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JUL - 8 2020

BOARD OF WATER SUPPLY

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HONOLULU, HI 96843
www.boardofwatersupply.com

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Manager and Chief Engineer

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

June 8, 2020

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

Dear Mr. Kawaoka:

Subject: Final Environmental Assessment and Finding of No Significant Impact for the Proposed Halau Wai Manoa, Honolulu, Oahu, Hawaii, Tax Map Key: (1) 2-9-054: 004, 006, 019, 020, 021, & 029 (POR.)

With this letter, the Honolulu Board of Water Supply hereby transmits the Final Environmental Assessment (FEA) and Finding of No Significant Impact for the proposed Halau Wai Manoa, on portions of Tax Map Key: (1) 2-9-054: 004, 006, 019, 020, 021, & 029, on the Island of Oahu, for publication in the next available edition of *The Environmental Notice*.

Transmitted with this letter are four (4) copies of a searchable .pdf document of the FEA and a shapefile for the proposed action. We have entered information about the proposed action in pertinent fields of the Office of Environmental Quality Control's online Submittal Form, including the action summary.

If you have any questions, please contact Amy Tsuneyoshi, Watershed Resource Specialist of our Water Resources Division at 748-5936, or our authorized agent of this project, Greg Nakai, of PBR Hawaii at 521-5631.

Very Truly Yours,

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

Enclosures

cc: Greg Nakai, PBR Hawaii & Associates, Inc.

20-295

From: webmaster@hawaii.gov
To: HI Office of Environmental Quality Control
Subject: New online submission for The Environmental Notice
Date: Thursday, June 25, 2020 12:38:12 PM

Action Name

Board of Water Supply (BWS) Hālau Wai Mānoa

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds
- (2) Propose any use within any land classified as a conservation district

Judicial district

Honolulu, Oʻahu

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

(1) 2-9-054:004 (por.); (1) 2-9-054:006 (por.); (1) 2-9-054:019 (por.); (1) 2-9-054:020 (por.); (1) 2-9-054:021 (por.); (1) 2-9-054:029 (por.)

Action type

Agency

Other required permits and approvals

Conservation District Use Approval; DOH Plan Review and Permits (as necessary); Dust Control Plan (if necessary); Noise Permit (if necessary); Individual Wastewater Systems Permit (if necessary); ADA Compliance; Highways Division Permit (if necessary); Grubbing, Grading and Stockpiling Permits (if necessary); Building Permits (if necessary); Street Usage Permit (if necessary)

Proposing/determining agency

Honolulu Board of Water Supply (BWS)

Agency contact name

Amy Tsuneyoshi

Agency contact email (for info about the action)

atsuneyoshi@hbws.org

Agency contact phone

(808) 748-5936

Agency address

630 South Beretania Street
Honolulu, HI 96843
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

PBR HAWAII & Associates

Consultant contact name

Greg Nakai

Consultant contact email

gnakai@pbrhawaii.com

Consultant contact phone

(808) 521-5631

Consultant address

1001 Bishop Street, Suite 650
Honolulu, HI 96813
United States
Map It

Action summary

BWS is proposing to establish the Hālau Wai Mānoa, which is a continuation of agricultural use at its property in upper Mānoa Valley, with a focus on promoting watershed protection, water conservation, native forest restoration, invasive species removal, lo‘i restoration, & sustainable agriculture. The proposed project would provide place-based, hands-on educational opportunities for current & future generations to learn about watersheds, forest health, watershed protection, water conservation, & sustainable resource management practices. Additionally, the proposed project may serve as a base for mauka restoration and watershed/valley-wide partnership efforts in Mānoa. A gathering place (a traditional meeting hale or similar open-air structure) is proposed for agricultural and educational purposes, plus small ancillary structures. Through an appropriate procurement method, BWS intends to select a non-profit community organization to operate Hālau Wai Mānoa on a long-term agreement.

Reasons supporting determination

Please refer to Sections 2.1.3 (Project Need), 2.2 (Project Objectives), and 7 (Findings, Supporting Reasons, and Determination) of the Final EA.

Attached documents (signed agency letter & EA/EIS)

- BWS-Halau-Wai-Manoa-FEA-copy-4.pdf
- BWS-Halau-Wai-Manoa-FEA-copy-3.pdf
- BWS-Halau-Wai-Manoa-FEA-copy-2.pdf
- BWS-Halau-Wai-Manoa-FEA-copy-1.pdf
- BWS-FEA-FONSI-letter-to-OEQC_060820.pdf

Shapefile

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

Action location map

- BWS_HalauWaiManoa_Shapefile.zip

Authorized individual

Greg Nakai

Authorization

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

BWS HĀLAU WAI MĀNOA

FINAL ENVIRONMENTAL ASSESSMENT

FINDING OF NO SIGNIFICANT IMPACT

PREPARED FOR:

HONOLULU BOARD OF WATER SUPPLY

PREPARED BY:

PBR HAWAII & ASSOCIATES, INC.

