0	214	27	241	491
07:45 AM	0	24	196	0	220	13	0	21	34	0	197	31	228	482
08:00 AM	0	22	214	0	236	16	0	26	42	0	209	29	238	516
Total Volume	0	83	813	0	896	60	0	81	141	0	848	131	979	2016
% App. Total		9.3	90.7	0		42.6	0	57.4		0	86.6	13.4		
PHF	.000	.865	.950	.000	.949	.882	.000	.779	.839	.000	.930	.744	.900	.956

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: JB, EV
Counters: TU-0652, TU-0653
Weather: Clear

File Name : ALA KAH PM
Site Code : 00000002
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	Southbound	ALA MOANA BOULEVARD Westbound					KAHANAMOKU STREET Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	19	219	0	0	238	24	0	36	109	169	0	291	24	0	315	722
03:15 PM	0	15	224	0	1	240	24	0	28	133	185	0	281	20	0	301	726
03:30 PM	0	15	222	0	0	237	29	0	32	159	220	0	290	15	2	307	764
03:45 PM	0	18	213	0	0	231	38	0	18	174	230	0	293	25	4	322	783
Total	0	67	878	0	1	946	115	0	114	575	804	0	1155	84	6	1245	2995
04:00 PM	0	17	237	0	0	254	37	0	26	162	225	0	311	21	0	332	811
04:15 PM	0	19	251	0	0	270	41	0	42	123	206	0	300	27	0	327	803
04:30 PM	0	23	285	0	0	308	36	0	15	153	204	0	307	30	4	341	853
04:45 PM	0	29	249	0	0	278	25	0	13	131	169	0	280	18	1	299	746
Total	0	88	1022	0	0	1110	139	0	96	569	804	0	1198	96	5	1299	3213
05:00 PM	0	12	232	0	3	247	29	0	28	196	253	0	316	16	0	332	832
05:15 PM	0	21	249	0	1	271	29	0	41	126	196	0	269	19	2	290	757
05:30 PM	0	21	213	0	5	239	24	0	27	238	289	0	279	23	2	304	832
05:45 PM	0	15	206	0	2	223	18	0	28	142	188	0	274	22	0	296	707
Total	0	69	900	0	11	980	100	0	124	702	926	0	1138	80	4	1222	3128
Grand Total	0	224	2800	0	12	3036	354	0	334	1846	2534	0	3491	260	15	3766	9336
Apprch %		7.4	92.2	0	0.4		14	0	13.2	72.8		0	92.7	6.9	0.4		
Total %	0	2.4	30	0	0.1	32.5	3.8	0	3.6	19.8	27.1	0	37.4	2.8	0.2	40.3	

	Southbound	ALA MOANA BOULEVARD Westbound				KAHANAMOKU STREET Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:00 PM														
04:00 PM	0	17	237	0	254	37	0	26	63	0	311	21	332	649
04:15 PM	0	19	251	0	270	41	0	42	83	0	300	27	327	680
04:30 PM	0	23	285	0	308	36	0	15	51	0	307	30	337	696
04:45 PM	0	29	249	0	278	25	0	13	38	0	280	18	298	614
Total Volume	0	88	1022	0	1110	139	0	96	235	0	1198	96	1294	2639
% App. Total		7.9	92.1	0		59.1	0	40.9		0	92.6	7.4		
PHF	.000	.759	.896	.000	.901	.848	.000	.571	.708	.000	.963	.800	.960	.948

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: DY, BE
Counters: TU-0649, TU-2049
Weather: Clear

File Name : ALA KAL ENA AM
Site Code : 00000003
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	ENA ROAD Southbound					ALA MOANA BOULEVARD Westbound					KALIA ROAD Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	18	9	7	34	14	53	3	4	74	22	7	5	1	35	4	57	26	32	119	262
06:15 AM	1	20	6	18	45	22	56	5	12	95	30	13	7	6	56	2	87	35	30	154	350
06:30 AM	9	23	3	10	45	29	58	10	9	106	45	21	5	0	71	3	90	47	46	186	408
06:45 AM	0	31	14	28	73	26	76	5	6	113	47	19	15	9	90	3	137	67	61	268	544
Total	10	92	32	63	197	91	243	23	31	388	144	60	32	16	252	12	371	175	169	727	1564
07:00 AM	0	24	16	20	60	27	93	9	15	144	60	26	18	16	120	4	115	62	53	234	558
07:15 AM	0	16	5	18	39	27	136	6	13	182	62	26	16	24	128	2	155	91	74	322	671
07:30 AM	0	17	15	27	59	25	110	8	29	172	63	10	27	20	120	7	165	74	81	327	678
07:45 AM	0	17	16	29	62	33	133	6	12	184	63	8	23	14	108	7	152	54	72	285	639
Total	0	74	52	94	220	112	472	29	69	682	248	70	84	74	476	20	587	281	280	1168	2546
08:00 AM	0	12	13	21	46	36	140	4	6	186	56	20	18	20	114	10	163	68	106	347	693
08:15 AM	0	11	15	48	74	15	117	16	13	161	48	16	11	9	84	6	145	53	136	340	659
08:30 AM	0	11	10	26	47	40	111	11	9	171	51	23	23	34	131	9	174	76	102	361	710
08:45 AM	1	12	23	43	79	37	112	5	6	160	60	24	14	23	121	8	150	49	117	324	684
Total	1	46	61	138	246	128	480	36	34	678	215	83	66	86	450	33	632	246	461	1372	2746
Grand Total	11	212	145	295	663	331	1195	88	134	1748	607	213	182	176	1178	65	1590	702	910	3267	6856
Apprch %	1.7	32	21.9	44.5		18.9	68.4	5	7.7		51.5	18.1	15.4	14.9		2	48.7	21.5	27.9		
Total %	0.2	3.1	2.1	4.3	9.7	4.8	17.4	1.3	2	25.5	8.9	3.1	2.7	2.6	17.2	0.9	23.2	10.2	13.3	47.7	

	ENA ROAD Southbound				ALA MOANA BOULEVARD Westbound				KALIA ROAD Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	16	5	21	27	136	6	169	62	26	16	104	2	155	91	248	542
07:30 AM	0	17	15	32	25	110	8	143	63	10	27	100	7	165	74	246	521
07:45 AM	0	17	16	33	33	133	6	172	63	8	23	94	7	152	54	213	512
08:00 AM	0	12	13	25	36	140	4	180	56	20	18	94	10	163	68	241	540
Total Volume	0	62	49	111	121	519	24	664	244	64	84	392	26	635	287	948	2115
% App. Total	0	55.9	44.1		18.2	78.2	3.6		62.2	16.3	21.4		2.7	67	30.3		
PHF	.000	.912	.766	.841	.840	.927	.750	.922	.968	.615	.778	.942	.650	.962	.788	.956	.976

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: DY, FS
Counters: TU-0649, TU-2049
Weather: Clear

File Name : ALA KAL ENA PM
Site Code : 00000003
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	ENA ROAD Southbound					ALA MOANA BOULEVARD Westbound					KALIA ROAD Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	1	9	14	33	57	37	139	11	7	194	75	29	22	20	146	12	182	79	73	346	743
03:15 PM	1	20	22	5	48	22	85	11	4	122	105	21	27	21	174	7	244	105	82	438	782
03:30 PM	1	27	14	24	66	32	133	11	0	176	91	22	29	22	164	13	191	98	83	385	791
03:45 PM	0	20	16	27	63	23	104	9	7	143	111	22	26	12	171	9	235	109	84	437	814
Total	3	76	66	89	234	114	461	42	18	635	382	94	104	75	655	41	852	391	322	1606	3130
04:00 PM	0	16	19	35	70	22	97	22	4	145	104	42	33	23	202	14	241	137	105	497	914
04:15 PM	0	20	16	44	80	40	120	3	0	163	95	28	21	5	149	15	224	112	72	423	815
04:30 PM	1	23	14	25	63	34	152	8	4	198	96	34	23	3	156	7	216	117	116	456	873
04:45 PM	2	16	15	69	102	27	95	7	9	138	94	26	22	17	159	11	232	104	109	456	855
Total	3	75	64	173	315	123	464	40	17	644	389	130	99	48	666	47	913	470	402	1832	3457
05:00 PM	0	10	13	31	54	24	81	4	8	117	96	18	23	21	158	8	242	75	60	385	714
05:15 PM	0	9	13	70	92	18	116	7	5	146	95	20	23	16	154	16	241	100	122	479	871
05:30 PM	2	17	16	18	53	22	101	4	8	135	63	23	23	0	109	16	210	102	73	401	698
05:45 PM	4	20	13	40	77	15	84	13	2	114	70	27	16	22	135	13	224	89	95	421	747
Total	6	56	55	159	276	79	382	28	23	512	324	88	85	59	556	53	917	366	350	1686	3030
Grand Total	12	207	185	421	825	316	1307	110	58	1791	1095	312	288	182	1877	141	2682	1227	1074	5124	9617
Apprch %	1.5	25.1	22.4	51		17.6	73	6.1	3.2		58.3	16.6	15.3	9.7		2.8	52.3	23.9	21		
Total %	0.1	2.2	1.9	4.4	8.6	3.3	13.6	1.1	0.6	18.6	11.4	3.2	3	1.9	19.5	1.5	27.9	12.8	11.2	53.3	

	ENA ROAD Southbound				ALA MOANA BOULEVARD Westbound				KALIA ROAD Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	20	16	36	23	104	9	136	111	22	26	159	9	235	109	353	684
04:00 PM	0	16	19	35	22	97	22	141	104	42	33	179	14	241	137	392	747
04:15 PM	0	20	16	36	40	120	3	163	95	28	21	144	15	224	112	351	694
04:30 PM	1	23	14	38	34	152	8	194	96	34	23	153	7	216	117	340	725
Total Volume	1	79	65	145	119	473	42	634	406	126	103	635	45	916	475	1436	2850
% App. Total	0.7	54.5	44.8		18.8	74.6	6.6		63.9	19.8	16.2		3.1	63.8	33.1		
PHF	.250	.859	.855	.954	.744	.778	.477	.817	.914	.750	.780	.887	.750	.950	.867	.916	.954

APPENDIX B

LEVEL OF SERVICE DEFINITIONS

LEVEL OF SERVICE DEFINITIONS

LEVEL-OF-SERVICE CRITERIA FOR AUTOMOBILES AT SIGNALIZED INTERSECTIONS

LOS A describes operations with a control delay of 10s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C describes operations with control delay between 20 and 35s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E describes operations with control delay between 55 and 80s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most Cycles fail to clear the queue.

A lane group can incur a delay less than 80s/veh when the volume-to-capacity ratio exceeds 1.0. This condition typically occurs when the cycle length is short, the signal progression is favorable, or both. As a result, both the delay and volume-to-capacity ratio are considered when lane group LOS is established. A ratio of 1.0 or more indicated that cycle capacity is fully utilized and represents failure from a capacity perspective (just as delay in excess of 80s/veh represents failure from a delay perspective).

"Highway Capacity Manual," Transportation Research Board, 2010.

APPENDIX C

CAPACITY ANALYSIS CALCULATIONS
BASELINE PEAK PERIOD TRAFFIC ANALYSIS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	949	55	42	834	30	154	22	48	27	69	357
Future Volume (veh/h)	99	949	55	42	834	30	154	22	48	27	69	357
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.70	1.00		0.60	1.00		0.68	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	101	968	56	43	851	31	114	82	49	28	70	364
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	1296	74	59	1136	41	469	241	144	131	327	395
Arrive On Green	0.07	0.27	0.27	0.03	0.23	0.23	0.26	0.26	0.26	0.25	0.25	0.25
Sat Flow, veh/h	1774	4793	276	1774	4904	177	1774	913	546	525	1312	1583
Grp Volume(v), veh/h	101	683	341	43	586	296	114	0	131	98	0	364
Grp Sat Flow(s),veh/h/ln	1774	1695	1678	1774	1695	1691	1774	0	1459	1837	0	1583
Q Serve(g_s), s	6.1	20.2	20.4	2.6	17.6	17.9	5.5	0.0	8.0	4.6	0.0	24.5
Cycle Q Clear(g_c), s	6.1	20.2	20.4	2.6	17.6	17.9	5.5	0.0	8.0	4.6	0.0	24.5
Prop In Lane	1.00		0.16	1.00		0.10	1.00		0.37	0.29		1.00
Lane Grp Cap(c), veh/h	128	916	454	59	786	392	469	0	385	458	0	395
V/C Ratio(X)	0.79	0.75	0.75	0.73	0.75	0.76	0.24	0.00	0.34	0.21	0.00	0.92
Avail Cap(c_a), veh/h	259	1393	689	146	1176	587	729	0	599	520	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.0	36.5	36.6	52.5	39.1	39.2	31.7	0.0	32.6	32.6	0.0	40.1
Incr Delay (d2), s/veh	10.4	1.2	2.5	15.6	1.4	3.1	0.3	0.0	0.5	0.2	0.0	22.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	9.5	9.8	1.5	8.4	8.7	2.8	0.0	3.3	2.4	0.0	13.2
LnGrp Delay(d),s/veh	60.5	37.7	39.1	68.1	40.5	42.3	32.0	0.0	33.1	32.8	0.0	62.9
LnGrp LOS	E	D	D	E	D	D	C		C	C		E
Approach Vol, veh/h		1125			925			245			462	
Approach Delay, s/veh		40.2			42.4			32.6			56.5	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	34.6		33.9	12.9	30.4		32.3
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	9.0	45.0		45.0	16.0	38.0		31.0
Max Q Clear Time (g_c+I1), s	4.6	22.4		10.0	8.1	19.9		26.5
Green Ext Time (p_c), s	0.0	7.1		1.2	0.1	5.5		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	1388	112	34	1121	47	180	28	55	30	76	288
Future Volume (veh/h)	241	1388	112	34	1121	47	180	28	55	30	76	288
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.81	1.00		0.63	1.00		0.63	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	246	1416	114	35	1144	48	134	98	56	31	78	294
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	1965	158	48	1411	59	376	191	109	103	259	313
Arrive On Green	0.15	0.42	0.42	0.03	0.29	0.29	0.21	0.21	0.21	0.20	0.20	0.20
Sat Flow, veh/h	1774	4706	379	1774	4872	204	1774	902	515	522	1314	1583
Grp Volume(v), veh/h	246	1020	510	35	795	397	134	0	154	109	0	294
Grp Sat Flow(s),veh/h/ln	1774	1695	1694	1774	1695	1686	1774	0	1417	1837	0	1583
Q Serve(g_s), s	18.6	34.3	34.3	2.7	29.8	29.9	8.8	0.0	13.1	6.9	0.0	25.0
Cycle Q Clear(g_c), s	18.6	34.3	34.3	2.7	29.8	29.9	8.8	0.0	13.1	6.9	0.0	25.0
Prop In Lane	1.00		0.22	1.00		0.12	1.00		0.36	0.28		1.00
Lane Grp Cap(c), veh/h	275	1416	707	48	982	488	376	0	300	363	0	313
V/C Ratio(X)	0.90	0.72	0.72	0.73	0.81	0.81	0.36	0.00	0.51	0.30	0.00	0.94
Avail Cap(c_a), veh/h	441	1884	941	104	1239	616	376	0	300	363	0	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.7	33.2	33.2	66.1	45.1	45.1	45.9	0.0	47.7	46.8	0.0	54.1
Incr Delay (d2), s/veh	13.4	0.9	1.8	19.4	3.3	6.5	0.6	0.0	1.5	0.5	0.0	35.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	16.2	16.4	1.6	14.4	14.8	4.4	0.0	5.3	3.6	0.0	14.0
LnGrp Delay(d),s/veh	70.1	34.1	35.0	85.4	48.4	51.7	46.5	0.0	49.1	47.3	0.0	89.7
LnGrp LOS	E	C	D	F	D	D	D		D	D		F
Approach Vol, veh/h		1776			1227			288			403	
Approach Delay, s/veh		39.4			50.5			47.9			78.2	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	62.1		34.0	26.2	44.6		32.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	8.0	76.0		29.0	34.0	50.0		27.0
Max Q Clear Time (g_c+I1), s	4.7	36.3		15.1	20.6	31.9		27.0
Green Ext Time (p_c), s	0.0	14.7		1.1	0.6	7.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.0
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	893	131	83	846	60	81
Future Volume (veh/h)	893	131	83	846	60	81
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.85	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	930	136	86	881	62	84
Adj No. of Lanes	4	0	1	3	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	4299	610	107	4401	120	108
Arrive On Green	0.77	0.77	0.08	1.00	0.07	0.07
Sat Flow, veh/h	5832	791	1774	5253	1774	1583
Grp Volume(v), veh/h	798	268	86	881	62	84
Grp Sat Flow(s),veh/h/ln	1602	1557	1774	1695	1774	1583
Q Serve(g_s), s	6.8	7.1	7.1	0.0	5.1	7.8
Cycle Q Clear(g_c), s	6.8	7.1	7.1	0.0	5.1	7.8
Prop In Lane		0.51	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3708	1201	107	4401	120	108
V/C Ratio(X)	0.22	0.22	0.80	0.20	0.51	0.78
Avail Cap(c_a), veh/h	3708	1201	378	4401	343	306
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.96	0.96	1.00	1.00
Uniform Delay (d), s/veh	4.7	4.7	68.1	0.0	67.5	68.8
Incr Delay (d2), s/veh	0.1	0.4	12.3	0.1	3.4	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.2	3.9	0.0	2.6	3.8
LnGrp Delay(d),s/veh	4.8	5.2	80.4	0.1	70.9	80.4
LnGrp LOS	A	A	F	A	E	F
Approach Vol, veh/h	1066			967	146	
Approach Delay, s/veh	4.9			7.2	76.3	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.1	120.7				134.8		15.2
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	32.0	74.0				111.0		29.0
Max Q Clear Time (g_c+I1), s	9.1	9.1				2.0		9.8
Green Ext Time (p_c), s	0.2	9.4				7.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	1377	96	88	1063	139	96		
Future Volume (veh/h)	1377	96	88	1063	139	96		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.82	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1434	100	92	1107	145	100		
Adj No. of Lanes	4	0	1	3	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	4520	314	113	4272	173	154		
Arrive On Green	0.75	0.75	0.06	0.84	0.10	0.10		
Sat Flow, veh/h	6327	422	1774	5253	1774	1583		
Grp Volume(v), veh/h	1135	399	92	1107	145	100		
Grp Sat Flow(s),veh/h/ln	1602	1682	1774	1695	1774	1583		
Q Serve(g_s), s	12.6	12.7	8.2	7.1	12.9	9.7		
Cycle Q Clear(g_c), s	12.6	12.7	8.2	7.1	12.9	9.7		
Prop In Lane		0.25	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3581	1253	113	4272	173	154		
V/C Ratio(X)	0.32	0.32	0.81	0.26	0.84	0.65		
Avail Cap(c_a), veh/h	3581	1253	299	4272	421	376		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.89	0.89	1.00	1.00		
Uniform Delay (d), s/veh	6.8	6.8	74.0	2.6	71.0	69.6		
Incr Delay (d2), s/veh	0.2	0.7	11.8	0.1	10.3	4.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.6	6.1	4.4	3.3	6.8	4.5		
LnGrp Delay(d),s/veh	7.0	7.5	85.7	2.7	81.3	74.1		
LnGrp LOS	A	A	F	A	F	E		
Approach Vol, veh/h	1534			1199	245			
Approach Delay, s/veh	7.2			9.1	78.3			
Approach LOS	A			A	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.2	124.2				139.4		20.6
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	27.0	80.0				112.0		38.0
Max Q Clear Time (g_c+I1), s	10.2	14.7				9.1		14.9
Green Ext Time (p_c), s	0.2	16.3				10.3		0.7

Intersection Summary			
HCM 2010 Ctrl Delay			13.8
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	661	287	121	636	24	244	64	84	0	62	49
Future Volume (veh/h)	26	661	287	121	636	24	244	64	84	0	62	49
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.78	1.00		0.96	1.00		0.87	1.00		0.84
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	27	674	293	123	649	24	157	194	86	0	63	50
Adj No. of Lanes	1	2	2	1	3	0	1	1	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	1511	1434	145	2445	90	318	334	247	0	157	125
Arrive On Green	0.01	0.14	0.14	0.08	0.49	0.49	0.18	0.18	0.18	0.00	0.18	0.18
Sat Flow, veh/h	1774	3539	2187	1774	5027	185	1774	1863	1377	0	882	700
Grp Volume(v), veh/h	27	674	293	123	437	236	157	194	86	0	0	113
Grp Sat Flow(s),veh/h/ln	1774	1770	1093	1774	1695	1822	1774	1863	1377	0	0	1582
Q Serve(g_s), s	2.3	26.2	12.4	10.3	11.4	11.5	11.9	14.3	8.2	0.0	0.0	9.5
Cycle Q Clear(g_c), s	2.3	26.2	12.4	10.3	11.4	11.5	11.9	14.3	8.2	0.0	0.0	9.5
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	0.00		0.44
Lane Grp Cap(c), veh/h	40	1511	1434	145	1649	886	318	334	247	0	0	282
V/C Ratio(X)	0.68	0.45	0.20	0.85	0.26	0.27	0.49	0.58	0.35	0.00	0.00	0.40
Avail Cap(c_a), veh/h	83	1511	1434	189	1649	886	461	484	358	0	0	411
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	73.9	48.2	21.1	67.9	22.7	22.7	55.4	56.4	53.9	0.0	0.0	54.5
Incr Delay (d2), s/veh	17.7	0.9	0.3	23.2	0.4	0.7	1.2	1.6	0.8	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	13.1	5.6	6.0	5.4	6.0	5.9	7.5	3.2	0.0	0.0	4.2
LnGrp Delay(d),s/veh	91.6	49.1	21.4	91.1	23.1	23.5	56.6	58.0	54.7	0.0	0.0	55.5
LnGrp LOS	F	D	C	F	C	C	E	E	D			E
Approach Vol, veh/h		994			796			437			113	
Approach Delay, s/veh		42.1			33.7			56.8			55.5	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	69.1		31.9	8.4	78.0		31.7
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	16.0	36.0		39.0	7.0	45.0		39.0
Max Q Clear Time (g_c+I1), s	12.3	28.2		16.3	4.3	13.5		11.5
Green Ext Time (p_c), s	0.1	3.6		1.8	0.0	4.6		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		42.6
HCM 2010 LOS		D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	953	475	119	680	42	406	126	103	1	79	65
Future Volume (veh/h)	45	953	475	119	680	42	406	126	103	1	79	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.90	1.00		0.96	1.00		0.64
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	47	993	495	124	708	44	277	335	107	1	82	68
Adj No. of Lanes	1	2	2	1	3	0	1	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1455	1647	144	2228	137	358	375	305	2	132	110
Arrive On Green	0.02	0.28	0.28	0.08	0.46	0.46	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1774	3539	2641	1774	4863	300	1774	1863	1513	9	731	606
Grp Volume(v), veh/h	47	993	495	124	492	260	277	335	107	151	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1320	1774	1695	1772	1774	1863	1513	1346	0	0
Q Serve(g_s), s	4.2	40.1	16.3	11.0	14.7	14.9	23.6	28.0	9.7	16.6	0.0	0.0
Cycle Q Clear(g_c), s	4.2	40.1	16.3	11.0	14.7	14.9	23.6	28.0	9.7	16.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		1.00	0.01		0.45
Lane Grp Cap(c), veh/h	61	1455	1647	144	1553	812	358	375	305	244	0	0
V/C Ratio(X)	0.78	0.68	0.30	0.86	0.32	0.32	0.77	0.89	0.35	0.62	0.00	0.00
Avail Cap(c_a), veh/h	100	1455	1647	144	1553	812	432	454	369	328	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	77.6	48.7	18.7	72.6	27.5	27.5	60.4	62.2	54.9	60.4	0.0	0.0
Incr Delay (d2), s/veh	17.8	2.5	0.4	37.6	0.5	1.0	7.1	17.3	0.7	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	20.2	9.2	6.9	7.0	7.5	12.3	16.2	4.1	6.3	0.0	0.0
LnGrp Delay(d),s/veh	95.4	51.1	19.1	110.3	28.0	28.6	67.5	79.4	55.6	63.0	0.0	0.0
LnGrp LOS	F	D	B	F	C	C	E	E	E	E		
Approach Vol, veh/h		1535			876			719			151	
Approach Delay, s/veh		42.2			39.8			71.3			63.0	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.0	70.8		37.2	10.5	78.3		34.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	13.0	49.0		39.0	9.0	53.0		39.0
Max Q Clear Time (g_c+I1), s	13.0	42.1		30.0	6.2	16.9		18.6
Green Ext Time (p_c), s	0.0	4.6		2.2	0.0	5.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	48.9
HCM 2010 LOS	D

Notes

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2027 PEAK PERIOD TRAFFIC
ANALYSIS WITHOUT PROJECT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1006	55	42	884	30	154	22	48	27	69	357
Future Volume (veh/h)	99	1006	55	42	884	30	154	22	48	27	69	357
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.72	1.00		0.61	1.00		0.67	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	101	1027	56	43	902	31	114	82	49	28	70	364
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1351	73	58	1190	41	460	236	141	130	326	394
Arrive On Green	0.07	0.28	0.28	0.03	0.24	0.24	0.26	0.26	0.26	0.25	0.25	0.25
Sat Flow, veh/h	1774	4824	262	1774	4930	168	1774	912	545	525	1312	1583
Grp Volume(v), veh/h	101	720	363	43	618	315	114	0	131	98	0	364
Grp Sat Flow(s),veh/h/ln	1774	1695	1696	1774	1695	1708	1774	0	1457	1837	0	1583
Q Serve(g_s), s	6.3	21.7	21.9	2.7	18.9	19.2	5.7	0.0	8.2	4.7	0.0	25.1
Cycle Q Clear(g_c), s	6.3	21.7	21.9	2.7	18.9	19.2	5.7	0.0	8.2	4.7	0.0	25.1
Prop In Lane	1.00		0.15	1.00		0.10	1.00		0.37	0.29		1.00
Lane Grp Cap(c), veh/h	127	949	475	58	818	412	460	0	378	457	0	394
V/C Ratio(X)	0.79	0.76	0.76	0.74	0.76	0.76	0.25	0.00	0.35	0.21	0.00	0.92
Avail Cap(c_a), veh/h	254	1366	683	143	1153	581	715	0	587	510	0	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.0	36.8	36.8	53.5	39.3	39.4	32.8	0.0	33.7	33.3	0.0	40.9
Incr Delay (d2), s/veh	10.5	1.5	3.1	16.2	1.8	3.8	0.3	0.0	0.5	0.2	0.0	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	10.3	10.7	1.6	9.1	9.4	2.8	0.0	3.3	2.4	0.0	13.5
LnGrp Delay(d),s/veh	61.6	38.3	40.0	69.8	41.1	43.3	33.0	0.0	34.2	33.5	0.0	64.9
LnGrp LOS	E	D	D	E	D	D	C		C	C		E
Approach Vol, veh/h		1184			976			245			462	
Approach Delay, s/veh		40.8			43.1			33.7			58.2	
Approach LOS		D			D			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	36.3		34.0	13.0	32.0		32.8
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	9.0	45.0		45.0	16.0	38.0		31.0
Max Q Clear Time (g_c+I1), s	4.7	23.9		10.2	8.3	21.2		27.1
Green Ext Time (p_c), s	0.0	7.4		1.2	0.1	5.7		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	43.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	1471	112	34	1188	47	180	28	55	30	76	288
Future Volume (veh/h)	241	1471	112	34	1188	47	180	28	55	30	76	288
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.64	1.00		0.63	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	246	1501	114	35	1212	48	134	98	56	31	78	294
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	2015	153	47	1457	58	368	187	107	103	260	313
Arrive On Green	0.15	0.43	0.43	0.03	0.30	0.30	0.21	0.21	0.21	0.20	0.20	0.20
Sat Flow, veh/h	1774	4737	360	1774	4899	194	1774	900	514	522	1314	1583
Grp Volume(v), veh/h	246	1074	541	35	838	422	134	0	154	109	0	294
Grp Sat Flow(s),veh/h/ln	1774	1695	1707	1774	1695	1703	1774	0	1414	1837	0	1583
Q Serve(g_s), s	19.0	37.3	37.3	2.7	32.3	32.3	9.1	0.0	13.6	7.1	0.0	25.6
Cycle Q Clear(g_c), s	19.0	37.3	37.3	2.7	32.3	32.3	9.1	0.0	13.6	7.1	0.0	25.6
Prop In Lane	1.00		0.21	1.00		0.11	1.00		0.36	0.28		1.00
Lane Grp Cap(c), veh/h	274	1442	726	47	1008	507	368	0	293	363	0	313
V/C Ratio(X)	0.90	0.74	0.75	0.74	0.83	0.83	0.36	0.00	0.53	0.30	0.00	0.94
Avail Cap(c_a), veh/h	431	1818	915	101	1188	597	368	0	293	368	0	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.0	33.8	33.8	67.6	45.9	45.9	47.5	0.0	49.3	47.8	0.0	55.3
Incr Delay (d2), s/veh	14.4	1.3	2.6	20.2	4.5	8.6	0.6	0.0	1.7	0.5	0.0	34.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	17.7	18.1	1.6	15.8	16.4	4.5	0.0	5.4	3.6	0.0	14.2
LnGrp Delay(d),s/veh	72.4	35.1	36.4	87.8	50.3	54.5	48.1	0.0	51.0	48.3	0.0	89.9
LnGrp LOS	E	D	D	F	D	D	D		D	D		F
Approach Vol, veh/h		1861			1295			288			403	
Approach Delay, s/veh		40.4			52.7			49.7			78.6	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	64.5		34.0	26.6	46.6		32.7
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	8.0	75.0		29.0	34.0	49.0		28.0
Max Q Clear Time (g_c+I1), s	4.7	39.3		15.6	21.0	34.3		27.6
Green Ext Time (p_c), s	0.0	15.3		1.1	0.6	7.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	49.2
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	947	131	83	897	60	81
Future Volume (veh/h)	947	131	83	897	60	81
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.85	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	986	136	86	934	62	84
Adj No. of Lanes	4	0	1	3	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	4336	584	107	4401	120	108
Arrive On Green	0.77	0.77	0.08	1.00	0.07	0.07
Sat Flow, veh/h	5881	756	1774	5253	1774	1583
Grp Volume(v), veh/h	840	282	86	934	62	84
Grp Sat Flow(s),veh/h/ln	1602	1570	1774	1695	1774	1583
Q Serve(g_s), s	7.3	7.5	7.1	0.0	5.1	7.8
Cycle Q Clear(g_c), s	7.3	7.5	7.1	0.0	5.1	7.8
Prop In Lane		0.48	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3708	1212	107	4401	120	108
V/C Ratio(X)	0.23	0.23	0.80	0.21	0.51	0.78
Avail Cap(c_a), veh/h	3708	1212	378	4401	343	306
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.95	1.00	1.00
Uniform Delay (d), s/veh	4.7	4.8	68.1	0.0	67.5	68.8
Incr Delay (d2), s/veh	0.1	0.5	12.3	0.1	3.4	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	3.4	3.9	0.0	2.6	3.8
LnGrp Delay(d),s/veh	4.9	5.2	80.3	0.1	70.9	80.4
LnGrp LOS	A	A	F	A	E	F
Approach Vol, veh/h	1122			1020	146	
Approach Delay, s/veh	5.0			6.9	76.3	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.1	120.7				134.8		15.2
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	32.0	74.0				111.0		29.0
Max Q Clear Time (g_c+I1), s	9.1	9.5				2.0		9.8
Green Ext Time (p_c), s	0.2	10.1				8.1		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.4
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1460	96	88	1127	139	96
Future Volume (veh/h)	1460	96	88	1127	139	96
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.82	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1521	100	92	1174	145	100
Adj No. of Lanes	4	0	1	3	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	4544	298	113	4273	173	154
Arrive On Green	0.75	0.75	0.06	0.84	0.10	0.10
Sat Flow, veh/h	6358	400	1774	5253	1774	1583
Grp Volume(v), veh/h	1198	423	92	1174	145	100
Grp Sat Flow(s),veh/h/ln	1602	1691	1774	1695	1774	1583
Q Serve(g_s), s	13.5	13.6	8.2	7.7	12.9	9.7
Cycle Q Clear(g_c), s	13.5	13.6	8.2	7.7	12.9	9.7
Prop In Lane		0.24	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3582	1260	113	4273	173	154
V/C Ratio(X)	0.33	0.34	0.81	0.27	0.84	0.65
Avail Cap(c_a), veh/h	3582	1260	288	4273	399	356
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	6.9	6.9	74.0	2.7	71.0	69.6
Incr Delay (d2), s/veh	0.3	0.7	11.7	0.1	10.3	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	6.6	4.4	3.5	6.8	4.5
LnGrp Delay(d),s/veh	7.2	7.6	85.7	2.8	81.3	74.1
LnGrp LOS	A	A	F	A	F	E
Approach Vol, veh/h	1621			1266	245	
Approach Delay, s/veh	7.3			8.8	78.4	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.2	124.2				139.4		20.6
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	26.0	83.0				114.0		36.0
Max Q Clear Time (g_c+I1), s	10.2	15.6				9.7		14.9
Green Ext Time (p_c), s	0.2	18.0				11.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	701	287	121	674	24	244	64	84	0	62	49
Future Volume (veh/h)	26	701	287	121	674	24	244	64	84	0	62	49
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.78	1.00		0.96	1.00		0.87	1.00		0.84
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	27	715	293	123	688	24	157	194	86	0	63	50
Adj No. of Lanes	1	2	2	1	3	0	1	1	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	1512	1434	145	2451	85	318	334	247	0	157	125
Arrive On Green	0.01	0.14	0.14	0.08	0.49	0.49	0.18	0.18	0.18	0.00	0.18	0.18
Sat Flow, veh/h	1774	3539	2187	1774	5039	175	1774	1863	1377	0	882	700
Grp Volume(v), veh/h	27	715	293	123	462	250	157	194	86	0	0	113
Grp Sat Flow(s),veh/h/ln	1774	1770	1093	1774	1695	1824	1774	1863	1377	0	0	1582
Q Serve(g_s), s	2.3	27.9	12.4	10.3	12.2	12.2	11.9	14.3	8.2	0.0	0.0	9.5
Cycle Q Clear(g_c), s	2.3	27.9	12.4	10.3	12.2	12.2	11.9	14.3	8.2	0.0	0.0	9.5
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	0.00		0.44
Lane Grp Cap(c), veh/h	40	1512	1434	145	1649	887	318	334	247	0	0	282
V/C Ratio(X)	0.68	0.47	0.20	0.85	0.28	0.28	0.49	0.58	0.35	0.00	0.00	0.40
Avail Cap(c_a), veh/h	83	1512	1434	177	1649	887	461	484	358	0	0	411
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	73.9	48.9	21.1	68.0	22.9	22.9	55.4	56.4	53.9	0.0	0.0	54.5
Incr Delay (d2), s/veh	17.6	1.0	0.3	26.1	0.4	0.8	1.2	1.6	0.8	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	13.9	5.6	6.1	5.8	6.4	5.9	7.5	3.2	0.0	0.0	4.2
LnGrp Delay(d),s/veh	91.5	49.9	21.4	94.1	23.3	23.7	56.6	58.0	54.7	0.0	0.0	55.5
LnGrp LOS	F	D	C	F	C	C	E	E	D			E
Approach Vol, veh/h		1035			835			437			113	
Approach Delay, s/veh		42.9			33.9			56.8			55.5	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.3	69.1		31.9	8.4	78.0		31.7
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	15.0	37.0		39.0	7.0	45.0		39.0
Max Q Clear Time (g_c+I1), s	12.3	29.9		16.3	4.3	14.2		11.5
Green Ext Time (p_c), s	0.1	3.5		1.8	0.0	4.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1010	475	119	721	42	406	126	103	1	79	65
Future Volume (veh/h)	45	1010	475	119	721	42	406	126	103	1	79	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.90	1.00		0.96	1.00		0.64
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	47	1052	495	124	751	44	277	335	107	1	82	68
Adj No. of Lanes	1	2	2	1	3	0	1	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1472	1661	135	2237	130	358	375	305	2	132	110
Arrive On Green	0.02	0.28	0.28	0.08	0.46	0.46	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1774	3539	2643	1774	4883	284	1774	1863	1513	9	731	606
Grp Volume(v), veh/h	47	1052	495	124	520	275	277	335	107	151	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1321	1774	1695	1777	1774	1863	1513	1346	0	0
Q Serve(g_s), s	4.2	42.8	16.2	11.1	15.7	15.9	23.6	28.0	9.7	16.6	0.0	0.0
Cycle Q Clear(g_c), s	4.2	42.8	16.2	11.1	15.7	15.9	23.6	28.0	9.7	16.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	0.01		0.45
Lane Grp Cap(c), veh/h	61	1472	1661	135	1553	814	358	375	305	244	0	0
V/C Ratio(X)	0.78	0.71	0.30	0.92	0.33	0.34	0.77	0.89	0.35	0.62	0.00	0.00
Avail Cap(c_a), veh/h	100	1472	1661	135	1553	814	432	454	369	328	0	0
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	77.6	49.1	18.3	73.4	27.7	27.8	60.4	62.2	54.9	60.4	0.0	0.0
Incr Delay (d2), s/veh	17.7	2.8	0.4	52.8	0.6	1.1	7.1	17.3	0.7	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	21.6	9.2	7.4	7.5	8.0	12.3	16.2	4.1	6.3	0.0	0.0
LnGrp Delay(d),s/veh	95.3	51.9	18.7	126.2	28.3	28.9	67.5	79.4	55.6	63.0	0.0	0.0
LnGrp LOS	F	D	B	F	C	C	E	E	E	E		
Approach Vol, veh/h		1594			919			719			151	
Approach Delay, s/veh		42.9			41.7			71.3			63.0	
Approach LOS		D			D			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.2	71.6		37.2	10.5	78.3		34.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	12.2	49.8		39.0	9.0	53.0		39.0				
Max Q Clear Time (g_c+I1), s	13.1	44.8		30.0	6.2	17.9		18.6				
Green Ext Time (p_c), s	0.0	3.6		2.2	0.0	5.8		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			49.5									
HCM 2010 LOS			D									
Notes												

APPENDIX E

CAPACITY ANALYSIS CALCULATIONS
PROJECTED YEAR 2027 PEAK PERIOD TRAFFIC
ANALYSIS WITH PROJECT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1120	55	42	916	30	154	22	48	27	69	357
Future Volume (veh/h)	99	1120	55	42	916	30	154	22	48	27	69	357
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.74	1.00		0.64	1.00		0.67	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	101	1143	56	43	935	31	114	82	49	28	70	364
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1457	71	57	1286	42	443	227	136	130	324	391
Arrive On Green	0.07	0.30	0.30	0.03	0.26	0.26	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1774	4876	238	1774	4953	163	1774	910	544	525	1312	1583
Grp Volume(v), veh/h	101	794	405	43	638	328	114	0	131	98	0	364
Grp Sat Flow(s),veh/h/ln	1774	1695	1724	1774	1695	1726	1774	0	1453	1837	0	1583
Q Serve(g_s), s	6.5	24.9	25.0	2.8	19.9	20.1	6.0	0.0	8.6	4.9	0.0	26.1
Cycle Q Clear(g_c), s	6.5	24.9	25.0	2.8	19.9	20.1	6.0	0.0	8.6	4.9	0.0	26.1
Prop In Lane	1.00		0.14	1.00		0.09	1.00		0.37	0.29		1.00
Lane Grp Cap(c), veh/h	127	1013	515	57	880	448	443	0	363	454	0	391
V/C Ratio(X)	0.80	0.78	0.79	0.75	0.72	0.73	0.26	0.00	0.36	0.22	0.00	0.93
Avail Cap(c_a), veh/h	245	1315	669	138	1110	565	688	0	563	491	0	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.0	37.3	37.3	55.7	39.2	39.3	34.9	0.0	35.9	34.8	0.0	42.7
Incr Delay (d2), s/veh	10.8	2.4	4.7	17.6	1.8	3.6	0.3	0.0	0.6	0.2	0.0	26.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	11.9	12.6	1.7	9.5	10.0	3.0	0.0	3.5	2.5	0.0	14.3
LnGrp Delay(d),s/veh	63.8	39.6	41.9	73.3	40.9	42.9	35.2	0.0	36.5	35.0	0.0	69.0
LnGrp LOS	E	D	D	E	D	D	D		D	C		E
Approach Vol, veh/h		1300			1009			245			462	
Approach Delay, s/veh		42.2			42.9			35.9			61.8	
Approach LOS		D			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	39.7		34.0	13.3	35.1		33.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	9.0	45.0		45.0	16.0	38.0		31.0				
Max Q Clear Time (g_c+I1), s	4.8	27.0		10.6	8.5	22.1		28.1				
Green Ext Time (p_c), s	0.0	7.7		1.2	0.1	5.7		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			45.0									
HCM 2010 LOS			D									
Notes												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	1597	112	34	1236	47	180	28	55	30	76	288
Future Volume (veh/h)	241	1597	112	34	1236	47	180	28	55	30	76	288
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.82	1.00		0.65	1.00		0.63	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	246	1630	114	35	1261	48	134	98	56	31	78	294
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	274	2051	143	47	1482	56	363	184	105	104	261	314
Arrive On Green	0.15	0.43	0.43	0.03	0.30	0.30	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1774	4777	333	1774	4916	187	1774	898	513	522	1314	1583
Grp Volume(v), veh/h	246	1156	588	35	869	440	134	0	154	109	0	294
Grp Sat Flow(s),veh/h/ln	1774	1695	1720	1774	1695	1713	1774	0	1412	1837	0	1583
Q Serve(g_s), s	19.3	41.8	42.0	2.8	34.1	34.2	9.2	0.0	13.8	7.2	0.0	25.9
Cycle Q Clear(g_c), s	19.3	41.8	42.0	2.8	34.1	34.2	9.2	0.0	13.8	7.2	0.0	25.9
Prop In Lane	1.00		0.19	1.00		0.11	1.00		0.36	0.28		1.00
Lane Grp Cap(c), veh/h	274	1456	738	47	1022	516	363	0	289	364	0	314
V/C Ratio(X)	0.90	0.79	0.80	0.75	0.85	0.85	0.37	0.00	0.53	0.30	0.00	0.94
Avail Cap(c_a), veh/h	426	1771	898	100	1149	580	363	0	289	376	0	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.8	35.0	35.0	68.5	46.5	46.5	48.5	0.0	50.3	48.4	0.0	55.9
Incr Delay (d2), s/veh	14.9	2.1	4.2	20.8	5.7	10.7	0.6	0.0	1.9	0.5	0.0	33.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	20.0	20.8	1.6	16.7	17.6	4.6	0.0	5.5	3.7	0.0	14.2
LnGrp Delay(d),s/veh	73.8	37.1	39.2	89.3	52.2	57.1	49.1	0.0	52.2	48.8	0.0	89.2
LnGrp LOS	E	D	D	F	D	E	D		D	D		F
Approach Vol, veh/h		1990			1344			288			403	
Approach Delay, s/veh		42.3			54.8			50.7			78.3	
Approach LOS		D			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.7	65.8		34.0	26.8	47.7		33.1
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	8.0	74.0		29.0	34.0	48.0		29.0
Max Q Clear Time (g_c+I1), s	4.8	44.0		15.8	21.3	36.2		27.9
Green Ext Time (p_c), s	0.0	15.7		1.1	0.6	6.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	50.7
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	981	211	83	897	92	128		
Future Volume (veh/h)	981	211	83	897	92	128		
Number	2	12	1	6	3	18		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		0.84	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	1022	220	86	934	96	133		
Adj No. of Lanes	4	0	1	3	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	3818	799	106	4237	178	159		
Arrive On Green	0.74	0.74	0.12	1.00	0.10	0.10		
Sat Flow, veh/h	5421	1080	1774	5253	1774	1583		
Grp Volume(v), veh/h	950	292	86	934	96	133		
Grp Sat Flow(s),veh/h/ln	1602	1434	1774	1695	1774	1583		
Q Serve(g_s), s	9.6	10.0	7.1	0.0	7.7	12.4		
Cycle Q Clear(g_c), s	9.6	10.0	7.1	0.0	7.7	12.4		
Prop In Lane		0.75	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	3556	1061	106	4237	178	159		
V/C Ratio(X)	0.27	0.28	0.81	0.22	0.54	0.84		
Avail Cap(c_a), veh/h	3556	1061	319	4237	390	348		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.95	0.95	1.00	1.00		
Uniform Delay (d), s/veh	6.3	6.4	65.2	0.0	64.2	66.3		
Incr Delay (d2), s/veh	0.2	0.6	12.8	0.1	2.5	11.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.3	4.1	3.9	0.0	3.9	5.9		
LnGrp Delay(d),s/veh	6.5	7.0	78.0	0.1	66.7	77.4		
LnGrp LOS	A	A	E	A	E	E		
Approach Vol, veh/h	1242			1020	229			
Approach Delay, s/veh	6.6			6.7	72.9			
Approach LOS	A			A	E			
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.0	116.0				130.0		20.0
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	27.0	75.0				107.0		33.0
Max Q Clear Time (g_c+I1), s	9.1	12.0				2.0		14.4
Green Ext Time (p_c), s	0.2	12.0				8.1		0.6
Intersection Summary								
HCM 2010 Ctrl Delay			12.7					
HCM 2010 LOS			B					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1498	184	88	1127	187	169
Future Volume (veh/h)	1498	184	88	1127	187	169
Number	2	12	1	6	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.82	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1560	192	92	1174	195	176
Adj No. of Lanes	4	0	1	3	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	4044	497	113	4113	228	204
Arrive On Green	0.71	0.71	0.06	0.81	0.13	0.13
Sat Flow, veh/h	5925	696	1774	5253	1774	1583
Grp Volume(v), veh/h	1323	429	92	1174	195	176
Grp Sat Flow(s),veh/h/ln	1602	1554	1774	1695	1774	1583
Q Serve(g_s), s	17.4	17.4	8.2	9.2	17.2	17.4
Cycle Q Clear(g_c), s	17.4	17.4	8.2	9.2	17.2	17.4
Prop In Lane		0.45	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	3432	1110	113	4113	228	204
V/C Ratio(X)	0.39	0.39	0.82	0.29	0.85	0.86
Avail Cap(c_a), veh/h	3432	1110	255	4113	444	396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	9.0	9.0	74.0	3.8	68.2	68.3
Incr Delay (d2), s/veh	0.3	1.0	11.8	0.2	8.8	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	7.7	4.4	4.3	9.0	8.2
LnGrp Delay(d),s/veh	9.4	10.0	85.8	4.0	77.1	78.7
LnGrp LOS	A	B	F	A	E	E
Approach Vol, veh/h	1752			1266	371	
Approach Delay, s/veh	9.5			9.9	77.9	
Approach LOS	A			A	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	15.2	119.2				134.4		25.6
Change Period (Y+Rc), s	5.0	5.0				5.0		5.0
Max Green Setting (Gmax), s	23.0	82.0				110.0		40.0
Max Q Clear Time (g_c+I1), s	10.2	19.4				11.2		19.4
Green Ext Time (p_c), s	0.1	20.8				11.3		1.1