JUNE 2020

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HĀLAU WAI MĀNOA

FINAL ENVIRONMENTAL ASSESSMENT/
FINDING OF NO SIGNIFICANT IMPACT

Prepared for:

Honolulu Board of Water Supply

Prepared by:

PBR HAWAII
& ASSOCIATES, INC.

June 2020

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LIST OF ACRONYMS

The following is a list of terms, abbreviations, and acronyms used in this document.

A	
ADA	Americans with Disabilities Act
AFONSI	Anticipated Finding of No Significant Impact
ALISH	Agricultural Lands of Importance to the State of Hawai‘i
AMSL	above mean sea level
B	
BMPs	best management practices
BWS	City and County of Honolulu, Board of Water Supply
C	
CCH	City and County of Honolulu
CFR	Code of Federal Regulations
CWRM	Commission on Water Resource Management (DLNR)
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
D	
dba	doing business as
DBEDT	State of Hawai‘i, Department of Business, Economic Development, and Tourism
DCAB	Disability and Communication Access Board (DOH)
DDC	City and County of Honolulu, Department of Design and Construction
DEA	Draft Environmental Assessment
DES	City and County of Honolulu, Department of Enterprise Services
DFM	City and County of Honolulu, Department of Facility Maintenance
DHHL	State of Hawai‘i, Department of Hawaiian Home Lands
DHS	State of Hawai‘i, Department of Human Services
DLNR	State of Hawai‘i, Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife (DLNR)
DOH	State of Hawai‘i, Department of Health
DOT	State of Hawai‘i, Department of Transportation
DPP	City and County of Honolulu, Department of Planning and Permitting
DPR	City and County of Honolulu, Department of Parks and Recreation
DTS	City and County of Honolulu, Department of Transportation Services
E	
EA	Environmental Assessment
EIS	Environmental Impact Statement
ENV	City and County of Honolulu, Department of Environmental Services
ESA	Endangered Species Act
F	
F (°F)	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact

H	
HAR	Hawai‘i Administrative Rules
HECO	Hawaiian Electric Company
HFD	Honolulu Fire Department
HPD	Honolulu Police Department
HRS	Hawai‘i Revised Statutes
K	
KF	Kumuola Foundation
L	
LEED	Leadership in Energy and Environmental Design
LID	low impact development
LSB	Land Study Bureau
LT	location and transportation
LUC	State of Hawai‘i, Land Use Commission
LUO	Land Use Ordinance
M	
MBTA	Migratory Bird Treaty Act of 1918
MHHW	mean higher high water
MLC	Mānoa Learning Center
MNB	Mānoa Neighborhood Board No. 7
MPH	miles per hour
N	
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System Permit
NPS	non-point source
NRCS	Natural Resources Conservation Service
O	
OCCL	Office of Conservation and Coastal Lands (DLNR)
OEQC	Office of Environmental Quality Control (DOH)
OP	Office of Planning (DBEDT)
P	
PIFWO	Pacific Islands Fish and Wildlife Office (USFWS)
PUC	Primary Urban Center
PUCDP	Primary Urban Center Development Plan
R	
ROH	Revised Ordinances of Honolulu
RP	Royal Patent Grant
S	
SAFP	State Agriculture Functional Plan
SCLFP	State Conservation Lands Functional Plan
SFP	State Functional Plan
SHPD	State Historic Preservation Division
SIHP	State Inventory of Historic Places
SLH	Session Laws of Hawai‘i
SLR	sea level rise

	SMA	Special Management Area
T		
	TMK	tax map key
	TMP	Traffic Management Plan
U		
	UHM	University of Hawaiʻi at Mānoa
	USACE	United States Army Corps of Engineers
	USFWS	United States Fish and Wildlife Service
	USGS	United States Geological Survey
V		
	VMT	vehicle miles traveled

1.0 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Chapter 343, Hawai‘i Revised Statutes (HRS) for the proposed BWS Hālau Wai Mānoa (“Project”).

1.1 PROJECT SUMMARY

Project Name:	BWS Hālau Wai Mānoa
Location:	3761 and 3837 Haukulu Road Honolulu, O‘ahu 96822
Tax Map Key (TMK):	TMK 2-9-054: 019, 020 & 021 (por.) TMK 2-9-054: 004, 006, & 029 (por.) – for access road/trail
Proposing/Approving Agency:	Honolulu Board of Water Supply (BWS)
Landowner:	BWS
Existing use:	Farm, cultural uses, and environmental restoration
Proposed Action:	Establishment of a farm to promote watershed protection, sustainable agriculture/living, and forest restoration, with a traditional meeting hale or similar open-air structure for agricultural activities and educational programming. Through an appropriate procurement method, the BWS intends to select a non-profit community group to operate Hālau Wai Mānoa on a long-term agreement.
Project Area:	Portion of an approximately 12.8-acre area
Land Use Designations:	***State Land Use:*** Conservation ***City and County of Honolulu (County)*** ***Primary Urban Center Development Plan:*** Preservation ***County Zoning****:* Restricted Preservation (P-1)
Special Management Area:	The Project is not located in the Special Management Area
Permits/Approvals Required:	Chapter 343, HRS Compliance Conservation District Use Approval Dust Control Plan (if necessary) Noise Permit (if necessary) Individual Wastewater Systems Permit (if necessary) Americans with Disabilities Act Compliance DOT Highways Permit (if necessary) Grading, Grubbing, & Stockpiling Permits (if necessary) Building Permit (if necessary) Street Usage Permit (if necessary)
Determination:	Finding of No Significant Impact (FONSI)

1.2 LOCATION

The BWS Hālau Wai Mānoa is proposed to be located on an approximately 12.8-acre area in Mānoa Valley, mauka of residential development, on Oʻahu, in the State of Hawaiʻi (Figure 1). The proposed activities will be located on a small portion of BWS properties ("Project Site").

1.3 SURROUNDING LAND USES

The Project Site is surrounded by mostly vacant State Conservation District lands (Figure 20). Nearby uses include Mānoa Falls Trailhead, Lyon Arboretum, Treetops Restaurant, and Paradise Park (now closed) (Figure 2 and Figure 3).

1.4 LAND OWNERSHIP

The BWS holds title to the land under the Project Site (Figure 4). Utilizing the Tax Map Key system, the land under the Project Site is identified as (1) 2-9-054: 019, 020 & 021. Two potential access corridors are proposed on portions of TMKs (1) 2-9-054: 004, 006, and 029, which are also owned by BWS.

1.5 IDENTIFICATION OF PROPOSING & APPROVING AGENCY

The proposing and approving agency is BWS.

Contact: Amy Tsuneyoshi
Watershed Resource Specialist
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, HI 96843
Phone: (808) 748-5936

1.6 IDENTIFICATION OF ENVIRONMENTAL CONSULTANT

BWS's environmental consultant is PBR HAWAII & Associates, Inc. dba PBR HAWAII.

Contact: Mr. Greg Nakai
Planner/Associate
PBR HAWAII
1001 Bishop Street
ASB Tower, Suite 650
Honolulu, Hawaiʻi 96813
Phone: (808) 521-5631

1.7 COMPLIANCE WITH STATE OF HAWAIʻI AND CITY AND COUNTY OF HONOLULU ENVIRONMENTAL LAWS

Preparation of this document falls in accordance with the provisions of Chapter 343, HRS and Title 11, Chapter 200, Hawaiʻi Administrative Rules (HAR) pertaining to Environmental Impact Statements. Section 343-5, HRS established nine "triggers" that require either an EA or an Environmental Impact Statement (EIS). The use of lands within the State Land Use Conservation District, and the use of State and/or County lands and/or funds requires the preparation of an Environmental Assessment.