Intersection Summary		
HCM 2010 Ctrl Delay		17.1
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	748	287	121	674	24	244	64	84	0	62	49
Future Volume (veh/h)	26	748	287	121	674	24	244	64	84	0	62	49
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.78	1.00		0.96	1.00		0.87	1.00		0.84
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	27	763	293	123	688	24	157	194	86	0	63	50
Adj No. of Lanes	1	2	2	1	3	0	1	1	1	0	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	1512	1435	145	2451	85	318	334	247	0	157	125
Arrive On Green	0.01	0.14	0.14	0.08	0.49	0.49	0.18	0.18	0.18	0.00	0.18	0.18
Sat Flow, veh/h	1774	3539	2187	1774	5039	175	1774	1863	1377	0	882	700
Grp Volume(v), veh/h	27	763	293	123	462	250	157	194	86	0	0	113
Grp Sat Flow(s),veh/h/ln	1774	1770	1093	1774	1695	1824	1774	1863	1377	0	0	1582
Q Serve(g_s), s	2.3	29.9	12.4	10.3	12.2	12.2	11.9	14.3	8.2	0.0	0.0	9.5
Cycle Q Clear(g_c), s	2.3	29.9	12.4	10.3	12.2	12.2	11.9	14.3	8.2	0.0	0.0	9.5
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	0.00		0.44
Lane Grp Cap(c), veh/h	40	1512	1435	145	1649	887	318	334	247	0	0	282
V/C Ratio(X)	0.68	0.50	0.20	0.85	0.28	0.28	0.49	0.58	0.35	0.00	0.00	0.40
Avail Cap(c_a), veh/h	83	1512	1435	167	1649	887	461	484	358	0	0	411
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	73.9	49.7	21.0	68.0	22.9	22.9	55.4	56.4	53.9	0.0	0.0	54.5
Incr Delay (d2), s/veh	17.3	1.2	0.3	29.0	0.4	0.8	1.2	1.6	0.8	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	14.9	5.6	6.2	5.8	6.4	5.9	7.5	3.2	0.0	0.0	4.2
LnGrp Delay(d),s/veh	91.2	50.9	21.4	97.0	23.3	23.7	56.6	58.0	54.7	0.0	0.0	55.5
LnGrp LOS	F	D	C	F	C	C	E	E	D			E
Approach Vol, veh/h		1083			835			437			113	
Approach Delay, s/veh		43.9			34.3			56.8			55.5	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	69.1		31.9	8.4	78.0		31.7
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	14.1	37.9		39.0	7.0	45.0		39.0
Max Q Clear Time (g_c+I1), s	12.3	31.9		16.3	4.3	14.2		11.5
Green Ext Time (p_c), s	0.0	3.2		1.8	0.0	4.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	43.5
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1083	475	119	721	42	406	126	103	1	79	65
Future Volume (veh/h)	45	1083	475	119	721	42	406	126	103	1	79	65
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.90	1.00		0.96	1.00		0.64
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	47	1128	495	124	751	44	277	335	107	1	82	68
Adj No. of Lanes	1	2	2	1	3	0	1	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1486	1671	129	2237	130	358	375	305	2	132	110
Arrive On Green	0.01	0.14	0.14	0.07	0.46	0.46	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1774	3539	2644	1774	4883	284	1774	1863	1513	9	731	606
Grp Volume(v), veh/h	47	1128	495	124	520	275	277	335	107	151	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1322	1774	1695	1777	1774	1863	1513	1346	0	0
Q Serve(g_s), s	4.2	49.1	18.0	11.2	15.7	15.9	23.6	28.0	9.7	16.6	0.0	0.0
Cycle Q Clear(g_c), s	4.2	49.1	18.0	11.2	15.7	15.9	23.6	28.0	9.7	16.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	0.01		0.45
Lane Grp Cap(c), veh/h	61	1486	1671	129	1553	814	358	375	305	244	0	0
V/C Ratio(X)	0.77	0.76	0.30	0.96	0.33	0.34	0.77	0.89	0.35	0.62	0.00	0.00
Avail Cap(c_a), veh/h	100	1486	1671	129	1553	814	432	454	369	328	0	0
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	78.5	61.1	22.1	74.0	27.8	27.8	60.4	62.2	54.9	60.4	0.0	0.0
Incr Delay (d2), s/veh	16.9	3.3	0.4	68.0	0.6	1.1	7.1	17.3	0.7	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	24.8	10.2	7.9	7.5	8.0	12.3	16.2	4.1	6.3	0.0	0.0
LnGrp Delay(d),s/veh	95.4	64.4	22.5	142.0	28.3	28.9	67.5	79.4	55.6	63.0	0.0	0.0
LnGrp LOS	F	E	C	F	C	C	E	E	E	E		
Approach Vol, veh/h		1670			919			719			151	
Approach Delay, s/veh		52.9			43.9			71.3			63.0	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.6	72.2		37.2	10.5	78.3		34.0
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	11.6	50.4		39.0	9.0	53.0		39.0
Max Q Clear Time (g_c+I1), s	13.2	51.1		30.0	6.2	17.9		18.6
Green Ext Time (p_c), s	0.0	0.0		2.2	0.0	5.8		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	54.8
HCM 2010 LOS	D

Notes

Appendix J

Park Hotels and Resorts – Ala Moana Boulevard Tower: Sidewalk Assessment
Wilson Okamoto Corporation
April 6, 2022

10418-02
April 6, 2022

Mr. Jeffrey H. Overton
Group 70 International, Inc. dba G70
111 S. King Street, Suite 170
Honolulu, HI 96813

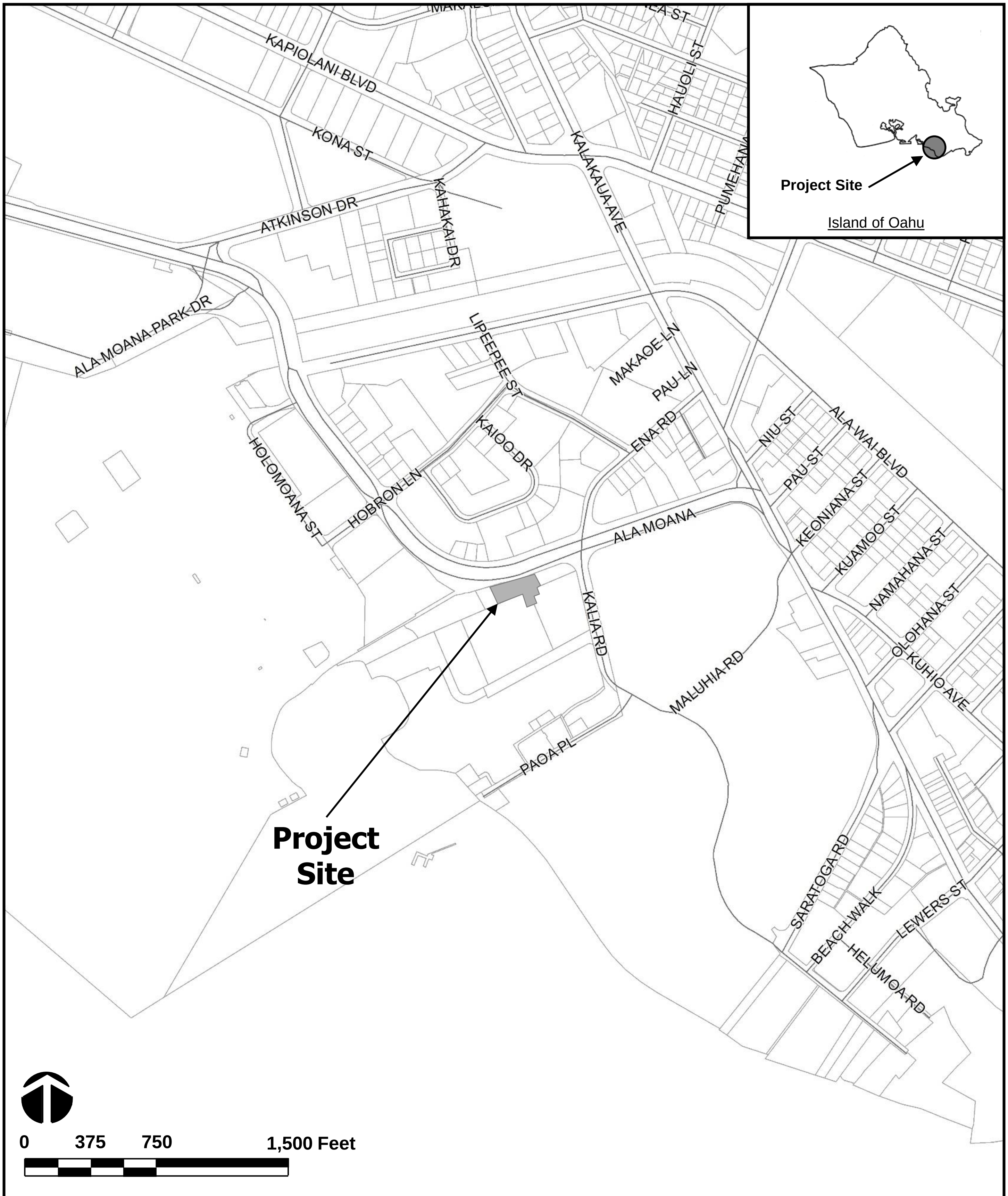
Subject: Park Hotels and Resorts—Ala Moana Boulevard Tower: Sidewalk Assessment

Dear Mr. Overton,

As requested, we have conducted a pedestrian assessment of the sidewalk along Ala Moana Boulevard fronting the proposed Park Hotels and Resorts development in Waikiki on the island of Oahu. The following is a summary of our assessment.

Project Description and Location

The project site for the proposed Park Hotels and Resorts project is located in Waikiki on the island of Oahu and is bounded by Ala Moana Boulevard to the north, the existing Hilton Hawaiian Village (HHV) to the east, south, and west (see Figure 1). The project site is further identified as Tax Map Keys (TMKs): 2-6-009: 004-006 and is currently comprised of buildings that include a mix of restaurant, retail, and other commercial uses. The proposed project entails the replacement of these buildings with a new hotel tower that will include 515 hotel rooms and retail space. The retail space is expected to provide a larger retail space for an existing ABC store that is being relocated in connection with the proposed redevelopment. In conjunction with the proposed project, the existing driveways off Ala Moana Boulevard serving the current uses will be replaced by two new one-way driveways connected by a porte cochere with the sidewalk fronting the project site expected to be maintained at 8 feet wide. Parking for the hotel, valet and self-parking, is expected to be accommodated within the existing, adjacent HHV parking garage. The project is expected to be completed by Year 2027. Figure 2 shows the project site plan.

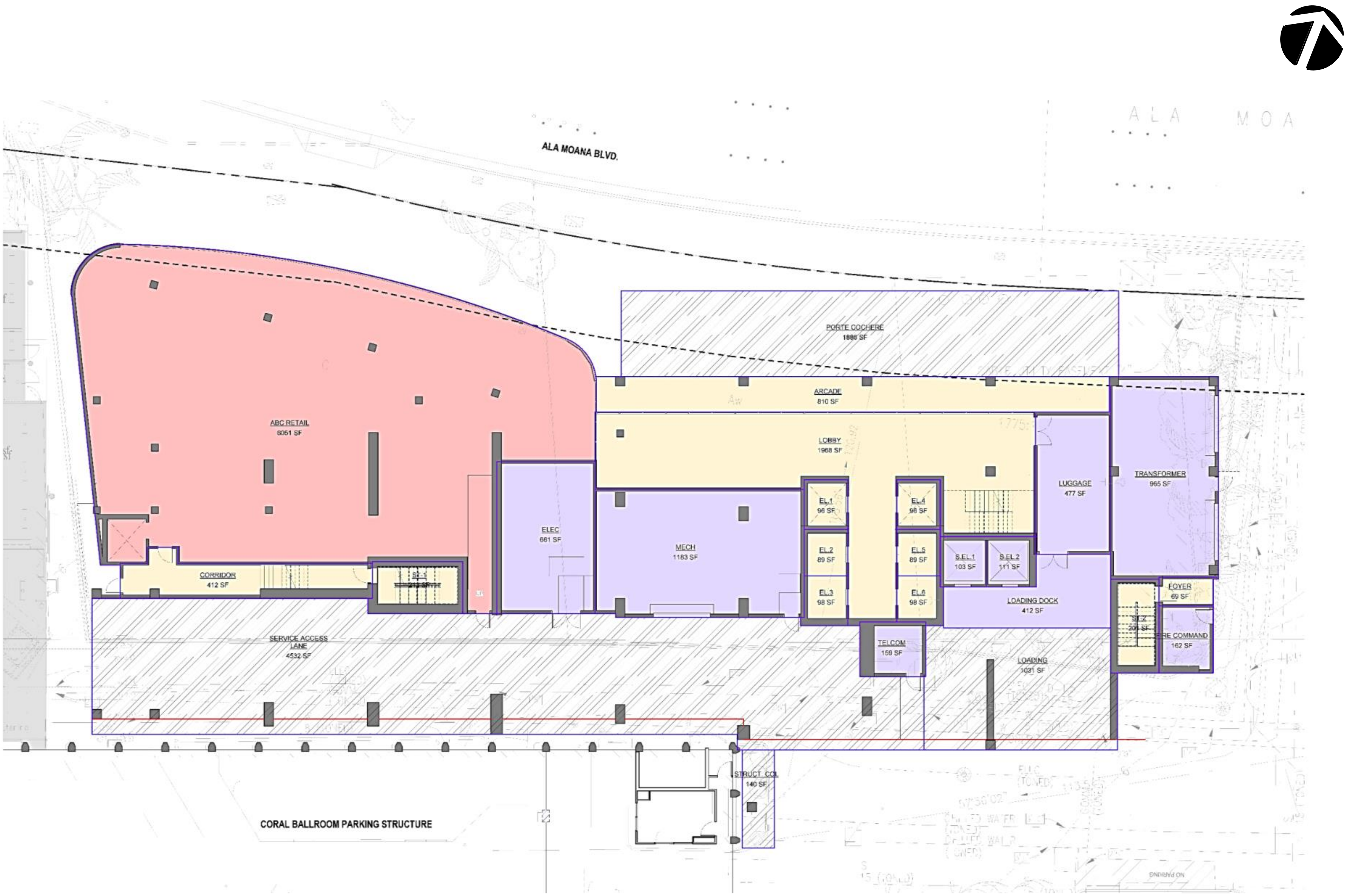


WILSON OKAMOTO CORPORATION

PARK HOTELS AND RESORTS

LOCATION MAP AND VICINITY MAP

FIGURE 1



WILSON OKAMOTO CORPORATION

PARK HOTELS AND RESORTS

SITE PLAN

FIGURE 2

Baseline Conditions

Field Investigations and Traffic Data

Field investigations were conducted in January 2022 and consisted of a geometric survey of the existing pedestrian facilities in the vicinity of the project. The traffic data used for the purpose of the analysis is based on pedestrian counts collected in Year 2017. The pedestrian count surveys were conducted during the morning peak hours between 6:00 AM and 9:00 AM, and the afternoon peak hours between 3:00 PM and 6:00 PM at the following intersections:

- Ala Moana Boulevard and Kahanamoku Street
- Ala Moana Boulevard and Kalia Road/Ena Road

More recent traffic data is unavailable and unable to be collected at this time due to the ongoing COVID-19 pandemic that has resulted in significantly decreased traffic volumes and shifted travel patterns. The State of Hawaii Department of Transportation (HDOT) has been tracking traffic volumes along the major roadways and their traffic data indicates that, in general, traffic volumes in the vicinity of the project are still less than Year 2019 pre-COVID-19 volumes, including pedestrian demands in the region. As such, the available traffic data was assumed to be representative of current baseline conditions. It should be noted that for the purpose of this report, the traffic count data from the PM peak period was used since pedestrian volumes are higher during this peak period.

Pedestrian Analysis Methodology

The pedestrian operational analysis performed in this study is based upon the procedures presented in the "Highway Capacity Manual" (HCM), Transportation Research Board, 2010. Pedestrian volumes and specific environmental conditions related to the effective walkway widths were used to determine pedestrian levels of service (PLOS) ratings. The effective width of walkway or a sidewalk is the portion of a walkway that can be used by pedestrians exclusive of any obstructions and the associated shy distances for the adjacent roadway and buildings. Table 1 shows the variety of typical walkway obstructions as shown in the HCM.

Table 1: Typical Fixed-Object Effective Widths

Fixed Object	Effective Width (ft)
Street Furniture	
Light pole	2.5–3.5
Traffic signal poles and boxes	3.0–4.0
Fire alarm boxes	2.5–3.5
Fire hydrants	2.5–3.0
Traffic signs	2.0–2.5
Parking meters	2.0
Mail boxes (1.7 ft x 1.7 ft)	3.2–3.7
Telephone booths (2.7 ft x 2.7 ft)	4.0
Trash cans (1.8 ft diameter)	3.0
Benches	5.0
Bus shelters (on sidewalk)	6.0–7.0
Public Underground Access	
Subway stairs	5.5–7.0
Subway ventilation gratings (raised)	6.0+
Transformer vault ventilation gratings (raised)	6.0+
Landscaping	
Trees	3.0–4.0
Planter boxes	5.0
Commercial Uses	
Newsstands	4.0–13.0
Vending stands	Variable
Advertising and store displays	Variable
Sidewalk cafés (two rows of tables)	7.0
Building Protrusions	
Columns	2.5–3.0
Stoops	2.0–6.0
Cellar doors	5.0–7.0
Standpipe connections	1.0
Awning poles	2.5
Truck docks (trucks protruding)	Variable
Garage entrance/exit	Variable
Driveways	Variable

Source: Pushkarev and Zupan (9).

Source: Pushkarev and Zupan as cited in the *Highway Capacity Manual,* 2010

In addition, the effective width of a walkway is also affected by shy distances, the buffer that pedestrians give themselves from linear objects along the walkway such as curbs and buildings (see Figure 2).

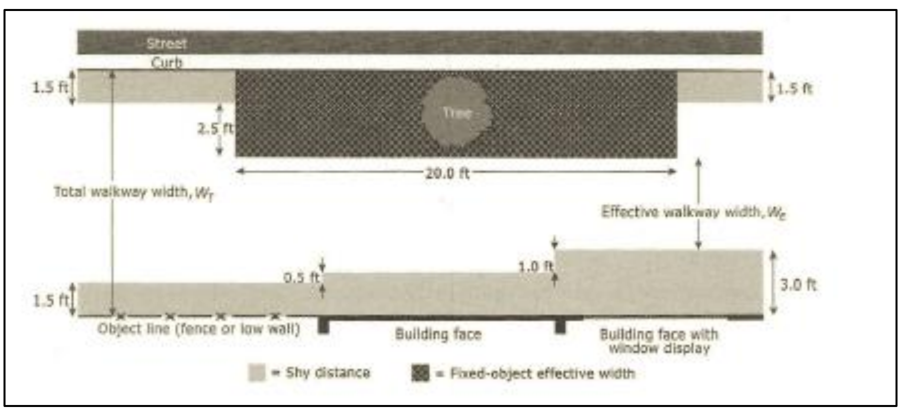


Figure 2. Typical Shy Distances and Width Adjustments for Fixed-Objects
Source: Highway Capacity Manual, 2010

The PLOS rating, generally similar to vehicular operating LOS designations, identifies the operational characteristics of a pedestrian facility as PLOS A through PLOS F, where PLOS A representing ideal operating conditions and PLOS F representing undesirable pedestrian conditions. PLOS definitions are included in the attachments.

Baseline Peak Hour Pedestrian Conditions

The existing pedestrian sidewalk along the proposed project site frontage on Ala Moana Boulevard includes an 8-feet wide pedestrian sidewalk. Taking into account the existing shy distances from the roadway, adjacent buildings, and walkway obstructions, the maximum effective sidewalk width along this segment of Ala Moana Boulevard is between 3.5 feet and 4 feet. During the PM peak hour, there are approximately 702 pedestrians utilizing this segment of sidewalk along Ala Moana Boulevard between Kahanamoku Street and Kalia Road. The PLOS for this sidewalk segment is PLOS “A” under baseline conditions which indicates that there is more than sufficient room for pedestrians to freely move in their desired path without needing to adjust their movements in response to other pedestrians along the walkway.

Projected Conditions

Projected Pedestrian Volumes

As included in the Traffic Impact Analysis Report (TIAR) for the project, the trip generation calculations for the project were based on the accepted techniques included in the “Trip Generation, 10th Edition,” 2017 published by the Institute of Transportation Engineers (ITE). ITE trip generation rates are developed empirically by correlating the vehicle trip generation data with various land use characteristics such as the number of vehicle trips generated per hotel room. It should be noted that the current ITE Trip Generation manual is based primarily on vehicle trips as there is limited data on project-specific trip generation based on person trips. However, trip generation rates based on vehicle trips may be converted to person trips by transportation mode using the applicable mode share and vehicle occupancy information representing conditions associated with the characteristics of the study area. The vehicular capacity analysis included in the TIAR assumed a lower proportion of the project-generated trips attributable to non-motorized modes and transit use to provide a more conservative assessment of the project’s potential impact on vehicular traffic operations. For the purpose of this report and as an industry-standard practice, a higher multimodal share was assumed given the density of attractive destinations in the vicinity to represent a more conservative multimodal assessment. As such, approximately 80% of the total person trips associated with the project were assumed to be attributable to non-motorized mode. The pedestrian volumes encompass trips attributable to alternative modes of transportation such as walking and bicycles and transit use in the vicinity. Table 2 below summarizes the pedestrian trips associated with the proposed project during the PM peak period.

Table 2: PM Peak Hour Trip Generation (Person-Trips)

	PROJECTED TRIPS
ENTER	190
EXIT	181
TOTAL	371

The site-generated pedestrian trips were superimposed over the existing pedestrian volumes to obtain projected demands along the sidewalk on Ala Moana Boulevard between Kahanamoku Street and Kalia Road with the completion of the proposed project. During the PM peak period, a total of 371 additional pedestrians are expected to be generated as a result of the proposed project with a cumulative total of 1,073 pedestrians expected along Ala Moana Boulevard adjacent to the project site.

Pedestrian LOS with Project

As previously discussed, the existing sidewalk fronting the proposed project site along Ala Moana Boulevard is expected to be maintained at 8 feet wide. Under projected conditions, the maximum effective sidewalk width along the project frontage on Ala Moana Boulevard is expected to be approximately 5 feet accounting for shy distances from the roadway and planned landscaping and retaining wall between the sidewalk and the porte cochere. With the proposed project and the anticipated increase in pedestrian traffic, the walkway segment fronting the project site is expected to operate at a slightly lower but similar “PLOS A”.

<u>Recommendations and Conclusions</u>

The proposed Park Hotels and Resorts project entails the redevelopment of existing uses to provide a new hotel tower with retail space. The project site frontage will be modified to provide new driveways and a porte cochere with the sidewalks fronting the project expected to be maintained at 8 feet wide. With the proposed project and the anticipated increase in pedestrian traffic, the 8-foot sidewalk width along Ala Moana Boulevard fronting the project site is expected to operate at a slightly lower “PLOS A”, therefore, no significant adverse impacts are anticipated. As such, it is recommended that the existing 8-foot sidewalk width along this segment of Ala Moana Boulevard be maintained with the project to provide an improved alignment and operating conditions for pedestrians adjacent to the project site. Finally, there may be plans to provide a bus/trolley stop west of the project site that may impact the width and connections to the sidewalk segment in the vicinity of that transit stop. Coordination with the entity(ies) implementing this improvement is recommended to ensure continuity of the pedestrian environment provided by the Park Hotels and Resorts development in the event that the bus/trolley stop is constructed.

Should you have any questions, please contact me at 808-946-2277.

Sincerely,

Cathy Leong, P.E.

Enclosures: Traffic Count Data
PLOS Definitions
Calculations

Wilson Okamoto Corporation

1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: JB, EV
Counters: TU-0652, TU-0653
Weather: Clear

File Name : ALA KAH AM
Site Code : 00000002
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	Southbound	ALA MOANA BOULEVARD Westbound					KAHANAMOKU STREET Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	13	79	0	1	93	10	0	8	19	37	0	78	24	0	102	232
06:15 AM	0	13	87	0	0	100	13	0	13	18	44	0	115	23	0	138	282
06:30 AM	0	10	111	0	0	121	19	0	16	60	95	0	144	37	0	181	397
06:45 AM	0	17	131	0	0	148	19	0	16	51	86	0	202	32	0	234	468
Total	0	53	408	0	1	462	61	0	53	148	262	0	539	116	0	655	1379
07:00 AM	0	14	168	0	0	182	23	0	14	62	99	0	172	43	0	215	496
07:15 AM	0	20	202	0	1	223	14	0	19	67	100	0	228	44	0	272	595
07:30 AM	0	17	201	0	0	218	17	0	15	79	111	0	214	27	0	241	570
07:45 AM	0	24	196	0	1	221	13	0	21	107	141	0	197	31	0	228	590
Total	0	75	767	0	2	844	67	0	69	315	451	0	811	145	0	956	2251
08:00 AM	0	22	214	0	0	236	16	0	26	116	158	0	209	29	1	239	633
08:15 AM	0	20	174	0	2	196	19	0	21	85	125	0	174	27	0	201	522
08:30 AM	0	22	159	0	0	181	21	0	24	97	142	0	209	16	0	225	548
08:45 AM	0	15	196	1	2	214	15	0	19	108	142	0	190	32	1	223	579
Total	0	79	743	1	4	827	71	0	90	406	567	0	782	104	2	888	2282
Grand Total	0	207	1918	1	7	2133	199	0	212	869	1280	0	2132	365	2	2499	5912
Apprch %		9.7	89.9	0	0.3		15.5	0	16.6	67.9		0	85.3	14.6	0.1		
Total %	0	3.5	32.4	0	0.1	36.1	3.4	0	3.6	14.7	21.7	0	36.1	6.2	0	42.3	

	Southbound	ALA MOANA BOULEVARD Westbound				KAHANAMOKU STREET Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	20	202	0	222	14	0	19	33	0	228	44	272	527
07:30 AM	0	17	201	0	218	17	0	15	32	0	214	27	241	491
07:45 AM	0	24	196	0	220	13	0	21	34	0	197	31	228	482
08:00 AM	0	22	214	0	236	16	0	26	42	0	209	29	238	516
Total Volume	0	83	813	0	896	60	0	81	141	0	848	131	979	2016
% App. Total		9.3	90.7	0		42.6	0	57.4		0	86.6	13.4		
PHF	.000	.865	.950	.000	.949	.882	.000	.779	.839	.000	.930	.744	.900	.956

Wilson Okamoto Corporation

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Honolulu, HI 96826

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File Name : ALA KAH PM
Site Code : 00000002
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	Southbound	ALA MOANA BOULEVARD Westbound					KAHANAMOKU STREET Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	0	19	219	0	0	238	24	0	36	109	169	0	291	24	0	315	722
03:15 PM	0	15	224	0	1	240	24	0	28	133	185	0	281	20	0	301	726
03:30 PM	0	15	222	0	0	237	29	0	32	159	220	0	290	15	2	307	764
03:45 PM	0	18	213	0	0	231	38	0	18	174	230	0	293	25	4	322	783
Total	0	67	878	0	1	946	115	0	114	575	804	0	1155	84	6	1245	2995
04:00 PM	0	17	237	0	0	254	37	0	26	162	225	0	311	21	0	332	811
04:15 PM	0	19	251	0	0	270	41	0	42	123	206	0	300	27	0	327	803
04:30 PM	0	23	285	0	0	308	36	0	15	153	204	0	307	30	4	341	853
04:45 PM	0	29	249	0	0	278	25	0	13	131	169	0	280	18	1	299	746
Total	0	88	1022	0	0	1110	139	0	96	569	804	0	1198	96	5	1299	3213
05:00 PM	0	12	232	0	3	247	29	0	28	196	253	0	316	16	0	332	832
05:15 PM	0	21	249	0	1	271	29	0	41	126	196	0	269	19	2	290	757
05:30 PM	0	21	213	0	5	239	24	0	27	238	289	0	279	23	2	304	832
05:45 PM	0	15	206	0	2	223	18	0	28	142	188	0	274	22	0	296	707
Total	0	69	900	0	11	980	100	0	124	702	926	0	1138	80	4	1222	3128
Grand Total	0	224	2800	0	12	3036	354	0	334	1846	2534	0	3491	260	15	3766	9336
Apprch %		7.4	92.2	0	0.4		14	0	13.2	72.8		0	92.7	6.9	0.4		
Total %	0	2.4	30	0	0.1	32.5	3.8	0	3.6	19.8	27.1	0	37.4	2.8	0.2	40.3	

	Southbound	ALA MOANA BOULEVARD Westbound				KAHANAMOKU STREET Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:00 PM														
04:00 PM	0	17	237	0	254	37	0	26	63	0	311	21	332	649
04:15 PM	0	19	251	0	270	41	0	42	83	0	300	27	327	680
04:30 PM	0	23	285	0	308	36	0	15	51	0	307	30	337	696
04:45 PM	0	29	249	0	278	25	0	13	38	0	280	18	298	614
Total Volume	0	88	1022	0	1110	139	0	96	235	0	1198	96	1294	2639
% App. Total		7.9	92.1	0		59.1	0	40.9		0	92.6	7.4		
PHF	.000	.759	.896	.000	.901	.848	.000	.571	.708	.000	.963	.800	.960	.948

Wilson Okamoto Corporation
1907 S. Beretania Street, Suite 400
Honolulu, HI 96826

Counted By: DY, BE
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Weather: Clear

File Name : ALA KAL ENA AM
Site Code : 00000003
Start Date : 9/5/2017
Page No : 1

Groups Printed- Unshifted

	ENA ROAD Southbound					ALA MOANA BOULEVARD Westbound					KALIA ROAD Northbound					ALA MOANA BOULEVARD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	18	9	7	34	14	53	3	4	74	22	7	5	1	35	4	57	26	32	119	262
06:15 AM	1	20	6	18	45	22	56	5	12	95	30	13	7	6	56	2	87	35	30	154	350
06:30 AM	9	23	3	10	45	29	58	10	9	106	45	21	5	0	71	3	90	47	46	186	408
06:45 AM	0	31	14	28	73	26	76	5	6	113	47	19	15	9	90	3	137	67	61	268	544
Total	10	92	32	63	197	91	243	23	31	388	144	60	32	16	252	12	371	175	169	727	1564
07:00 AM	0	24	16	20	60	27	93	9	15	144	60	26	18	16	120	4	115	62	53	234	558
07:15 AM	0	16	5	18	39	27	136	6	13	182	62	26	16	24	128	2	155	91	74	322	671
07:30 AM	0	17	15	27	59	25	110	8	29	172	63	10	27	20	120	7	165	74	81	327	678
07:45 AM	0	17	16	29	62	33	133	6	12	184	63	8	23	14	108	7	152	54	72	285	639
Total	0	74	52	94	220	112	472	29	69	682	248	70	84	74	476	20	587	281	280	1168	2546
08:00 AM	0	12	13	21	46	36	140	4	6	186	56	20	18	20	114	10	163	68	106	347	693
08:15 AM	0	11	15	48	74	15	117	16	13	161	48	16	11	9	84	6	145	53	136	340	659
08:30 AM	0	11	10	26	47	40	111	11	9	171	51	23	23	34	131	9	174	76	102	361	710
08:45 AM	1	12	23	43	79	37	112	5	6	160	60	24	14	23	121	8	150	49	117	324	684
Total	1	46	61	138	246	128	480	36	34	678	215	83	66	86	450	33	632	246	461	1372	2746
Grand Total	11	212	145	295	663	331	1195	88	134	1748	607	213	182	176	1178	65	1590	702	910	3267	6856
Apprch %	1.7	32	21.9	44.5		18.9	68.4	5	7.7		51.5	18.1	15.4	14.9		2	48.7	21.5	27.9		
Total %	0.2	3.1	2.1	4.3	9.7	4.8	17.4	1.3	2	25.5	8.9	3.1	2.7	2.6	17.2	0.9	23.2	10.2	13.3	47.7	

	ENA ROAD Southbound				ALA MOANA BOULEVARD Westbound				KALIA ROAD Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	16	5	21	27	136	6	169	62	26	16	104	2	155	91	248	542
07:30 AM	0	17	15	32	25	110	8	143	63	10	27	100	7	165	74	246	521
07:45 AM	0	17	16	33	33	133	6	172	63	8	23	94	7	152	54	213	512
08:00 AM	0	12	13	25	36	140	4	180	56	20	18	94	10	163	68	241	540
Total Volume	0	62	49	111	121	519	24	664	244	64	84	392	26	635	287	948	2115
% App. Total	0	55.9	44.1		18.2	78.2	3.6		62.2	16.3	21.4		2.7	67	30.3		
PHF	.000	.912	.766	.841	.840	.927	.750	.922	.968	.615	.778	.942	.650	.962	.788	.956	.976

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
03:00 PM	1	9	14	33	57	37	139	11	7	194	75	29	22	20	146	12	182	79	73	346	743
03:15 PM	1	20	22	5	48	22	85	11	4	122	105	21	27	21	174	7	244	105	82	438	782
03:30 PM	1	27	14	24	66	32	133	11	0	176	91	22	29	22	164	13	191	98	83	385	791
03:45 PM	0	20	16	27	63	23	104	9	7	143	111	22	26	12	171	9	235	109	84	437	814
Total	3	76	66	89	234	114	461	42	18	635	382	94	104	75	655	41	852	391	322	1606	3130
04:00 PM	0	16	19	35	70	22	97	22	4	145	104	42	33	23	202	14	241	137	105	497	914
04:15 PM	0	20	16	44	80	40	120	3	0	163	95	28	21	5	149	15	224	112	72	423	815
04:30 PM	1	23	14	25	63	34	152	8	4	198	96	34	23	3	156	7	216	117	116	456	873
04:45 PM	2	16	15	69	102	27	95	7	9	138	94	26	22	17	159	11	232	104	109	456	855
Total	3	75	64	173	315	123	464	40	17	644	389	130	99	48	666	47	913	470	402	1832	3457
05:00 PM	0	10	13	31	54	24	81	4	8	117	96	18	23	21	158	8	242	75	60	385	714
05:15 PM	0	9	13	70	92	18	116	7	5	146	95	20	23	16	154	16	241	100	122	479	871
05:30 PM	2	17	16	18	53	22	101	4	8	135	63	23	23	0	109	16	210	102	73	401	698
05:45 PM	4	20	13	40	77	15	84	13	2	114	70	27	16	22	135	13	224	89	95	421	747
Total	6	56	55	159	276	79	382	28	23	512	324	88	85	59	556	53	917	366	350	1686	3030
Grand Total	12	207	185	421	825	316	1307	110	58	1791	1095	312	288	182	1877	141	2682	1227	1074	5124	9617
Apprch %	1.5	25.1	22.4	51		17.6	73	6.1	3.2		58.3	16.6	15.3	9.7		2.8	52.3	23.9	21		
Total %	0.1	2.2	1.9	4.4	8.6	3.3	13.6	1.1	0.6	18.6	11.4	3.2	3	1.9	19.5	1.5	27.9	12.8	11.2	53.3	

	ENA ROAD Southbound				ALA MOANA BOULEVARD Westbound				KALIA ROAD Northbound				ALA MOANA BOULEVARD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	20	16	36	23	104	9	136	111	22	26	159	9	235	109	353	684
04:00 PM	0	16	19	35	22	97	22	141	104	42	33	179	14	241	137	392	747
04:15 PM	0	20	16	36	40	120	3	163	95	28	21	144	15	224	112	351	694
04:30 PM	1	23	14	38	34	152	8	194	96	34	23	153	7	216	117	340	725
Total Volume	1	79	65	145	119	473	42	634	406	126	103	635	45	916	475	1436	2850
% App. Total	0.7	54.5	44.8		18.8	74.6	6.6		63.9	19.8	16.2		3.1	63.8	33.1		
PHF	.250	.859	.855	.954	.744	.778	.477	.817	.914	.750	.780	.887	.750	.950	.867	.916	.954

LEVEL OF SERVICE DEFINITIONS

PEDESTRIAN LEVEL-OF-SERVICE CRITERIA FOR WALKWAYS

The following descriptors show the LOS criteria for exclusive pedestrian walkways.

At LOS A, pedestrians freely move in the desired path without needing to adjust their movements in response to pedestrians. Walking speeds are freely selected and conflicts between pedestrians are unlikely. This level represents an average space of greater than 60 ft^2/p.

At LOS B there is sufficient area for pedestrians to select walking speeds freely to bypass other pedestrians and avoid crossing conflicts. At this level, pedestrians must occasionally adjust his/her path to avoid conflicts. This level represents an average space greater than 40 ft^2/p and up to 60 ft^2/p.

At LOS C there is sufficient space for normal walking speeds, and for bypassing other pedestrians. Crossing movements may cause minor conflicts and pedestrian must frequently adjust his/her path to avoid conflicts. This level represents an average space greater than 24 ft^2/p and up to 40 ft^2/p.

At LOS D the pedestrian's speed and ability to pass slower pedestrians are restricted. There is a high probability of conflict requiring frequent changes in speed and position. This level represents an average space greater than 15 ft^2/p up and up to 24 ft^2/p.

At LOS E the pedestrian's speed is restricted, resulting in a limited ability and capacity to pass slower pedestrians. This level represents an average space greater than 8 ft^2/p and up to 15 ft^2/p.

At LOS F the pedestrian's speed is severely restricted, resulting in frequent contact with other users. This level represents an average space less than 8 ft^2/p.

"Highway Capacity Manual," Transportation Research Board, 2010.

PLOS Calculations

		Existing				Future Conditions			
			Unit						
Ped Flow Rate	V_{ped}	702	p/hr			V_{ped}	1073	p/hr	
Effective Width	W_E	3.5	ft			W_E	5	ft	
Ped Flow Rate per unit width	V_p	3.3	p/ft/min			V_p	3.5	p/ft/min	
Ped Walking Speed	S_p	3.5	ft/s			S_p	3.5	ft/s	
Pedestrian Space	A_p	63	ft^2/p	LOS A		A_p	60	ft^2/p	LOS A

Formulas	Vp	Vped/(60*WE)	60*(Sp/Ap)
	Ap	60*(Sp/Vp)	
	WE	Vped/60*Vp	(Vped*AP)/(3600*Sp)

Appendix K

Hilton Hawaiian Village AMB Tower
Preliminary Engineering Report
BCH, a Bowers + Kubota Consulting, Inc.
Company.
February 2023

HILTON HAWAIIAN VILLAGE AMB TOWER

PRELIMINARY ENGINEERING REPORT

Waikiki, O‘ahu, Hawai‘i
Tax Map Keys: 2-6-009:4, 5, 6, and portions of 7, 9, 13

February 2023

Prepared for:
G70
111 South King Street, Suite 170
Honolulu, Hawai‘i 96813

Prepared by:
BCH, a Bowers + Kubota Consulting Inc. Company
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Honolulu, hawai‘i 96819

LINDSAY L. M. NAKASHIMA
LICENSED PROFESSIONAL ENGINEER
No.12569–C
HAWAII, U.S.A.

This work was prepared by me or under my supervision.
Expiration date of the License: **April 30, 2024**

2019-33-2200

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1 PURPOSE

The purpose of this Preliminary Engineering Report (PER) is to verify existing conditions and address the potential impacts and mitigations to the wastewater system, water supply, grading/drainage, gas services, roadways, and solid waste management, in support of the Supplemental Environmental Impact Statement (SEIS) for the Hilton Hawaiian Village (HHV) – Village Master Plan Improvements Ala Moana Boulevard (AMB) Tower.

The infrastructure review was limited to the above-listed wet utilities as the electrical and communications will be covered in separate reports done for the SEIS. Hawaiian Electric Company, Inc. (HECO) currently services the area and HHV campus from Ala Moana Boulevard. Additionally, traffic requirements are also addressed in a separate report done for the SEIS and the existing parking garage and access points will be utilized, with a new port cochere off Ala Moana Boulevard to provide the main drop off for this new tower.

2 AMB TOWER DESCRIPTION

The proposed tower is located primarily on three properties, 1831, 1835, and 1841 Ala Moana Boulevard, tax map keys 2-6-009: 004, 005, and 006. Portions of the structure will connect to the existing parking garage and utilize the service road at the back of Kalia Tower. The project will add 515 hotel accommodations, retail space, fitness facility, and pool with recreation deck. Pedestrian access and landscaping will be integrated into the rest of the campus to provide access around the tower. A primary porte cochere with access off Ala Moana Boulevard will provide the main entry point for guests. Parking for guests will continue to be at the main parking garage but will also be expanded as needed to add more stalls to provide for those additional guests. The loading dock will be at the back of the building, adjacent to the existing service roadway.

3 INFRASTRUCTURE

3.1 WASTEWATER

3.1.1 EXISTING CONDITIONS

There are existing sewer lines on all sides of the HHV campus within the surrounding roadways. These sewers connect to the existing Fort DeRussy Wastewater Pump Station (FD WWPS), which can handle a peak design flow of 8.68 million gallons per day. Wastewater from this pump station is eventually treated at the Sand Island Wastewater Treatment Plant (SI WWTP). Fronting the three parcels and within Ala Moana Boulevard there is a 12-inch diameter gravity sewer on the southern side providing a wastewater connection for the Grand Waikikian and also an 18-inch diameter sewer on the northern side of the street that provides sewer coverage to properties northwest of HHV, see Figure 1 – Sewer System.

Based on the Memorandum of Agreement (Kalia Rd/Ala Moana Blvd/Kalakaua Ave Sewer Improvements) (MOA) dated December 31, 2012, between HHV and the City and County of Honolulu (City), a sewer transmission capacity of 638 Equivalent Single-Family Dwelling Units (ESDUs) was provided to HHV. 300 ESDUs of sewer transmission capacity were provided for the Grand Islander. Per the MOA, the City shall approve no more than 338 ESDUs for future improvements, including the AMB Tower.

The existing sewer allocation available from the three AMB parcels is equivalent to 10 multi-family units. Assuming each multi-family unit equals 2.8 persons per unit, there is a total allocation of 28 people or 7

ESDUs. Should the existing buildings remain occupied until construction begins, the 7 ESDUs may be made available for HHV's credit from the MOA. This is in addition to the ESDUs already allocated to the property.

3.1.2 PROBABLE IMPACTS

Based on the proposed project improvements to add 515 hotel units, the equivalent ESDUs for the project would total 258 ESDUs. The remaining ESDUs for any future development, would be 80 ESDUs, see summary in Table 1 below.

TABLE 1: MOA ESDU ALLOCATION SUMMARY

Phase	Units	Population	Retail	ESDU
Grand Islander	428 (timeshare)	1,199	-	300
AMB Tower	515 (hotel)	1,030	6,051 sf	258
Total ESDUs				558
			MOA ESDUs	638
			Remaining	80

Note: 1 timeshare unit = 2.8 people, 1 hotel unit = 2 people, 1 ESDU=4 people

The total wastewater generated from the project is estimated in Table 2 below and would connect to the existing 12-inch diameter sewer line in Ala Moana Boulevard. The net increase in wastewater generated is not anticipated to significantly impact the City's wastewater system.

TABLE 2: WASTEWATER GENERATION

Phase	No. of Units	Use Rate	Expected Usage
Hotel Rooms	515 rooms	140 gal/unit-day	72,100
Retail & Offices	6,051 sf	0.064 gal/sf-day	389
TOTAL			72,489 gpd 0.072 mgd

Ref: Wastewater System Design Standards, City and County of Honolulu, July 2017.

3.2 WATER SUPPLY

3.2.1 EXISTING CONDITIONS

The Board of Water Supply (BWS) supplies all of the water to the HHV campus through pipelines in the main roads surrounding the campus. There are 12-inch diameter water lines in Ala Moana Boulevard and Kahanamoku Street and 8-inch water lines in Kalia Road and Paola Place, see Figure 2 – Water System.

Multiple water meters service the campus with the main potable water service connection from the 12-inch diameter main in Ala Moana Boulevard. The secondary connection is in Kalia Road fronting Kalia Tower. Other meters have been added to service the Grand Waikikian and the Grand Islander. These meters provide potable and fire water service to the campus, where a network of pipes in Lagoon Drive, service roads, and at the back of the buildings interconnect to create a looped system. The main potable water line through the campus is an 8-inch diameter line. Fire hydrants within the HHV campus connect off this looped domestic water line.

The largest fire service line is from the 12-inch diameter water main in Ala Moana Boulevard with a secondary connection from Kalia Road. Similar to the main potable water line, the 6-inch diameter fire line loops around the campus. Within the City and State roadways fire hydrants are spaced approximately every 300 feet. There is adequate pipeline infrastructure around the area to support the proposed project.

3.2.2 PROBABLE IMPACTS

Water usage is anticipated to increase by 0.181 million gallons per day (mgd) with the proposed improvements and is shown in Table 3 below. The BWS noted in a letter dated November 30, 2021, that the existing system currently has adequate capacity to accommodate the domestic water and off-site fire protection for the proposed development. The final approval of water availability will be determined when the building permit application is submitted for approvals. Domestic service would likely be serviced off the 12-inch water main in Ala Moana Boulevard, while fire service would connect to the existing HHV campus fire lines located in the service roadway between the proposed tower and the parking garage.

TABLE 3: WATER USAGE

Phase	No. of Units	Use Rate	Expected Usage
Hotel Rooms	515 rooms	350 gal/unit-day	180,250
Retail & Offices	6,051 sf	0.120 gal/sf-day	726
TOTAL			180,976 gpd 0.181 mgd

Ref: Water System Standards, 2002, Table 100-18.

There is adequate pipeline infrastructure around and within the HHV campus to support the proposed improvements, adverse impacts are not anticipated due to the proposed development. During the design phase water conservation measures will be evaluated including water reuse systems, drought tolerant plants, efficient irrigation systems and ultra-low flow water fixtures and toilets in order to reduce water consumption and provide additional conservation measures.

3.3 GRADING AND DRAINAGE

3.3.1 EXISTING CONDITIONS

The entire HHV campus, including the project site, is within the Federal Emergency Management Agency (FEMA) 100-year flood zone, see Figure 3 – Drainage System. All three properties are within the AE zone and span two base flood elevations. At the property closest to the Grand Waikikian the base flood elevation is 7 feet above mean sea level (msl), the parcel in the middle straddles both the 7 foot and 6 foot elevation boundary and the eastern property is entirely within base flood elevation 6 feet msl.

The existing properties along Ala Moana Boulevard do not have any drain lines or catch basins fronting their property, so there are no underground drainage connections. Instead a portion of the front of the properties is graded such that storm water surface flows toward Ala Moana Boulevard. The runoff eventually enters catch basins near the intersection of Ala Moana and Kalia Road. The rest of the property at the back of the site appears lower than the road grade and likely ponds on the property since there are no drain lines. All three properties are mostly paved with asphalt or concrete surfaces and buildings.

Within Ala Moana Boulevard there is a 5-foot by 3-foot box drain on the opposite side of the roadway from the existing project. This box drain collects stormwater from much of AMB and the smaller side streets including Kalia Road. Storm water collected by the box drain conveys storm water to the west, turning south toward the HHV campus at Kahanamoku Street, following Kahanamoku Street toward the ocean, and eventually discharging into the Ala Wai Boat Harbor.

Within the HHV campus at the back of proposed site in the service roadways around the parking garage and Kalia Tower are existing area drains. The smaller 4-inch and 8-inch diameter drains collect runoff from the Kalia Tower loading dock and uncovered portions of the service roadways. Due to the low elevations in this area a pump within the parking garage helps get the water to drain lines through the parking garage and to drain lines in the Great Lawn. Drain lines from other parts of the HHV campus also get routed to a sump area in the Great Lawn where a pump is used to convey the water toward the Ala Wai Boat Harbor to discharge into the ocean.

3.3.2 PROBABLE IMPACTS

When any building straddles a base flood elevation boundary, the higher elevation is used to determine the starting base flood elevation for that building. Since the proposed tower will be constructed across the three parcels, the 7-foot base flood elevation should be used, and the finish floor elevation of the building set higher than 7 feet mean sea level.

The proposed improvements will require mitigation to not increase runoff toward AMB and will have some impacts on drainage within the HHV campus at the back of the proposed tower because it will now connect to the rest of the site. Table 4 summarizes the storm water runoff flows (Q) for the existing and estimated developed conditions, see Figure 5 – Drainage Area map for basins.

TABLE 4: STORM WATER RUNOFF SUMMARY

Drainage Basin	Drainage Direction	Existing Runoff Q (cfs)	Developed Runoff Q (cfs)	Net Change Q (cfs)	Mitigation with BMPs	Net Change Q (cfs)
1	Ala Moana Blvd	1.17	1.52	0.35	-0.35	0
2	Back of bldg/onsite	1.38	0	-1.38	0	-1.38
3	HHV Campus	1.36	2.21	0.85	0	0.85
Total		3.91	3.73	-0.18	-0.35	-0.53

The slight increase in runoff anticipated at the front of the property due to the changes in the drainage area will be mitigated with the use of infiltration (seepage wells, drywells, or permeable pavement) to offset that increase and to comply with the City and County of Honolulu's Rules Relating to Water Quality (Rules). As part of the requirements geotechnical drilling and testing of the site should be conducted to determine infiltration rates, water surface elevations, and to help in determining other strategies to mitigate stormwater runoff and minimize adverse impacts to the AMB drainage system. The net increase in runoff could also be rerouted onto the HHV campus and disposed of at another location on the campus.

At the back of the proposed site, improvements made to connect the proposed tower to the existing parking garage and utilizing the existing service roadway for loading dock access will require connections to the existing HHV drainage system. Portions of the existing drainage system may also need to be rerouted based upon tower footings, columns, and walls used to connect the tower to the parking garage. Improvements made to the pump to accommodate both the existing condition and proposed increase in runoff will need to be evaluated in the design. Additional infiltration methods should also be considered where feasible to mitigate this net increase. Adverse impacts to the surrounding drainage systems are not anticipated with implementation of adequate mitigation measures installed on the property.

The City's Rules for water quality are strict requirements to protect pollutants from entering the storm drainage systems and it also helps reduce the quantity of runoff heading directly to the system. Based on the regulations this project is a Category 4, Priority B1 project since it is building taller than 100 feet and has the potential to have significant impacts to water quality based on its land activities. In order to protect downstream water quality various treatment controls and best management practices (BMPs) will be assessed at the design phase. Some examples of BMPs to consider include green roofs, bioretention basins, vegetated bioswales, infiltration basins and trenches, seepage wells, drywells, detention basins, rainwater harvesting and reuse, permeable pavements, and manufactured treatment devices designed to remove trash and sediment in storm water. Additionally, source control BMPs should be included in the design to prevent pollution of stormwater. This would include having covered trash areas and loading docks and routing stormwater from paved areas to landscape areas.

For this project a Storm Water Quality Report (SWQR) shall be prepared in accordance with the Rules and must include a feasibility screening worksheet and Operations and Maintenance (O&M) Plan. The SWQR will describe the project, expected activities and likely pollutants generated at the site, identify low impact development (LID) strategies to implement, and also include the project's schedule. In addition, an Erosion and Sediment Control Plan (ESCP) prepared in accordance with the Rules will be completed. This plan contains pre-construction, during construction, and post-construction BMPs specific to the site. Once the plan is approved and moves to construction the project will be required to do regular BMP inspections every 7 days by an ESCP coordinator. After all the post-construction BMPs are installed, the Department of Facility Maintenance must approve the post-construction BMP drawings and O&M plan. Together these two documents shall then be recorded with the State of Hawaii Land Court or Bureau of Conveyances.

3.4 GAS

3.4.1 EXISTING CONDITIONS

Natural gas is used for much of the cooking, hot water heating, and outdoor lighting of the tiki torches throughout the HHV campus. Hawaii Gas supplies the natural gas through a 4-inch diameter gas line in Kalia Road and Ala Moana Boulevard, see Figure 4 – Gas System. The 4-inch gas line that comes from Kalia Road enters the HHV campus on the north side of Kalia Tower and then follows the service road on the north side of the parking garage. A smaller 1 ¼-inch gas line extends across Ala Moana Boulevard to service the existing 3 parcels fronting Ala Moana Boulevard.

3.4.2 PROBABLE IMPACTS

There is adequate pipeline infrastructure for Hawaii Gas to continue to service the HHV campus as well as the proposed project. Coordination with Hawaii Gas during the design phase of the project should be conducted to verify points of connection. No major impacts or infrastructure improvements are anticipated to the gas network.

3.5 ROADWAYS AND TRAFFIC

3.5.1 EXISTING CONDITIONS

The HHV Campus is bound by both City and State roadways. The main roadway fronting the project site is Ala Moana Boulevard, which is a State Department of Transportation roadway. The State also owns a small portion of Kalia Road, about 170 feet south of the intersection with Ala Moana Boulevard. Kahanamoku Street as well as the southern portion of Kalia Road are City and County of Honolulu streets. Access to the parking garage is through Rainbow Drive, which is the main entrance on Kalia Street and also via Lagoon Drive from Kahanamoku Street.

3.5.2 PROBABLE IMPACTS

Probable impacts to the area roadways are detailed in the Traffic Impact Report. The main impacts will be along Ala Moana Boulevard where the port cochere will have a one way drive thru, wide enough for two cars and will exit with a right turn on AMB. At the east end a one-way access to the HHV private service road will allow vehicles to get access to the rest of the campus along with the parking garage without traveling onto AMB. From this private service roadway there is only a right in and right-out access along AMB.

3.6 SOLID WASTE

3.6.1 EXISTING CONDITIONS

HHV utilizes on-site compactors for solid waste management, with the compacted material hauled away by Oahu Waste Services, a private contractor. The solid waste is taken to either the City's H-Power waste-to-energy facility, which processes up to 3,000 tons of the island's refuse, the City's Waimanalo Gulch landfill or various recycling services around Oʻahu. Food waste is collected and hauled away by a private food waste recycling contractor, Eco-Feed Incorporated. Approximately 32 tons a month of food waste is collected by the hotel and sent to the pig farms as feed. Recycling of cardboard materials is also done through a private contractor and keeps almost 19,000 tons per month out of the landfill.

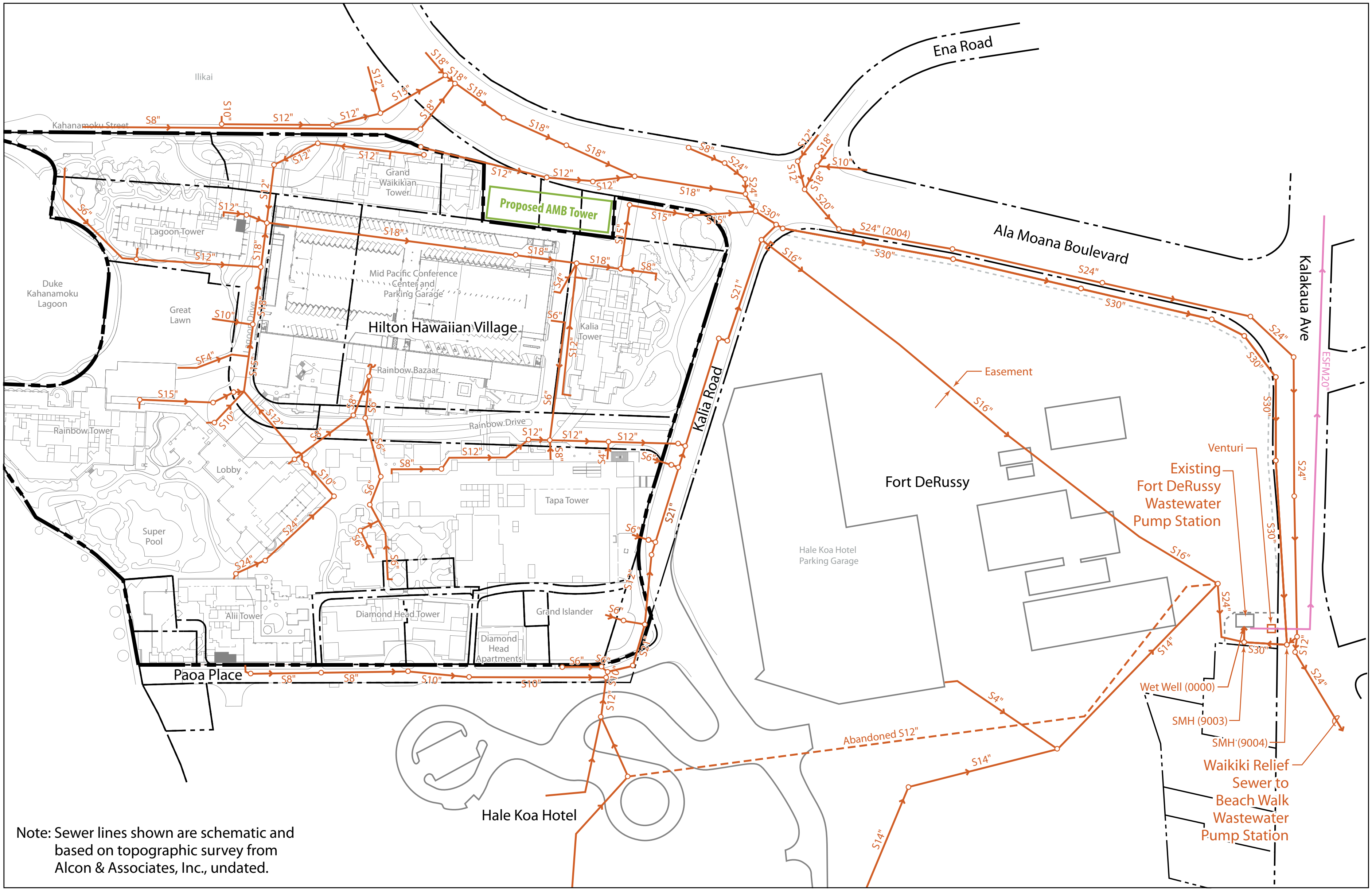
3.6.2 PROBABLE IMPACTS

Solid waste from the proposed project is anticipated to generate 0.72 tons a day, as shown in Table 5. The increase in waste generated from the AMB Tower will not have a significant impact on the City's waste stream and disposal to the H-Power Plant, which has the capacity to handle 3,000 tons per day. Recycling of food waste, cardboard, glass, and plastics will continue to be hauled away by a private food recycler.

Table 5: Solid Waste Generation

Type of Use	No. of Units	Use Rate	Expected Generation
Hotel Rooms	515	2.5 lbs/room-day	1,288 lbs/day
Retail	6051	0.026 lbs/sf-day	157 lbs/day
Total			1,445 lbs/day 0.72 tons/day 264 tons/year

FIGURES



BELT COLLINS

NORTH

0 125 250
SCALE IN FEET

LEGEND

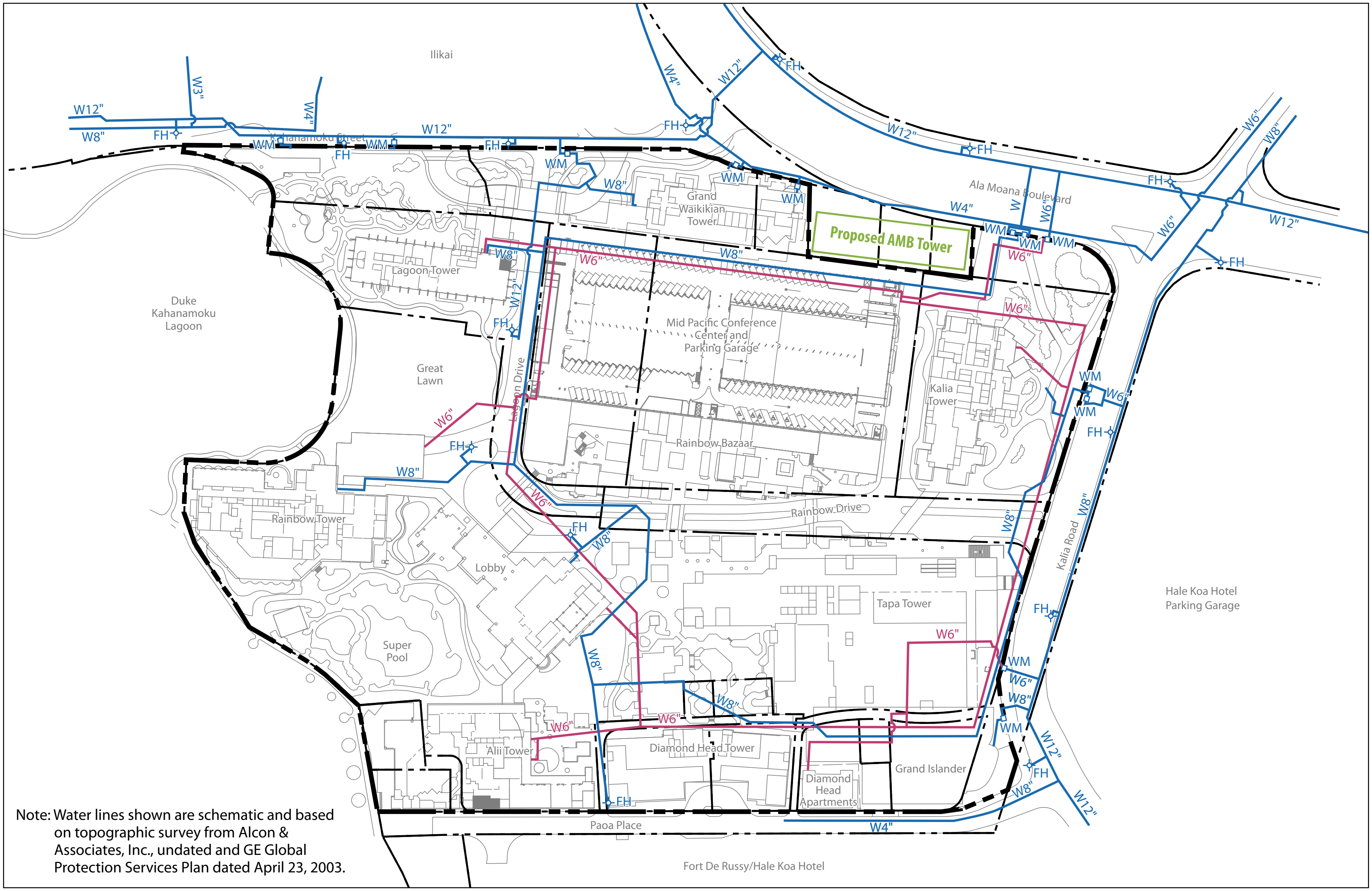
S12" Sewer Line/Size/Direction

Sewer Manhole

ESFM20" Sewer Force Main/Size/Direction

Figure 1
SEWER SYSTEM

Hilton Hawaiian Village AMB Tower
Preliminary Engineering Report
February 2023



Note: Water lines shown are schematic and based on topographic survey from Alcon & Associates, Inc., undated and GE Global Protection Services Plan dated April 23, 2003.

LEGEND

- W8" Water Line
- W6" Fire Water Line (On Site)
- WM Water Meter
- FH Fire Hydrant

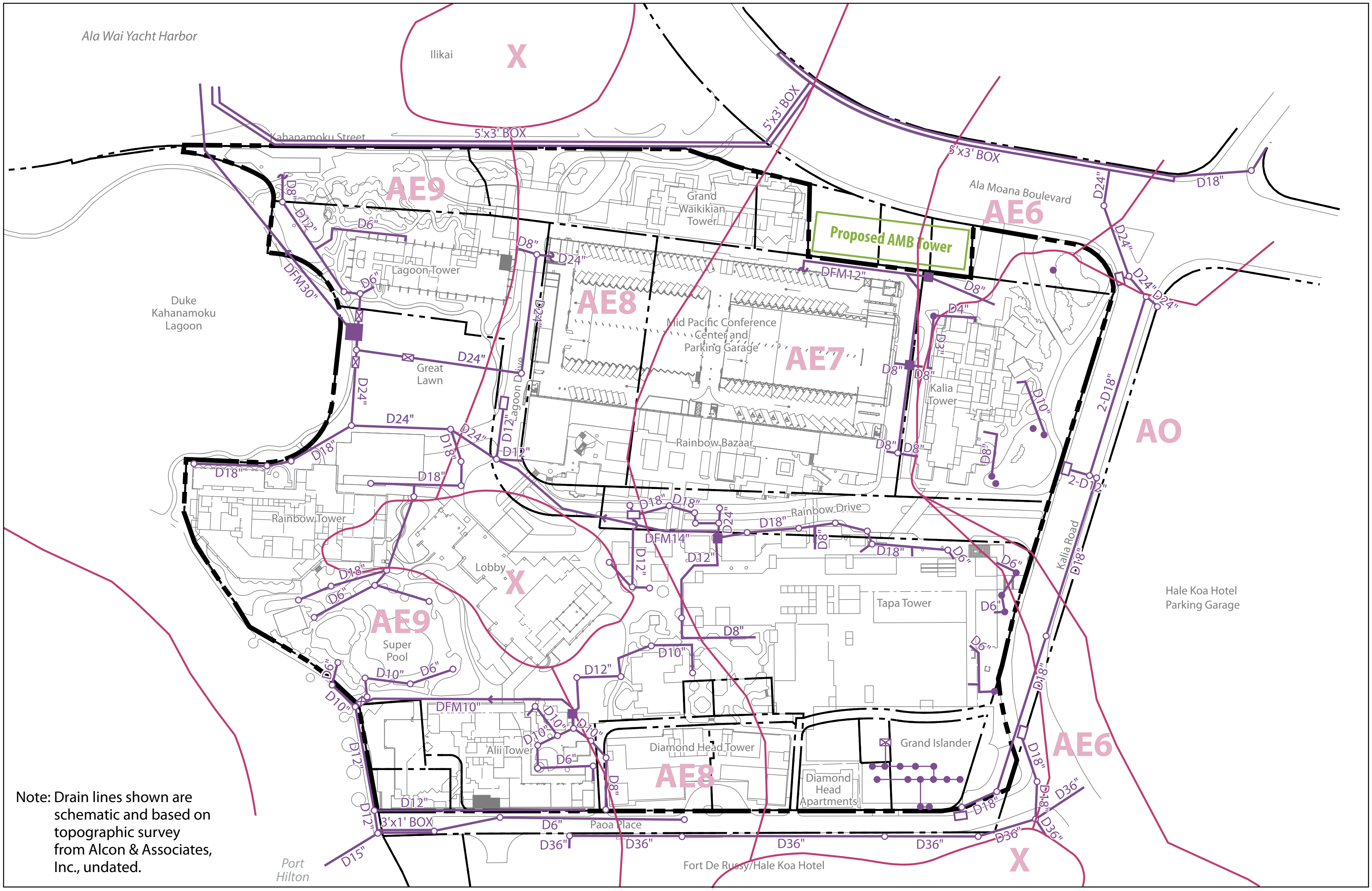
BELT COLLINS

NORTH

SCALE IN FEET: 0 50 100 200

Figure 2
WATER SYSTEM

Hilton Hawaiian Village AMB Tower
Preliminary Engineering Report
February 2023



Note: Drain lines shown are schematic and based on topographic survey from Alcon & Associates, Inc., undated.

LEGEND

D18"	Drain Line
DFM12"	Drain Force Main
	Drain Manhole/Inlet
	Catch Basin
	Seepage Well/Dry Well
	Pump Station
	Storm Water Quality Chamber
AE8	FEMA Flood Zone w/ Base Flood Elevations

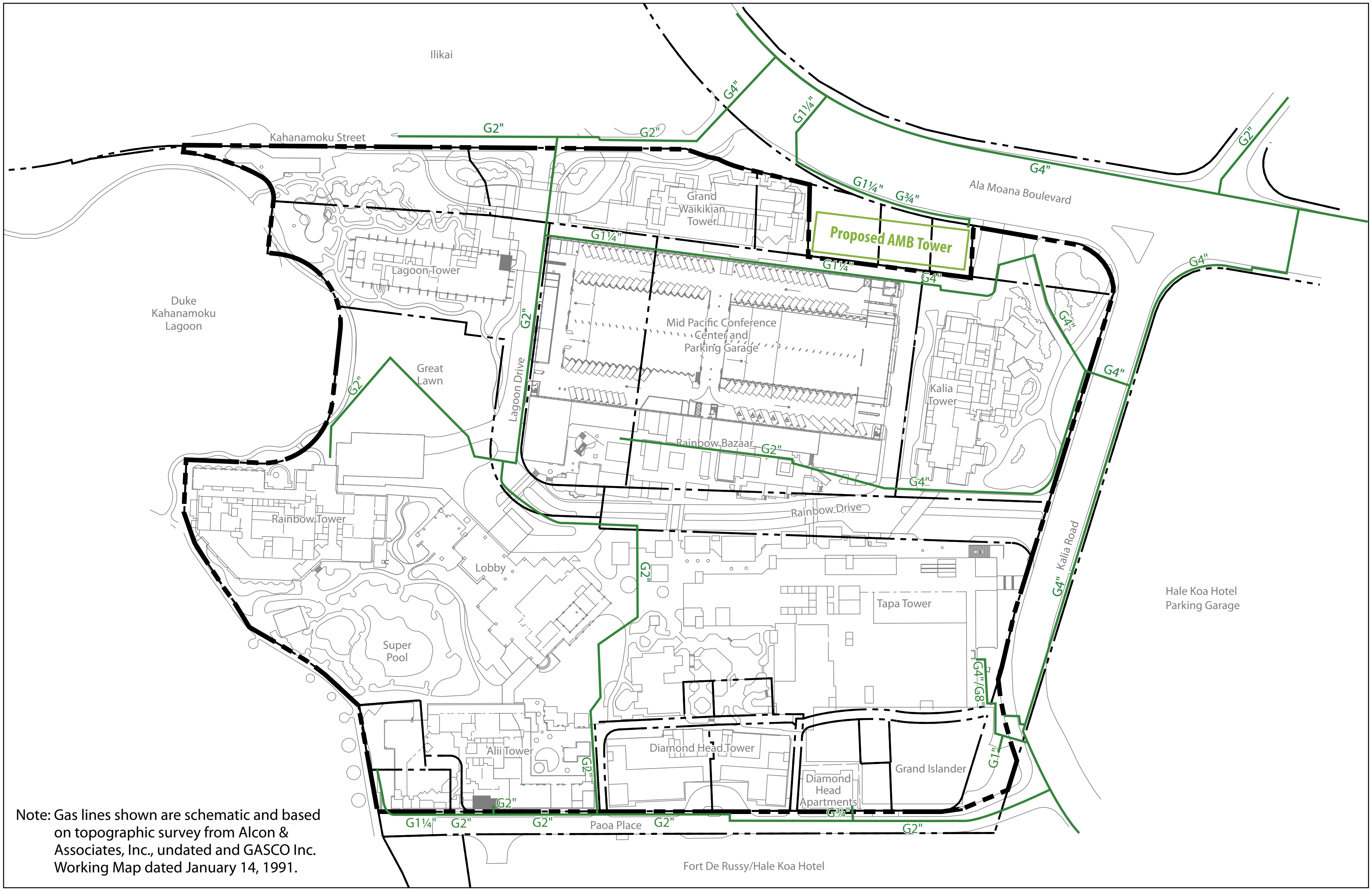
BELT COLLINS

NORTH

0 50 100 200
SCALE IN FEET

Figure 3
DRAINAGE SYSTEM

Hilton Hawaiian Village AMB Tower
Preliminary Engineering Report
February 2023



Note: Gas lines shown are schematic and based on topographic survey from Alcon & Associates, Inc., undated and GASCO Inc. Working Map dated January 14, 1991.

BELT COLLINS®

NORTH

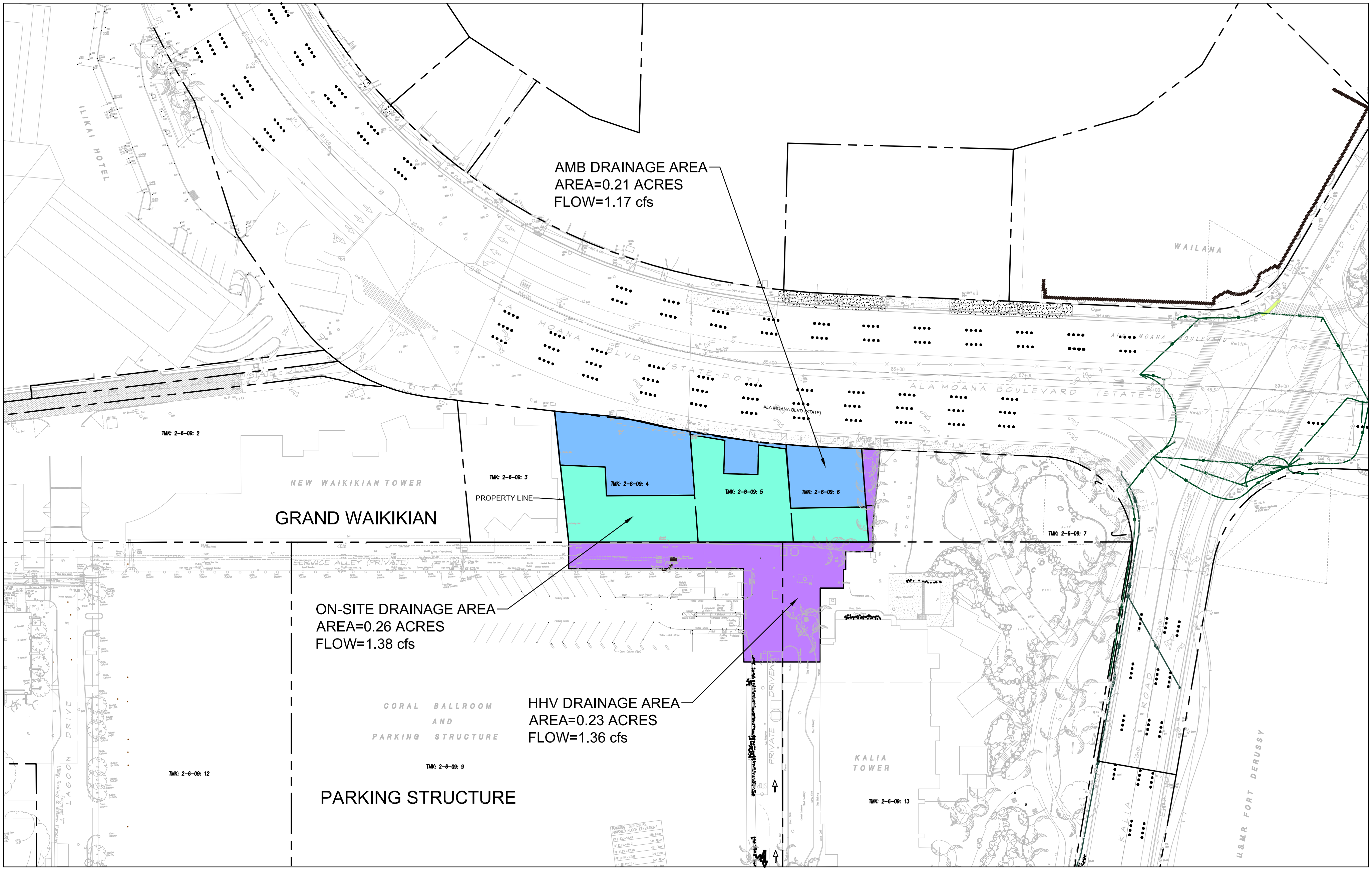
0 50 100 200
SCALE IN FEET

LEGEND

G2" Gas Line

Figure 4
GAS SYSTEM

Hilton Hawaiian Village AMB Tower
Preliminary Engineering Report
February 2023



LEGEND

AMB DRAINAGE AREA

ON-SITE DRAINAGE AREA

HHV CAMPUS DRAINAGE AREA

PROPERTY LINE

50' 25' 0' 50' 100'

N W E S NORTH

Figure 5
DRAINAGE BASIN AREAS

Hilton Hawaiian Village AMB Tower
Preliminary Engineering Report
February 2023

CALCULATIONS

BELT COLLINS

PROJECT:	Hilton Hawaiian Village	JOB NO:	2019-33-2200
CLIENT:	Group 70	DATE:	23-Jan-22
SUBJECT:	Project Wastewater Generation	BY:	LN
FILE:	T:\HHV\2019332200 AMB Tower\04 Basis of Design\Analyses\Sewer\[Wastewater Generation.xlsx]Project Wastewate		

Additional Wastewater Generation

Type of Use	No. of Units	Generation Rate		Expected Generation	
Hotel Rooms	515	140	gallons/unit-day	72,100	gal/day
Retail	6,051	0.064	gallons/sf-day	389	gal/day
Total				72,489	gal/day
				0.072	mgd

Notes:
1. Generation rate from Department of Environmental Services, Wastewater System Design Standards City and County of Honolulu, July 2017.

Average Daily per Capita Flow:	70	gallons	
Density:	2.0	persons per apartment unit	
Hotel Room Generation Rate:	(70 gallons/person-day) x (2 persons/unit)		
	140	gallons/unit-day	
Retail & Offices:	40	capita/acre	use neighborhood business, as it
	(40 cpa x 70 gal/person) =		correlates to water use.
	2,800	gallons/acre	
	0.064	gallons/sf-day	

PROJECT:	HHV AMB Tower		JOB NO:	2019-33-2200
CLIENT:	G70		DATE:	23-Jan-22
SUBJECT:	Wastewater Generation - Design Basis		BY:	LN
FILE:	T:\HHV\2019332200 AMB Tower\04 Basis of Design\Analyses\Solid Waste\[Solid Waste AMB Tower.xlsx]Solid Waste			

	People/room	# rooms	Capita	4 people/ ESDU	Equivalent Single Family Dwelling Units (ESDU)
1 bedroom hotel	2	515	1030	4	257.5

TMK	Area (ac)	Area (sf)	Equivalent Single Family Dwelling Units (ESDU)	Capita per acre or unit	Capita	Average Wastewater Flow (gpd)	Equivalent Dwelling Unit	Peaking Factor	Peak Base Sanitary Flow	Groundwater Infiltration	Design Average Flow (gpd)	Peak Dry Weather Flow	Wet Weather Infiltration /Inflow (gpd)	Design Peak Flow (gpd)	(mgd)
AMB Tower	0.46	20,038	258	4	1,030	72,100	180.3	2.5	180,250	36,050	108,150	216,300	1,380	217,680	0.218

Design Parameters Wastewater System Design Standards, City and County of Honolulu, July 2017,

1 Sewers laid above the ground water table

Groundwater Infiltration	35	gpcd
Wet I/I	3000	gad

2 Average per capita design flow = 70 gpd

3 Equivalent Populations by zoning

A-5a	Agricultural, 5 ac/unit, assume 25 capita / ac
RS-7.5	Single Family Residential , 7,500 sf/unit, 4 capita / unit
RD-3.75	Double Family Residential, 3,750 sf/unit, 4 capita / unit
RM-1	Multiple Family Residential, 1,000 sf/unit, 2.8 capita / unit (rounded up)
CV-7.5	Village Commercial, 7,500 sf/bldg = Neighborhood Business, 40 capita / ac

4 Variable use. See captia estimation by parcel.

5 Equivalent Dwelling Unit = 400 gpd

BELT COLLINS

PROJECT:	HHV AMB Tower	JOB NO:	2019-33-2200
CLIENT:	G70	DATE:	23-Jan-22
SUBJECT:	Water Generation - Design Basis	BY:	LN
FILE:	T:\HHV\2019332200 AMB Tower\04 Basis of Design\Analyses\Water\[Water Demands.xlsx]Water		

	No. of Units	Units	Gallons/unit	Units	Average Daily Demand (gpd)	Units
Rooms	515	Rooms	350	gallons/unit-day	180,250	gal/day
Retail	6051	SF	0.12	gallons/sf-day	726	gal/day
Total					180,976	gal/day
					0.181	mgd

Notes:

1. Use rate from Board of Water Supply, Water System Standards, 2002, Table 100-18, Domestic Consumption Guidelines
   350 gallons/unit for Oahu Resort
   120 gals/1000 sq ft for Oahu Commercial/Residential Mix

BELT COLLINS

PROJECT:	HHV AMB Tower	JOB NO:	2019.33.2200
CLIENT:	G70	DATE:	22-Feb-23
SUBJECT:	Drainage	BY:	ln
FILE:	T:\HHV\2019332200 AMB Tower\04 Basis of Design\Analyses\Drainage\[Drainage Calculation Sheet.xlsx]Drainage Quantity		

Table 1: Existing Drainage Runoff Calculations

Drainage Basin	Area (sf)	Area (acres)	Runoff C Weighted	Rainfall Intensity, I (in/hr)	Tc (min)	Correction Factor	Corrected I' (in/hr)	Peak Flow Q (cfs)
Ala Moana Blvd	9,000	0.21	0.90	2.25	5.0	2.8	6.30	1.17
On-site	11,220	0.26	0.85	2.25	5.0	2.8	6.30	1.38
HHV Basin	9,900	0.23	0.95	2.25	5.0	2.8	6.30	1.36
Totals	**30,120**	**0.69**			**Existing Discharge from Site =**			**3.91**

Table 2: Developed Drainage Runoff Calculations

Drainage Basin	Area (sf)	Area (acres)	Runoff C Weighted	Rainfall Intensity, I (in/hr)	Tc (min)	Correction Factor	Corrected I' (in/hr)	Peak Flow Q (cfs)
Ala Moana Blvd	14,020	0.32	0.75	2.25	5.0	2.8	6.30	1.52
HHV Campus	16,100	0.37	0.95	2.25	5.0	2.8	6.30	2.21
Totals	**30,120**	**0.69**			**Developed Discharge from Site =**			**3.73**

	Existing	Developed	Net	Mitigation with BMPs	Net
Ala Moana Blvd	1.17	1.52	0.35	-0.35	0.00
HHV Campus	1.36	2.21	0.85	0	0.85

Notes:

1. The Runoff Coefficient and the Time of Concentration (T_c) are based on Table 2 and Plate 3 of the Rules Relating to Storm Drainage Standard, respectivel
2. C = runoff coefficient. $C= C_1+ C_2+ C_3+ C_4$
   $C_{business}$ = 0.85
   $C_{hotel\text{-}apt}$ = 0.95
3. T_c = time of concentration. T_c minimum is 5 minutes.
4. I = rainfall intensity
   1-hour rainfall (i):
   i_{10} = 2.25 (10-year Storm, Plate 1)
5. Correction Factor (Plate 4)
6. Q = Runoff generated within the drainage basin = CIA.

Weighted Runoff C	Area (sf)	Runoff C	
Grass	2451	0.3	735.30
Permeable Pavemen	1583.3	0.15	237.50
Impervious	9985.7	0.95	9486.42
		Avg C:	0.75

PROJECT:	HHV AMB Tower
CLIENT:	G70
SUBJECT:	Solid Waste Generation
FILE:	T:\HHV\2019332200 AMB Tower\04 Basis of Design\Analyses\Solid Waste\[Solid Waste AMB Tower.xlsx]Solid Waste

JOB NO:	2019-33-2200
DATE:	23-Jan-22
BY:	LN

	No. of Units	Unit	Rate	Unit	Expected Generation	Unit
Hotel Rooms	515	Rooms	2.5	lbs/room-day	1,288	lbs/day
Retail	6051	sf	0.026	lbs/sf-day	157	lbs/day
Total					1,445	lbs/day
					0.72	tons/day
					264	tons/year

1. Source: Wimberly, Allison, Tong and Goo. November 2001. Waikikian Development Plan Final EIS. Based on historical records from the HHV.

Timeshare = 3.5 lbs/room-day
Timeshare=2.8 people
Hotel = 2 people

Appendix L

Acoustic Study for the AMB Tower Project
Y. Ebisu & Associates
April 2022

ACOUSTIC STUDY FOR THE AMB TOWER PROJECT HONOLULU, HAWAII

Prepared for:

G70

Prepared by:

Y. EBISU & ASSOCIATES
1126 12th Avenue, Room 305
Honolulu, Hawaii 96816

APRIL 2022

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CHAPTER 1. SUMMARY

The existing and future traffic noise levels in the vicinity of the proposed AMB Tower Project in Waikiki (see Figure I-1) were evaluated for their potential impacts and their relationship to current FHA/HUD noise standards. The traffic noise level increases along the access roadways to and from the project site were calculated. No significant increases in traffic noise are predicted to occur along Ala Moana Boulevard, Kalia Road, Ena Road, Kahanamoku Street, and Hobron Lane as a result of project plus non-project traffic following project build-out by CY 2027. Traffic noise from Ala Moana Boulevard will continue to control background ambient noise levels in the project environs, with traffic noise levels exceeding 65 DNL at existing and future resort units which front Ala Moana Boulevard. Mitigation of the high traffic noise levels will be required at all new resort units, and will be available in the form of closure and air conditioning of the future units in the AMB Tower Building.

Project traffic will not add more than 0.2 DNL additional units of noise along Ala Moana Boulevard, Kalia Road, Ena Road, and Hobron Lane under the scenarios of worst case traffic volumes along all roadways in the project environs. These levels of traffic noise increases resulting from project generated traffic are not considered to be significant. These predicted increases in traffic noise levels are very small after considering that the baseline traffic noise levels without the project are probably low due to the COVID-19 crisis, with existing traffic noise levels still being lower than during prior periods of high visitor occupancy in Waikiki. Along Kahanamoku Street at Ala Moana Boulevard, project traffic will increase existing traffic noise levels by 2.3 DNL above currently low traffic noise levels. Traffic noise levels from Kahanakoku Street should still remain below 65 DNL beyond the Right of Way.

Unavoidable, but temporary, noise impacts may occur during construction of the proposed project, particularly during the demolition and excavation activities on the project site. Because construction activities are predicted to be audible within the project site and at adjoining properties, the quality of the acoustic environment may be degraded to unacceptable levels during periods of construction. Mitigation measures to reduce construction noise to inaudible levels will not be practical in all cases, but the use of quiet equipment is recommended as a standard mitigation measure. The use of drilling and cast-in-place piles for the foundation of the project are planned to minimize risks of potential noise and vibration impacts on the surrounding area during the construction phase. The implementation of Hawaii State Department of Health permit procedures and curfew periods for construction activities is also expected for this project.

PROJECT LOCATION MAP AND NOISE MEASUREMENT LOCATIONS

FIGURE I-1

CHAPTER II. PURPOSE

The primary objective of this study was to describe the existing and future traffic noise environment in the environs of the proposed AMB Tower Project in Waikiki on the island of Oahu. Traffic noise level increases and impacts associated with the proposed development were to be determined within the project site as well as along the public roadways which are expected to service the project traffic. A specific objective was to determine future traffic noise level increases associated with both project and non-project traffic, and the potential noise impacts associated with these increases.

Assessments of possible future impacts from short term construction noise at the project site were also included as noise study objectives. Recommendations for minimizing identified noise impacts were also to be provided as required.

CHAPTER III. NOISE DESCRIPTORS AND THEIR RELATIONSHIP TO LAND USE COMPATIBILITY

The noise descriptor currently used by federal agencies (such as FHA/HUD) to assess environmental noise is the Day-Night Average Sound Level (Ldn or DNL). This descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. By definition, the minimum averaging period for the DNL descriptor is 24 hours. Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the DNL descriptor. A more complete list of noise descriptors is provided in Appendix B to this report.

Table III-1, derived from Reference 1, presents current federal noise standards and acceptability criteria for residential land uses. Land use compatibility guidelines for various levels of environmental noise as measured by the DNL descriptor system are shown in Figure III-1. As a general rule, noise levels of 55 DNL or less occur in rural areas, or in areas which are removed from high volume roadways. In urbanized areas which are shielded from high volume streets, DNL levels generally range from 55 to 65 DNL, and are usually controlled by motor vehicle traffic noise. Residences which front major roadways are generally exposed to levels of 65 DNL, and as high as 75 DNL when the roadway is a high speed freeway. In the project area, traffic noise levels associated with Ala Moana Boulevard are greater than 70 DNL along the Right-of-Way due to the large volume of traffic on that major thoroughfare.

For purposes of determining noise acceptability for funding assistance from federal agencies (FHA/HUD and VA), an exterior noise level of 65 DNL or less is considered acceptable for residences. This standard is applied nationally (Reference 2), including Hawaii. Because of our open-living conditions, the predominant use of naturally ventilated dwellings, and the relatively low exterior-to-interior sound attenuation afforded by these naturally ventilated structures, an exterior noise level of 65 DNL does not eliminate all risks of noise impacts. Because of these factors, and as recommended in Reference 3, a lower level of 55 DNL is considered as the "Unconditionally Acceptable" (or "Near-Zero Risk") level of exterior noise. However, after considering the cost and feasibility of applying the lower level of 55 DNL, government agencies such as FHA/HUD and VA have selected 65 DNL as a more appropriate regulatory standard.

For commercial, industrial, and other non-noise sensitive land uses, exterior noise levels as high as 75 DNL are generally considered acceptable. Exceptions to this occur when naturally ventilated office and other commercial establishments are exposed to exterior levels which exceed 65 DNL.

On the island of Oahu, the State Department of Health (DOH) regulates noise

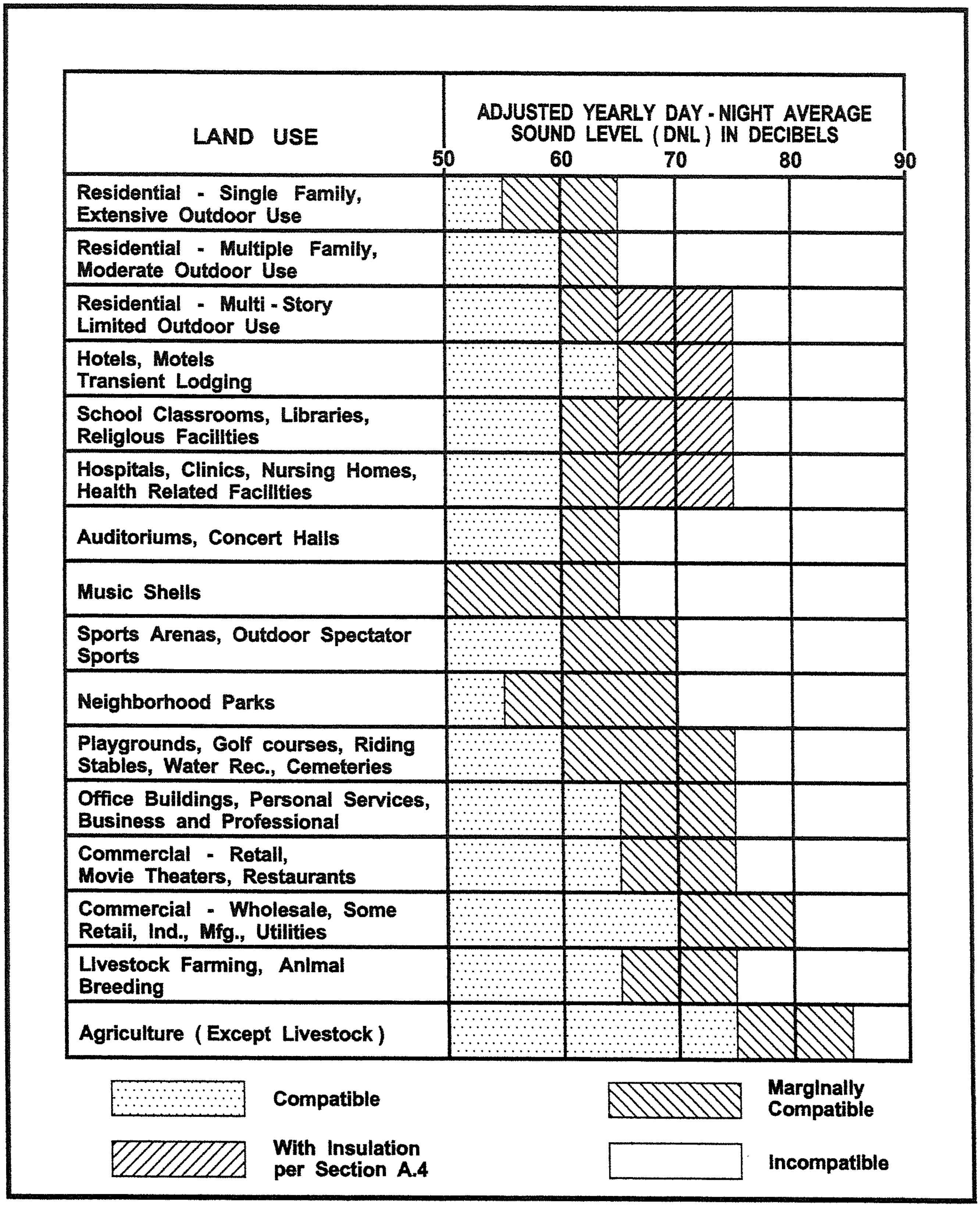
TABLE III-1

EXTERIOR NOISE EXPOSURE CLASSIFICATION (RESIDENTIAL LAND USE)

NOISE EXPOSURE CLASS	DAY-NIGHT SOUND LEVEL	EQUIVALENT SOUND LEVEL	FEDERAL (1) STANDARD
Minimal Exposure	Not Exceeding 55 DNL	Not Exceeding 55 Leq	Unconditionally Acceptable
Moderate Exposure	Above 55 DNL But Not Above 65 DNL	Above 55 Leq But Not Above 65 Leq	Acceptable(2)
Significant Exposure	Above 65 DNL But Not Above 75 DNL	Above 65 Leq But Not Above 75 Leq	Normally Unacceptable
Severe Exposure	Above 75 DNL	Above 75 Leq	Unacceptable

Notes: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation.

(2) FHWA uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent if: (a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and (b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours. The noise mitigation threshold used by FHWA for residences is 67 Leq.



LAND USE COMPATIBILITY WITH YEARLY AVERAGE DAY - NIGHT SOUND LEVEL (DNL) AT A SITE FOR BUILDINGS AS COMMONLY CONSTRUCTED.
(Source: American National Standards Institute S12.9 - 1988/Part 5)

FIGURE III-1

from fixed mechanical equipment and construction activities. State DOH noise regulations are expressed in maximum allowable noise limits rather than DNL (see Reference 4). Although they are not directly comparable to noise criteria expressed in DNL, State DOH noise limits for single family residential lands equate to approximately 55 DNL. For multifamily residential, commercial, and resort lands, the State DOH noise limits equate to approximately 60 DNL. For light and heavy industrial lands, the State DOH noise limits equate to approximately 76 DNL, respectively. Construction activities, which are typically noisier than the State DOH noise limits, are regulated through the issuance of permits for allowing excessive construction noise during limited time periods.

CHAPTER IV. GENERAL STUDY METHODOLOGY

Existing traffic and background ambient noise levels were measured at 4 locations (A, B, C, and D) in the project environs to provide a basis for describing the existing noise environment in the project environs. The locations of the measurement sites are shown in Figure I-1. Location A was on the city (north) lanai of a 11th floor unit in the Grand Waikikian, and Location B was at ground level along Kalia Road. Locations C and D were at ground level near the project site along Ala Moana Boulevard.

Traffic and background ambient noise measurements were performed during the month of November 2021. Traffic noise measurements were obtained at Locations A and B. The results of the traffic noise measurements were compared with calculations of existing traffic noise levels to validate the computer model used. The traffic noise measurement results at Locations A and B, and the comparisons of the measured traffic noise levels with computer model predictions of existing traffic noise levels are summarized in Table IV-1.

Traffic noise calculations for the existing conditions as well as noise predictions for the Year 2027 were performed using the Federal Highway Administration (FHWA) Traffic Noise Model Version 2.5 (Reference 5). Traffic data entered into the noise prediction model were: roadway and receiver locations; hourly traffic volumes, average vehicle speeds; estimates of traffic mix; and "Hard Soil" propagation loss factor. The traffic data and forecasts for the project (Reference 6), plus the published traffic counts along Ala Moana Boulevard (Reference 7), and prior traffic data and sound level measurements reported in References 8 and 9 were the primary sources of data inputs to the model.

Appendix C summarizes the AM and PM peak hour traffic volumes for CY 2021 and 2027 which were used to model existing and future traffic noise along the streets surrounding the project site. For existing and future traffic along the streets surrounding the project site, it was assumed that the average noise levels, or Leq(h), during the PM peak traffic hour were 2.6 to 3.4 dB less than the 24-hour DNL along those roadways. This assumption was based on the traffic noise measurements obtained in November 2021 at Location A as well as on the traffic counts and noise measurements contained in References 7 through 9 (see Figures IV-1 through IV-6).

Traffic noise calculations for both the existing and future conditions in the project environs were developed for ground level and elevated receptors with and without the benefit of shielding from the proposed AMB Tower. Traffic noise levels were also calculated for future conditions with (Build Alternative) and without (No Build Alternative) the proposed project. The forecasted changes in traffic noise levels over existing levels were calculated with and without the project, and noise impact risks evaluated. The relative contributions of non-project and project traffic to the total noise levels were also calculated, and an evaluation of possible traffic noise impacts was made.

TABLE IV-1
TRAFFIC AND BACKGROUND NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume AUTO	Hourly Traffic Volume M.TRUCK	Hourly Traffic Volume H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
A. 105 FT from the center-line of Ala Moana Boulevard (11/3/21)	1608 TO 1708	35	2,003	28	39	66.3 65.0 (1)	65.2
A. 105 FT from the center-line of Ala Moana Boulevard (11/4/21)	0700 TO 0800	40	1,364	57	32	66.6 65.5 (2)	65.4
B. 50 FT from the center-line of Kalia Road (11/4/21)	1330 TO 1430	22	681	33	25	63.1	63.6
A. 105 FT from the center-line of Ala Moana Boulevard (11/4/21)	1553 TO 1653	35	2,230	23	39	67.3 65.3 (3)	65.2
A. 105 FT from the center-line of Ala Moana Boulevard (11/5/21)	0700 TO 0800	41	1,401	31	22	67.6 65.2 (4)	65.1

Notes:
(1) Measured traffic noise level after adjustment for other background noise of 60.5 dB.
(2) Measured traffic noise level after adjustment for other background noise of 60.0 dB.
(3) Measured traffic noise level after adjustment for other background noise of 63.0 dB from idling tour bus.
(4) Measured traffic noise level after adjustment for other background noise of 63.9 dB from aircraft and refuse truck.

FIGURE IV-1
MEASURED HOURLY NOISE LEVELS AT 291 FEET FROM CENTERLINE OF ALA MOANA BOULEVARD AT ILIKAI HOTEL; JULY 26-27, 2010

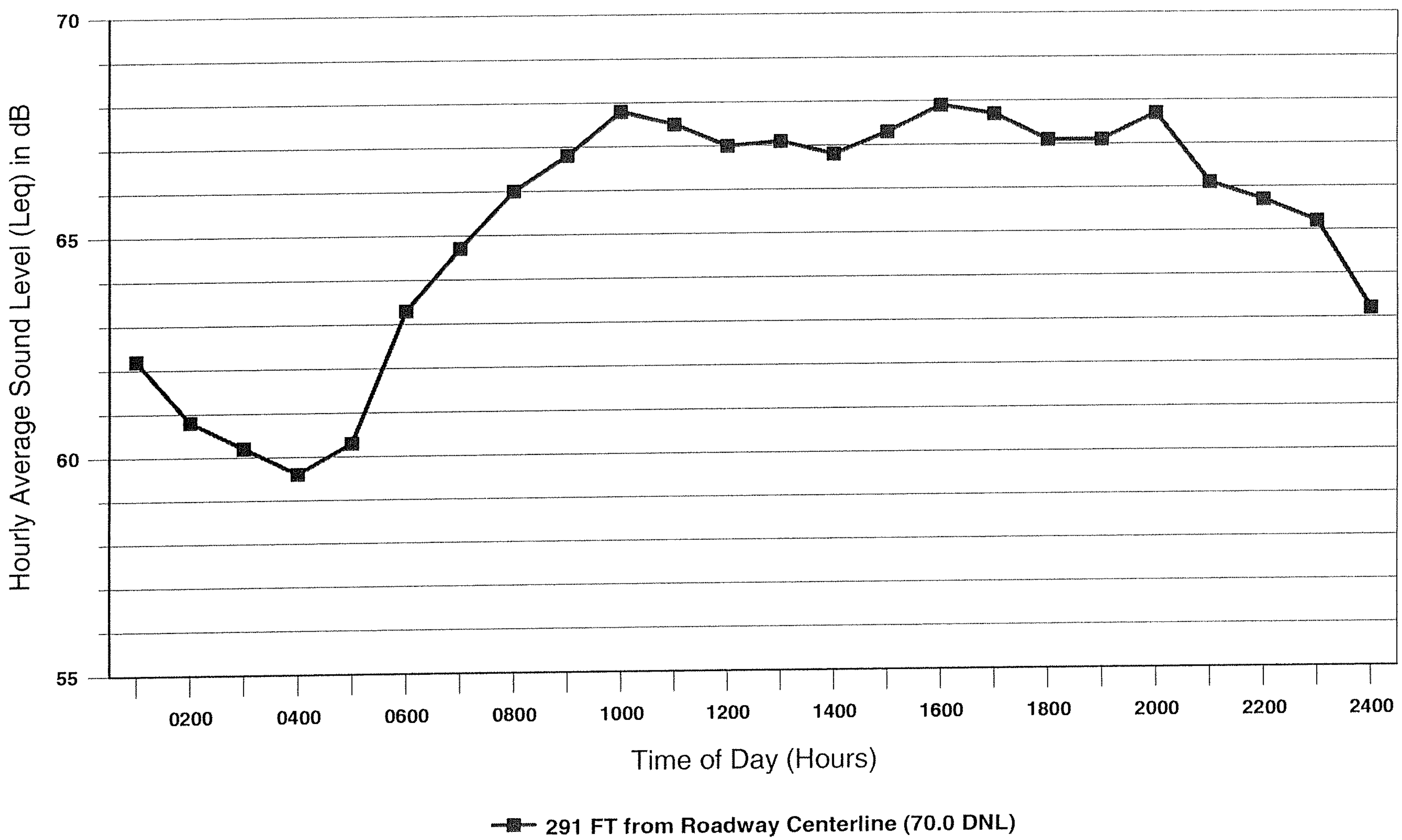


FIGURE IV-2
MEASURED HOURLY NOISE LEVELS AT 105 FEET FROM CENTERLINE OF ALA MOANA BOULEVARD AT GRAND WAIKIKIAN; NOVEMBER 3-4, 2021

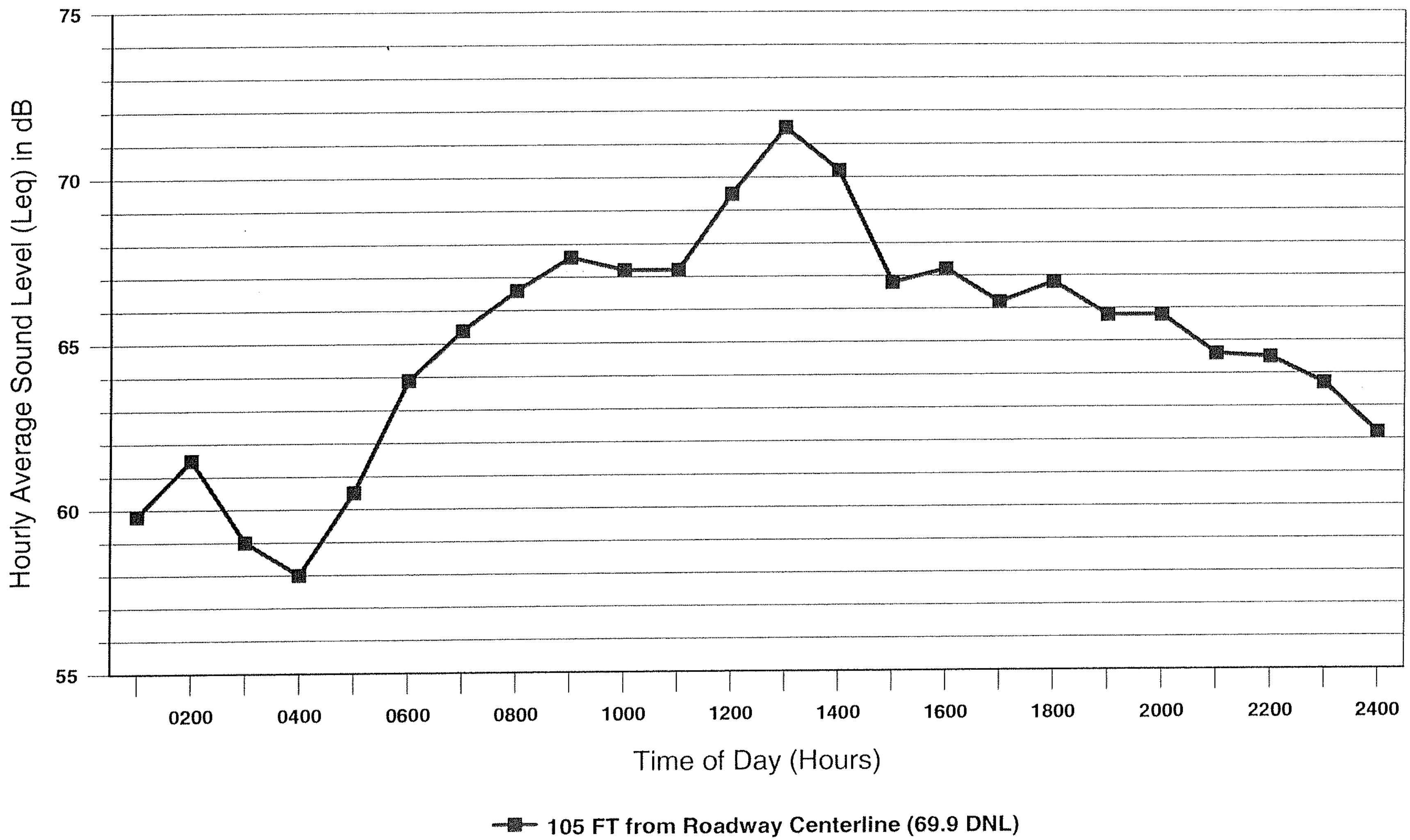


FIGURE IV-3
MEASURED HOURLY NOISE LEVELS AT 105 FEET FROM CENTERLINE OF ALA MOANA BOULEVARD AT GRAND WAIKIKIAN; NOVEMBER 4-5, 2021

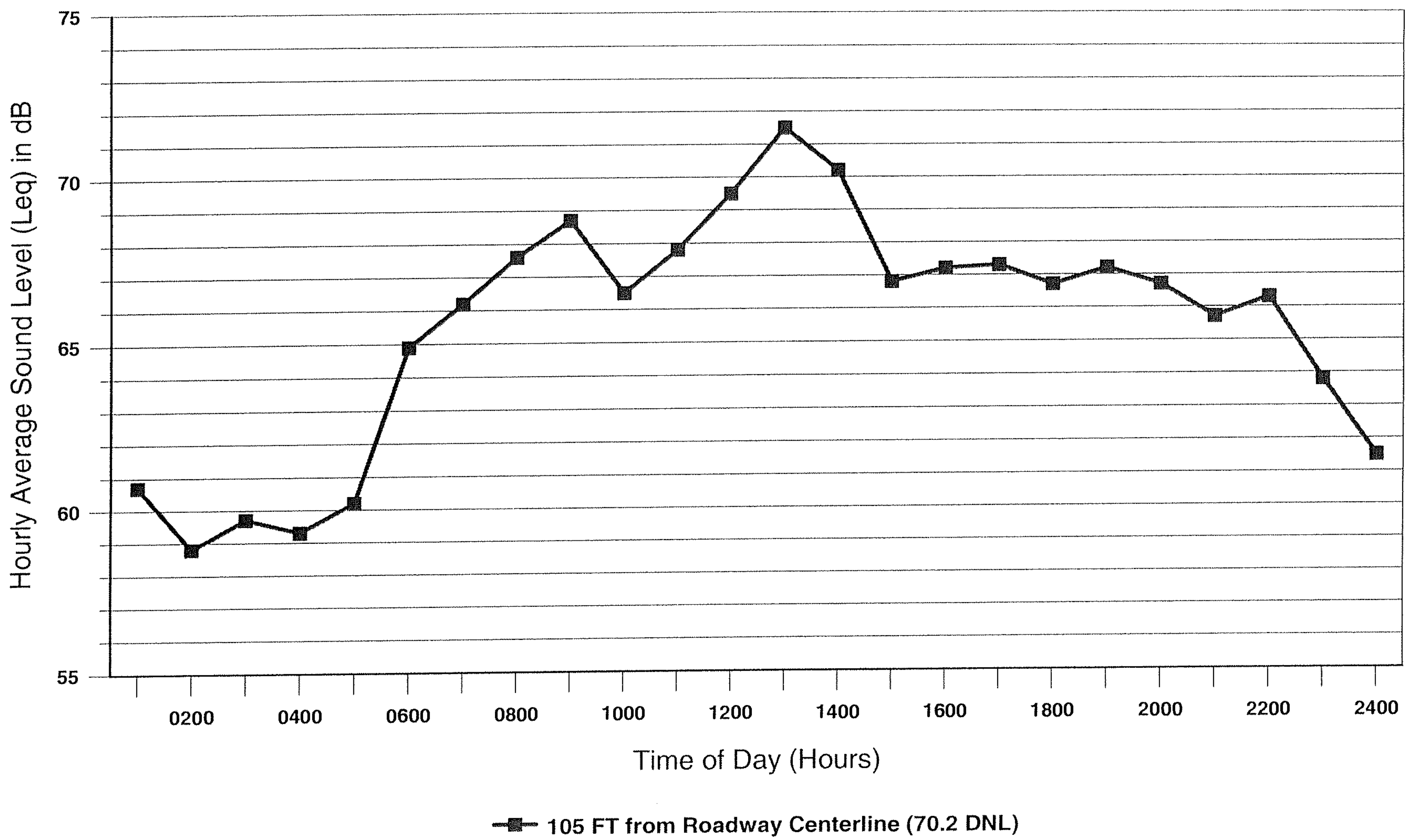


FIGURE IV-4
MEASURED HOURLY NOISE LEVELS AT 351 FEET FROM CENTERLINE OF KALIA ROAD AT HILTON HAWAIIAN VILLAGE; AUGUST 16-17, 2010

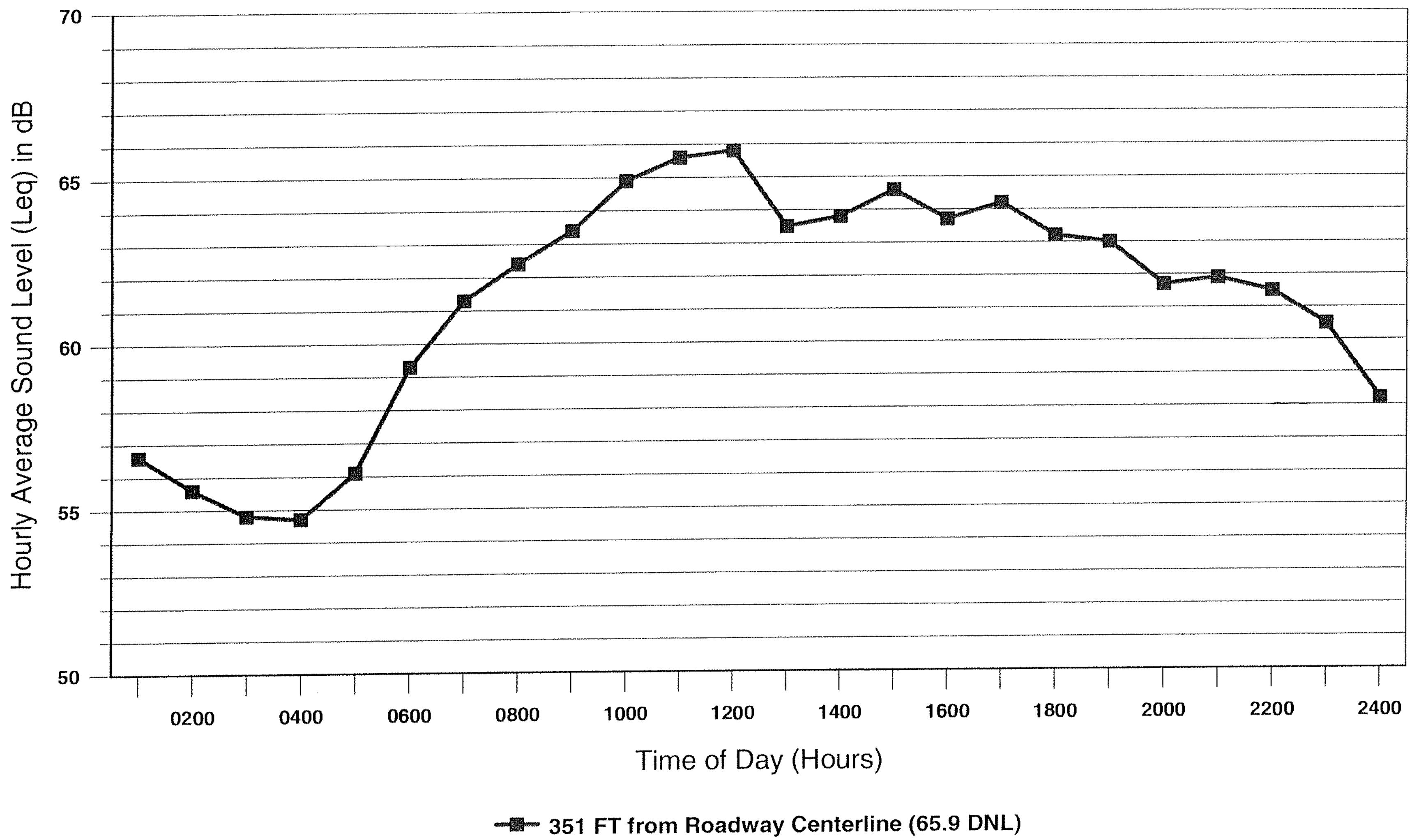


FIGURE IV-5
MEASURED HOURLY NOISE LEVELS AT 72 FEET FROM CENTERLINE OF ALA MOANA BOULEVARD AT ALANA WAIKIKI; JANUARY 31 - FEBRUARY 1, 2012

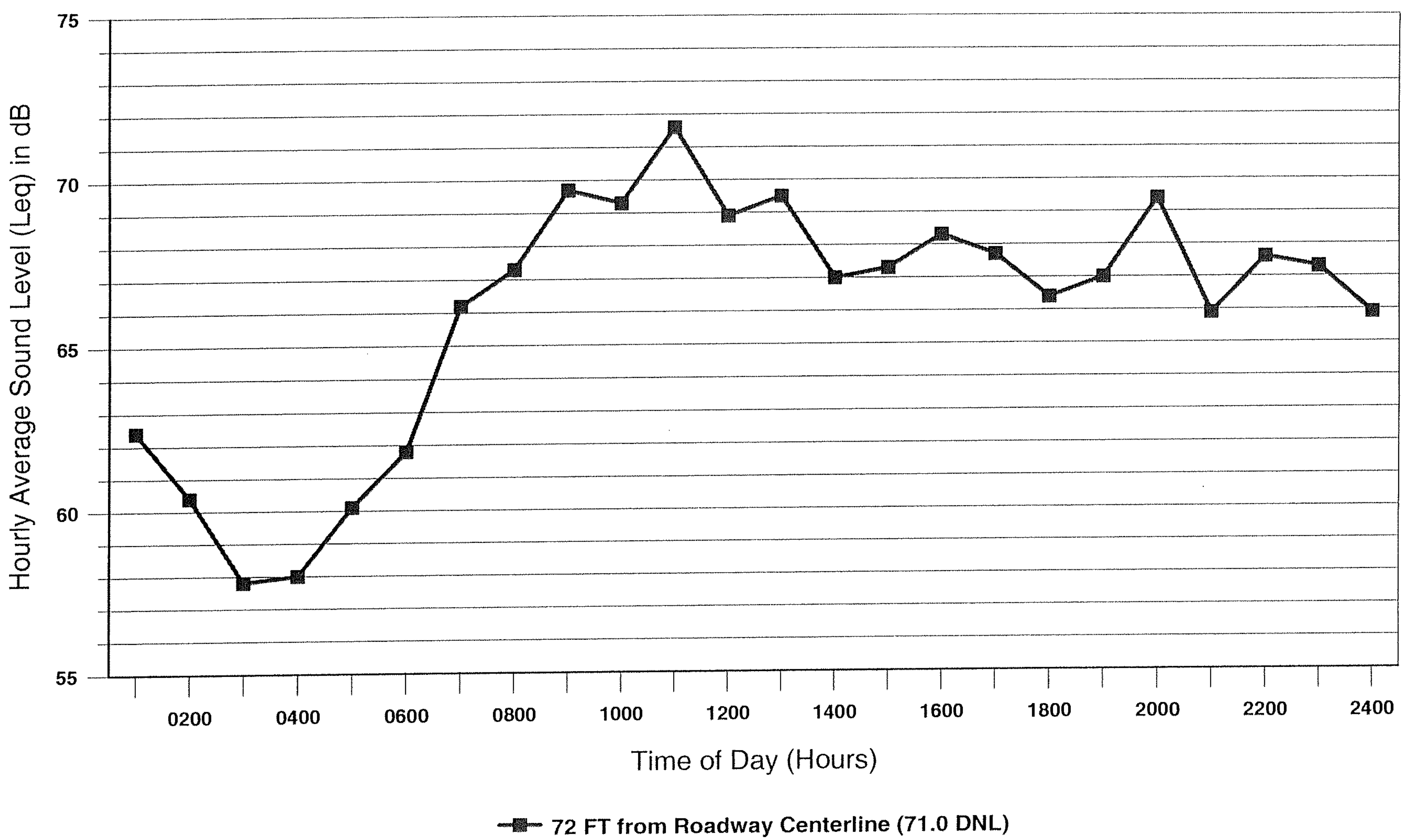
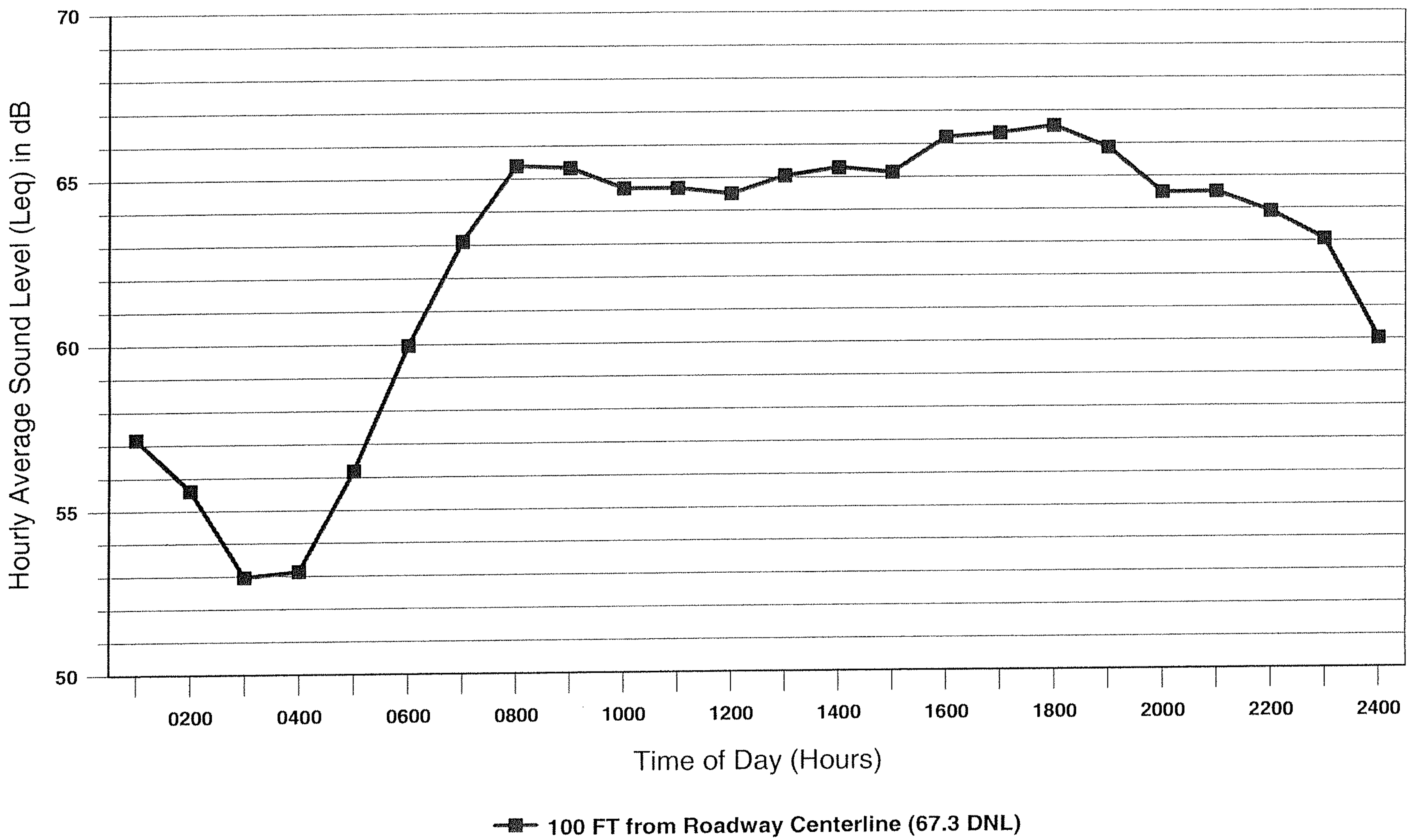


FIGURE IV-6
STA. B72009200907; 100 FEET FROM CENTERLINE. OF ALA MOANA BLVD. MAUKA OF KALIA RD.; JULY 12, 2017



In addition to the traffic noise measurements, the contributions from other background noise sources (idling tour buses, fighter jet aircraft, wood chipper truck, and refuse truck) were obtained at Location A. Short term traffic noise measurements at Locations C and D were obtained simultaneously with those at Location A to estimate existing traffic noise levels on the AMB Tower Project site at ground level. Based on the short term measurements at Locations C and D, it was concluded that existing traffic noise levels at ground level on the project site were similar (within 1 dB) to those measured at Location A. The results of these measurements and predictions were used to describe the existing noise levels in the project environs, and to determine if the units of the proposed AMB Tower are located in an existing area with noise levels within the FHA/HUD standard of 65 DNL or less.

Calculations of average exterior and interior noise levels from construction activities were performed for typical naturally ventilated and air conditioned dwellings. Predicted noise levels were compared with existing background ambient noise levels, and the potential for noise impacts was assessed.

CHAPTER V. EXISTING ACOUSTICAL ENVIRONMENT

Primary contributors to the existing background ambient noise levels within the project area are: traffic along Ala Moana Boulevard and Kalia Road; military jet aircraft flybys; tour bus idling along Ala Moana Boulevard; and grounds maintenance activities.

The traffic noise contributions from Ala Moana Boulevard were measured at Locations A, C, and D, and the results of these measurements are shown in Table IV-1, and Figures IV-2 and IV-3. The large increase in noise levels between noon and 2:00 pm shown in Figures IV-2 and IV-3 was caused by the noise from an engine-driven mulcher machine operating across Ala Moana Boulevard. Table V-1 contains the hourly average, maximum, and minimum sound levels recorded at Location A on the 11th floor lanai of the Grand Waikikian.

Table V-2 presents the calculations of traffic noise levels during the PM peak hour along the various roadways in the project environs and at various setback distances from the roadways' centerlines. Table V-3 presents the existing setback distances to the 65, 70, and 75 DNL contours for unobstructed field of views to the vehicles on each roadway. As indicated in Table V-3, as much as 190 feet of buffer space would be required from the centerline of Ala Moana Boulevard at the project location to be clear of the 65 DNL traffic noise contour. Table V-4 presents the calculated CY 2021 DNL values at various locations on the project site where the AMB Tower building is currently sited. Figures V-1 and V-2 depict the various locations on lower and upper faces of the planned AMB Tower building where the calculations of CY 2021 DNL values were performed. In Figure V-1 and Table V-4, "XX" designates the lower floor levels of the various receptor locations shown at the outdoor lanais within the planned building. In Figure V-2 and Table V-4, "YY" designates the floor levels of the various upper floor receptor locations shown at the outdoor lanais within the planned building. As indicated in Table V-4, CY 2021 traffic noise levels at the site of the planned AMB Tower range from 66 to 71 DNL, and are consistent with the measured traffic plus background DNL level of approximately 70 DNL measured on the 11th floor lanai of the Grand Waikikian (Location A) in November 2021.

Based on these measurement and noise modeling results, it was concluded that existing traffic noise levels at the project site currently exceed the FHA/HUD 65 DNL standard, with the dominant noise source being traffic on Ala Moana Boulevard. Because of the COVID-19 crisis, existing traffic noise levels are probably lower than they were during the pre-COVID period, with tour bus traffic volumes also lower than normal. Existing traffic noise levels were estimated to be 2 to 3 DNL units lower than normal due to the reduced number of tour buses traveling along Ala Moana Boulevard in the project environs.

At receptor locations which are at larger setback distances from Ala Moana Boulevard and/or are shielded from traffic noise by buildings, such as at Location B, existing background ambient noise levels are typically lower due to the larger setback distances and/or the noise shielding effects of the buildings. Noise reductions of 5 to

TABLE V-1
SUMMARY OF HOURLY NOISE LEVELS MEASURED AT LOCATION A

LOCATION: "A" - LANAI OF UNIT 1112; GRAND WAIKIKIAN

PROJECT: HILTON HAWAIIAN VILLAGE AMB TOWER

Date	Hour	Leq	Lmax	Lmin	Event Description
11/03/21	1600-1700	66.2	76.7	60.1	
11/03/21	1700-1800	66.8	80.1	60.1	Motorcycle at 80 dBA.
11/03/21	1800-1900	65.8	83.2	58.8	
11/03/21	1900-2000	65.8	84.3	57.8	
11/03/21	2000-2100	64.6	78.6	57.6	
11/03/21	2100-2200	64.5	85.9	57.1	
11/03/21	2200-2300	63.7	77.0	56.1	
11/03/21	2300-2400	62.2	79.8	56.3	
11/04/21	0000-0100	59.8	73.5	55.4	
11/04/21	0100-0200	61.5	86.0	55.2	
11/04/21	0200-0300	59.0	73.3	55.6	
11/04/21	0300-0400	58.0	75.2	55.6	
11/04/21	0400-0500	60.5	71.6	55.7	
11/04/21	0500-0600	63.9	79.0	56.6	
11/04/21	0600-0700	65.4	76.0	56.9	
11/04/21	0700-0800	66.6	76.3	59.0	
11/04/21	0800-0900	67.6	82.5	60.1	
11/04/21	0900-1000	67.2	80.8	60.3	
11/04/21	1000-1100	67.2	79.9	59.9	
11/04/21	1100-1200	69.5	60.7	61.0	Engine driven mulcher operating across
11/04/21	1200-1300	71.5	85.1	63.3	Ala Moana Boulevard from 11:30 am to
11/04/21	1300-1400	70.2	84.5	59.9	1:20 pm.
11/04/21	1400-1500	66.8	82.2	59.7	
11/04/21	1500-1600	67.2	76.9	60.4	
11/04/21	1600-1700	67.3	76.5	59.6	Tour bus idling at near curb from 4:00 pm
11/04/21	1700-1800	66.7	78.5	59.2	to 4:24 pm.
11/04/21	1800-1900	67.2	87.1	59.3	
11/04/21	1900-2000	66.7	82.9	59.5	

TABLE V-1 (CONTINUED)
SUMMARY OF HOURLY NOISE LEVELS MEASURED AT LOCATION A

LOCATION: "A" - LANAI OF UNIT 1112; GRAND WAIKIKIAN

PROJECT: HILTON HAWAIIAN VILLAGE AMB TOWER

Date	Hour	Leq	Lmax	Lmin	Event Description
11/04021	2000-2100	65.7	83.6	58.5	
11/04021	2100-2200	66.3	89.6	57.3	
11/04021	2200-2300	63.8	79.6	57.0	
11/04021	2300-2400	61.5	73.7	55.5	
11/05/21	0000-0100	60.7	74.4	55.8	
11/05/21	0100-0200	58.8	68.8	55.4	
11/05/21	0200-0300	59.7	71.8	55.4	
11/05/21	0300-0400	59.3	68.5	55.8	
11/05/21	0400-0500	60.2	71.3	55.4	
11/05/21	0500-0600	64.9	76.0	56.4	
11/05/21	0600-0700	66.2	79.5	57.8	
11/05/21	0700-0800	67.6	84.1	59.6	Military fighter jet at 84.1 dBA.
11/05/21	0800-0900	68.7	87.7	60.4	
11/05/21	0900-1000	66.5	79.7	60.2	
11/05/21	1000-1100	67.8	81.5	61.1	

Notes:

a. Leq = Average A-Weighted Sound Level (in dBA)

b. Lmax = Maximum A-Weighted Sound Level (in dBA)

c. Lmin = Minimum A-Weighted Sound Level (in dBA)

TABLE V-2

EXISTING (CY 2021) TRAFFIC VOLUMES AND NOISE LEVELS ALONG ROADWAYS IN PROJECT AREA (PM PEAK HOUR)

LOCATION	SPEED (MPH)	TOTAL VPH	******* VOLUMES (VPH) ********* AUTOS	M TRUCKS	H TRUCKS	50' Leq	100' Leq	200' Leq
Ala Moana Blvd. East. of Kalia Rd.	35	1,898	1,851	28	19	66.2	* 63.4	59.7
Ala Moana Blvd. - Fronting Project	35	2,624	2,546	31	47	69.9	* 66.3	62.1
Ala Moana Blvd. Between Kahanamoku & Hobron	35	2,675	2,595	32	48	70.0	* 66.4	62.2
Ala Moana Blvd. NW of Hobron Ln.	35	3,330	3,230	40	60	70.2	* 67.0	63.0
Kalia Road - At Ala Moana Boulevard	22	1,308	1,228	41	39	64.2	60.4	57.1
Ena Road At Ala Moana Blvd.	20	358	356	2	0	53.1	49.6	45.8
Kahanamoku St. At Ala Moana Blvd.	20	419	418	1	0	53.4	49.9	46.0
Hobron Ln. N. of Ala Moana Blvd.	20	710	709	1	0	55.7	52.2	48.4
Hobron Ln. S. of Ala Moana Blvd.	20	485	484	1	0	54.3	50.8	46.9

Notes:

1. Traffic noise levels calculated for ground level receptors.
2. Hard soil and unobstructed field-of-view conditions assumed.
3. * Calculated at 60 FT distance from centerline instead of 50 FT.

TABLE V-3

EXISTING AND CY 2027 DISTANCES TO 65, 70, AND 75 DNL CONTOURS

STREET SECTION	65 DNL SETBACK (FT)		70 DNL SETBACK (FT)		75 DNL SETBACK (FT)	
	EXISTING	CY 2027	EXISTING	CY 2027	EXISTING	CY 2027
Ala Moana Blvd. East. of Kalia Rd.	121	130	48	52	19	21
Ala Moana Blvd. - Fronting Project	190	203	86	91	42	45
Ala Moana Blvd. Between Kahanamoku & Hobron	194	210	87	93	43	46
Ala Moana Blvd. NW of Hobron Ln.	222	238	94	100	42	45
Kalia Road - At Ala Moana Boulevard	69	72	28	26	< 12	< 12
Ena Road At Ala Moana Blvd.	< 12	< 12	< 12	< 12	< 12	< 12
Kahanamoku St. At Ala Moana Blvd.	< 12	13	< 12	< 12	< 12	< 12
Hobron Ln. N. of Ala Moana Blvd.	13	13	< 12	< 12	< 12	< 12
Hobron Ln. S. of Ala Moana Blvd.	< 12	< 12	< 12	< 12	< 12	< 12

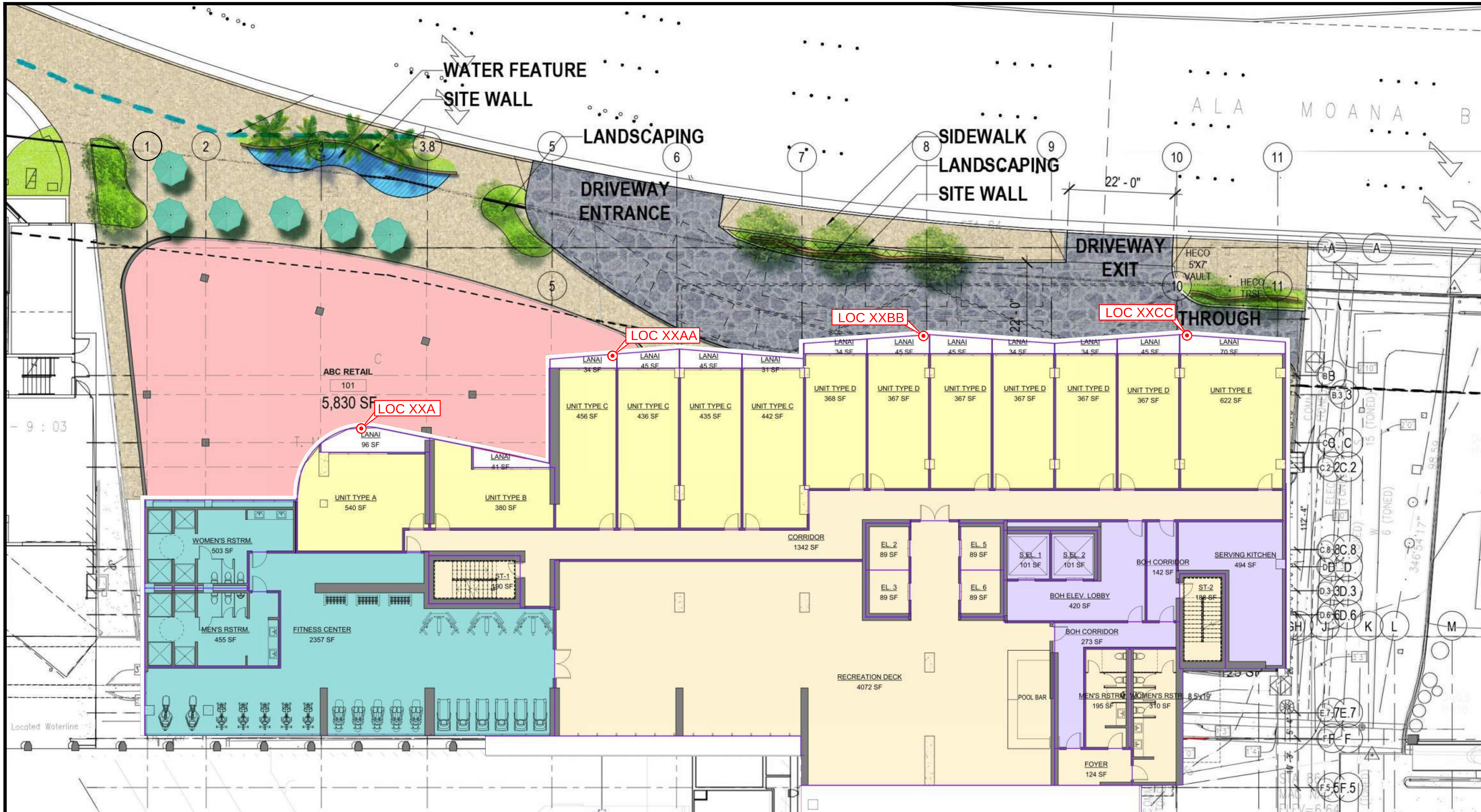
Notes:

(1) All setback distances are from the roadways' centerlines.
(2) See Tables V-2 and VI-1 for traffic volume, speed, and mix assumptions.
(3) Setback distances are for ground level receptors with unobstructed fields-of-view.
(4) "Hard Soil" conditions assumed along all roadways.

TABLE V-4

EXISTING AND FUTURE TRAFFIC NOISE LEVELS
(FUTURE NO BUILD AND BUILD CONDITIONS)

RECEPTOR LOCATION	SETBACK DIST. FROM ALA MOANA BLVD. C.L.	RECEPTOR EAR ELEVATION	EXISTING (CY 2021) DNL	FUTURE (CY 2027) LEVELS NO BUILD DNL	BUILD DNL
06A	119.24 FT	70 FT Above Ground	68	68	68
07A	119.24 FT	82 FT Above Ground	68	68	68
08A	119.24 FT	94 FT Above Ground	68	68	68
06AA	92.82 FT	70 FT Above Ground	69	70	70
07AA	92.82 FT	82 FT Above Ground	69	69	70
08AA	92.82 FT	94 FT Above Ground	69	69	70
06BB	82.35 FT	70 FT Above Ground	70	71	71
07BB	82.35 FT	82 FT Above Ground	70	70	71
08BB	82.35 FT	94 FT Above Ground	70	70	71
06CC	79.96 FT	70 FT Above Ground	71	71	71
07CC	79.96 FT	82 FT Above Ground	71	71	71
08CC	79.96 FT	94 FT Above Ground	70	71	71
10B	117.45 FT	117 FT Above Ground	68	68	63
19B	117.45 FT	198 FT Above Ground	67	67	68
28B	117.45 FT	279 FT Above Ground	67	67	68
36B	117.45 FT	351 FT Above Ground	67	67	68
10C	118.06 FT	117 FT Above Ground	68	68	60
19C	118.06 FT	198 FT Above Ground	67	67	68
28C	118.06 FT	279 FT Above Ground	67	67	68
36C	118.06 FT	351 FT Above Ground	67	67	68
10D	135.45 FT	117 FT Above Ground	67	67	64
19D	135.45 FT	198 FT Above Ground	66	67	64
28D	135.45 FT	279 FT Above Ground	66	66	64
36D	135.45 FT	351 FT Above Ground	66	66	64
10E	148.10 FT	117 FT Above Ground	66	66	61
19E	148.10 FT	198 FT Above Ground	66	66	63
28E	148.10 FT	279 FT Above Ground	66	66	63
36E	148.10 FT	351 FT Above Ground	66	66	63
LOC A	100.20 FT	97 FT Above Ground	68	69	69

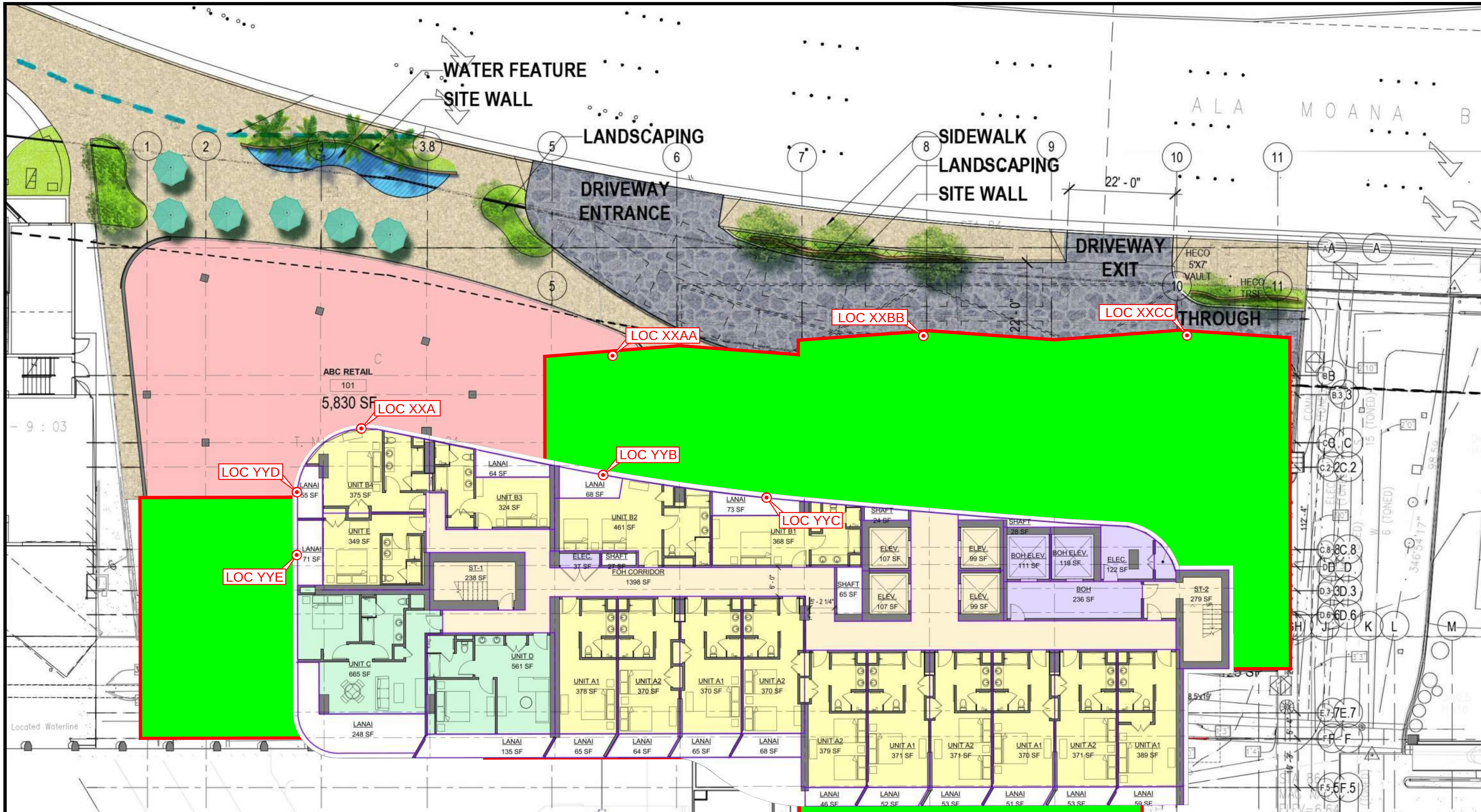


NOTE:
IN BOTH FIGURE V-1 AND TABLE V-4, THE RECEPTOR FLOOR LEVELS ARE DESIGNATED BY "XX" IN LOCS XXA, XXAA, XXBB, AND XXCC.

SCALE IN FEET

RECEPTOR LOCATIONS AT PLANNED AMB TOWER BUILDING (6TH-8TH FLOOR)

FIGURE V-1



NOTE:
IN BOTH FIGURE V-2 AND TABLE V-4, THE RECEPTOR FLOOR LEVELS ARE DESIGNATED BY "YY" IN LOCS YYB, YYC, YYD, AND YYE.

RECEPTOR LOCATIONS AT PLANNED AMB TOWER BUILDING (10TH-36TH FLOOR)

FIGURE V-2

20 dBA can be expected from these traffic noise reducing effects. In general, these noise shielding effects are greatest at receptors near ground level, and tend to diminish at high rise receptor elevations. Receptor locations which front roadways typically experience the least amount of noise shielding effects, and tend to have the highest traffic noise levels due to both the detrimental effects of smaller buffer distances and the lack of noise shielding effects from intervening buildings.

CHAPTER VI. FUTURE NOISE ENVIRONMENT

Predictions of future traffic noise levels were made using the traffic volume assignments of Reference 6 for CY 2027 with and without the proposed project. The future projections of non-project and project traffic volumes for the No Build and Build Alternatives are shown in Appendix C.

Table VI-1 contains the CY 2027 traffic volumes and noise levels during the PM peak hour for the Build Alternative at various distances from the roadways' centerlines. Table V-3 contains the CY 2027 setback distances to the 65, 70, and 75 DNL contours under the Build Alternative for unobstructed visual line of sight conditions. Future average vehicle speeds and traffic vehicle mixes along all roadways were assumed to be identical to those used for CY 2021 (see Table V-2).

Table VI-2 shows the expected increases in traffic noise levels from CY 2021 to CY 2027 under the No Build and Build Alternatives due to the projected increases in future traffic volumes along the roadways shown. As shown in Table VI-2, the projected increases in future traffic noise levels with or without the project should not exceed 1.0 dB at all roadways, except along Kahanamoku Street at Ala Moana Boulevard..

Table V-4 shows the predicted traffic noise levels at the various project receptor locations in CY 2027 under the No Build and Build Alternatives. The noise level reductions shown at receptor locations in the hotel tower between the No Build and Build Alternatives are the results of the beneficial noise shielding effects from the new building's exterior walls under the Build Alternative. Certain receptor locations ("YYD" and "YYE" in Figure V-2) located on the west (Ewa) face of the proposed tower building should not be exposed to traffic noise from the sections of Ala Moana Boulevard to the east due to the noise shielding effects of the north face of the tower building. The receptors at 10th Floor locations 10B and 10C should experience some noise shielding effects from Ala Moana Boulevard traffic noise due to the top edge of the transparent screen wall on the north face of the 9th Floor base structure below the tower.

The dominant traffic noise source in the project area will continue to be traffic noise from Ala Moana Boulevard. Increases in traffic noise levels along Ala Moana Boulevard by CY 2027 are expected to be 0.1 to 0.2 dB under the No Build Alternative and 0.3 dB under the Build Alternative. Significant increases in traffic noise levels along Ala Moana Boulevard are not expected to result from the AMB Tower Project. Similar conclusions were possible for future traffic noise along Ena Road and Kalia Road, where future traffic noise increases associated with the AMB Tower Development were predicted to be 0.0 dB for the Build Alternative. Traffic noise levels along Hobron Lane north or south of Ala Moana Boulevard are not expected to change under the No Build or Build Alternative.

Along Kahanamoku Street at the Ala Moana Boulevard intersection, a relatively

TABLE VI-1

FUTURE (CY 2027) TRAFFIC VOLUMES AND NOISE LEVELS ALONG ROADWAYS IN PROJECT AREA (PM PEAK HOUR, WITH THE PROJECT)

LOCATION	SPEED (MPH)	TOTAL VPH	******* VOLUMES (VPH) *********			50' Leq		100' Leq	200' Leq
			AUTOS	M TRUCKS	H TRUCKS				
Ala Moana Blvd. East. of Kalia Rd.	35	2,069	2,017	31	21	66.6	*	63.8	60.1
Ala Moana Blvd. - Fronting Project	35	2,839	2,754	34	51	70.3	*	66.7	62.5
Ala Moana Blvd. Between Kahanamoku & Hobron	35	2,998	2,908	36	54	70.5	*	66.9	62.7
Ala Moana Blvd. NW of Hobron Ln.	35	3,654	3,544	44	66	70.6	*	67.4	63.4
Kalia Road - At Ala Moana Boulevard	22	1,308	1,228	41	39	64.2		60.8	57.1
Ena Road At Ala Moana Blvd.	20	358	356	2	0	53.1		49.6	45.8
Kahanamoku St. At Ala Moana Blvd.	20	628	625	2	1	55.6		52.2	48.3
Hobron Ln. N. of Ala Moana Blvd.	20	710	709	1	0	55.7		52.2	48.4
Hobron Ln. S. of Ala Moana Blvd.	20	485	484	1	0	54.3		50.8	46.9

Notes:

1. Traffic noise levels calculated for ground level receptors.
2. Hard soil and unobstructed field-of-view conditions assumed.
3. * Calculated at 60 FT distance from centerline instead of 50 FT.

TABLE VI-2

CALCULATIONS OF PROJECT AND NON-PROJECT TRAFFIC NOISE CONTRIBUTIONS (CY 2027) (PM PEAK HOUR LEQ OR DNL)

	NOISE LEVEL INCREASE DUE TO:	
STREET SECTION	NON-PROJECT TRAFFIC	PROJECT TRAFFIC
Ala Moana Blvd. East. of Kalia Rd.	0.3	0.1
Ala Moana Blvd. - Fronting Project	0.2	0.2
Ala Moana Blvd. Between Kahanamoku & Hobron	0.3	0.2
Ala Moana Blvd. NW of Hobron Ln.	0.2	0.2
Kalia Road - At Ala Moana Boulevard	0.4	0.0
Ena Road At Ala Moana Blvd.	0.0	0.0
Kahanamoku St. At Ala Moana Blvd.	0.0	2.3
Hobron Ln. N. of Ala Moana Blvd.	0.0	0.0
Hobron Ln. S. of Ala Moana Blvd.	0.0	0.0

large increase in traffic noise level of 2.3 DNL is predicted to occur under the Build Alternative. Because of the relatively low noise levels during CY 2021 along Kahanamoku Street at the Ala Moana Boulevard intersection, traffic noise levels from Kahanamoku Street will not approach those associated with Ala Moana Boulevard even with the anticipated increase. Future traffic noise levels under the Build Alternative are predicted to be below 65 DNL at setback distances greater than 13 feet from the centerline of Kahanamoku Street.

Probably due to the lower number of tourists visiting Waikiki during early November 2021 when the Base Year traffic noise levels were measured at Locations A through D, the percentage mix of vans and buses observed in November 2021 were much lower (at 2.9%) than was observed (at 8.9%) along Ala Moana Boulevard prior to the COVID-19 crisis ten years earlier. For this reason, if tourist visitor counts in Waikiki return to the Pre-COVID values of the early CY 2010 decade by 2027, it is likely that the future CY 2027 traffic noise levels contained in this noise study are underestimating traffic noise levels by approximately 2 to 3 Leq or DNL. For this reason, the CY 2027 traffic noise levels for both the Build and No Build conditions shown in Tables V-4 and VI-1 may be underestimating future worst case traffic noise levels by 2 to 3 Leq or DNL. This should be considered when designing traffic noise mitigation measures for use at or near the project site, so as to provide acceptable interior noise levels within normally occupied living or commercial units.

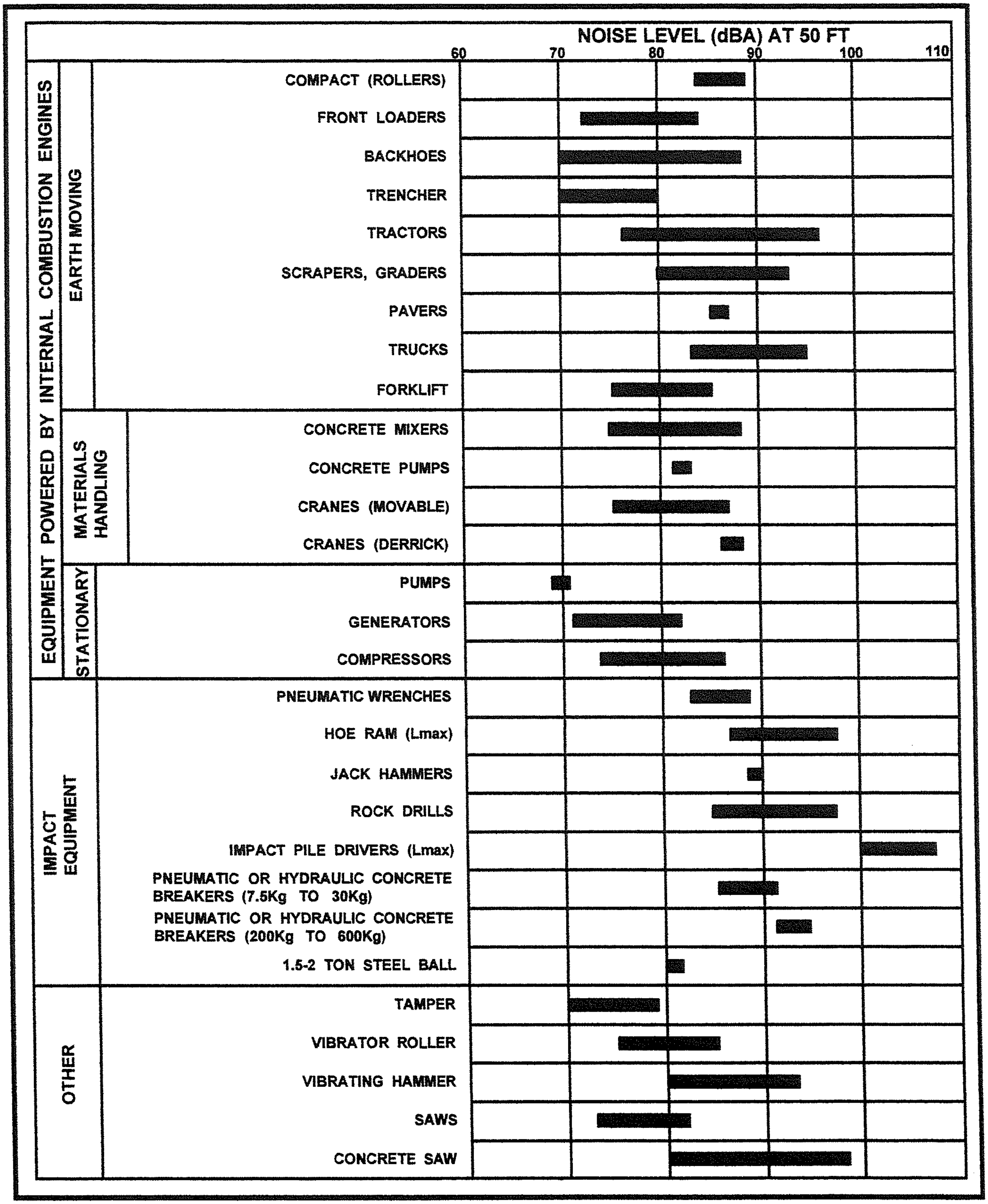
CHAPTER VII. DISCUSSION OF PROJECT-RELATED NOISE IMPACTS AND POSSIBLE MITIGATION MEASURES

Traffic Noise. For the units in the proposed AMB Tower building, noise mitigation measures are recommended. Closure and air conditioning of the units in the building is an effective noise mitigation measure for this project. Approximately 30 to 35 dBA of exterior-to-interior noise reduction is recommended for those guest units which have unobstructed lines-of-sight to Ala Moana Boulevard, and approximately 25 to 30 dBA of noise reduction is recommended for the remaining guest units. Approximately 25 to 30 dBA of noise reduction is also recommended for the common and support spaces within the project building. Special glazing and the use of weather seals will be required to achieve these noise reductions.

Noise impacts from project related traffic along the roadways which are expected to service the project traffic are not expected due to the relatively low levels of project related traffic noise when compared to the noise levels of non-project related traffic and other noise sources. In addition, the existing resort units which are located in the immediate vicinity of the project along Ala Moana Boulevard and Kalia Road are currently provided with air conditioning.

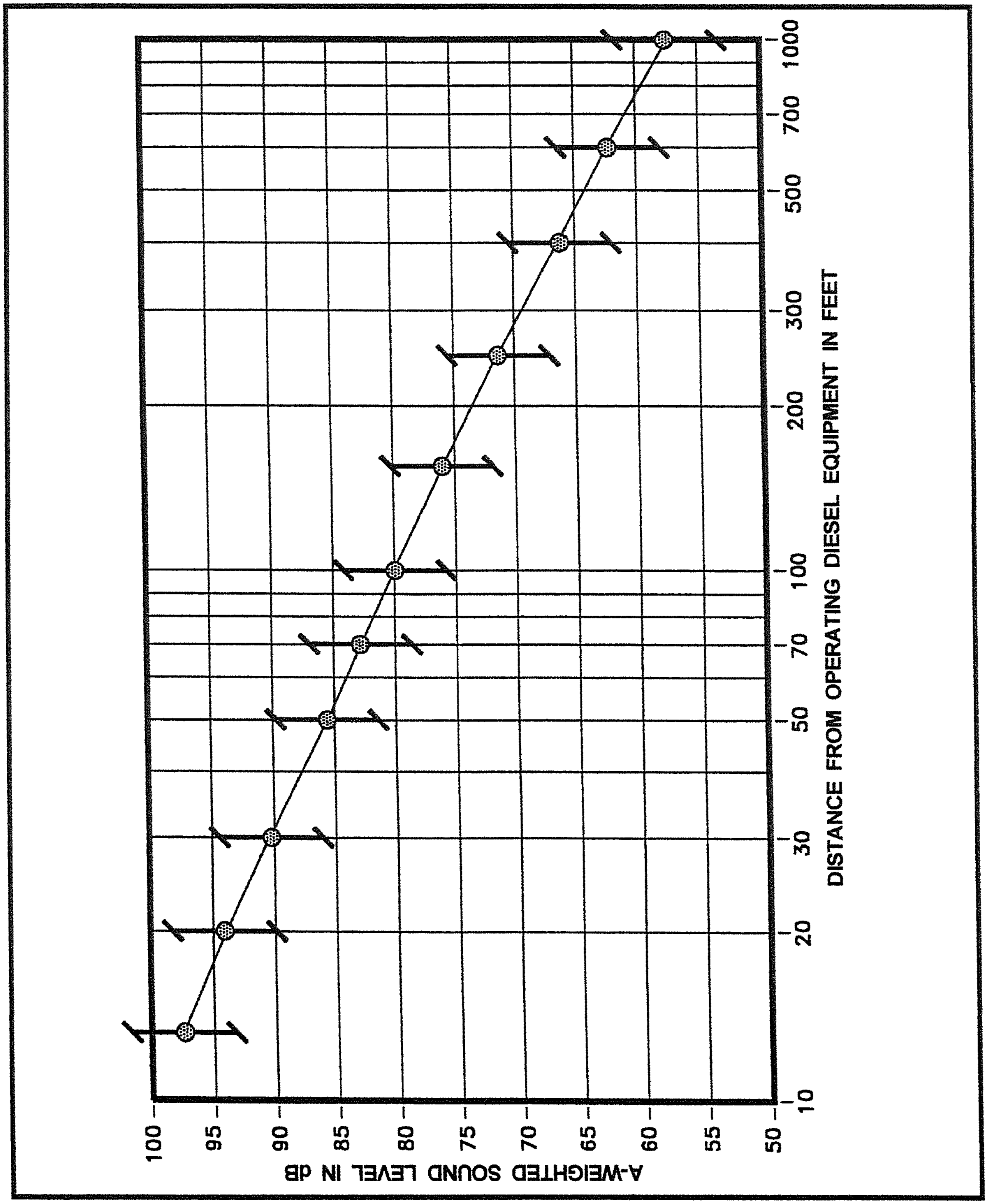
General Construction Noise. Audible construction noise will probably be unavoidable at times during the project construction period. It is anticipated that the actual work will be moving from one location on the project site to another during construction, such that the actual length of exposure to construction noise at any given receptor location will probably be less than the total construction period for the entire project. Table VII-1 depicts the range of noise levels of various types of construction equipment when measured at 50 FT distance from the equipment. Typical levels of exterior noise from construction activity (excluding pile driving activity) at various distances from the job site are shown in Figure VII-1. The impulsive noise levels of impact pile drivers are approximately 15 dB higher than the levels shown in Figure VII-1, while the intermittent noise levels of vibratory pile drivers are at the upper end of the noise level ranges depicted in the figure.

Figure VII-1 is useful for predicting exterior noise levels at short distances (within 100 FT) from the work when visual line of sight exists between the construction equipment and the receptor. Direct line-of-sight distances from the construction equipment to existing resort, residential, and commercial buildings will range from 26 FT to 400 FT, with corresponding average noise levels of 92 to 66 dBA (plus or minus 5 dBA). For receptors along a cross-street, the construction noise level vs. distance curve of Figure VII-1 should be reduced by approximately 8 dBA when the work is occurring at the intersection with the cross street, and should be reduced by 15 dBA when work is occurring at least 100 FT from the intersection (and the visual line-of-sight is blocked by intervening buildings). Typical levels of construction noise inside naturally ventilated and air conditioned structures are approximately 10 and 20 dB less, respectively, than the levels shown in Figure VII-1.



RANGES OF CONSTRUCTION EQUIPMENT NOISE LEVELS

TABLE VII-1



ANTICIPATED RANGE OF CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE VII-1

The existing resort units at the east end of the Grand Waikikian and at the north and west faces of the Kalia Tower building are predicted to experience the highest noise levels during construction activities due to their close proximity (within 26 FT to 59 FT) to the construction site. Predicted construction noise levels may intermittently exceed 92 dBA during earthwork activities and exceed 82 dBA during building erection activities. Impact pile driving will not be used during construction of the project building's foundation. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work, the availability of closure and air conditioning for noise mitigation at both resort buildings, and due to the administrative controls available for regulation of construction noise. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

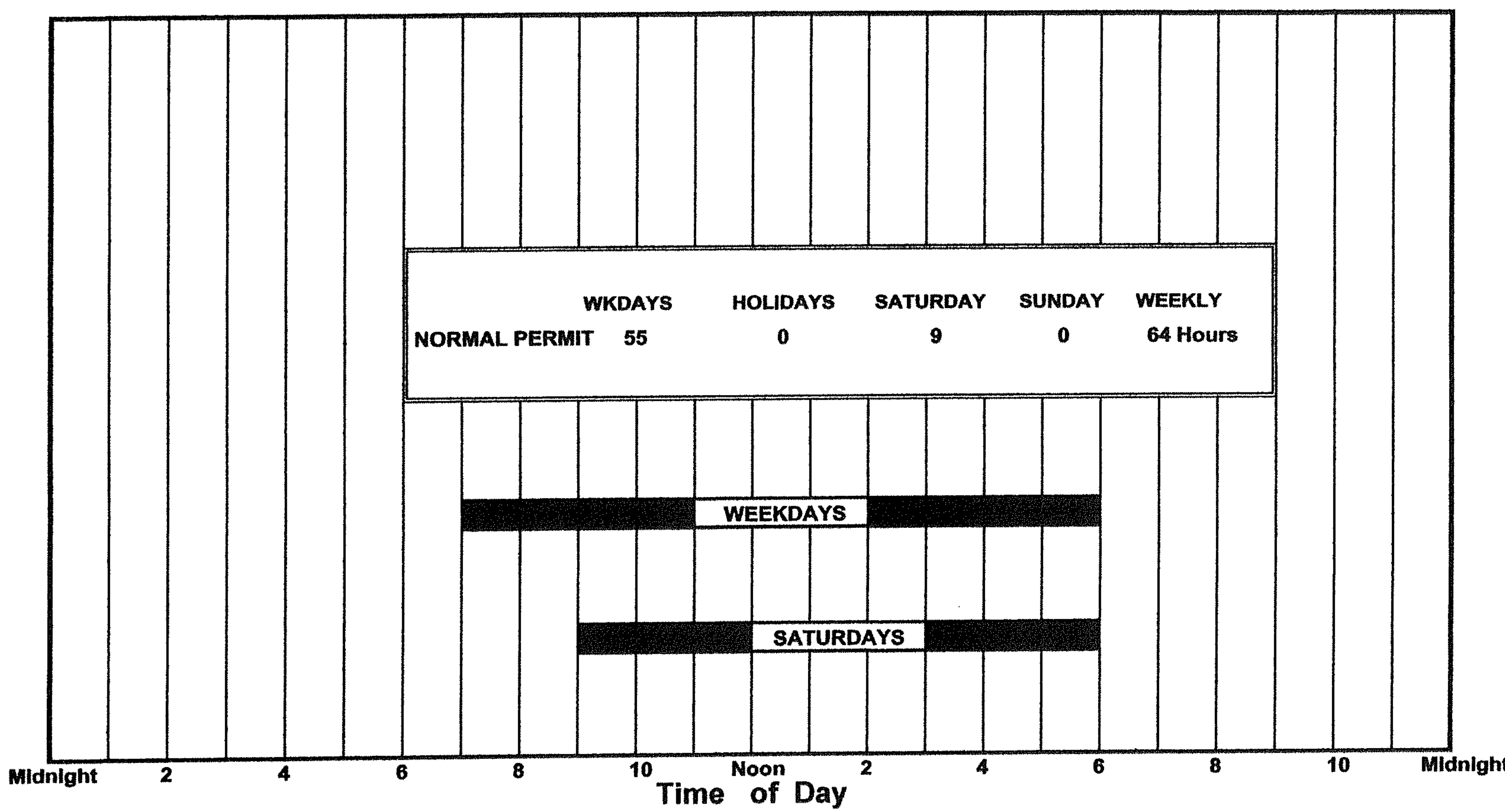
Mitigation of construction noise to inaudible levels will not be practical in all cases due to the intensity of construction noise sources (80 to 90+ dBA at 50 FT distance), and due to the exterior nature of the work (grading and earth moving, trenching, concrete pouring, hammering, etc.). The use of properly muffled construction equipment should be required on the job site.

Severe noise impacts are not expected to occur inside air conditioned structures which are beyond 70 to 450 FT of the project construction site. Inside naturally ventilated structures, interior noise levels (with windows or doors opened) are estimated to range between 73 to 55 dBA at 70 FT to 450 FT distances from the construction site. Closure of all doors and windows facing the construction site would generally reduce interior noise levels by an additional 5 to 10 dBA. With windows and doors closed, the highest construction noise levels of 92 dBA at 26 FT should decrease to approximately 72 dBA indoors.

The incorporation of State Department of Health construction noise limits and curfew times, which are applicable throughout the State of Hawaii (Reference 4), is another noise mitigation measure which is normally applied to construction activities. Figure VII-2 depicts the normally permitted hours of construction. Noisy construction activities are not allowed on Sundays and holidays, during the early morning, and during the late evening and nighttime periods under the DOH permit procedures.

New On Site Activities. The Recreation Deck and Swimming Pool and Emergency Generator, represent new activities on the project site. Risks of adverse noise impacts from the emergency generator are considered to be low as long as local noise limits are not exceeded. The applicable State Department of Health noise limits (see Reference 4) are 60 dBA and 50 dBA during the daytime and nighttime periods, respectively, and these limits apply to fixed machinery and equipment. The Honolulu Liquor Commission also applies similar noise limits to music and other noises which may emanate from an establishment where alcohol is served.

If the future pool activities are similar to those currently being conducted (sun-



AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

FIGURE VII-2

bathing, swimming, wading, etc.) at the existing pools adjacent to the Lagoon Tower and the Ilikai, risk of adverse noise impacts should be very low. Administrative controls should be implemented to reduce yelling, screaming, and other boisterous activities are allowed on a regular basis. If such activities are allowed on a regular basis, sound levels of 70 to 85 dBA at 50 feet from the center of the pool (and at the guest units of the Kalia Tower) could occur.

APPENDIX A. REFERENCES

(1) "Guidelines for Considering Noise in Land Use Planning and Control;" Federal Interagency Committee on Urban Noise; June 1980.

(2) "Environmental Criteria and Standards, Noise Abatement and Control, 24 FR, Part 51, Subpart B;" U.S. Department of Housing and Urban Development; July 12, l979.

(3) "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety;" Environmental Protection Agency (EPA 550/9-74-004); March 1974.

(4) "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.

(5) "FHWA Traffic Noise Model User's Guide;" FHWA-PD-96-009, Federal Highway Administration; Washington, D.C.; January 1998 and Version 2.5 Upgrade (April 14, 2004).

(6) Traffic Impact Repoort, Park Hotels and Resorts; Wilson Okamoto Corporation; February 2022.

(7) 24-Hour Traffic Counts, Station B72009200907, Ala Moana Boulevard Mauka of Kalia Road; July 12, 2017; Hawaii State Department of Transportation.

(8) Acoustic Study for the Hilton Hawaiian Village Master Plan Entitlements Project; October 2010; Y. Ebisu & Associates.

(9) Evaluation of Construction Noise Impacts; Kalia-Fort DeRussy Wastewater System Improvements; August 1, 2012; Y. Ebisu & Associates Letter Report to G70.

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E.....). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the LCdn with the LAdn.

Although not included in the tables, it is also recommended that "Lpn" and "LepN" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, Leq, is designated the "equivalent sound level". For Ld, Ln, and Ldn, "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, DBA, PNdB, and EPNdB are not to be used. Examples of this preferred usage are: the Perceived Noise Level (Lpn was found to be 75 dB. Lpn = 75 dB). This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of bel except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighed Loss of Hearing" (PHL) shall be used consistent with CHABA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

TABLE I

A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

TERM	SYMBOL
1. A-Weighted Sound Level	L_A
2. A-Weighted Sound Power Level	L_{WA}
3. Maximum A-Weighted Sound Level	L_{max}
4. Peak A-Weighted Sound Level	L_{Apk}
5. Level Exceeded x% of the Time	L_x
6. Equivalent Sound Level	L_{eq}
7. Equivalent Sound Level Over Time (T) [1]	$L_{eq(T)}$
8. Day Sound Level	L_d
9. Night Sound Level	L_n
10. Day-Night Sound Level	L_{dn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$
12. Sound Exposure Level	L_{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be speficied as $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACCOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78,

APPENDIX B (CONTINUED)

TABLE II

RECOMMENDED DESCRIPTOR LIST

TERM	A-WEIGHTING	ALTERNATIVE[1] A-WEIGHTING	OTHER[2] WEIGHTING	UNWEIGHTED
1. Sound (Pressure)[3] Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{Amax}	L_{Bmax}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{Apk}		L_{Bpk}	L_{pk}
5. Level Exceeded x% of the Time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level[4] Over Time(T)	$L_{eq(T)}$	$L_{Aeq(T)}$	$L_{Beq(T)}$	$L_{peq(T)}$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$	$L_{Adn(Y)}$	$L_{Bdn(Y)}$	$L_{pdn(Y)}$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average Value Over (Non-Time Domain) Set of Observations	$L_{eq(e)}$	$L_{Aeq(e)}$	$L_{Beq(e)}$	$L_{peq(e)}$
14. Level Exceeded x% of the Total Set of (Non-Time Domain) Observations	$L_{x(e)}$	$L_{Ax(e)}$	$L_{Bx(e)}$	$L_{px(e)}$
15. Average L_x Value	L_x	L_{Ax}	L_{Bx}	L_{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E,.....weighting.

(3) The term "pressure" is used only for the unweighted level.

(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is Leq(1). Time may be specified in non-quantitative terms (e.g., could be specified as Leq(WASH) to mean the washing cycle noise for a washing machine.

APPENDIX C

SUMMARY OF BASE YEAR AND FUTURE YEAR TRAFFIC VOLUMES

ROADWAY LANES	**** CY 2021 *****		CY 2027 (NO BUILD)		CY 2027 (BUILD)	
	AM VPH	PM VPH	AM VPH	PM VPH	AM VPH	PM VPH
Ala Moana Blvd. E. of Kalia Rd. (EB)	745	1,057	785	1,114	832	1,187
Ala Moana Blvd. E. of Kalia Rd. (WB)	781	841	819	882	819	882
Two-Way	1,526	1,898	1,604	1,996	1,651	2,069
Ala Moana Blvd. Between Kalia & Kahanamoku (EB)	974	1,473	1,021	1,543	1,085	1,635
Ala Moana Blvd. Between Kalia & Kahanamoku (WB)	929	1,151	974	1,204	974	1,204
Two-Way	1,903	2,624	1,995	2,747	2,059	2,839
Ala Moana Blvd. Between Kahanamoku & Hobron (EB)	1,024	1,473	1,080	1,556	1,194	1,682
Ala Moana Blvd. Between Kahanamoku & Hobron (WB)	906	1,202	957	1,268	989	1,316
Two-Way	1,930	2,675	2,036	2,824	2,182	2,998
Ala Moana Blvd. NW of Hobron Ln. (EB)	1,103	1,741	1,160	1,824	1,274	1,950
Ala Moana Blvd. NW of Hobron Ln. (WB)	1,345	1,589	1,395	1,656	1,427	1,704
Two-Way	2,448	3,330	2,555	3,480	2,701	3,654
Kalia Road At Ala Moana Blvd. (SB)	470	673	470	673	470	673
Kalia Road At Ala Moana Blvd. (NB)	392	635	392	635	392	635
Two-Way	862	1,308	862	1,308	862	1,308
Ena Road At Ala Moana Blvd. (SB)	111	145	111	145	111	145
Ena Road At Ala Moana Blvd. (NB)	114	213	114	213	114	213
Two-Way	225	358	225	358	225	358
Kahanamoku St. At Ala Moana Blvd. (SB)	214	184	214	184	294	272
Kahanamoku St. At Ala Moana Blvd. (NB)	141	235	141	235	220	356
Two-Way	355	419	355	419	514	628
Hobron Ln. N. of Ala Moana Blvd. (SB)	453	394	453	394	453	394
Hobron Ln. N. of Ala Moana Blvd. (NB)	151	316	151	316	151	316
Two-Way	604	710	604	710	604	710
Hobron Ln. S. of Ala Moana Blvd. (SB)	166	222	166	222	166	222
Hobron Ln. S. of Ala Moana Blvd. (NB)	224	263	224	263	224	263
Two-Way	390	485	390	485	390	485

Appendix M

Economic Impact Analysis
and Public Cost Benefit Assessment
of the Proposed AMB Hotel Tower
at Hilton Hawaiian Village

CBRE, Inc.

September 23, 2022

CBRE VALUATION & ADVISORY SERVICES

ECONOMIC IMPACT ANALYSIS & PUBLIC COST BENEFIT ASSESSMENT

PROPOSED AMB HOTEL TOWER at Hilton Hawaiian Village

1831 to 1841 Ala Moana Boulevard
Waikiki, Honolulu, HI 96815
Tax Map Key (1) 2-6-9, Parcels 3, 4, 5, 6, 7, 9 & 13
CBRE, Inc. File No. 20-251PS-3179-2

Jeffrey Overton, Principal
G70 International

CBRE

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VALUATION & ADVISORY SERVICES

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September 23, 2022

Jeffrey Overton, Principal
Group 70 International
111 South King Street, Suite 170
Honolulu, Hawaii 96813
Phone: (808) 523-5866
Email: jeff@g70.design

RE: Economic Impact Analysis and Public Fiscal Assessment of the Proposed AMB Hotel Tower at Hilton Hawaiian Village
1831 to 1841 Ala Moana Boulevard
Waikiki, Honolulu, Hawaii 96815
CBRE, Inc. File No. 20-251PS-3179-2

Mr. Overton:

At your request, we have completed an Economic Impact Analysis and Public Fiscal assessment of the proposed 515-room Park Hotels & Resorts AMB Hotel Tower (AMB Tower) to be located adjacent and incorporated into the existing Hilton Hawaiian Village, at the ewa end of the Waikiki urban resort district, Honolulu, Hawaii.

The 36-story tower, with 28 lodging floors above an eight-story podium, will be an expansion of the existing full-service resort with finishes commensurate with other upper-upscale lodging offerings in market. Additional amenities will include an ABC Store, recreation deck (pool, fitness center, bar) and a multi-floor parking garage. The operation will not include restaurants or other amenities and services which are readily available in the Hilton Hawaiian Village 22.4-acre campus, Waikiki's premiere and largest resort development.

The AMB Tower will contain some 395,028 square feet of floor area (118,556 SF in the podium and 276,472 SF in the tower). The project cost is budgeted at $461.5 million and will require some 30 months to complete, with construction anticipated to commence by early 2025 subject to market conditions and receipt of necessary entitlements and permits.

The underlying site includes 20,141 square feet of three Ala Moana Boulevard-fronting lots, TMKs First Division 2-6-9 parcels 4, 5 & 6, in conjunction with available abutting lands within the HHV.

The proposed AMB Tower site is shaded blue on the map below, in the mauka/ewa corner of the larger HHV campus (yellow). The holding has some 254 feet of frontage on Ala Moana Boulevard, a primary Waikiki access/thoroughfare. The neighborhood is fully-developed, with the subject representing a re-development of older low-density commercial buildings.

Our assignment was to analyze the proposed AMB Tower project from entitlement, through ground-breaking and construction (2025 to 2027), and eventual operational ramp-up to stabilization (2028), assessing its impact on the Oahu economy and State and County over time.

The study and presentation are comprised of two elements.

1. **Economic Impact Analysis.** Estimating the general and specific effects on the local economy which will result from the development of the AMB Tower, including capital investment, employment during initial construction and on-going hotel operations, worker wages and spending, contractor/supplier profits, hotel and retail business activity, guest population and spending, and other regional monetary, employment and economic effects. We also applied the State of Hawaii *Inter-County Input-Output Model* to test Type II [1] impacts and compare them with our model outcomes.
2. **Public Cost/Benefit Assessment.** Quantifying the impact on the public purse arising from the proposed AMB Tower in the form of new tax/fee revenues for the State of Hawaii and Honolulu County, versus any implied costs of needed additional governmental services to the development.

[1] "A Type II multiplier accounts for the direct effect, the indirect effect, plus the economic activity produced by the consumption spending related to the earnings induced by the direct and indirect effects of the final demand change (called the induced effect)." Source: https://files.hawaii.gov/dbedt/economic/reports/IO/2017-County-I-O.pdf

To generate outcomes for the study issues we constructed a two-period model depicting the approvals and construction of the project (2022 to mid-2027) and stabilized annual operation thereafter.

The pertinent results are summarized in the attached report, which opens with an Introduction and Primary Study Conclusions section describing our salient findings. The remainder of the report is comprised of a series of brief discussions and tabular presentation of our data, analysis, and modeling for each aspect of the assignment.

The purpose of study was to provide economic and fiscal modeling, and an analysis of probable impacts on the Honolulu and Oahu communities resulting from the development of the proposed AMB Tower project for inclusion in submittals in its on-going entitlement process.

As part of our investigation and analysis we have:

- visited the subject property and its environs.
- interviewed market participants and knowledgeable parties active in the regional economy, tourism/hotel industries, and real estate sectors.
- reviewed federal, state and county materials, statistics, policies and publications.
- accessed on-line databases; and,
- compiled materials from published and private sources, and our files.

There were no extraordinary assumptions

All conclusions presented herein are subject to the identified limiting conditions, assumptions, and certification of CBRE, Inc., in addition to any others specifically set forth in the text.

We appreciate the opportunity to be of service to Group 70 International and Park Hotels & Resorts. regarding this proposed, modern, high-quality sustainable addition to the Waikiki lodging inventory.

Respectfully submitted,

CBRE - VALUATION & ADVISORY SERVICES

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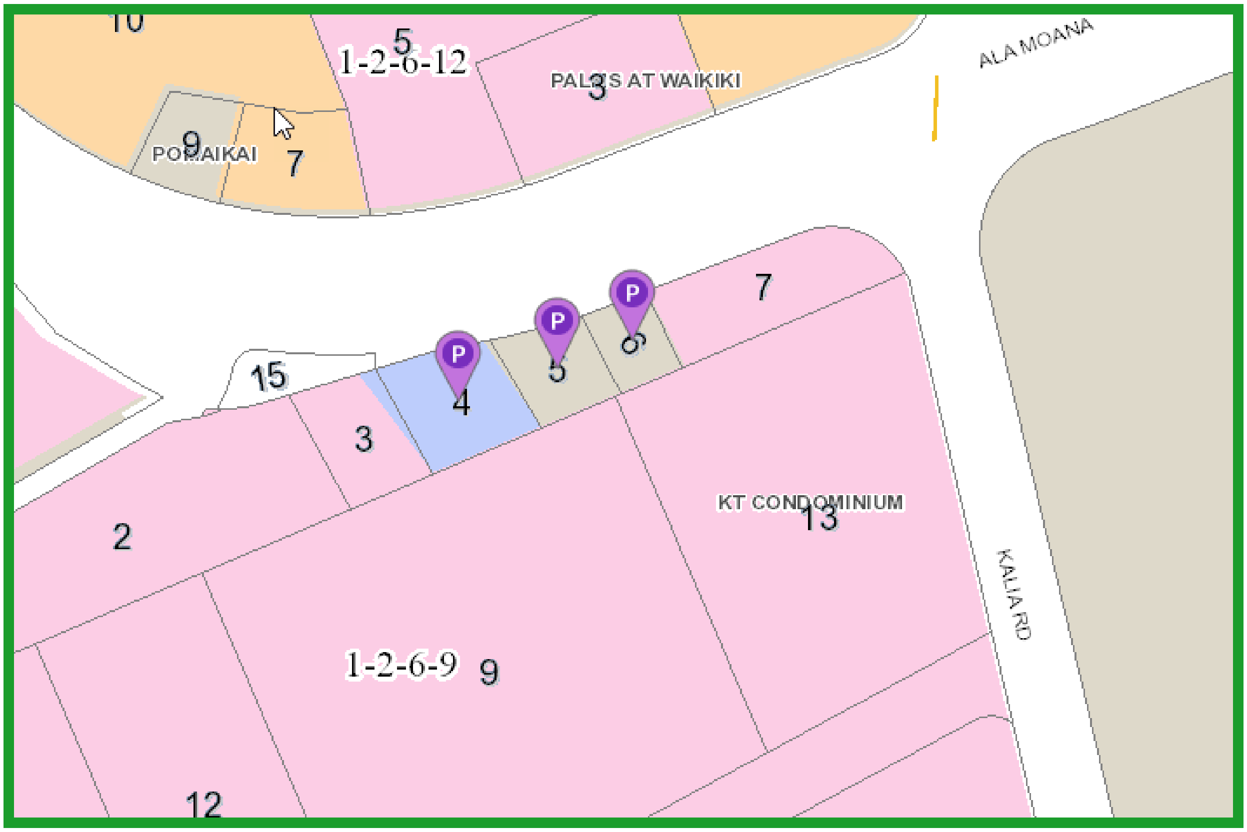
Subject Location Maps

Aerial of Island of Oahu with Subject Location (Figure 1)

Aerial View of Project Site, Outlined in White (Figure 2)

PLAT MAP



Excerpt from Hawaii Information Service Map (Figure 3)

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Introduction and Primary Study Conclusions

INTRODUCTION

The CBRE, Inc. assignment was to analyze the proposed AMB Tower project from a real estate market perspective and to identify and quantify probable economic and public fiscal impacts associated with the master plan considering competitive, regional, prevailing and forecast trends to answer two basic study questions:

1. What will be the general/specific and direct/indirect economic impacts on Oahu resulting from the undertaking of the AMB Tower via capital investment, employment, wages, hotel & retail business operations, guest population and spending, and other economic activity related to the real property asset?
2. What will be the fiscal impacts on the state and county "public purse(s)" from the AMB Tower project in increased tax/fee receipts and per capita operating costs?

These issues were addressed through a comprehensive research and inquiry process utilizing data from market investigation, governmental agencies, various Hawaii-based media, industry spokespersons/sources, on-line databases, published public and private documents, and our files.

The pertinent results of our study are highlighted in the following summary report which contains brief narrative, tabular data and other materials contributing to our conclusions. The presentation is divided into four sections:

1. Primary Study Conclusions
2. The Subject Property and Proposed Project
3. Analysis of the Economic Impacts from the development of the AMB Tower
4. Assessment of the Public Fiscal Impacts (Costs/Benefits) Associated with the AMB Tower project

The primary source information regarding the subject used in our study were:

- Maps, master plans, unit counts, and background materials provided by Group 70 International, the developer, and other members of the planning team.
- Direct cost estimates and construction timing provided by Rider Levitt Bucknall, Group 70 and actual costs/budgets for recently-constructed and proposed Honolulu tower developments.
- Forecast hotel operating revenues, guest populations and their spending, based on our analysis of numerous comparable Hawaii hotels and general tourism/ hotel trends.
- Projections, maps, community plan materials, and other data from the County of Honolulu Planning Department and State of Hawaii Office of Planning, DBEDT, and Dept. of Labor and Industrial Relations.
- The United States Census, Bureau of Labor Statistics and other federal data.
- Data from Hawaii Information Service and CBRE intranet sources; and,
- Data from other published and on-line sources and from our files.

We did not complete a detailed Market Study as part of this analysis; however, we do provide an overview of the post-quarantine Waikiki/Oahu tourism and hotel industries which indicates there is demand for a competitive AMB Tower project.

The AMB Tower site and environs have been viewed by our firm on many occasions and we have completed hundreds of hospitality-oriented appraisal and consulting assignments in Waikiki over the past four decades.

The modeling time-frame for our *Economic Impact Analysis* and *Public Fiscal Assessment* studies both extend 6.5 years, from mid-2022 through year-end 2028, broken-down as follows:

- Planning/design, entitlements and approvals will be completed from mid-2022 through 2024.
- Construction, from site work to project completion, will require about 30 months, expected to start by early 2025, and open in mid-2027.
- Hotel operations would commence in 2027 and begin ramping-up to wards stabilization.
- Hotel is assumed to reach stabilization in 2028 (and beyond).

The anticipated development time-line is summarized below. Our modeling time-line follows.

BUILD-OUT AND RAMP-UP TIMING FOR THE PROPOSED HHV AMB HOTEL TOWER

Year	Project Year	Activity
2022	1	Entitlements, A&E, Drawings, Permitting & Financing
2023	2	Entitlements, A&E, Drawings, Permitting & Financing
2024	3	Complete Permitting, Site Prep, Infrastructure Extension, and Staging
2025	4	Vertical Construction Commences Early in Year
2026	5	Construction Continues
2027	6	Construction Completed by Mid-Year, Hotel Opens and Ramps=Up
2028	7	Hotel Reaches Stabilized Operations

Compiled by CBRE

DEPICTION OF TIME-LINE FOR ECONOMIC IMPACT AND PUBLIC FISCAL MODELS			
Modeling Period	July 2022 through December 2024	January 2025 through June 2027	July 2027 Through December 2028
Entitlement/Approvals/Staging	Anticipated to Take Approximately 18 Months		
Vertical Construction & Finish		Projected to Require 30 Months	
Opening and Operation			Hotel opens, Ramps-Up and Achieves Stabilized Operations

This time-frame effectively depicts the life-span of the project from today, through final entitlement, ground-breaking, build-out, and its eventual operational "stabilization". For analytical purposes we have only projected operations for the stabilized year (assumed to be 2028 and beyond) and have not calculated interim ramping-up operations.

Primary and direct secondary capital/economic outcomes from the development of AMB Tower are quantified and presented on all tables in two periods; **during construction** (cumulatively from 2022 to mid-2027) and ramp-up to **stabilized annual operations** (mid-2027 through 2028) and beyond. The de facto daily guest population of the hotel and their spending is estimated.

We have also tested our econometric model outcomes against the formulae within the State DBEDT "*2017 Hawaii Inter-County Input-Output Study*" (approved June 2021).

It is noted, our economic and fiscal models are not specifically time-sensitive as all dollar amounts are expressed in constant 2022 dollars. Should the project timeline move several years in either direction from the modeling period we would not anticipate major changes to our stated conclusions.

PRIMARY STUDY CONCLUSIONS

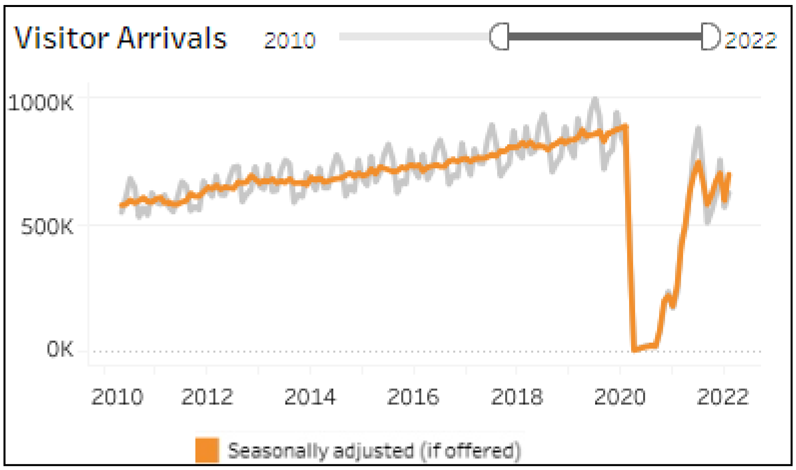
Based on our analysis of the subject property, its environs, and envisioned development we have reached the following conclusions as of the Second Quarter of 2022 regarding the probable market standing and combined economic impacts of the proposed AMB Tower at the Hilton Hawaiian Village project.

Economic Overview

- The AMB Tower will be located in the Waikiki District of the Island of Oahu, one of the major islands in the Hawaiian chain and having the largest, most-visited tourism plant. Prior to the onset of the COVID-19 pandemic, Oahu/Waikiki was experiencing an extended visitor industry upcycle and a healthy general economy. The island had shown strong growth in Total Visitor Arrivals, Total Visitor Days and Total Visitor Expenditures, the three most critical industry data points, since the depth of the recession, with total gains of 54%, 43% and 62%, respectively, between 2010 and 2019. All-time records were again set in each category in 2019, for the fifth consecutive year, and January/February of 2020 were the strongest in four decades.

- The trans-pacific quarantine for Hawaii was instituted in late March 2020 and continued to October 15, 2020 when the State's Safe Travel plan commenced. During the seven-months of closure the Oahu tourism and hotel industries were virtually shuttered with arrivals, spending and employment plunging by some 90 percent. Most sectors of Hawaii's economy were heavily impacted, with unemployment surging above 30 percent, per capita personal income dropping, and many household's dependent upon federal pandemic relief funds.

- With the commencement of a quarantine bypass, tourism began recovering quickly (as shown in the chart below) despite logistical issues impacting hotels, restaurants/bars, and rental cars, and difficulty in filling staffing needs. Westbound travelers (Mainland US) roared back to pre-pandemic levels by mid to late-2021. With the on-going re-opening of Japan/Asian and Pacific countries to Hawaii travel, we expect Oahu visitor counts, spending, occupancy and economic activity to return to stabilized trends by 2023-24 barring a variant surge or recession.



Source: DBEDT (Figure 4)

- Among the favorable economic indicators and trends on Oahu, the unemployment rate has dropped to a current level (May 2022) of about 6.7 percent down nearly two-thirds from the 19.4 percent in 2020 during the depths of the quarantine. Recovery has flowed throughout the economy, although many closed businesses may never reopen, and there has been positive absorption of retail and industrial space in 2021-22, continuing strong residential and industrial sectors, escalating investor interest, and an increasing velocity of development. However, insufficient staffing, supply-chain issues, surging inflation and recession concerns are near-term obstacles to reaching stabilized trend lines.

- We estimate there will be a shortfall of lodging unit supply on Oahu relative to increasing demand over the coming ten-years, which we forecast will be a minimum of 2,670 units by 2032 even if all proposed and planned projects are built (unlikely)[2]. The shortage will be even greater as new legislation is enforced supporting the County closure of thousands of uncertified/illegal units (typically advertised via VRBO or Airbnb).

- Recognizing the established vibrancy of the hotel investment sector and the assumed short-term impact of COVID, hotel sales activity ceased during the quarantine as owners awaited the inevitable strong recovery and were generally unwilling to sell at a pre-pandemic value discount of up to 30 percent, experienced in the hotel sector nation-wide. Demand for hotel properties has surged to record levels since early 2021, with many Waikiki and neighbor

[2] See Market Analysis in Addendum A, table titled "Quantification of Transient Lodging Room Night Demand".

island hotels trading and investor interest high. Per room sales prices on Oahu are approaching $1 million per room for premier holdings.

- The barrier to entry into the Waikiki lodging market is high. Development sites are limited, entitlements/approvals are difficult to obtain (expensive, risky and time-consuming), and construction costs are near all-time highs. While many hotels in Waikiki have been recently renovated/repositioned there has not been an entirely new hotel built in the Waikiki District in decades due to uneconomic conditions, with lodging additions being limited to condotels, timeshare and resort condominiums. The proposed AMB Tower will be an additional upper-upscale tower within the Hilton Hawaiian Village Resort.

- The University of Hawaii Economic Research Organization (UHERO) *Forecast Project County Forecast* (May 2022) forecasts strong recovery/growth again for Honolulu County in 2022 followed by slowing but continuing annual percentile growth over the subsequent two years.

- The UHERO Honolulu County forecasts are shown below.

TABLE 5: MAJOR ECONOMIC INDICATOR SUMMARY
HONOLULU COUNTY FORECAST

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	473.9	411.5	421.9	438.3	453.7	459.3
% Change	0.1	-13.2	2.5	3.9	3.5	1.2
Unemployment Rate (%)	2.3	10.3	7.1	3.4	2.7	2.7
Population (Thou)	1,017.6	1,013.2	1,000.9	996.0	995.0	995.2
% Change	-0.2	-0.4	-1.2	-0.5	-0.1	0.0
Personal Income (Mil $)	57,756.1	60,521.9	63,473.7	64,537.4	67,742.3	70,220.0
% Change	2.4	4.8	4.9	1.7	5.0	3.7
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.8	6.7	4.0	2.0
Real Personal Income (Mil 2020 $)	58,663.5	60,521.9	61,162.1	58,296.9	58,830.9	59,772.0
% Change	0.8	3.2	1.1	-4.7	0.9	1.6
Real Per Capita Income (Thou 2020 $)	57.7	59.7	61.1	58.5	59.1	60.1
% Change	1.0	3.6	2.3	-4.2	1.0	1.6
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	6,153.9	1,506.2	3,330.9	4,698.4	5,460.0	5,525.3
% Change - Total Visitor Arrivals by Air	5.0	-75.5	121.1	41.1	16.2	1.2
U.S. Visitors	3,326.5	967.4	3,139.1	3,595.7	3,382.8	3,265.8
% Change - U.S. Visitors	9.3	-70.9	224.5	14.5	-5.9	-3.5
Japanese Visitors	1,492.8	269.4	23.1	383.1	946.4	1,041.0
% Change - Japanese Visitors	6.7	-82.0	-91.4	1,556.3	147.0	10.0
Other Visitors	1,334.6	269.5	168.7	719.5	1,130.8	1,218.4
% Change - Other Visitors	-6.0	-79.8	-37.4	326.5	57.2	7.8
Visitor Days (Thou)	41,827.3	12,829.5	26,980.7	34,533.8	37,969.3	38,035.1
% Change	3.3	-69.3	110.3	28.0	9.9	0.2
Occupancy Rate (%)	84.0	32.8	54.9	70.4	76.2	76.7

Note: Source is UHERO. Income figures for 2021 are UHERO estimates. Figures for 2022 - 2024 are forecasts.

Source: UHERO (Figure 5)

- Though not issued on a County-basis, the State of Hawaii Department of Business, Economic Development & Tourism (DBEDT) *Quarterly Outlook for the Economy* (2nd Quarter 2022) statewide forecasts show continuing gains for each of the 13 indicators measured from 2022 through 2025.

The DBEDT actual and forecasts data are shown below.

ACTUAL AND FORECAST OF KEY ECONOMIC INDICATORS FOR HAWAII: 2020 TO 2025

Economic Indicators	2020	2021 1/	2022	2023	2024	2025
	Actual		Forecast			
Total population (thousands) 2/	1,452	1,442	1,441	1,442	1,445	1,448
Visitor arrivals (thousands) 3/	2,708	6,777	9,129	9,723	10,096	10,329
Visitor days (thousands) 3/	28,660	65,343	82,218	86,249	88,911	90,361
Visitor expenditures (million dollars) 3/	5,162	12,996	17,763	19,029	19,953	20,553
Honolulu CPI-U (1982-84=100)	286.0	296.8	314.6	323.5	331.0	337.9
Personal income (million dollars)	82,527	87,054	86,230	88,911	91,577	94,202
Real personal income (millions of 2012$)	66,459	68,171	64,728	65,239	65,945	66,685
Personal income deflator (2012=100)	124.2	127.7	133.2	136.3	138.9	141.3
Non-agricultural wage & salary jobs (thousands)	559.9	583.5	609.8	629.3	645.6	659.2
Civilian unemployment rate	12.0	5.7	3.7	3.5	3.1	2.9
Gross domestic product (million dollars)	82,885	90,059	97,402	102,333	106,363	110,117
Real gross domestic product (millions of 2012$)	70,625	73,880	76,244	78,150	79,869	81,466
Gross domestic product deflator (2012=100)	117.4	121.9	127.8	130.9	133.2	135.2
Annual Percentage Change						
Total population	(NA)	-0.7	-0.1	0.1	0.2	0.2
Visitor arrivals	-73.9	150.3	34.7	6.5	3.8	2.3
Visitor days	-68.3	128.0	25.8	4.9	3.1	1.6
Visitor expenditures	-71.1	151.8	36.7	7.1	4.9	3.0
Honolulu CPI-U	1.6	3.8	6.0	2.8	2.3	2.1
Personal income	5.1	5.5	-0.9	3.1	3.0	2.9
Real personal income	3.4	2.6	-5.1	0.8	1.1	1.1
Personal income deflator (2012=100)	1.7	2.8	4.3	2.3	1.9	1.7
Non-agricultural wage & salary jobs	-15.4	4.2	4.5	3.2	2.6	2.1
Civilian unemployment rate 4/	9.1	-6.3	-2.0	-0.2	-0.3	-0.2
Gross domestic product	-9.7	8.7	8.2	5.1	3.9	3.5
Real gross domestic product	-10.8	4.6	3.2	2.5	2.2	2.0
Gross domestic product deflator (2012=100)	1.1	3.9	4.8	2.5	1.7	1.5

NA Not available or not applicable.
1/ Some of the indicators are preliminary or estimated such as visitor expenditures, personal income, and gross domestic product
2/ July 1 count.
3/ Visitors who came to Hawaii by air and by cruise ship. Expenditures includes supplementary business expenditures.
4/ Absolute change from previous year.
Source: Hawaii State Department of Business, Economic Development & Tourism, May 24, 2022.

Source: DBEDT (Figure 6)

- Overall, the Oahu/Waikiki economy has regained much of the "lost" ground, with a return to long-term trends on the horizon. The overall near to mid-term outlook is favorable.

Economic Impact Analysis

We have constructed a model depicting the economic impact of the proposed AMB Tower on the Honolulu and Statewide community during its "lifespan" from entitlement in 2022-24, through build-out (2025-mid-2027), and operations" in mid-2027 and thereafter, stabilizing in 2028.

All estimated amounts are in constant 2022 dollars. We note, even if the timing of development or absorption moves from our projected dates it does not change the resultant outcomes or indicators. The use of constant dollars removes time as a determinant variable.

The purpose of the model is to illustrate how capital, jobs, wages, population and business activity will flow over time for planning and budgeting purposes apart from and present value considerations.

Among the primary forecasts and conclusions regarding the economic impacts of the development of AMB Tower are as follows:

- The development of proposed AMB Tower will bring in an estimated $499.6 million of economic impact (along with significant unquantified indirect expenditures) into the Oahu economy and real estate market. This will generate some $461.5 million in total direct capital investment island-wide during its approval and construction period (from 2022 to 2027), and it will contribute some $137.6 million in annual economic activity on a stabilized basis thereafter.

- The construction of the AMB Tower infrastructure/site work and vertical components will directly create an estimated 2,441 "worker-years" of employment (the equivalent of 52 work weeks at 40 hours per week) in the trades and supply businesses during build-out, averaging about 900 worker years annually, with an estimated $190.4 million in wages (averaging about $76 million per year).

- The hotel and retail operations will create some 370-new worker-years of Full-Time Equivalent (FTE) employment on a stabilized basis with cumulative annual wages totaling $28.5 million.

- Associated secondary/off-site employment during the development time-frame will total 610 worker-years with wages of $38.1 million and a stabilized FTE job-count of 123 with total wages of $7.7 million per year.

- At stabilized occupancy the average daily de facto guest population of the hotel will be some 1,020 persons. Their discretionary expenditures into the Oahu economy/businesses community will average $33.9 million per year on a stabilized basis.

- The on-going hotel operations and on-site retail business activity will average $82.2 million in gross revenues per year on a stabilized basis.

State Input-Output Model

- Application of the State Inter-County Input-Output Model macro multipliers depicting direct, indirect and induced economic impacts arising from development of AMB Tower results in significantly higher economic out-flow indicators than those from our direct, subject-specific micro model.

- The total State economic impact from construction of the project would reach $969.2 million, there would be 4,870 total construction worker-years of jobs created and total 5,270 worker-year jobs in all sectors, and the total increase in direct-effect earnings statewide would be $102.1 million.

- The State model also estimates the total annual economic output from on-going hotel & retail business activity within AMB Tower would be at $302.6 million annually on a stabilized basis. The total number of worker-years island-wide attributable to the subject dollars flowing through the economy would be 1,377 direct-effect positions upon stabilization and 1,575 positions throughout the State.

SUMMARY COMPARISON OF MAJOR ECONOMIC IMPACTS FOR THE PROPOSED HHV AMB HOTEL TOWER
All Amounts Expressed in Constant, Uninflated 2022 Dollars

Analysis Item	Cumulative During Build-Out Period	Stabilized Annually Thereafter
	6/2022 to 6/2027	2028 and Beyond
Direct Capital Investment	$461,516,929	
Local Contractor's Profits	$46,151,693	
Local Supplier's Profits	$18,460,677	
Worker Years of Jobs	2,441	493
Forecast Stabilized Hotel Annual Gross Revenues		$82,212,425
Employee Wages	$190,424,000	$28,480,587
Average Daily Hotel Guest Population		1,020
Total De Facto Population		1,020
Average Annual Guest Spending (Excluding Lodging and Rental Car)		$33,869,336
Oahu "Base" Economic Impact	$499,601,729	$137,624,725

(Above figures are not intended to sum)

Public Fiscal Impacts (Costs/Benefits)

Public fiscal (or cost/benefit) impacts were estimated on a per capita basis for the stabilized guest population of the AMB Tower project which is estimated to average about 1,020 persons daily. This is based on a conservative assumption that each new person added to the Oahu community is "responsible for" a similar tax cost/obligation as every other person on the island, resident or visitor.

The AMB Tower guests represent additions to the Oahu de facto population count and as such create proportionate additional operating costs for the County and State when viewed from a per capita perspective.

However, the actual additional costs and impact on services from the AMB Tower guests will be minimal as they will place no to limited demands on schools, prisons, social/welfare support, most governmental services or facilities, and are unlikely to push emergency services and regional infrastructure beyond an expansion-requiring threshold.

The proposed project represents an expansion of the private Hilton Hawaiian Village “community” and would be well-serviced by the existing campus infrastructure and services in addition to those within the project.

The estimated amounts represent "new" tax dollars and governmental expenditures resulting from the AMB Tower project.

- Honolulu County will realize Real Property Taxes and other secondary receipts and development fees totaling $13.3 million during the build-out period and $18.4 million annually on a stabilized basis thereafter.

- The State of Hawaii will receive $49.1 million during the build-out period from Gross Excise and Income Taxes, and secondary revenues. The State will receive $22.5 million per year from Gross Excise and Income Taxes, Transient Accommodation Taxes, and secondary revenues on a stabilized basis thereafter.

- The cost to the County and State during the build-out period will be nominal (if any), and the stabilized proportionate annual per capita costs will total $3.8 million for Oahu and $12.5 million for the State.

- After accounting for the per capita costs of servicing the “new” AMB Tower guests following completion, the County will gain a net benefit ("profit") of $13.3 million during the build-out period and $14.6 million annually on a stabilized basis. The State will have net benefits of $49.1 million during development and $10.0 million stabilized per year thereafter.

- The public fiscal conclusions are summarized on the following tables. The column on the left summarizes the cumulative impacts during the approval/construction period and the righthand column the annual impacts after stabilization.

SUMMARY COMPARISON OF MAJOR ECONOMIC IMPACTS
FOR THE PROPOSED HHV AMB HOTEL TOWER
All Amounts Expressed in Constant, Uninflated 2022 Dollars

Analysis Item	Cumulative During Build-Out Period	Stabilized Annually Thereafter
	6/2022 to 6/2027	2028 and Beyond
PUBLIC FISCAL IMPACTS		
Additional Tax Revenues for County of Honolulu	$13,288,105	$18,382,179
Additional Tax Revenues for State of Hawaii	$49,111,074	$22,471,692
Additional Per Capita Costs for County of Honolulu	$0	$3,821,447
Additional Per Capita Costs for State of Hawaii	$0	$12,491,325
Net Benefit (Loss) to the County of Honolulu	$13,288,105	$14,560,732
Net Benefit (Loss) to the State of Hawaii	$49,111,074	$9,980,367

Source: CBRE

The Subject Property and Proposed Project

The following project descriptions were excerpted from Group 70 materials.

The project will expand the 22.24-acre Hilton Hawaiian Village (HHV) campus to include Tax Map Keys (TMK) (1) 2-6-9: 4, 5, and 6 in order to develop the AMB Tower (*Figure 7*), which will be situated on those parcels and on available abutting land within the existing HHV campus. The AMB Tower will consist of a podium and tower that will add approximately 515 new hotel guestrooms to the HHV campus and strengthen the Village's positioning as a major and iconic destination drawing visitors to Waikīkī and its local businesses. The project includes ground floor retail accessible to pedestrians along Ala Moana Boulevard, a welcoming porte cochere, lobby areas, and a modest expansion of existing parking facilities. Food and beverage offerings, fitness facilities, and an improved pool and recreation area shared with Kālia Tower are also included in the project.

The building will reach a maximum height of 350 feet (exclusive of permitted rooftop equipment) and consist of approximately 395,028 sf of total floor area comprised of a 118,556-sf podium and a 276,472-sf tower containing the majority of the hotel guestrooms. Landscaping, water features, and pedestrian connections will be integrated throughout to enhance integration with the Village campus. The following sections summarize the AMB Tower project components.

Tower Podium

The tower podium will be comprised of eight floors consisting of a porte cochere, ground floor arrival lobby, ground floor retail, second floor check-in lobby, pool deck and recreation area, fitness facilities, parking, and operations facilities. The total floor area of the podium is 118,556 sf. Each component is summarized below.

<u>PORTE COCHERE, ARRIVAL LOBBY, AND CHECK-IN LOBBY</u>

The ground floor porte cochere entry from Ala Moana Boulevard will be the primary point of guest arrival and will provide visitors and guests with a convenient drop off/pick-up area, baggage assistance, and valet service (*Figure 8*). The porte cochere area will offer a welcoming entryway with landscaping and a water feature, and will lead to the arrival lobby.

A second-floor check-in lobby will be accessed from the ground floor via six elevators and a stairway (*Figure 9*). Both the arrival lobby and the check-in lobby will be enclosed to minimize exterior noise and provide a quiet, refreshing space for visitors. An arrival/departure lounge will be connected to the check-in lobby and offer a relaxing area for guests.

<u>RETAIL</u>

The existing ABC Store on the project site will be demolished and a new ABC Store will be constructed on the ground floor of the AMB Tower, serving as the key retail space within the building's podium. The new ABC store will service the needs of the AMB Tower guests, patrons of the larger HHV campus, and other visitors and residents in this area of Waikīkī. The ground floor of the store will encompass approximately 6,051 sf, and approximately 1,830 sf of storage will be located on the second floor (*Figures 8* and *9*). Additionally, outdoor seating at the ground level will be provided. Inclusion of ground-level retail at the project will activate this portion of Ala Moana Boulevard and create a people-oriented and interactive streetscape.

<u>PARKING AND BACK OF HOUSE (BOH)/OPERATIONS FACILITIES</u>

Fifty off-street parking stalls will be provided within Floors 2 through 4 of the AMB Tower podium, and six off-street loading stalls will be located within the southern portion of the podium ground floor. Floors 2 through 4 will also provide a direct connection to the adjacent Coral Ballroom parking garage.

All floors of the tower podium will include various back of house (BOH) support spaces for hotel operations, including luggage storage; mechanical, electrical, and communications control areas; administrative offices; housekeeping operations; and staff areas. Floor 5 will also include a direct connection to the Coral Ballroom, as well as an event service support area.

POOL DECK AND RECREATION AREA

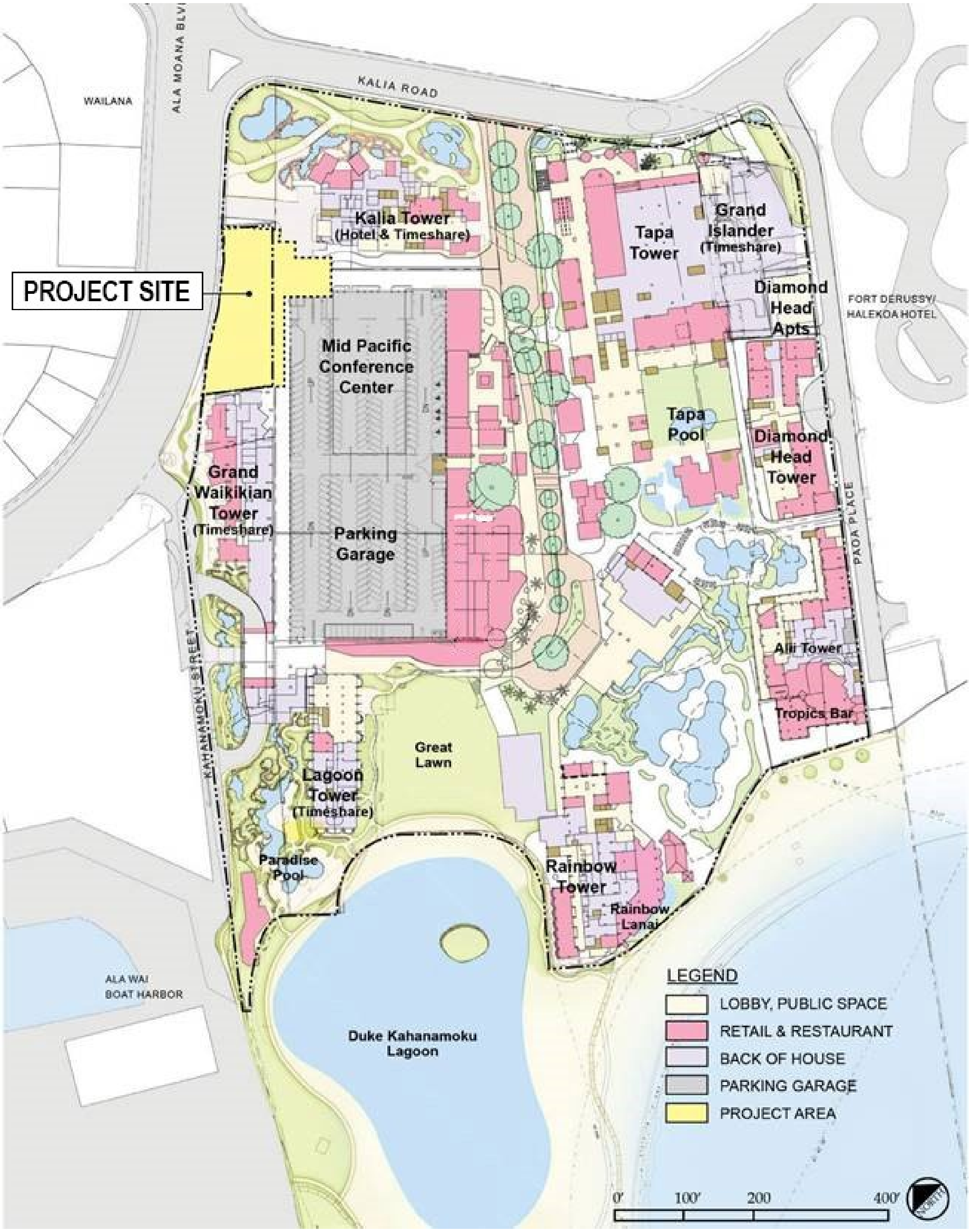
Floor 8 of the tower podium will feature a fitness center and recreation deck for visitors (*Figure 10*). The recreation deck will provide lounging areas and a pool bar, and will directly connect to the existing Kālia Tower pool deck. Improvements to the existing pool deck will also be made as part of the project. Water features and landscaping elements will be integrated throughout to fit with the surrounding character of the Village campus.

Tower Hotel Lodging Accommodations

The AMB Tower will provide approximately 515 hotel guestrooms with varying views and room sizes. The 28-story guestroom tower will begin on Floor 9; however, guestrooms are also provided on Floors 6, 7, and 8. The new AMB Tower is expected to offer five room configurations, including traditional hotel guestrooms and one-bedroom suites. Each unit will also include a lanai for visitors to enjoy views of the surrounding environment.

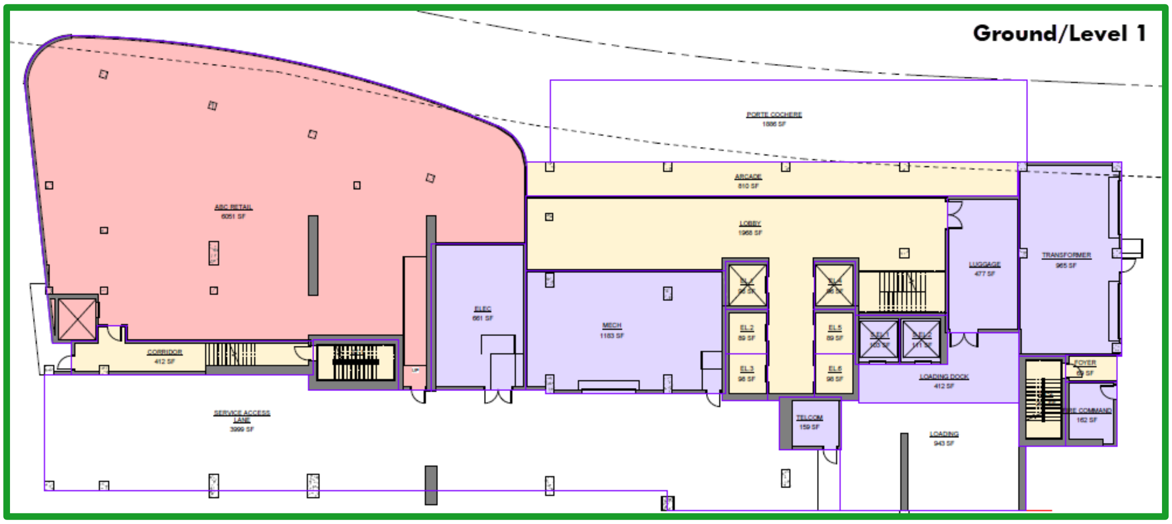
ʻEwa Gateway to Waikīkī and Pedestrian Improvements

Expansion of the HHV campus and development of the AMB Tower will enhance the immediate pedestrian surroundings by replacing the dated structures at the project site, thereby reinvigorating and revitalizing Ala Moana Boulevard, the primary ʻewa gateway to Waikīkī. This will provide guests and other visitors with a more appealing and welcoming experience that reinforces the identity of Waikīkī as a premier global tourism destination. The tower will have a gracefully-curved glass façade, and building materials will be subdued, contributing to a Hawaiian sense of place and complementing the natural setting and heritage of Waikīkī.

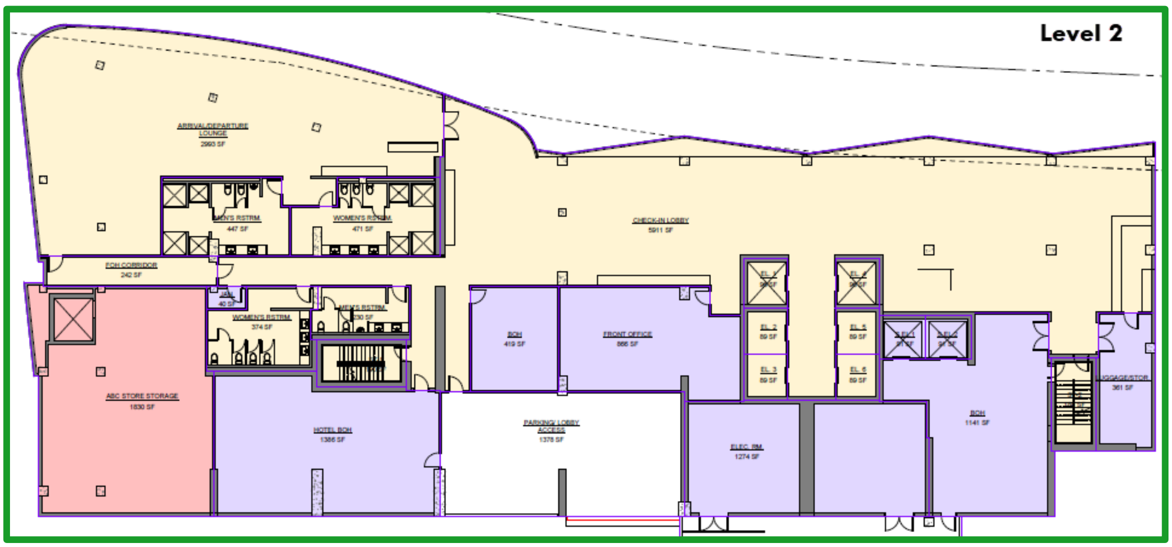


Source: Group 70 (Figure 7)

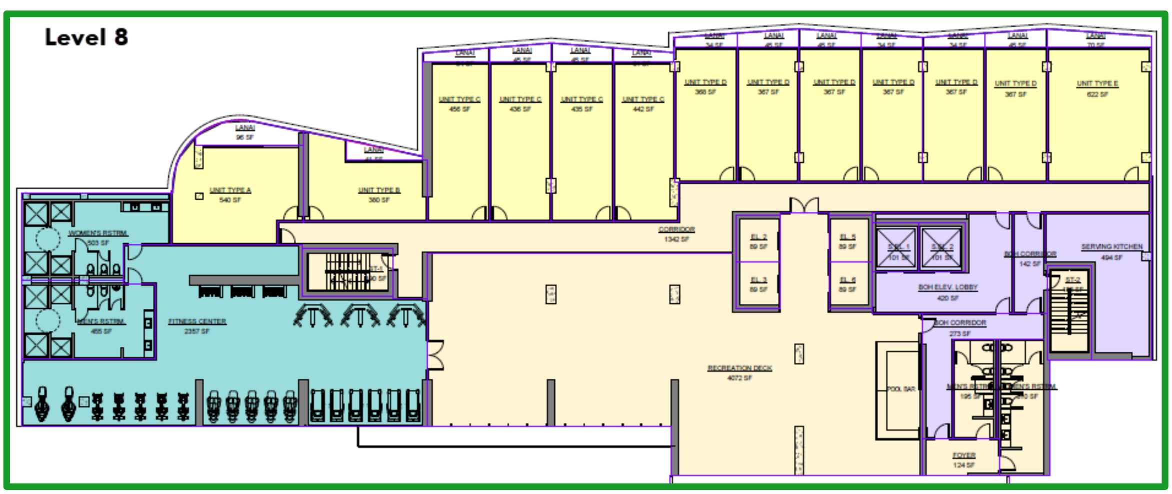
Ground, Second, eighth (rec deck) and typical lodging tower floor plans are shown below.



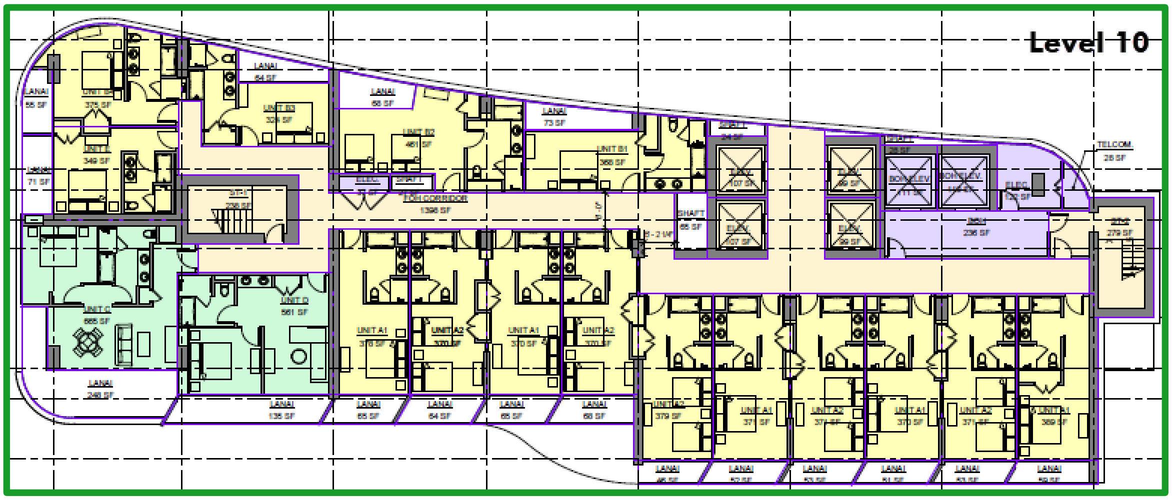
(Figure 8)



(Figure 9)



(Figure 10)



(Figure 11)

Economic Impacts of the Proposed Development

The development of the AMB Tower will result in significant expenditures that will favorably impact the Oahu economy on both a direct and indirect basis, increasing the level of capital investment and capital flow in the region, which will in turn create employment and widen the tax base.

From a direct perspective, the proposed 515-room lodging operation and 6,051 square foot of commercial space will create numerous construction, equipment operator and specialty trade jobs on- and off-site, directly and indirectly, during entitlement/planning, emplacement of the infrastructure, and building of the improvements.

After completion of the vertical construction and amenities over a two-year development period, there will be permanent employment positions created by the lodging operation and ABC Store retail businesses, and by the improvements themselves (landscape, service, maintenance, and renovation needs during their economic life).

Numerous local businesses will see significant profit opportunities arising for contracting companies constructing the improvements and for local businesses which would supply a substantial portion of the materials needed in the building efforts.

The general island economy also will benefit from the subject development, as its guests, employees and businesses will spend large amounts of discretionary income in off-site shops, restaurants, and service establishments throughout Oahu, and in purchasing goods and services. Guests are projected to be generally upper-middle to upper-income and have daily expenditures comparable with the average Oahu visitor.

Indirectly, as these wages, profits, and expenditures move through the regional economy, they will have a ripple, or "multiplier," effect which increases the amount of capital flowing to the entire island from the development of the subject.

Construction, operational and other workers earning wages via AMB Tower development and associated off-site/supporting efforts will spend most of their income on living and entertainment expenses while supporting and patronizing other island businesses. Hotel guests will spend on restaurants, shopping, entertainment and activities throughout Oahu. Much of this spending would be re-directed by these businesses to other island industries, and significant portions of these secondary profits would in turn be put back through the region's economic and tax structure.

These substantial direct and indirect economic impacts associated with the proposed subject project, as quantified in the following section, are all the result of the capital investment and entrepreneurship necessary to convert an under-developed, logistically-challenged property into a valuable revenue, employment and tax-producing asset. The Oahu economy will be meaningfully stimulated by the capital investments, guest spending and business operations of the development.

Our economic modeling is based on a five-year planning/approval and construction period from mid-2022 through mid-2027, with hotel opening and commencement of ramping-up in mid-2027 and reaching with operational stabilization in 2028.

However, whether full development and operating stabilization takes 5 years or 10 years, the stabilized "operation" of the hotel and its de facto guest population will be the same following completion. Using constant uninflated 2022 dollars throughout the model eliminates time as a significant variable in the analysis. The stabilized projections are identical regardless of the full build-out timeframe.

Our anticipated build-out and ramp-up timing is summarized in the following table.

BUILD-OUT AND RAMP-UP TIMING FOR THE PROPOSED HHV AMB HOTEL TOWER

Year	Project Year	Activity
2022	1	Entitlements, A&E, Drawings, Permitting & Financing
2023	2	Entitlements, A&E, Drawings, Permitting & Financing
2024	3	Complete Permitting, Site Prep, Infrastructure Extension, and Staging
2025	4	Vertical Construction Commences Early in Year
2026	5	Construction Continues
2027	6	Construction Completed by Mid-Year, Hotel Opens and Ramps=Up
2028	7	Hotel Reaches Stabilized Operations

Compiled by CBRE

CAPITAL INVESTMENT AND CONSTRUCTION COSTS

The subject will bring an estimated $461.5 million in direct development capital (i.e., total construction impact made up of wages, contractor/supplier profit and other constructions costs) into Oahu during construction period for the project as summarized on the following table.

PROPOSED HHV AMB TOWER DEVELOPMENT SCHEDULE AND ESTIMATED CONSTRUCTION COSTS All Amounts Expressed in Constant 2022 Dollars	
Item	Totals During Build-Out
Construction Period	6/2022 to 6/2027
Infrastructure Emplacement & Site Work	$10,132,384
Hotel Construction	$451,384,545
TOTAL CONSTRUCTION COSTS	$461,516,929
Contractor Profits	$46,151,693
Supplier Profits	$18,460,677
Source: CBRE	

DIRECT BUSINESS PROFITS FROM CONSTRUCTION

While a significant percentage of the materials needed to build the subject infrastructure, hotel tower, and commercial/parking components must be imported to Oahu, a portion of the construction costs spent in the development will directly flow to local businesses in the form of contractor profits and supplier profits.

Typically, within the industry net contractor profit margins are expected to be at 8 to 20 percent of total construction costs. We have used a conservative ten percent figure. Supplier profits were extrapolated at 4 percent of total costs. The estimates are shown on the foregoing table.

The total Contractor's Profit generated by the AMB Tower project for local building companies totals a cumulative profit of $46.2 million over the construction period. The total Supplier's Profit equates to $18.5 million in aggregate.

EMPLOYMENT OPPORTUNITIES CREATED

Based on indicators provided by the recent construction of comparable scale/quality projects in Hawaii, we have estimated the demand for on- and off-site, direct and indirect, full-time equivalent construction and operational employment positions associated with:

1. Laying of infrastructure systems and all site work.
2. Construction of the lodging tower and retail unit.
3. Finish site work and amenities.
4. The on-going lodging operations and retail business and food & beverage offerings located in the project.
5. Providing continuing maintenance, repair and renovation services to the occupied improvements.
6. Off-site and secondary businesses serving the workers (construction and operating) and guests in AMB Tower.

The construction, maintenance, and indirect/off-site employment opportunities created by the subject development (items 1, 2, 3, 5 & 6) will not all be "new" jobs requiring new Oahu residents and workers but will be vitally needed new opportunities for in-place resident construction trade workers and existing local businesses. The jobs associated with the hotel operations are “new” positions and represent an expansion of the Oahu employment pool; although, the ABC Stores unit will be re-locating and expanding and will not generate all "new" positions.

It is assumed the off-site/indirect work created will be steered towards existing Oahu suppliers, equipment providers, and other service companies, which will help mitigate the impacts of economic cycles on their business activities.

In this regard, the combination of employment types generated by the subject development will beneficially serve to support existing businesses while also providing a substantial number of new employment opportunities, contributing to the sustainable health of the Oahu economic community for the next generation of residents.

Our employment estimates on are based on Full-Time Equivalent (FTE) "worker-years," although one worker-year (or circa 2,080 working hours annually) may be comprised of many employees involved in specialized tasks of a much shorter duration.

Our projections are founded on examples provided by various recent comparable hotel developments undertaken throughout the state and via formulae expressing relationships between total worker wages/benefits and construction task costs.

The following table summarizes our AMB Tower employment projections for each development and operating component, on and off-site, during the construction period and stabilized thereafter.

ESTIMATED YEARLY FULL-TIME EQUIVALENT EMPLOYMENT POSITIONS CREATED BY DEVELOPMENT	Totals During Build-Out	Stabilized Annually Thereafter
Construction Period	6/2022 to 6/2027	2028 and Beyond
Infrastructure Emplacement (1)	25	
Hotel Construction (1)	1,806	
Total Construction Jobs	1,831	
		On-Going Employment Stabilized Annually
Hotel Operations Employees (Including Retail space) (3)		
Total FTE Jobs in Place at End of Period		370
Off-Site Employment (4)		
Total FTE Jobs in Place at End of Period	610	123
TOTAL WORKER YEARS DURING DEVELOPMENT	2,441	
PERMANENT JOBCOUNT FOLLOWING COMPLETION		493

(1) Infrastructure construction employment estimated at 1 worker-year for every $400,000 in costs.

Includes all direct employment associated with construction, on and off-site.

(2) Vertical construction employment estimated at 1 worker-year for every $250,000 in costs.

Includes all direct employment associated with construction, on and off-site.

(3) Hotel employment estimated at 340 total full-time equivalent positions (.66 workers per room), retail employment of 20 positions and pool bar/events 10 persons.

(4) Estimated at one cumulative off-site employment position for every three on site positions.

Source: CBRE

A total of 1,831 worker-years of employment in the construction trades, materials supply and related businesses will be needed for developing the AMB Tower project.

The hotel operation will require 340 FTE employees upon stabilization (.66 workers per room X 515 rooms); a relatively low figure due to centralized management, administration, maintenance, and service positions for the operation being located in the existing HHV operations.

The ABC Store will total some 20 FTE positions on a stabilized basis, and the pool bar/events service 10 persons.

Our estimate includes basic maintenance workers. We have not included employment associated with cyclical/periodic renovation project which would be anticipated to occur every seven to twelve years.

Off-Site/Indirect/Secondary employment created by the AMB Tower project will total 610 worker-years during construction and 123 FTE positions per year as stabilized. This is the equivalent of one off-site/secondary FTE position for every three on-site workers.

This format, "build-out" (6/2022 to 6/2027) and “stabilized annually” (2028 and beyond) periods are identical for all the summary tables comprising our economic impact model. We have not modeled the six-month operational ramp-up period between opening and the stabilized year.

WAGE INCOME GENERATED

In accordance with data compiled by the State Department of Labor and Industry Relations, as tempered through our analysis, we have estimated the personal income (in the form of wages) which will flow to Oahu workers from AMB Tower construction, operations and use. The results are shown on the table below.

ESTIMATED YEARLY EMPLOYEE WAGES CREATED BY DEVELOPMENT All Amounts Expressed in Constant 2022 Dollars	Cumulative During Build-Out Period	Stabilized Annually Thereafter
Construction Period	6/2022 to 6/2027	2028 and Beyond
Infrastructure Emplacement (1)	$2,080,000	
Hotel Construction (1)	$150,259,200	
Total Construction Wages	$152,339,200	
		Stabilized Annually
Hotel and Retail Operations (2)		$20,783,131
Off-Site Employment Wages (3)	$38,084,800	$7,697,456
TOTAL PERIODIC WAGES	$190,424,000	$28,480,587

(1) Average annual wage for full-time-equivalent construction worker (all trades) at $83,200 ($40/hour X 2,080 hours).

(2) Average annual wage for full-time-equivalent hotel operations & retail workers at $54,800 ($27/hour).

(3) Average annual wage for full-time-equivalent general worker at $62,400 ($30/hour), the average wage for all "Total Private Workers" in the state.

Wages taken from US Bureau of Labor Statistics "May 2021 Metropolitan and Nonmetropolitan Area Employment and Wage Estimates - Urban Honolulu, HI".

Source: CBRE

The gross average full-time equivalent wage estimates for a worker-year according to the identified employment categories for 2022 are estimated as follows:

- Construction workers (covering all trades), $83,200 per year.

- Commercial positions (hotel operations & retail workers), $54,800 annually.
- Off-site and indirect workers of all types, $62,400 annually.

Overall average wages paid via the subject development are equal to $73,031 per worker-year created during the 6.5-year modeling timeframe.

Stabilized operations will create $28.5 million in annual on and off-site worker wages.

HOTEL OPERATIONS

Based on our analysis of the 2017 through 2021 operating levels of comparable hotels throughout Hawaii and other classes of Oahu hotels, we have projected the probable stabilized annual revenue-production of the proposed AMB Tower, as summarized in the following table.

The projected income will be "new" additions to Oahu, increasing economic activity on the island.

ESTIMATED STABILIZED OPERATING LEVELS FOR THE PROPOSED AMB HOTEL TOWER FROM CURRENT 2022 PERSPECTIVE

Hotel Usage	Amount
Number of Available Rooms Daily	515
Total Room/Nights Available Annually	187,975
Stabilized Occupancy Rate	90%
Total Room/Nights Occupied Annually	169,178
Average Daily Room Rate	$350.00
Effective RevPAR	$315.00

Source: CBRE

ESTIMATED STABILIZED OPERATING LEVELS FOR THE PROPOSED AMB HOTEL TOWER FROM CURRENT 2022 PERSPECTIVE

Forecast Hotel & Retail Gross Operating Revenues

Department	Stabilized Gross Annual Income	Percent of Total Income
Rooms Department	$59,212,125	83.0%
Food & Beverage (pool bar)	$1,200,000	1.7%
Other Operated Departments	$200,000	0.3%
Fees, Rentals & Other Income	$10,708,500	15.0%
Total Estimated Annual Gross Income	**$71,320,625**	**100.0%**
Retail Gross Sales (6,051 square feet X sales of $1,800 per SF).	**$10,891,800**	

Source: CBRE

GUEST POPULATION AND SPENDING

Discretionary spending by AMB Tower guests will be a significant addition to the Waikiki/Oahu region and the general Oahu economy.

We project the average party-size for the AMB Tower guest rooms will be some 2.2 persons based on Hawaii Tourism Authority and Hawaii Department of Business, Economic Development and Tourism statistics. As shown in the following table, this would result in an average daily de facto guest count of 1,020 persons assuming a 90 percent occupancy rate for the hotel (typical for HHV).

We estimate their average per capita spending would be some $91 per day, based on recent on-ground spending averages of $221 daily per visitor less daily lodging and car rental/transportation costs. Total daily AMB Tower guest spending would be some $92,793, equating to about $33.9 million annually.

ESTIMATED STABILIZED OPERATING LEVELS FOR THE PROPOSED AMB HOTEL TOWER FROM CURRENT 2022 PERSPECTIVE	
Average Daily Guest Count and Spending	
Average Number of Occupied Rooms	464
Average Party Size in Persons	2.2
Total Average De Facto Guest Population	**1,019.7**
Average Daily Spending per Guest (1)	$91
Total Daily Guest Spending	$92,793
Total Annual Off-Site Guest Spending	**$33,869,336**

(1) Average spending per visitor per day of $221, less lodging and car rental costs, based on year-end 2021 data.

Source: CBRE

SUMMARY OF DIRECT, LOCAL ECONOMIC IMPACTS

As detailed on the table below, the Total Base Economic Impact of the AMB Tower project including all capital investment and on and off-site economic activity during construction will be $499.6 million and at $137.6 million annually on a stabilized basis, as shown on the following table.

SUMMARY OF ECONOMIC IMPACTS/ACTIVITY ASSOCIATED WITH DEVELOPMENT All Amounts Expressed in Constant 2022 Dollars	Totals During Build-Out	Stabilized Annually Thereafter
	6/2022 to 6/2027	2028 and Beyond
Construction Wages	$152,339,200	
Contractor Profits	$46,151,693	
Supplier Profits	$18,460,677	
Other Construction Costs	$244,565,359	
Total Construction Impact	$461,516,929	
Hotel & Retail Operating Gross Revenues		$82,212,425
Off-Site Wages	$38,084,800	$7,697,456
Total Hotel Guest Population Spending (1)		$33,869,336
Hotel Maintenance & Repairs (2)		$13,845,508
TOTAL BASE ECONOMIC IMPACT	$499,601,729	$137,624,725

(1) Off-Site, excluding hotel and rental car.

(2) Estimated at 3% of direct construction costs annually

Source: CBRE

Virtually all of this will be "new" economic acitivity on the island.

STATE INPUT/OUTPUT MODEL

We have also analyzed the impacts of the project for Oahu and Statewide using the *Hawaii Inter-County Input-Output Economic Model* (2017 data approved by DBEDT in 2021) Type II multipliers. These factors quantify the total Direct, Indirect and Induced "effects" of various forms of business and spending activity as it flows through the economy of the islands.

In every instance, application of the macro Input-Output multipliers resulted in higher dollar, employment, and tax revenue indicators than in our subject-focused micro model which was designed to reflect Direct and upper-level Indirect impacts only.

ESTIMATES OF TOTAL ECONOMIC IMPACT FROM SUBJECT CONSTRUCTION USING INTER-COUNTY INPUT-OUTPUT MODEL "TYPE II" MULTIPLIERS All Amounts Expressed in Constant 2022 Dollars	Totals During Build-Out	Stabilized Annually
Year	6/2022 to 6/2027	2028 and Beyond
Construction Costs/On-Going Maintenance	$461,516,929	$13,845,508
1. Economic Output Multiplier	2.1000	2.1000
Total State Economic Output	$969,185,551	$29,075,567
2. Earnings Multiplier	0.6800	0.6800
Total Increase in State Earnings	$313,831,512	$9,414,945
3. State Tax Multipliers	0.0973	0.0973
Total Increase in State Taxes	$44,905,597	$1,347,168
4. Total Job Multipliers	11.4200	11.4200
Total State Jobs Created (per Million Dollars Spent)	5,270.5	158.1
Construction/On-Going Maintenance Employment	1,831	92
5. Direct-Effect Job Multipliers	2.6600	2.6600
Total Direct Jobs Created (1)	4,870.5	245.5
Construction/On-Going Maintenance Wages	$152,339,200	$5,759,731
6. Direct-Effect Earnings	0.6700	0.6700
Total Increase in Direct Earnings	$102,067,264	$3,859,020

(1) Jobs estimated at one job per $250,000 spent during build-out and $150,000 when stabilized.
Source: "2017 Hawaii Inter-County Input-Output Study" (approved June 2021), and CBRE

ESTIMATES OF TOTAL ECONOMIC IMPACT FROM SUBJECT OPERATIONS

USING INTER-COUNTY INPUT-OUTPUT MODEL "TYPE II" MULTIPLIERS

All Amounts Expressed in Constant 2022 Dollars

	Totals During Build-Out	Stabilized Annually
Year	6/2022 to 6/2027	2028 and Beyond
Total On-Going, Stabilized Annual Economic Activity	$0	$137,624,725
1. Economic Output Multiplier	2.2100	2.2100
Total State Economic Output	$0	$304,150,641
2. Earnings Multiplier	0.5800	0.5800
Total Increase in State Earnings	$0	$79,822,340
3. State Tax Multipliers	0.2010	0.2010
Total Increase in State Taxes	$0	$27,662,570
4. Total Job Multipliers (per million dollars spent)	11.5000	11.5000
Total State Jobs Created	0.0	1,582.7
Operating Employment (On & Off-Site)	0.0	493.4
5. Direct-Effect Job Multipliers	3.0700	3.0700
Total Direct Jobs Created (1)	0.0	1,514.8
Operating Wages	$0	$28,480,587
6. Direct-Effect Earnings	2.7300	2.7300
Total Increase in Direct Earnings	$0	$77,752,003

(1) Jobs estimated at one job per 0.66 hotel rooms, 1/300 SF of retail space and 10 for pool bar.
Source: "2017 Hawaii Inter-County Input-Output Study" (approved June 2021), and CBRE

Public Fiscal Impacts (Costs/Benefits)

We have analyzed the public fiscal impacts of the proposed AMB Tower, both regarding tax benefits flowing to the State and Oahu County and the cost of providing government services to them on a per capita basis. All of the costs and benefits are effectively "new".

The purpose of this assessment is to delineate the direct areas in which the construction and long-term operation of the AMB Tower will potentially impact the public "purse". Specifically, the goal is to quantify and compare the costs of providing expanded County and State services to the project and its guest population versus the economic benefits that accrue to governmental coffers via an increase in local and state tax and fee payments arising from the new economic activity associated with the development.

REAL PROPERTY TAXES (TO OAHU COUNTY)

For the County, the primary tax revenue source will be from Real Property Taxes paid by the owners of AMB Tower.

The potential property tax receipts were estimated by applying current prevailing tax rates against the projected market value of the property.

During the three entitlement/build-out period real property taxes would be paid on the land each year, with an estimated assessed value of $4,657,600 (the current assessed value), with only up to two years of improvements assessment for the partially completed project.

Upon completion (and stabilization) the assessed value of the finished improvements is forecast to be $516.9 million, which includes the infrastructure, plus $12 million for the underlying site.

The current Oahu County tax rate (2022) for "Hotel and Resort" properties is $13.90 per $1,000 of assessed value.

Application of the tax rate to the projected assessed values would result in total real property taxes of $5.3 million during the build-out period and $7.4 million annually on a stabilized basis, thereafter, as shown below.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS All Amounts Expressed in Constant 2022 Dollars		
Development Period	Totals During Development Period	Stabilized Annually After Build-out
	6/2022 to 6/2027	2028 and Beyond
PUBLIC BENEFITS (Revenues)		
1. COUNTY REAL PROPERTY TAXES		
Cumulative Assessed Value During Period (Three Years)		
Vacant Land (Net Area of 20,141 SF)	$36,253,800	$12,084,600
Completed Hotel Construction (Assuming 0% Year 1, 25% Year 2 and 50% Year 3)	$346,137,697	
Completed Hotel (Construction Cost plus12% Developer's Profit)		$516,898,960
Total Assessed Value	$382,391,497	$528,983,560
Effective Real Property Tax Mill Rate (per $1,000 in Assessed Value), Fiscal Year 2020-2021		
Vacant Hotel & Resort Land		
Hotel & Resort Improvements	$13.90	$13.90
	$13.90	$13.90
Real Property Taxes During Period		
Vacant Land	$503,928	$167,976
Completed Hotel	$4,811,314	$7,184,896
Total Real Property Taxes	$5,315,242	$7,352,871

COUNTY SECONDARY RECEIPTS AND TOTAL TAXES FROM THE AMB HOTEL TOWER

Real Property Taxes (RPT) comprised 39 percent of general fund revenues in recent Honolulu County fiscal year, with secondary taxes and fees forming the remainder. It is logical to assume the AMB Tower project development and resulting business activities will generate secondary taxes in proportion to RPT as does the overall Oahu community.

The secondary Oahu County receipts are equal to 2.50 percent of the RPT total (60% divided by 40%, plus 1.0).

Application of the total tax revenue ratio of 2.5 against the real property taxes received from AMB Tower results in a cumulative total estimated County tax collection from the subject of $13.3 million during the build-out period, and $18.4 million annually on a stabilized basis.

We have not included any County impact fees which may be charged to the AMB Tower project.

INCOME TAXES (TO STATE OF HAWAII)

The State of Hawaii will receive an estimated $10 million in primary receipts from State Income Taxes during the build-out period and $2.0 million annually on a stabilized basis from worker wages, and profits from businesses based on average statewide corporate and personal payments rates of 4.4 percent and 5.1 percent, respectively, applied against the economic model forecasts. This represents new/added taxable items resulting from the AMB Tower.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS All Amounts Expressed in Constant 2022 Dollars		
Development Period	Totals During Development Period 6/2022 to 6/2027	Stabilized Annually After Build-out 2028 and Beyond
2. STATE INCOME TAXES		
Taxable Personal Income (Worker Wages Only)	$190,424,000	$28,480,587
Taxable Third-Party Corporate Profits	$6,461,237	$13,377,600
Personal Taxes Paid	$9,711,624	$1,452,510
Corporate Taxes Paid	$284,294	$588,614
TOTAL STATE INCOME TAXES	$9,995,918	$2,041,124

GROSS EXCISE TAXES (TO STATE OF HAWAII)

The State will collect Gross Excise Taxes (GET) of 4.712 percent on the gross amount of construction contracts, construction supplies, spending by workers and hotel guests, and from the on-going business activity (lodging, commercial, and renovations). During the construction period these receipts will total $25.3 million and a stabilized amount of $6.3 million annually, as shown in the following table.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS All Amounts Expressed in Constant 2022 Dollars		
Development Period	Totals During Development Period 6/2022 to 6/2027	Stabilized Annually After Build-out 2028 and Beyond
3. STATE GROSS EXCISE TAX		
Taxable Transactions		
Construction Contracts	$461,516,929	$13,845,508
Worker Disposable Income Purchases	$76,169,600	$14,240,294
Hotel Gross Revenues	$0	$71,320,625
Hotel Guest Off-Site Spending	$0	$33,869,336
Total Taxable Transactions	$537,686,529	$133,275,762
TOTAL STATE EXCISE TAX	$25,335,789	$6,279,954

TRANSIENT ACCOMODATIONS TAX (TO STATE OF HAWAII)

Hotel rooms sales are subject to a Transient Accommodations Tax (TAT) which is currently set at a total of 13.25 percent of gross room revenues. On a stabilized basis AMB Tower will pay some $7.8 million annually to the State and County for this item, as shown on the following table.

We note that at present the “resort fees” charged by a hotel are not definitively subject to TAT; a stance disputed by the State tax collector which considers them a “cost of occupancy” and therefore a TAT item. We consider it likely that at some future point they will be subject to TAT but have not included these additional receipts in our model.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS All Amounts Expressed in Constant 2022 Dollars		
Development Period	Totals During Development Period	Stabilized Annually After Build-out
	6/2022 to 6/2027	2028 and Beyond
4. TRANSIENT ACCOMMODATIONS TAX		
Subject Hotel Rooms Department Revenues Subject to TAT	$0	$59,212,125
State Transient Accommodations Tax Rate	10.25%	10.25%
County Transient Accommodations Tax Rate	3.00%	3.00%
TOTAL STATE TRANSIENT ACCOMMODATIONS TAX	$0	$7,845,607
Source: CBRE		

STATE SECONDARY RECEIPTS AND TOTAL TAXES FROM THE AMB HOTEL TOWER

In recent fiscal years, Income Tax, GET and TAT have generated about 72 percent of total State general fund revenues, and secondary taxes and fees the remainder. We anticipate the AMB Tower activity will result in similar ratios of secondary taxes flowing from the project relative to the primary sources quantified.

The secondary State receipts are equal to .39 times the Income Tax and GET totals (28% divided by 72% plus 1.0).

Application of the total tax ratio of 1.39 to the AMB Tower income tax, GET and TAT sums results in a cumulative total estimated State tax collection from the subject of $49.1 million during the build-out period, and $22.5 million annually on a stabilized basis.

We have not included any State impact fees which may be charged to the AMB Tower project.

TOTAL COUNTY AND STATE DIRECT AND SECONDARY TAX RECEIPTS

The total direct, secondary and impact fees flowing to the County and State as tax receipts from the development and operation of the AMB Tower are estimated as summarized below.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER		
ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS		
All Amounts Expressed in Constant 2022 Dollars		
Development Period	Totals During Development Period	Stabilized Annually After Build-out
	6/2022 to 6/2027	2028 and Beyond
TOTAL GROSS PUBLIC REVENUES		
Real Property Taxes To County of Honolulu	$5,315,242	$7,352,871
Adjustment for Other Proportional Taxes (1)	2.50	2.50
Adjusted Honolulu County Revenues	$13,288,105	$18,382,179
Plus Impact Fees	$0	$0
Total County of Honolulu Receipts	$13,288,105	$18,382,179
To State (Income Taxes, GET and TAT)	$35,331,708	$16,166,685
Adjustment for Other Proportional Taxes (2)	1.39	1.39
Adjusted State Revenues	$49,111,074	$22,471,692
Plus Impact Fees	$0	$0
Total State of Hawaii Receipts	$49,111,074	$22,471,692
AGGREGATE TAX REVENUES	$62,399,178	$40,853,871

(1) Real property taxes have comprised some 39 percent of Total Revenues for the County of Honolulu in recent years. Economic activity generates other revenue items of 61 percent or additional 150 percent above real property taxes; this also provides allowance for new revenues from the County TAT.
(2) In recent fiscal years, Gross Excise, Income Taxes and Transient Accommodations taxes have averaged some 52 percent of total State revenues; other revenue items 48 percent, or 72 percent above income, gross excise and TAT taxes.

COUNTY AND STATE PER CAPITA EXPENDITURES

The new/additional per capita cost for the County and State associated with the guest population of the AMB Tower was calculated as follows based on the 2021-22 fiscal year budgets for each as shown.

CALCULATION OF PER CAPITA GOVERNMENTAL COSTS FOR FISCAL-YEAR 2021-2022	
Honolulu County Operating Budget	$2,910,000,000
Honolulu County Capital Budget	$1,025,000,000
County Operating and Capital Budget	**$3,935,000,000**
Divided by Total County De Facto Population (Residents & Tourists)	1,050,000
County Per Capita Fiscal Year Expense	**$3,748**
State of Hawaii Operating Budget	$16,900,000,000
State of Hawaii Capital Budget	$2,700,000,000
Total State Budget	**$19,600,000,000**
Divided by Total State De Facto Population (Residents & Tourists)	1,600,000
State Per Capita Fiscal Year Expense	**$12,250**

TOTAL COUNTY AND STATE NEW PER CAPITA COSTS FROM THE AMB HOTEL TOWER

The total new governmental costs on a periodic basis resulting from the increase in the Oahu de facto population count by guests of AMB Tower for the development period and as stabilized are on the following chart.

There are no costs during the build-out period as there is no increase in the island population during this time. Per capita costs begin once the hotel opens and occupancy ramps-up.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER

ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS

All Amounts Expressed in Constant 2022 Dollars

Development Period	Totals During Development Period	Stabilized Annually After Build-out
	6/2022 to 6/2027	2028 and Beyond
PUBLIC COSTS (Expenses)		
By County of Honolulu	$0	$3,821,447
By State of Hawaii	$0	$12,491,325
TOTAL PUBLIC COSTS	$0	$16,312,772

TOTAL NET PUBLIC BENEFITS TO COUNTY AND STATE FROM THE AMB HOTEL TOWER

As shown below, both the County and the State will be provided with a net positive benefit (or "profit") from the AMB Tower during both the build-out period and on an annual stabilized basis.

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER

ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS

All Amounts Expressed in Constant 2022 Dollars

Development Period	Totals During Development Period	Stabilized Annually After Build-out
	6/2022 to 6/2027	2028 and Beyond
TOTAL NET PUBLIC BENEFITS		
County of Honolulu	$13,288,105	$14,560,732
State of Hawaii	$49,111,074	$9,980,367
AGGREGATE NET BENEFITS	$62,399,178	$24,541,098

The net benefit to Honolulu County will total $13.3 million during build-out and stabilize at $14.6 million per year following completion of the hotel. The State of Hawaii will have net fiscal benefits of $49.1 million during construction and $10.0 million per year thereafter.

Assumptions and Limiting Conditions

1. CBRE, Inc. through its appraiser (collectively, "CBRE") has inspected through reasonable observation the subject property. However, it is not possible or reasonably practicable to personally inspect conditions beneath the soil and the entire interior and exterior of the improvements on the subject property. Therefore, no representation is made as to such matters.
2. The report, including its conclusions and any portion of such report (the "Report"), is as of the date set forth in the letter of transmittal and based upon the information, market, economic, and property conditions and projected levels of operation existing as of such date. The dollar amount of any conclusion as to value in the Report is based upon the purchasing power of the U.S. Dollar on such date. The Report is subject to change as a result of fluctuations in any of the foregoing. CBRE has no obligation to revise the Report to reflect any such fluctuations or other events or conditions which occur subsequent to such date.
3. Unless otherwise expressly noted in the Report, CBRE has assumed that:

(i) Title to the subject property is clear and marketable and that there are no recorded or unrecorded matters or exceptions to title that would adversely affect marketability or value. CBRE has not examined title records (including without limitation liens, encumbrances, easements, deed restrictions, and other conditions that may affect the title or use of the subject property) and makes no representations regarding title or its limitations on the use of the subject property. Insurance against financial loss that may arise out of defects in title should be sought from a qualified title insurance company.

(ii) Existing improvements on the subject property conform to applicable local, state, and federal building codes and ordinances, are structurally sound and seismically safe, and have been built and repaired in a workmanlike manner according to standard practices; all building systems (mechanical/electrical, HVAC, elevator, plumbing, etc.) are in good working order with no major deferred maintenance or repair required; and the roof and exterior are in good condition and free from intrusion by the elements. CBRE has not retained independent structural, mechanical, electrical, or civil engineers in connection with this appraisal and, therefore, makes no representations relative to the condition of improvements. CBRE appraisers are not engineers and are not qualified to judge matters of an engineering nature, and furthermore structural problems or building system problems may not be visible. It is expressly assumed that any purchaser would, as a precondition to closing a sale, obtain a satisfactory engineering report relative to the structural integrity of the property and the integrity of building systems.

(iii) Any proposed improvements, on or off-site, as well as any alterations or repairs considered will be completed in a workmanlike manner according to standard practices.

(iv) Hazardous materials are not present on the subject property. CBRE is not qualified to detect such substances. The presence of substances such as asbestos, urea formaldehyde foam insulation, contaminated groundwater, mold, or other potentially hazardous materials may affect the value of the property.

(v) No mineral deposit or subsurface rights of value exist with respect to the subject property, whether gas, liquid, or solid, and no air or development rights of value may be transferred. CBRE has not considered any rights associated with extraction or exploration of any resources, unless otherwise expressly noted in the Report.

(vi) There are no contemplated public initiatives, governmental development controls, rent controls, or changes in the present zoning ordinances or regulations governing use, density, or shape that would significantly affect the value of the subject property.

(vii) All required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, nor national government or private entity or organization have been or can be readily obtained or renewed for any use on which the Report is based.

(viii) The subject property is managed and operated in a prudent and competent manner, neither inefficiently or super-efficiently.

(ix) The subject property and its use, management, and operation are in full compliance with all applicable federal, state, and local regulations, laws, and restrictions, including without limitation environmental laws, seismic hazards, flight patterns, decibel levels/noise envelopes, fire hazards, hillside ordinances, density, allowable uses, building codes, permits, and licenses.

(x) The subject property is in full compliance with the Americans with Disabilities Act (ADA). CBRE is not qualified to assess the subject property's compliance with the ADA, notwithstanding any discussion of possible readily achievable barrier removal construction items in the Report.

(xi) All information regarding the areas and dimensions of the subject property furnished to CBRE are correct, and no encroachments exist. CBRE has neither undertaken any survey of the boundaries of the subject property nor reviewed or confirmed the accuracy of any legal description of the subject property.

Unless otherwise expressly noted in the Report, no issues regarding the foregoing were brought to CBRE's attention, and CBRE has no knowledge of any such facts affecting the subject property. If any information inconsistent with any of the foregoing assumptions is discovered, such information could have a substantial negative impact on the Report. Accordingly, if any such information is subsequently made known to CBRE, CBRE reserves the right to amend the Report, which may include the conclusions of the Report. CBRE assumes no responsibility for any conditions regarding the foregoing, or for any expertise or knowledge required to discover them. Any user of the Report is urged to retain an expert in the applicable field(s) for information regarding such conditions.

4. CBRE has assumed that all documents, data and information furnished by or behalf of the client, property owner, or owner's representative are accurate and correct, unless otherwise expressly noted in the Report. Such data and information include, without limitation, numerical street addresses, lot and block numbers, Assessor's Parcel Numbers, land dimensions, square footage area of the land, dimensions of the improvements, gross building areas, net rentable areas, usable areas, unit count, room count, rent schedules, income data, historical operating expenses, budgets, and related data. Any error in any of the above could have a substantial impact on the Report. Accordingly, if any such errors are subsequently made known to CBRE, CBRE reserves the right to amend the Report, which may include the conclusions of the Report. The client and intended user should carefully review all assumptions, data, relevant calculations, and conclusions of the Report and should immediately notify CBRE of any questions or errors within 30 days after the date of delivery of the Report.

5. CBRE assumes no responsibility (including any obligation to procure the same) for any documents, data or information not provided to CBRE, including without limitation any termite inspection, survey or occupancy permit.

6. All furnishings, equipment and business operations have been disregarded with only real property being considered in the Report, except as otherwise expressly stated and typically considered part of real property.

7. Any cash flows included in the analysis are forecasts of estimated future operating characteristics based upon the information and assumptions contained within the Report. Any projections of income, expenses and economic conditions utilized in the Report, including such cash flows, should be considered as only estimates of the expectations of future income and expenses as of the date of the Report and not predictions of the future. Actual results are affected by a number of factors outside the control of CBRE, including without limitation fluctuating economic, market, and property conditions. Actual results may ultimately differ from these projections, and CBRE does not warrant any such projections.

8. The Report contains professional opinions and is expressly not intended to serve as any warranty, assurance or guarantee of any particular value of the subject property. Other appraisers may reach different conclusions as to the value of the subject property. Furthermore, market value is highly related to exposure time, promotion effort, terms, motivation, and conclusions surrounding the offering of the subject property. The Report is for the sole purpose of providing the intended user with CBRE's independent professional opinion of the value of the subject property as of the date of the Report. Accordingly, CBRE shall not be liable for any losses that arise from any investment or lending decisions based upon the Report that the client, intended user, or any buyer, seller, investor, or lending institution may undertake related to the subject property, and CBRE has not been compensated to assume any of these risks. Nothing contained in the Report shall be construed as any direct or indirect recommendation of CBRE to buy, sell, hold, or finance the subject property.

9. No opinion is expressed on matters which may require legal expertise or specialized investigation or knowledge beyond that customarily employed by real estate appraisers. Any user of the Report is advised to retain experts in areas that fall outside the scope of the real estate appraisal profession for such matters.

10. CBRE assumes no responsibility for any costs or consequences arising due to the need, or the lack of need, for flood hazard insurance. An agent for the Federal Flood Insurance Program should be contacted to determine the actual need for Flood Hazard Insurance.

11. Acceptance or use of the Report constitutes full acceptance of these Assumptions and Limiting Conditions and any special assumptions set forth in the Report. It is the responsibility of the user of the Report to read in full, comprehend and thus become aware of all such assumptions and limiting conditions. CBRE assumes no responsibility for any situation arising out of the user's failure to become familiar with and understand the same.

12. The Report applies to the property as a whole only, and any pro ration or division of the title into fractional interests will invalidate such conclusions, unless the Report expressly assumes such pro ration or division of interests.

13. The allocations of the total value estimate in the Report between land and improvements apply only to the existing use of the subject property. The allocations of values for each of the land and improvements are not intended to be used with any other property or appraisal and are not valid for any such use.

14. The maps, plats, sketches, graphs, photographs, and exhibits included in this Report are for illustration purposes only and shall be utilized only to assist in visualizing matters discussed in the Report. No such items shall be removed, reproduced, or used apart from the Report.

15. The Report shall not be duplicated or provided to any unintended users in whole or in part without the written consent of CBRE, which consent CBRE may withhold in its sole discretion. Exempt from this restriction is duplication for the internal use of the intended user and its attorneys, accountants, or advisors for the sole benefit of the intended user. Also exempt from this restriction is transmission of the Report pursuant to any requirement of any court, governmental authority, or regulatory agency having jurisdiction over the intended user, provided that the Report and its contents shall not be published, in whole or in part, in any public document without the written consent of CBRE, which consent CBRE may withhold in its sole discretion. Finally, the Report shall not be made available to the public or otherwise used in any offering of the property or any security, as defined by applicable law. Any unintended user who may possess the Report is advised that it shall not rely upon the Report or its conclusions and that it should rely on its own appraisers, advisors and other consultants for any decision in connection with the subject property. CBRE shall have no liability or responsibility to any such unintended user.

ADDENDA

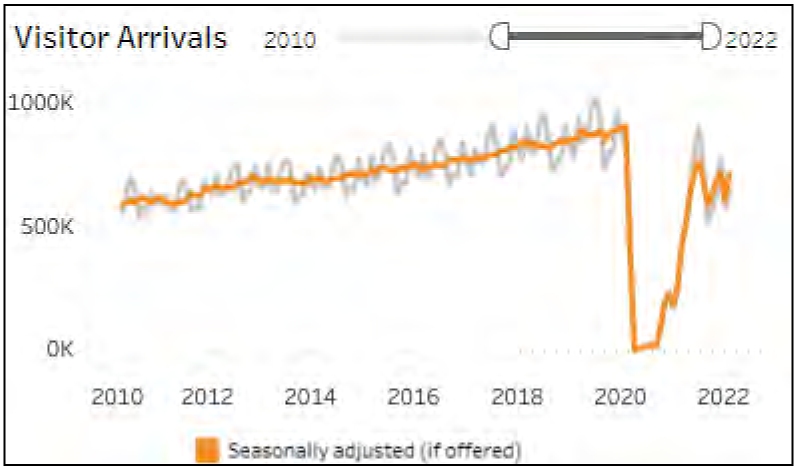
Addendum A

MARKET ANALYSIS OF THE OAHU/WAIKIKI TOURISM AND HOTEL INDUSTRIES

Market Analysis

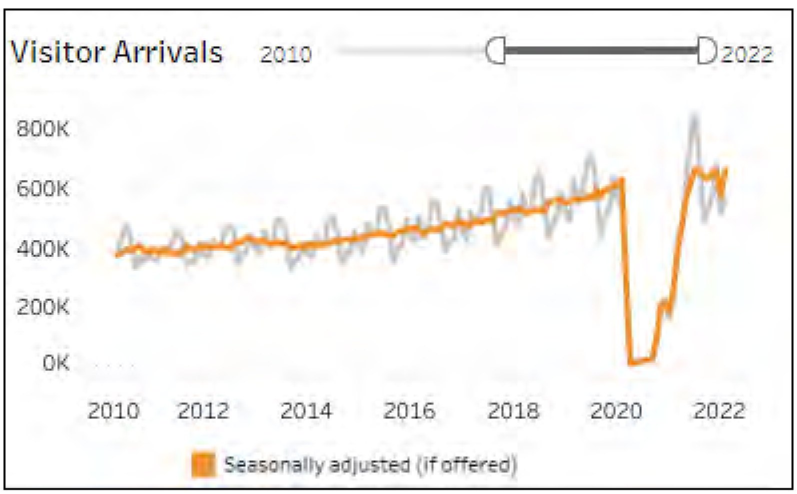
COVID Recovery

As shown below on the graphs sourced from http://dbedt.hawaii.gov/visitor/dailypax-dashboard/, Oahu Visitor Arrivals have recovered substantially towards long-term upward trends following the COVID quarantine from March to October 2020.



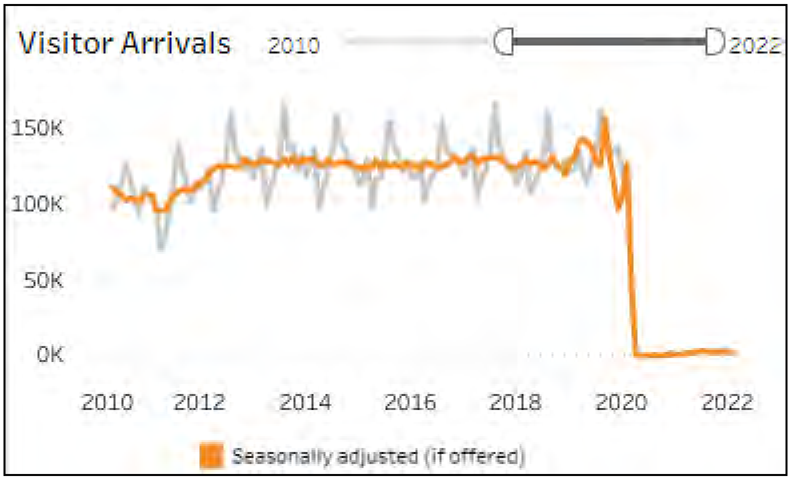
Total Oahu Visitor Arrivals by Air (Source: DBEDT)

The Mainland US market (the largest Oahu/Waikiki visitor segment) has fully recovered, as displayed in the following graph, and bookings are continuing strong into this summer.



Total Mainland US Arrivals (Source: DBEDT)

The Pacific/Asian sector, as represented by the Japan Visitor Arrival graph below, has yet to rebound due to lingering COVID-related immigration controls. However, Korean and Australian visitors have been surging back over the past month with expectations Japan will fully reopen by the third quarter 2022.



Total Japan Visitor Arrivals (Source: DBEDT)

Japanese travelers are a long-established, high-spending guest demographic and AMB Tower should benefit by the return of this visitor segment.

The general Oahu economy is rebounding in conjunction with tourism's recovery and post-quarantine re-opening, although it is plagued by a destabilized labor market, supply chain issues and the closure of many restaurants, retail, and other businesses, as seen elsewhere in the US.

Overview

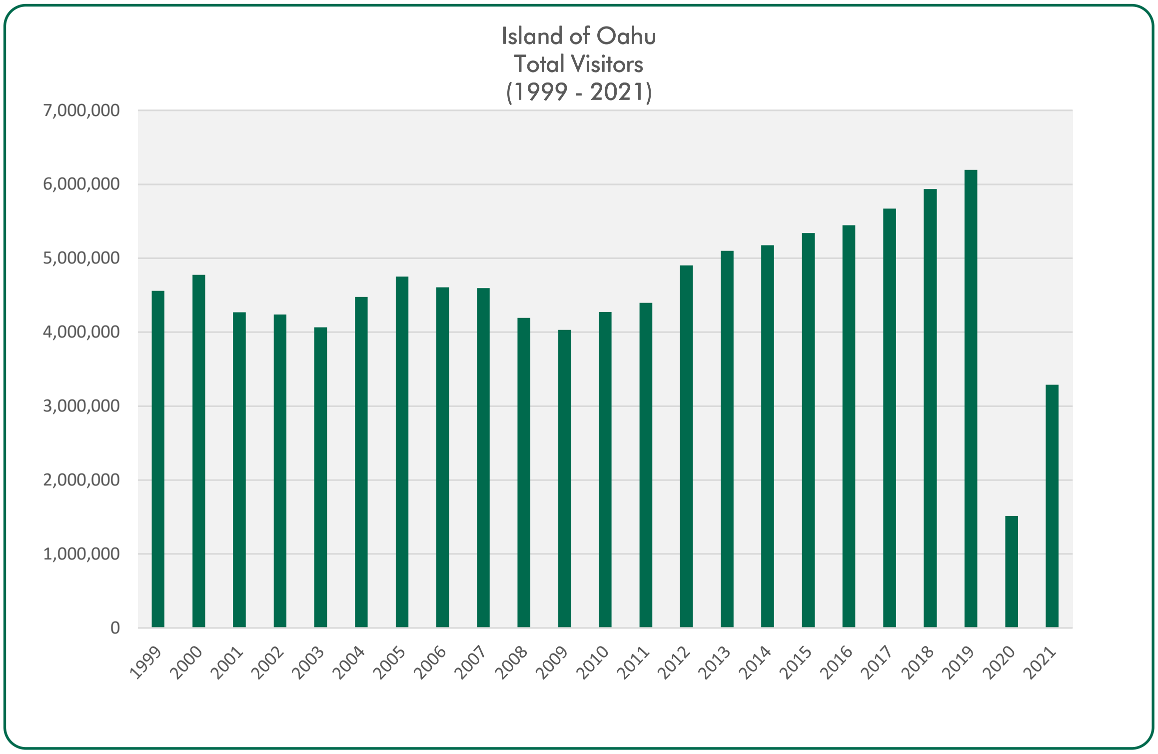
Prior Years: 2009 - 2019

Per State of Hawaii DBEDT and Hawaii Tourism Authority, 2019 was another strong year for the Oahu hotel industry, with an average daily rate (ADR) of $240.76, an occupancy rate of 84.2%, and revenue per available room (RevPAR) of $202.62. Compared to 2018, ADR was up 2.0%, occupancy was up 0.6%, and RevPAR was up 2.5%.

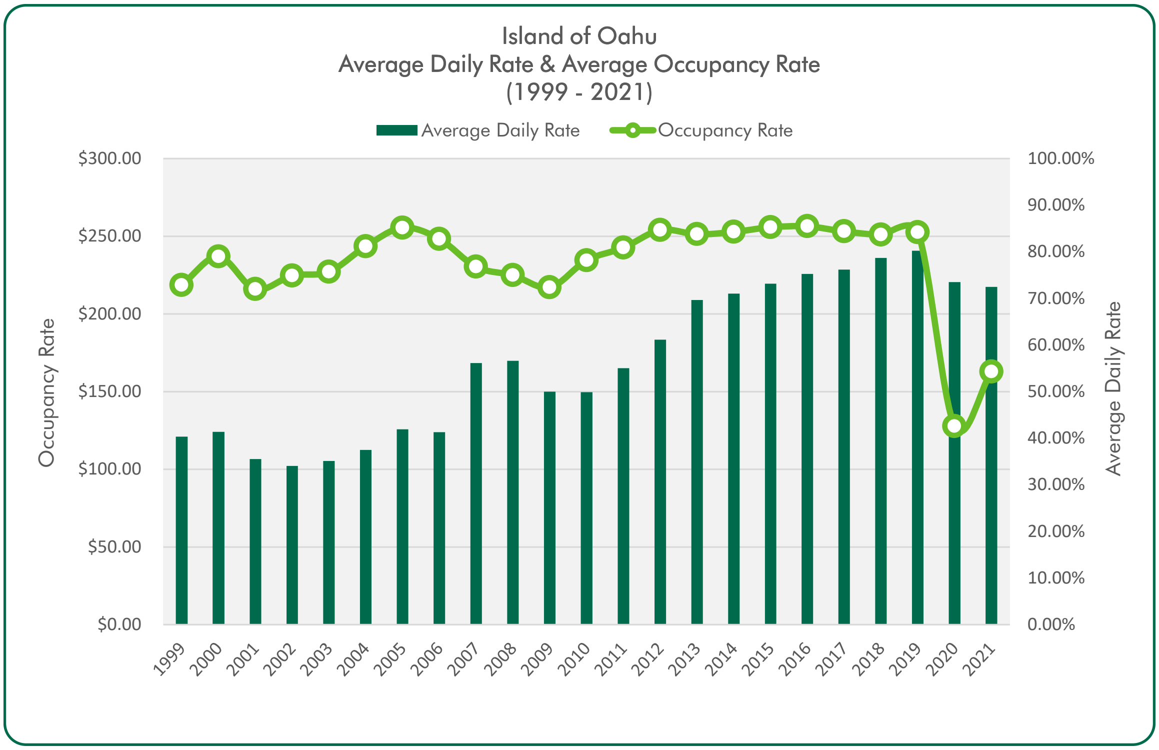
Following several successive years of strong post-recessionary growth from 2010 to mid-2013, marking a complete recovery from the recessionary downturn, the Oahu tourism and hotel industries showed nominal signs of slowing in late 2013 due to major currency devaluation negatively impacting the critical Japanese, Australian and Canadian visitor segments. Despite these external issues affecting some indicators (notably Total Visitor Spending) the market continued within an up-cycle, and 2013-19 were overall still among the top 5 all-time years for tourism though representing a slowing of the upward post-recessionary trend.

The general visitor industry trends for the island are summarized on the following graphs and tables, focusing on the three most critical variables in tourism, Total Visitors, Total Visitor Days, and Total Visitor Expenditures. A regional tourism economy can be considered successful and sustainable if these three factors typically demonstrate growth over time.

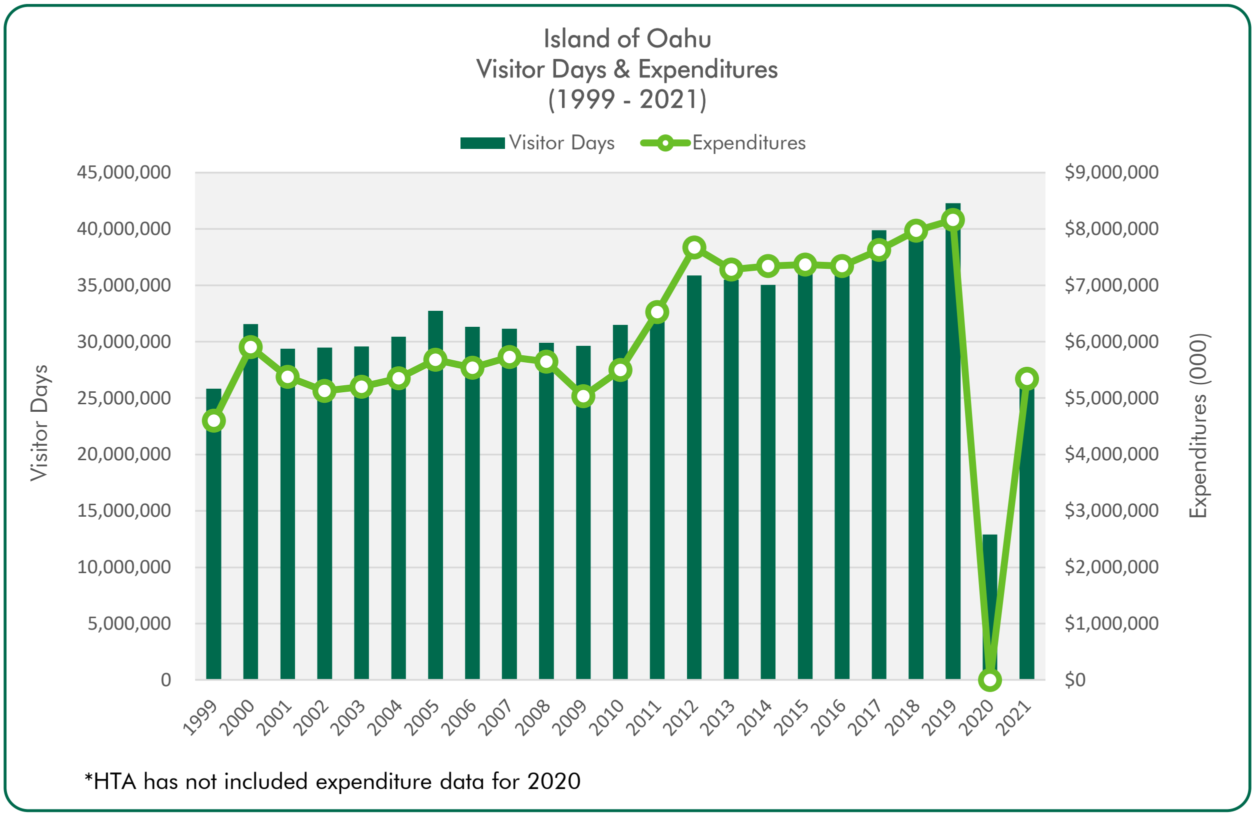
From the depth of the recession in late-2009 to the end of 2019, the number of Total Arrivals was up 54 percent, Total Visitor Days were up 43 percent, and Total Visitor Expenditures up 62 percent. All the "lost ground" resulting from the financial crisis/great recession had been fully recovered and well-surpassed.



Source: CBRE from DBEDT / HTA data



Source: CBRE from DBEDT / HTA data



Source: CBRE from DBEDT / HTA data

Resulting from the vitality of the market in 2019, and the apparent ease with which the market regained inertia after slightly slowing in some indicators in 2013-14, the State Department of Business, Economic Development and Tourism (DBEDT) and the University of Hawaii Economic Research Organization (UHERO) upwardly revised their forecasts for the third quarter in 2019, and into the mid-term, projecting arrivals and spending would continue to see growth at a slower pace over the next several years. The fourth quarter forecast was slightly more tempered.

While there were concerns the sharp rise in Average Daily Rates (ADR) on Oahu, traditionally considered an inexpensive Hawaii destination, coupled with spiking Waikiki occupancies, was creating an overheated market with inevitable compression on the horizon, continued gains were anticipated to extend in 2014; albeit at reduced rates relative to the prior three years.

Year-end 2019 figures showed another banner year for Oahu/Waikiki to the point there were concerns the island and community were being overwhelmed by visitors. However, tourism remained the strongest sector in the local economy and was anticipated to continue as such into the mid-term.

COVID-19 PANDEMIC: 2020 and 2021

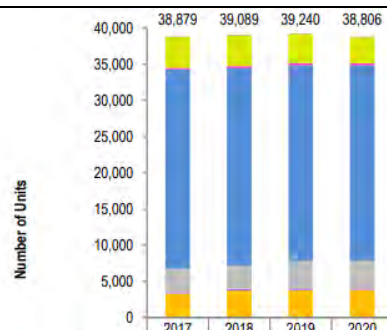
All forecasts for the industry became untenable with the onset of the COVID-19 pandemic. 2020 was beginning to look like another strong year for Oahu's tourism industry until the COVID-19 pandemic shut down the State's tourism industry between the end of March to mid-October. January and February 2020 saw a combined 4.4 percent increase in visitor arrivals when compared to the previous year. However, by March it became apparent that the virus was no longer contained to the east Asia region and infections began spreading around the world which subsequently reduced tourism both in Hawaii and other tourist destinations. The month of March saw a 54.4 decrease in visitor arrivals when compared to prior year 2019.

To deter the spread of the virus locally, the State of Hawaii, using an emergency proclamation, implemented a mandated 14-day quarantine that has caused declines in visitor arrivals. The 14-day quarantine commenced March 31, 2020, and between the months of April and September the state saw a 97 percent drop in visitor arrivals. Recognizing the negative economic impacts created by the quarantine, the State government reopened tourism on October 15, 2020, by implementing a testing program that allowed tourists to bypass a mandated 14-day quarantine (reduced to 10 days in December 2020) with a negative COVID-19 test.

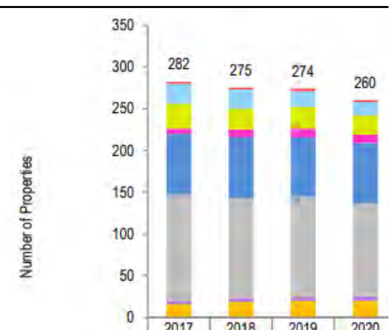
The "Safe Travel" program proved efficient and amenable to travelers until its termination in March 2022.

Oahu Visitor Plant

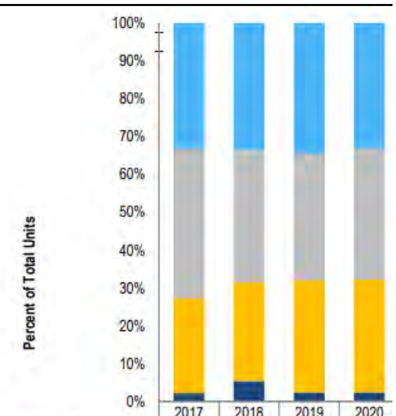
As shown on the graph below, as of the 2020 Visitor Plant Inventory - Hawaii Tourism Authority survey (published in 2021, the most recently published information), there were some 38,806 state-registered transient lodging units on Oahu, 68 percent of which are within 73 integrated hotel operations, with condotels and timeshares comprising the next largest shares of the standing inventory, though modest in comparison with hotels.



	2017	2018	2019	2020
O'AHU TOTAL	38,879	39,089	39,240	38,806
Apt/Hotel	50	50	68	50
B&B	47	47	43	38
Condo Hotel	4,246	4,242	3,956	3,575
Hostels	239	267	285	285
Hotel	27,473	27,306	27,060	26,966
Vacation Rental Unit	3,270	3,221	3,821	3,848
Other	225	225	225	225
Timeshare	3,329	3,731	3,782	3,819



	2017	2018	2019	2020
O'AHU TOTAL	282	275	274	260
Apt/Hotel	2	2	3	2
B&B	24	23	19	16
Condo Hotel	30	25	26	23
Hostels	6	9	10	10
Hotel	72	73	71	73
Vacation Rental Unit	128	120	121	111
Other	4	4	4	5
Timeshare	16	19	20	20



	2017	2018	2019	2020
Luxury (over $500/night)	33.1%	33.5%	34.5%	33.0%
Deluxe ($251 to $500)	39.6%	35.1%	33.5%	34.8%
Standard ($101 to $250)	25.1%	26.1%	29.6%	29.8%
Budget (up to $100)	2.2%	5.4%	2.4%	2.4%

Source: 2020 Visitor Plant Inventory – Hawaii Tourism Authority

As shown, visitor units on Oahu are equitably spread across the pricing spectrum, with the "Standard", "Deluxe" and "Luxury" segments all having major shares.

Additionally, the HTA survey identified some 8,486 "individual advertised units", mostly private homes and condominiums. While some of these units are registered and there may be some double-counting of units which advertise on multiple websites and escaped HTA scrutiny, many are unregistered, "illegal" (uncertified) units outside of designated resort areas and the County has vowed to undertake a concerted effort to shut down their operation with the passage of Ordinance 19-18 which places new regulations on short-term vacation rentals. The County has begun sending letters to owners ordering them to shut down their operation or face fines. It expected that there will be a decrease in individual advertised units in the 2021 visitor inventory plant (calendar year reports are delayed by a year).

GENERAL TOURISM STATISTICS AND TRENDS

The table below displays the primary statistics and trending for Oahu tourism from 1990 through 2022 (2022 is annualized based on data through March).

ISLAND OF OAHU TOURISM INDUSTRY TRENDS

YEAR	TOTAL VISITORS	Annual Pct. Change	AVERAGE LENGTH OF STAY (DAYS)	Annual Pct. Change	TOTAL VISITOR DAYS	Annual Pct. Change	VISITOR EXPENDITURES: ESTIMATED TOTAL* (000's)	VISITOR EXPENDITURES: Annual Pct. Change	VISITOR EXPENDITURES: DAILY PER CAPITA	VISITOR EXPENDITURES: Annual Pct. Change	TOTAL LODGING UNITS	Annual Pct. Change
1990	5,005,307	2.25%	5.81	-0.68%	29,080,835	1.55%	$5,026,332	11.09%	$172.84	9.39%	36,899	1.18%
1991	4,653,624	-7.03%	5.60	-3.61%	26,060,292	-10.39%	$5,106,254	1.59%	$195.94	13.36%	36,623	-0.75%
1992	4,527,147	-2.72%	5.75	2.68%	26,031,093	-0.11%	$4,840,221	-5.21%	$185.94	-5.10%	36,851	0.62%
1993	4,213,470	-6.93%	5.77	0.35%	24,311,723	-6.61%	$4,442,967	-8.21%	$182.75	-1.72%	36,604	-0.67%
1994	4,695,167	11.43%	5.85	1.39%	27,466,727	12.98%	$5,090,134	14.57%	$185.32	1.41%	36,194	-1.12%
1995	4,915,840	4.70%	5.90	0.85%	29,003,456	5.59%	$5,890,602	15.73%	$203.10	9.59%	36,174	-0.06%
1996	5,092,680	3.60%	5.88	-0.34%	29,944,958	3.25%	$6,313,595	7.18%	$210.84	3.81%	36,146	-0.08%
1997	5,017,069	-1.48%	5.95	1.11%	29,828,984	-0.39%	$6,323,745	0.16%	$212.00	0.55%	35,971	-0.48%
1998	4,741,130	-5.50%	5.41	-9.01%	25,649,513	-14.01%	$4,770,809	-24.56%	$186.00	-12.26%	36,206	0.65%
1999	4,558,168	-3.86%	5.67	4.81%	25,844,813	0.76%	$4,600,377	-3.57%	$178.00	-4.30%	35,861	-0.95%
2000	4,776,960	4.80%	6.61	16.58%	31,575,706	22.17%	$5,904,657	28.35%	$187.00	5.06%	36,303	0.81%
2001	4,268,937	-10.63%	6.88	4.15%	29,388,797	-6.93%	$5,375,000	-8.97%	$182.89	-2.20%	36,500	0.54%
2002	4,239,887	-0.68%	6.96	1.10%	29,494,656	0.36%	$5,125,000	-4.65%	$173.76	-4.99%	36,457	-0.12%
2003	4,066,258	-4.10%	7.27	4.45%	29,579,916	0.29%	$5,200,000	1.46%	$175.79	1.17%	36,600	0.39%
2004	4,476,229	10.08%	6.80	-6.46%	30,438,357	2.90%	$5,350,000	2.88%	$175.77	-0.02%	35,987	-1.67%
2005	4,751,855	6.16%	6.89	1.32%	32,740,281	7.56%	$5,679,200	6.15%	$173.46	-1.31%	34,340	-4.58%
2006	4,606,438	-3.06%	6.80	-1.31%	31,323,778	-4.33%	$5,536,800	-2.51%	$176.76	1.90%	34,008	-0.97%
2007	4,596,330	-0.22%	6.78	-0.36%	31,142,644	-0.58%	$5,729,200	3.47%	$184.00	4.10%	33,588	-1.24%
2008	4,193,685	-8.76%	7.13	5.23%	29,900,974	-3.99%	$5,644,300	-1.48%	$188.77	2.59%	34,081	1.47%
2009	4,032,198	-3.85%	7.35	3.09%	29,636,655	-0.88%	$5,031,600	-10.86%	$169.78	-10.06%	34,027	-0.16%
2010	4,273,657	5.99%	7.37	0.27%	31,495,094	6.27%	$5,500,600	9.32%	$174.65	2.87%	34,040	0.04%
2011	4,397,935	2.91%	7.50	1.77%	32,983,238	4.73%	$6,527,800	18.67%	$197.90	13.3%	35,001	2.82%
2012	4,904,045	11.51%	7.31	-2.49%	35,864,092	8.73%	$7,672,500	17.54%	$213.93	8.10%	35,200	0.57%
2013	5,100,169	4.00%	6.96	-4.83%	35,496,392	-1.03%	$7,277,900	-5.14%	$205.03	-4.16%	35,430	0.65%
2014	5,176,858	1.50%	6.77	-2.74%	35,044,667	-1.27%	$7,343,800	0.91%	$209.56	2.21%	35,864	1.22%
2015	5,339,912	3.15%	6.80	0.44%	36,308,933	3.61%	$7,366,500	0.31%	$202.88	-3.18%	36,058	0.54%
2016	5,447,229	2.01%	6.82	0.36%	37,170,588	2.37%	$7,340,300	-0.36%	$197.48	-2.67%	37,400	3.72%
2017	5,672,123	4.13%	7.03	3.02%	39,875,025	7.28%	$7,627,200	3.91%	$191.28	-3.14%	38,879	3.95%
2018	5,935,007	4.63%	6.82	-2.98%	40,478,710	1.51%	$7,969,100	4.48%	$196.87	2.92%	39,089	0.54%
2019	6,193,027	4.35%	6.83	0.08%	42,271,087	4.43%	$8,160,358	2.80%	$193.05	-1.94%	39,240	0.39%
2020	1,515,013	-75.54%	8.51	24.70%	12,894,588	-69.5%	--	--	--	--	--	--
2021 [2]	3,330,948	119.86%	8.10	-4.83%	26,982,006	109.3%	$5,660,825	--	$209.80	--	--	--
2022 [1]	4,408,500	32.35%	7.79	-3.83%	31,764,500	17.7%	$7,324,894	29.40%	$230.60	9.91%	--	--

[1] Data from March YTD 2022; Total Visitors, Total Visitor Days, and Visitor Expenditures annualized using DBEDT projections.

[2] Due to COVID-19 pandemic, HTA has not published data regarding visitor expenditures for Year 2020.

Source: State DBEDT, Hawaii Tourism Authority, and CBRE

The two most critical figures for the industry are Total Visitor Days and Total Visitor Expenditures, as having more people (a higher daily visitor count) spending more money over the long-term is the surest sign of a fundamentally strong and sustainable market.

HOTEL OPERATING STATISTICS AND TRENDS

The Oahu hotel market is still recovering from the impacts of the COVID-19 pandemic. ADR has remained relatively strong despite having large decreases in RevPAR and Occupancy. With DBEDT projections anticipating a full recovery sometime around 2023-24, ADR, RevPAR, and Occupancy are anticipated to return at pre-covid levels.

ISLAND OF OAHU HOTEL INDUSTRY TRENDS

YEAR	ROOM RENTAL RATE	Annual Pct. Change	REVENUE Per Available Room (RevPAR)	Annual Pct. Change	AVERAGE OCCUPANCY RATE	Annual Pct. Change
1990	$94.01	10.42%	$81.09	10.39%	86.26%	-0.02%
1991	$94.26	0.27%	$75.16	-7.31%	79.74%	-7.56%
1992	$98.38	4.37%	$79.22	5.39%	80.52%	0.98%
1993	$97.18	-1.22%	$74.24	-6.29%	76.39%	-5.13%
1994	$97.63	0.46%	$78.84	6.20%	80.75%	5.71%
1995	$108.33	10.96%	$90.88	15.27%	83.89%	3.89%
1996	$116.88	7.89%	$95.30	4.87%	81.54%	-2.80%
1997	$123.18	5.39%	$91.63	-3.85%	74.39%	-8.77%
1998	$122.83	-0.28%	$85.21	-7.01%	69.37%	-6.75%
1999	$121.09	-1.42%	$88.24	3.56%	72.87%	5.05%
2000	$124.09	2.48%	$98.03	11.10%	79.00%	8.41%
2001	$106.62	-14.08%	$76.79	-21.67%	72.02%	-8.84%
2002	$102.12	-4.22%	$76.49	-0.39%	74.90%	4.00%
2003	$105.52	3.33%	$79.90	4.46%	75.72%	1.09%
2004	$112.51	6.62%	$91.35	14.33%	81.19%	7.22%
2005	$125.74	11.76%	$107.13	17.28%	85.20%	4.94%
2006	$123.96	-1.42%	$102.64	-4.19%	82.80%	-2.82%
2007	$168.36	35.82%	$129.30	25.98%	76.80%	-7.25%
2008	$169.92	0.93%	$127.44	-1.44%	75.00%	-2.34%
2009	$150.06	-11.69%	$108.64	-14.75%	72.40%	-3.47%
2010	$149.67	-0.26%	$117.04	7.73%	78.20%	8.01%
2011	$165.05	10.28%	$133.53	14.08%	80.90%	3.45%
2012	$183.51	11.18%	$155.43	16.41%	84.70%	4.70%
2013	$209.01	13.90%	$175.15	12.69%	83.80%	-1.06%
2014	$213.22	2.01%	$179.74	2.62%	84.30%	0.60%
2015	$219.53	2.96%	$187.26	4.18%	85.30%	1.19%
2016	$225.86	2.88%	$193.11	3.12%	85.50%	0.23%
2017	$228.55	1.19%	$192.90	-0.11%	84.40%	-1.29%
2018	$236.06	3.29%	$197.65	2.46%	83.70%	-0.83%
2019	$240.76	1.99%	$202.62	2.51%	84.20%	0.60%
2020	$220.63	-8.36%	$94.04	-53.59%	42.60%	-49.41%
2021	$225.31	2.12%	$125.19	33.12%	55.60%	30.52%
2022 [1]	$240.73	6.84%	$169.03	35.02%	70.20%	26.26%

[1] Data from March YTD 2022.

Source: Hawaii Tourism Authority and CBRE.

PROJECTED LODGING DEMAND/SUPPLY TRENDS

We have estimated that the unmet lodging demand on Oahu through 2032 will total some 2,670 units, even if all proposed projects are built (unlikely) and before accounting for the many "illegal" short-term rentals being closed by the County. Our calculations are shown on the following table.

QUANTIFICATION OF TRANSIENT LODGING ROOM NIGHT DEMAND ON OAHU 2022 THROUGH 2032

Year	Total Visitor Arrivals (1)	Average Length of Stay (2) (Days)	Total Visitor Days	Total Visitor Nights (3)	Average Party Size (4) (Persons)	Total Room Night Demand (Annually)	Occupancy Rate (5)	Total Inventory Demand (6) (Units)
2022	4,408,500	6.83	30,090,630	25,682,130	2.20	11,673,696	65.00%	49,204
(Annualized YTD February 2022)					Total Unit Supply (Registered and Unregistered)			
2023	5,573,724	6.80	37,901,325	32,327,601	2.20	14,694,364	82.50%	48,798
2024	5,662,904	6.80	38,507,746	32,844,843	2.20	14,929,474	82.50%	49,579
2025	5,753,510	6.80	39,123,870	33,370,360	2.20	15,168,345	82.00%	50,679
2026	5,845,567	6.80	39,749,852	33,904,286	2.20	15,411,039	81.75%	51,648
2027	5,939,096	6.80	40,385,850	34,446,754	2.20	15,657,616	81.50%	52,635
2028	6,034,121	6.80	41,032,024	34,997,902	2.20	15,908,137	81.00%	53,807
2029	6,130,667	6.80	41,688,536	35,557,869	2.20	16,162,668	81.00%	54,668
2030	6,228,758	6.80	42,355,553	36,126,795	2.20	16,421,270	81.00%	55,543
2031	6,328,418	6.80	43,033,241	36,704,823	2.20	16,684,011	81.00%	56,432
2032	6,429,673	6.80	43,721,773	37,292,101	2.20	16,950,955	81.00%	57,335
								8,130
				Maximum Potential Increase in Number of Lodging Units 2022 Through 2032				**5,460**
						Residual Unmet Unit Demand		**2,670**

(1) Assuming Total Visitor Arrivals to Oahu increases at mid-point of UHERO (Oahu) and DBEDT (statewide) forecasts or 1.6% per year.
(2) Prior to the COVID-19 pandemic, the average length of stay on Oahu increased at a coumpounded annual rate of 0.37% over the past 10 years. Assumed stable at 6.8 days following recover.

(3) Visitors typically stay for one less night than their total length of stay in days ("eight days/seven nights"). Total visitor arrivals re deducted from total visitor days to quantify total visitor nights.

(4) The Average Party-Size to Oahu has ranged from 2.1 to 2.4 persons over the past decade, and was at 2.23 persons in 2019. We have used an average party-size of 2.2 persons throughout the projection period.

(5) Prior to 2020, the average occupancy rate on Oahu for the last decade has been between 80.9 and 85.5% during the last decase. We have trended to stabilization at 81.0%.

Note: The Hawaii Tourism Authority annual survey identified 38,806 legal, registered transient lodging units on Oahu in 2020. In addition they identified 8,486 "individually advertised units". HTA acknowledges that a few of the units are also registered units and there may be some double-counting of units advertised in more than one website which escaped their scrutiny. However, the large majority of these units are "illegal/uncertified" and subject to closure by the City & County of Honolulu and To the extent the illegal units are shuttered the number of available units would drop and increase demand for the remaining units.

Source: CBRE

The table below summarizes proposed or announced projects and their status. The proposed facilities will contain a total 5,460 lodging units.

PROPOSED DEVELOPMENTS & PLANNED IMPROVEMENTS
For Lodging Inventory on the Island of Oahu

Project Name/Description	Location	Unit Count [1]		Property Type	STR Anticipated Chain Scales	Service Segment	Status
Remington College Building Conversion (AC Hotels)	Downtown	104		Hotel	Upper Midscale - Upscale	Limited-Service	Design/Plan
#3 Hotel Garn Development/Leihano Dev. Subdivision	Kapolei	220		Hotel	Upper Midscale - Upscale	Limited-Service	Design/Plan
#4 Hotel Garn Development/Leihano Dev. Subdivision	Kapolei	170		Hotel	Upper Midscale - Upscale	Limited-Service	Design/Plan
Sky Ala Moana	Ala Moana	300		Condotel	Upper Upscale - Luxury	Full-Service	Sales
Mandarin Oriental	Ala Moana	125		Hotel	Luxury	Full-Service	Sales
1500 Kapiolani	Ala Moana	450		Condotel	Upper Upscale - Luxury	Full-Service	In Planning
Hawaii Ocean Plaza	Ala Moana	175		Hotel	Upper Upscale	Mod to Full-Service	Sales
Pearl Hotel Waikiki Expansion	Waikiki	47	[3]				
Princess Kaiulani Redevelopment	Waikiki	0	[2]	Hotel/Resort	Upper Upscale - Luxury	Full-Service	Design/Plan
133 Kaiulani	Waikiki	200		Timeshare	Upper Upscale	--	Sales
Proposed Timeshare, Hilton Hawaiian Village	Waikiki	255		Timeshare	Upper Upscale	--	Design/Plan
Proposed Hotel Tower, Hilton Hawaiian Village	Waikiki	464					
KS/BE University Redevelopment (RD Olsen)	McCully - Moiliili	175		Hotel	Upper Midscale - Upscale	Limited-Service	--
Atlantis Ko Olina	Ko Olina	800		Resort	Luxury	Full-Service	Design/Plan
Oceanwide Ko Olina	Ko Olina	150		Hotel	Upper Midscale - Upscale	Limited-Service	In Planning
Lot 70	Kapolei	150		Hotel	Upper Midscale - Upscale	Limited-Service	--
Additional Kamakana Alii Hotels	Kapolei	300		Hotel	Upper Midscale - Upscale	Limited-Service	On-Hold
Hoakalei	Ewa Beach	750		Hotel/Resort	Upper Upscale - Luxury	Full-Service	Design/Plan
Turtle Bay	North Shore	625		Resort	Upper Upscale - Luxury	Full-Service	Ongoing
Total Proposed Units For All Properties		5,460					

[1] Unit count excludes project's residential units and only includes units that will be allowed for lodging purposes.

[2] The redevelopment of the Princess Kaiulani is anticipated to result in no net change in the number of units on-site

[3] Pearl Hotel Waikiki is undergoing a renovation that will expand the room count by 47-rooms from 132-rooms to 179-rooms

Compiled by CBRE

Even with the market beginning to stabilize and growth trends nominalizing, the demand for additional lodging inventory on Oahu, widely considered to be in a period of "tight supply", is expected to continue to rise over the near to mid-term as quantified on the table previously presented.

OAHU VISITORS BY MARKET SEGMENT

OAHU VISITOR SEGMENTATION

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (1)	Average
Total Oahu Visitors	4,401,625	4,904,045	5,044,276	5,159,078	5,321,436	5,461,880	5,672,123	5,935,007	6,154,248	1,506,316	3,330,948	990,208	**4,808,271**
Origin													
Domestic Travelers	2,592,015	2,734,643	2,732,456	2,763,121	2,856,317	2,912,872	3,008,932	3,244,254	3,513,070	998,149	3,251,685	911,023	**2,782,501**
% of Total	58.9%	55.8%	54.2%	53.6%	53.7%	53.3%	53.0%	54.7%	57.1%	66.3%	97.6%	92.0%	**57.9%**
International Travelers	1,809,610	2,169,402	2,311,820	2,395,956	2,465,119	2,549,008	2,663,191	2,690,754	2,641,178	508,167	79,263	79,185	**2,025,770**
% of Total	41.1%	44.2%	45.8%	46.4%	46.3%	46.7%	47.0%	45.3%	42.9%	33.7%	2.4%	8.0%	**42.1%**
Travel Method													
Group Tour	527,513	618,401	608,545	606,859	540,109	554,345	488,325	451,779	403,457	80,220	49,295	21,183	**448,077**
% of Total	12.0%	12.6%	12.1%	11.8%	10.1%	10.1%	8.6%	7.6%	6.6%	5.3%	1.5%	2.1%	**9.0%**
Package	1,865,717	2,093,283	2,141,828	2,172,811	2,074,618	2,052,775	2,007,310	1,924,244	1,920,905	347,620	538,264	149,753	**1,739,943**
% of Total	42.4%	42.7%	42.5%	42.1%	39.0%	37.6%	35.4%	32.4%	31.2%	23.1%	16.2%	15.1%	**35.1%**
True Independent	2,454,287	2,725,450	2,817,541	2,894,015	3,143,068	3,289,755	3,561,536	3,896,817	4,125,961	1,131,517	2,768,820	831,482	**2,982,615**
% of Total	55.8%	55.6%	55.9%	56.1%	59.1%	60.2%	62.8%	65.7%	67.0%	75.1%	83.1%	84.0%	**60.2%**
Accommodations Type													
Hotel	3,296,694	3,702,925	3,795,679	3,894,875	3,915,500	4,016,556	4,110,102	4,145,725	4,302,650	959,901	2,159,272	655,955	**3,481,807**
% of Total	74.9%	75.5%	75.2%	75.5%	73.6%	73.5%	72.5%	69.9%	69.9%	63.7%	64.8%	66.2%	**70.3%**
Condominium	459,653	482,425	532,395	517,778	557,080	562,032	590,686	617,800	624,031	161,661	341,434	105,304	**495,180**
% of Total	10.4%	9.8%	10.6%	10.0%	10.5%	10.3%	10.4%	10.4%	10.1%	10.7%	10.3%	10.6%	**10.0%**
Timeshare	254,882	291,952	292,146	294,823	315,378	309,228	335,537	324,457	326,184	76,833	168,490	43,626	**271,810**
% of Total	5.8%	6.0%	5.8%	5.7%	5.9%	5.7%	5.9%	5.5%	5.3%	5.1%	5.1%	4.4%	**5.5%**
Rental House/B&B/Other	390,396	426,743	424,056	451,602	533,478	574,064	635,798	620,043	689,094	168,805	370,411	109,120	**480,408**
% of Total	8.9%	8.7%	8.4%	8.8%	10.0%	10.5%	11.2%	10.4%	11.2%	11.2%	11.1%	11.0%	**9.7%**
Purpose of Trip													
Pleasure	3,485,114	3,957,482	4,085,909	4,154,858	4,267,996	4,374,037	4,597,404	4,824,050	5,033,069	1,127,200	2,711,694	801,742	**3,874,438**
% of Total	79.2%	80.7%	81.0%	80.5%	80.2%	80.1%	81.1%	81.3%	81.8%	74.8%	81.4%	81.0%	**78.2%**
MC&I	232,927	240,737	250,237	282,801	308,484	302,434	298,869	297,009	280,775	68,579	32,862	27,207	**235,974**
% of Total	5.3%	4.9%	5.0%	5.5%	5.8%	5.5%	5.3%	5.0%	4.6%	4.6%	1.0%	2.7%	**4.8%**
Visit Friends & Relatives	454,613	480,654	477,203	479,267	500,399	506,015	505,688	545,559	577,297	226,728	558,394	139,912	**482,892**
% of Total	10.3%	9.8%	9.5%	9.3%	9.4%	9.3%	8.9%	9.2%	9.4%	15.1%	16.8%	14.1%	**9.7%**
Other	228,971	225,172	230,927	242,152	244,557	496,471	684,142	342,610	315,239	74,636	83,885	27,341	**288,069**
% of Total	5.2%	4.6%	4.6%	4.7%	4.6%	9.1%	12.1%	5.8%	5.1%	5.0%	2.5%	2.8%	**5.8%**

Note: Percentages are based on share of survey answers within the segment category. They may not equate the total number of visitors to Oahu because of multiple or no answers.
(1) Data through February 2022.

Averages based on data from 2011-2021. Excludes 2022 data.

Source: Hawaii Tourism Authority and CBRE

Addendum B

ECONOMIC IMPACT ANALYSIS TABLES

TABLE A

SUMMARY COMPARISON OF MAJOR ECONOMIC IMPACTS FOR THE PROPOSED HHV AMB HOTEL TOWER

All Amounts Expressed in Constant, Uninflated 2022 Dollars

Analysis Item	Cumulative During Build-Out Period	Stabilized Annually Thereafter
	6/2022 to 6/2027	2028 and Beyond
Direct Capital Investment	$461,516,929	
Local Contractor's Profits	$46,151,693	
Local Supplier's Profits	$18,460,677	
Worker Years of Jobs	2,441	493
Forecast Stabilized Hotel Annual Gross Revenues		$82,212,425
Employee Wages	$190,424,000	$28,480,587
Average Daily Hotel Guest Population		1,020
Total De Facto Population		1,020
Average Annual Guest Spending (Excluding Lodging and Rental Car)		$33,869,336
Oahu "Base" Economic Impact	$499,601,729	$137,624,725
	(Above figures are not intended to sum)	
PUBLIC FISCAL IMPACTS		
Additional Tax Revenues for County of Honolulu	$13,288,105	$18,382,179
Additional Tax Revenues for State of Hawaii	$49,111,074	$22,471,692
Additional Per Capita Costs for County of Honolulu	$0	$3,821,447
Additional Per Capita Costs for State of Hawaii	$0	$12,491,325
Net Benefit (Loss) to the County of Honolulu	$13,288,105	$14,560,732
Net Benefit (Loss) to the State of Hawaii	$49,111,074	$9,980,367

Source: CBRE

TABLE B

BUILD-OUT AND RAMP-UP TIMING FOR THE PROPOSED HHV AMB HOTEL TOWER

Year	Project Year	Activity
2022	1	Entitlements, A&E, Drawings, Permitting & Financing
2023	2	Entitlements, A&E, Drawings, Permitting & Financing
2024	3	Complete Permitting, Site Prep, Infrastructure Extension, and Staging
2025	4	Vertical Construction Commences Early in Year
2026	5	Construction Continues
2027	6	Construction Completed by Mid-Year, Hotel Opens and Ramps=Up
2028	7	Hotel Reaches Stabilized Operations

Compiled by CBRE

DEPICTION OF TIME-LINE FOR ECONOMIC IMPACT AND PUBLIC FISCAL MODELS

Modeling Period	July 2022 through December 2024	January 2025 through June 2027	July 2027 Through December 2028
Entitlement/Approvals/Staging	Anticipated to Take Approximately18 Months		
Vertical Construction & Finish		Projected to Require 30 Months	
Opening and Operation			Hotel opens, Ramps-Up and Achieves Stabilized Operations

TABLE 1

PROPOSED HHV AMB TOWER DEVELOPMENT SCHEDULE AND ESTIMATED CONSTRUCTION COSTS

All Amounts Expressed in Constant 2022 Dollars

Item	Totals During Build-Out
Construction Period	6/2022 to 6/2027
Infrastructure Emplacement & Site Work	$10,132,384
Hotel Construction	$451,384,545
TOTAL CONSTRUCTION COSTS	$461,516,929
Contractor Profits	$46,151,693
Supplier Profits	$18,460,677

Source: CBRE

TABLE 2

ESTIMATED YEARLY FULL-TIME EQUIVALENT EMPLOYMENT POSITIONS CREATED BY DEVELOPMENT

	Totals During Build-Out	Stabilized Annually Thereafter
Construction Period	6/2022 to 6/2027	2028 and Beyond
Infrastructure Emplacement (1)	25	
Hotel Construction (1)	1,806	
Total Construction Jobs	1,831	
		On-Going Employment Stabilized Annually
Hotel Operations Employees (Including Retail space) (3)		
Total FTE Jobs in Place at End of Period		370
Off-Site Employment (4)		
Total FTE Jobs in Place at End of Period	610	123
TOTAL WORKER YEARS DURING DEVELOPMENT	2,441	
PERMANENT JOBCOUNT FOLLOWING COMPLETION		493

(1) Infrastructure construction employment estimated at 1 worker-year for every $400,000 in costs.

Includes all direct employment associated with construction, on and off-site.

(2) Vertical construction employment estimated at 1 worker-year for every $250,000 in costs.

Includes all direct employment associated with construction, on and off-site.

(3) Hotel employment estimated at 340 total full-time equivalent positions (.66 workers per room), retail employment of 20 positions and pool bar/events 10 persons.

(4) Estimated at one cumulative off-site employment position for every three on site positions.

Source: CBRE

TABLE 3

ESTIMATED YEARLY EMPLOYEE WAGES CREATED BY DEVELOPMENT

All Amounts Expressed in Constant 2022 Dollars

	Cumulative During Build-Out Period	Stabilized Annually Thereafter
Construction Period	6/2022 to 6/2027	2028 and Beyond
Infrastructure Emplacement (1)	$2,080,000	
Hotel Construction (1)	$150,259,200	
Total Construction Wages	**$152,339,200**	
		Stabilized Annually
Hotel and Retail Operations (2)		$20,783,131
Off-Site Employment Wages (3)	$38,084,800	$7,697,456
TOTAL PERIODIC WAGES	$190,424,000	$28,480,587

(1) Average annual wage for full-time-equivalent construction worker (all trades) at $83,200 ($40/hour X 2,080 hours).

(2) Average annual wage for full-time-equivalent hotel operations & retail workers at $54,800 ($27/hour).

(3) Average annual wage for full-time-equivalent general worker at $62,400 ($30/hour), the average wage for all "Total Private Workers" in the state.

Wages taken from US Bureau of Labor Statistics "May 2021 Metropolitan and Nonmetropolitan Area Employment and Wage Estimates - Urban Honolulu, HI".

Source: CBRE

TABLE 4A

ESTIMATED STABILIZED OPERATING LEVELS FOR THE PROPOSED AMB HOTEL TOWER FROM CURRENT 2022 PERSPECTIVE

Hotel Usage	Amount
Number of Available Rooms Daily	515
Total Room/Nights Available Annually	187,975
Stabilized Occupancy Rate	90%
Total Room/Nights Occupied Annually	169,178
Average Daily Room Rate	$350.00
Effective RevPAR	$315.00

Source: CBRE

TABLE 4B

ESTIMATED STABILIZED OPERATING LEVELS FOR THE PROPOSED AMB HOTEL TOWER FROM CURRENT 2022 PERSPECTIVE

Forecast Hotel & Retail Gross Operating Revenues

Department	Stabilized Gross Annual Income	Percent of Total Income
Rooms Department	$59,212,125	83.0%
Food & Beverage (pool bar)	$1,200,000	1.7%
Other Operated Departments	$200,000	0.3%
Fees, Rentals & Other Income	$10,708,500	15.0%
Total Estimated Annual Gross Income	**$71,320,625**	**100.0%**
Retail Gross Sales		
(6,051 square feet X sales of $1,800 per SF).	**$10,891,800**	

Source: CBRE

TABLE 4C

ESTIMATED STABILIZED OPERATING LEVELS FOR THE PROPOSED AMB HOTEL TOWER FROM CURRENT 2022 PERSPECTIVE

Average Daily Guest Count and Spending

Average Number of Occupied Rooms	464
Average Party Size in Persons	2.2
Total Average De Facto Guest Population	1,019.7
Average Daily Spending per Guest (1)	$91
Total Daily Guest Spending	$92,793
Total Annual Off-Site Guest Spending	$33,869,336

(1) Average spending per visitor per day of $221, less lodging and car rental costs, based on year-end 2021 data.

Source: CBRE

TABLE 5

SUMMARY OF ECONOMIC IMPACTS/ACTIVITY ASSOCIATED WITH DEVELOPMENT

All Amounts Expressed in Constant 2022 Dollars

	Totals During Build-Out	Stabilized Annually Thereafter
	6/2022 to 6/2027	2028 and Beyond
Construction Wages	$152,339,200	
Contractor Profits	$46,151,693	
Supplier Profits	$18,460,677	
Other Construction Costs	$244,565,359	
Total Construction Impact	$461,516,929	
Hotel & Retail Operating Gross Revenues		$82,212,425
Off-Site Wages	$38,084,800	$7,697,456
Total Hotel Guest Population Spending (1)		$33,869,336
Hotel Maintenance & Repairs (2)		$13,845,508
TOTAL BASE ECONOMIC IMPACT	$499,601,729	$137,624,725

(1) Off-Site, excluding hotel and rental car.

(2) Estimated at 3% of direct construction costs annually

Source: CBRE

TABLE 6

ESTIMATES OF TOTAL ECONOMIC IMPACT FROM SUBJECT CONSTRUCTION

USING INTER-COUNTY INPUT-OUTPUT MODEL "TYPE II" MULTIPLIERS

All Amounts Expressed in Constant 2022 Dollars

	Totals During Build-Out	Stabilized Annually
Year	6/2022 to 6/2027	2028 and Beyond
Construction Costs/On-Going Maintenance	$461,516,929	$13,845,508
1. Economic Output Multiplier	2.1000	2.1000
Total State Economic Output	$969,185,551	$29,075,567
2. Earnings Multiplier	0.6800	0.6800
Total Increase in State Earnings	$313,831,512	$9,414,945
3. State Tax Multipliers	0.0973	0.0973
Total Increase in State Taxes	$44,905,597	$1,347,168
4. Total Job Multipliers	11.4200	11.4200
Total State Jobs Created (per Million Dollars Spent)	5,270.5	158.1
Construction/On-Going Maintenance Employment	1,831	92
5. Direct-Effect Job Multipliers	2.6600	2.6600
Total Direct Jobs Created (1)	4,870.5	245.5
Construction/On-Going Maintenance Wages	$152,339,200	$5,759,731
6. Direct-Effect Earnings	0.6700	0.6700
Total Increase in Direct Earnings	$102,067,264	$3,859,020

(1) Jobs estimated at one job per $250,000 spent during build-out and $150,000 when stabilized.
Source: "2017 Hawaii Inter-County Input-Output Study" (approved June 2021), and CBRE

TABLE 7

ESTIMATES OF TOTAL ECONOMIC IMPACT FROM SUBJECT OPERATIONS

USING INTER-COUNTY INPUT-OUTPUT MODEL "TYPE II" MULTIPLIERS

All Amounts Expressed in Constant 2022 Dollars

	Totals During Build-Out	Stabilized Annually
Year	6/2022 to 6/2027	2028 and Beyond
Total On-Going, Stabilized Annual Economic Activity	$0	$137,624,725
1. Economic Output Multiplier	2.2100	2.2100
Total State Economic Output	$0	$304,150,641
2. Earnings Multiplier	0.5800	0.5800
Total Increase in State Earnings	$0	$79,822,340
3. State Tax Multipliers	0.2010	0.2010
Total Increase in State Taxes	$0	$27,662,570
4. Total Job Multipliers (per million dollars spent)	11.5000	11.5000
Total State Jobs Created	0.0	1,582.7
Operating Employment (On & Off-Site)	0.0	493.4
5. Direct-Effect Job Multipliers	3.0700	3.0700
Total Direct Jobs Created (1)	0.0	1,514.8
Operating Wages	$0	$28,480,587
6. Direct-Effect Earnings	2.7300	2.7300
Total Increase in Direct Earnings	$0	$77,752,003

(1) Jobs estimated at one job per 0.66 hotel rooms, 1/300 SF of retail space and 10 for pool bar.
Source: "2017 Hawaii Inter-County Input-Output Study" (approved June 2021), and CBRE

Addendum C

PUBLIC FISCAL (COST BENEFIT) ASSESSMENT TABLE

TABLE 8

QUANTIFICATION OF PUBLIC FISCAL BENEFITS TO COUNTY AND STATE FROM THE PROPOSED HHV AMB HOTEL TOWER ASSUMING ALL GUESTS ARE NON-OAHU RESIDENTS All Amounts Expressed in Constant 2022 Dollars		
Development Period	Totals During Development Period 6/2022 to 6/2027	Stabilized Annually After Build-out 2028 and Beyond
PUBLIC BENEFITS (Revenues)		
1. COUNTY REAL PROPERTY TAXES		
Cumulative Assessed Value During Period (Three Years)		
Vacant Land (Net Area of 20,141 SF)	$36,253,800	$12,084,600
Completed Hotel Construction (Assuming 0% Year 1, 25% Year 2 and 50% Year 3)	$346,137,697	
Completed Hotel (Construction Cost plus12% Developer's Profit)		$516,898,960
Total Assessed Value	$382,391,497	$528,983,560
Effective Real Property Tax Mill Rate (per $1,000 in Assessed Value), Fiscal Year 2020-2021		
Vacant Hotel & Resort Land		
Hotel & Resort Improvements	$13.90	$13.90
	$13.90	$13.90
Real Property Taxes During Period		
Vacant Land	$503,928	$167,976
Completed Hotel	$4,811,314	$7,184,896
Total Real Property Taxes	$5,315,242	$7,352,871
2. STATE INCOME TAXES		
Taxable Personal Income (Worker Wages Only)	$190,424,000	$28,480,587
Taxable Third-Party Corporate Profits	$6,461,237	$13,377,600
Personal Taxes Paid	$9,711,624	$1,452,510
Corporate Taxes Paid	$284,294	$588,614
TOTAL STATE INCOME TAXES	$9,995,918	$2,041,124
3. STATE GROSS EXCISE TAX		
Taxable Transactions		
Construction Contracts	$461,516,929	$13,845,508
Worker Disposable Income Purchases	$76,169,600	$14,240,294
Hotel Gross Revenues	$0	$71,320,625
Hotel Guest Off-Site Spending	$0	$33,869,336
Total Taxable Transactions	$537,686,529	$133,275,762
TOTAL STATE EXCISE TAX	$25,335,789	$6,279,954
4. TRANSIENT ACCOMMODATIONS TAX		
Subject Hotel Rooms Department Revenues Subject to TAT	$0	$59,212,125
State Transient Accommodations Tax Rate	10.25%	10.25%
County Transient Accommodations Tax Rate	3.00%	3.00%
TOTAL STATE TRANSIENT ACCOMMODATIONS TAX	$0	$7,845,607
TOTAL GROSS PUBLIC REVENUES		
Real Property Taxes To County of Honolulu	$5,315,242	$7,352,871
Adjustment for Other Proportional Taxes (1)	2.50	2.50
Adjusted Honolulu County Revenues	$13,288,105	$18,382,179
Plus Impact Fees	$0	$0
Total County of Honolulu Receipts	$13,288,105	$18,382,179
To State (Income Taxes, GET and TAT)	$35,331,708	$16,166,685
Adjustment for Other Proportional Taxes (2)	1.39	1.39
Adjusted State Revenues	$49,111,074	$22,471,692
Plus Impact Fees	$0	$0
Total State of Hawaii Receipts	$49,111,074	$22,471,692
AGGREGATE TAX REVENUES	$62,399,178	$40,853,871
PUBLIC COSTS (Expenses)		
By County of Honolulu	$0	$3,821,447
By State of Hawaii	$0	$12,491,325
TOTAL PUBLIC COSTS	$0	$16,312,772
TOTAL NET PUBLIC BENEFITS		
County of Honolulu	$13,288,105	$14,560,732
State of Hawaii	$49,111,074	$9,980,367
AGGREGATE NET BENEFITS	$62,399,178	$24,541,098

(1) Real property taxes have comprised some 39 percent of Total Revenues for the County of Honolulu in recent years. Economic activity generates other revenue items of 61 percent or additional 150 percent above real property taxes; this also provides allowance for new revenues from the County TAT.
(2) In recent fiscal years, Gross Excise, Income Taxes and Transient Accommodations taxes have averaged some 52 percent of total State revenues; other revenue items 48 percent, or 72 percent above income, gross excise and TAT taxes.

Source: CBRE

Addendum D

QUALIFICATIONS

PROFESSIONAL QUALIFICATIONS OF THOMAS W. HOLLIDAY, CRE, FRICS

Business Affiliation	Director	The Hallstrom Team | CBRE, Inc. Valuation & Advisory Services Honolulu, Hawaii (2015 – Present)
	Senior Analyst/ Supervisor	The Hallstrom Group, Inc. Honolulu, Hawaii (1980 – 2014)
	Former Staff Appraiser	Davis-Baker Appraisal Co. Avalon, Santa Catalina Island, California (1977 -1979)

International Designation and Membership

- CRE Designation (2015) - The Counselors of Real Estate
- FRICS Designation (2016)–Fellow of the Royal Institution of Chartered Surveyors

Education/Qualifications

- California State University, Fullerton (Communications/Journalism)
- More than 600 Hawaii Hotel/Hospitality Valuation and Consulting Assignments
- More than 150 Market Studies, Economic Impact Analyses and Public Fiscal Assessments for Proposed Projects and Entitlement Purposes
- Qualified expert witness testimony before State of Hawaii Land Use Commission, County Planning Commissions, County Councils and various state and county boards and agencies since 1983.
- Only certified real estate economist by County of Kauai for workforce housing assessments.
- Numerous SREA, Appraisal Institute and RICS Courses
- Numerous professional seminars and clinics.
- Contributing author to Hawaii Real Estate Investor, Honolulu Star Bulletin, Pacific Business News, Other Publications

On January 1, 1991, the American Institute of Real Estate Appraisers (AIREA) and the Society of Real Estate Appraisers (SREA) consolidated, forming the Appraisal Institute (AI).

Recent Assignments

- Market Study, Economic Impact Analyses and Public Costs/ Benefits (Fiscal Impact) Assessments

Oahu

-- OHA Kakaako Makai (Mixed-Use Project)
-- Howard Hughes/Ward Kewalo Basin (Retail Project)
-- Marriott Waikiki Parking Lot (Hotel/Timeshare Project)
-- Residence Inn Kapolei (Hotel)
-- Turtle Bay Resort (Destination Resort Community)
-- Waikapu Country Town (Mixed-Use Community)
-- Oahu Community Correctional Center Relocation
-- Oahu Tourism Spending/Tax Impact Analysis
-- Waikapu Country Town (Mixed-Use Community)

<u>Maui County</u>
-- Waikapu Country Town (Mixed-Use Community)
-- Lanai City Expansion (Mixed-Use/201H Community)
-- Polanui Garden (201H Residential Community)
-- Molokai Ranch Holdings (Mixed-Use)
-- Makila Rural Subdivision (201H Residential Community)
-- Makila Kai (201H Residential Community)
-- Maui Research & Tech Park (Mixed-Use Community)
-- Maui Lani (Mixed-Use Community)
-- Honuaula (Mixed-Use Community)
-- Makena Beach Resort
-- Maui Business Park, Phase II (Industrial/Commercial)
-- Kapalua Mauka (Master Planned Community)
-- Hailiimaile (Mixed-Use Master Planned Community)
-- Pulelehua (Master Planned Community)
-- Westin Kaanapali Ocean Villas Expansion (Resort/Timeshare)

<u>Big Island</u>
-- Parker Ranch Waimea Town Center (Mixed-Use)
-- West Hawaii/Gold Coast Tourism & Hotel Analysis
-- Puako Farms/Kamakoa (Residential Subdivision)
-- Kau Tea Farm (Agricultural/Mixed-Use Project)
-- Kamakana Villages (Mixed-Use Residential Development)
-- W.H. Shipman Ltd, Master Plan (Various Urban Uses)
-- Nani Kahuku Aina (Mixed-Use Resort Community
-- Kona Kai Ola (Mixed-Use Resort Community)
-- Waikoloa Highlands (Residential)
-- Waikoloa Heights (Mixed-Use Residential Development)

<u>Kauai</u>
-- Princeville Lodge (Hotel)
-- Princeville Phase II (Destination Resort Community)
-- Hanalei Plantation Workforce Housing (Resort)
-- Lima Ola (Residential Community)
-- Coco Palms (Hotel)
-- Sheraton Kauai Workforce Housing (Resort)
-- Coconut Coast Tourism and Hotel Analysis
-- Hanalei Plantation Resort (Resort/Residential)
-- Kukuiula (Resort/Residential)
-- Waipono/Puhi (Mixed-Use Planned Development)
-- Eleele Commercial Expansion (Commercial)
-- Village at Poipu (Resort/Residential)
-- Ocean Bay Plantation (Resort/Residential)

- Major Neighbor Island Valuation Assignments

  -- Mauna Lani Bay Hotel
  -- Courtyard Kahului Airport Hotel
  -- Maui Oceanfront Days Inn
  -- Holiday Inn Express – Kona Hotel (proposed)
  -- Keauhou Beach Hotel
  -- Courtyard King Kamehameha Kona Beach Hotel
  -- Aloha Beach Resort
  -- Coco Palms Resort
  -- Grand Hyatt Kauai
  -- Islander on the Beach
  -- Waimea Plantation Cottages
  -- Coconut Beach Resort
  -- Sheraton Maui Hotel
  -- Outrigger Wailea Resort Hotel
  -- Maui Lu Hotel
  -- Coconut Grove Condominiums
  -- Palauea Bay Holdings
  -- Wailea Ranch
  -- Maui Coast Hotel
  -- Westin Maui Hotel
  -- Maui Marriott Hotel
  -- Waihee Beach
  -- Kapalua Bay Hotel and The Shops at Kapalua

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