1.8 IDENTIFICATION OF AGENCIES AND STAKEHOLDERS CONSULTED

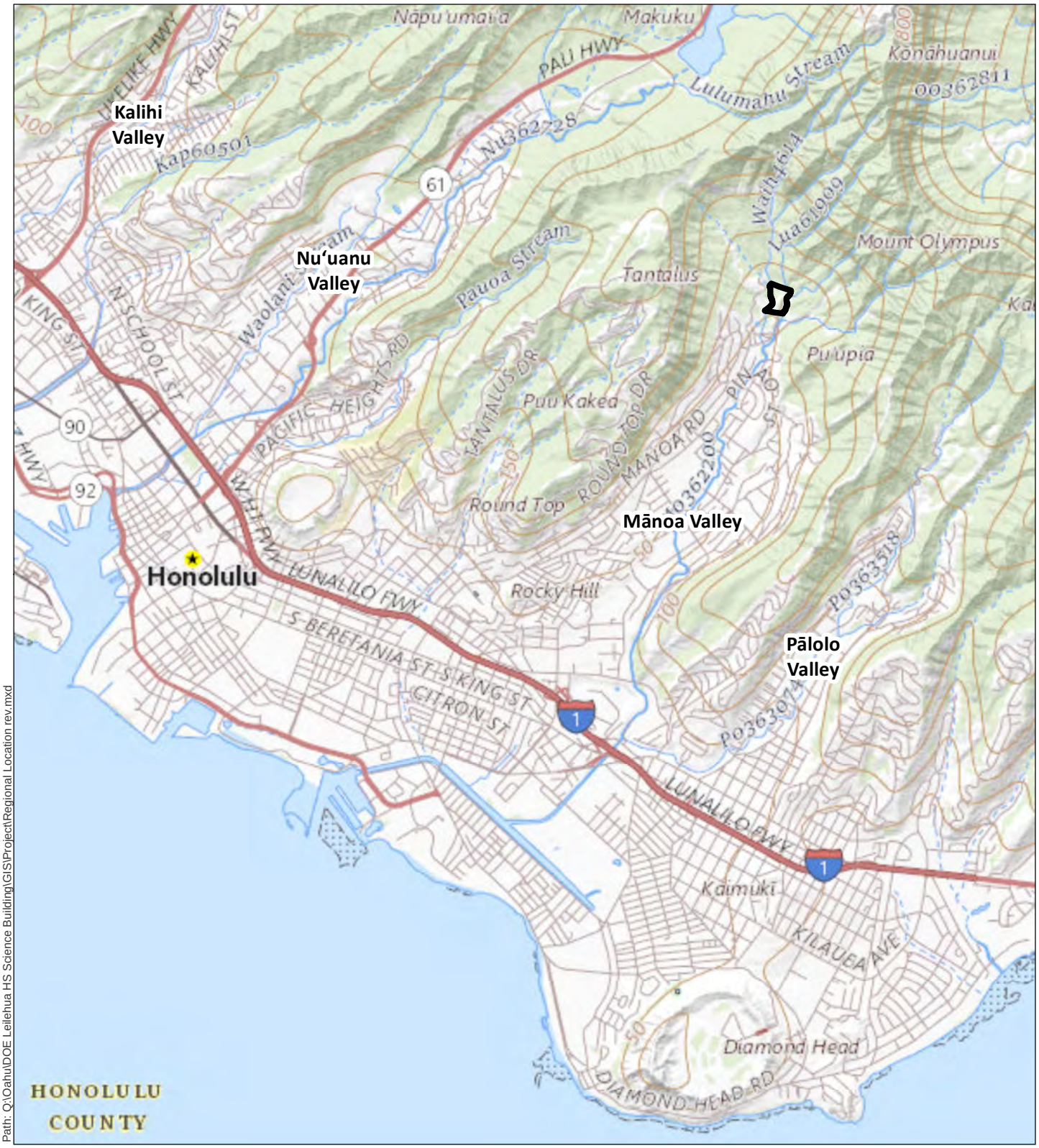
As part of the planning process, BWS engaged in meetings with various stakeholders, including community organizations, neighboring institutions, State agencies, and elected officials. These meetings are described in Section 8.1.1 and documented in Appendix A. Appearances were made to the Mānoa Neighborhood Board No. 7 at their monthly meetings in August, September, and October 2019, as well as June 2020, to provide an overview of the project, announce the publication of the Draft EA and the 30-day public review and comment period, and answer any questions (see Appendix F).

In addition, other agencies and organizations were consulted as a matter of course for this Environmental Assessment, also described in Sections 8.1.3 and 8.3 and documented in Appendix A.

1.9 STUDIES CONTRIBUTING TO THIS ENVIRONMENTAL ASSESSMENT

The information contained in this report has been gathered from agency and community conversations, document and historical research, site visits, technical studies, and generally available information regarding the characteristics and history of the Site and surrounding area. References can be found in Section 9.0 of this EA, and technical studies are provided as appendices to this EA. These studies include:

- Flora and Fauna Study (Appendix B)
- Archaeological Inventory Survey (Appendix C)
- Cultural Impact Assessment (Appendix D)
- Traffic Management Plan (Appendix E)



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DATE: 7/8/2019

LEGEND

Project Site

Figure 1
Regional Location

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply — Island of O'ahu

North

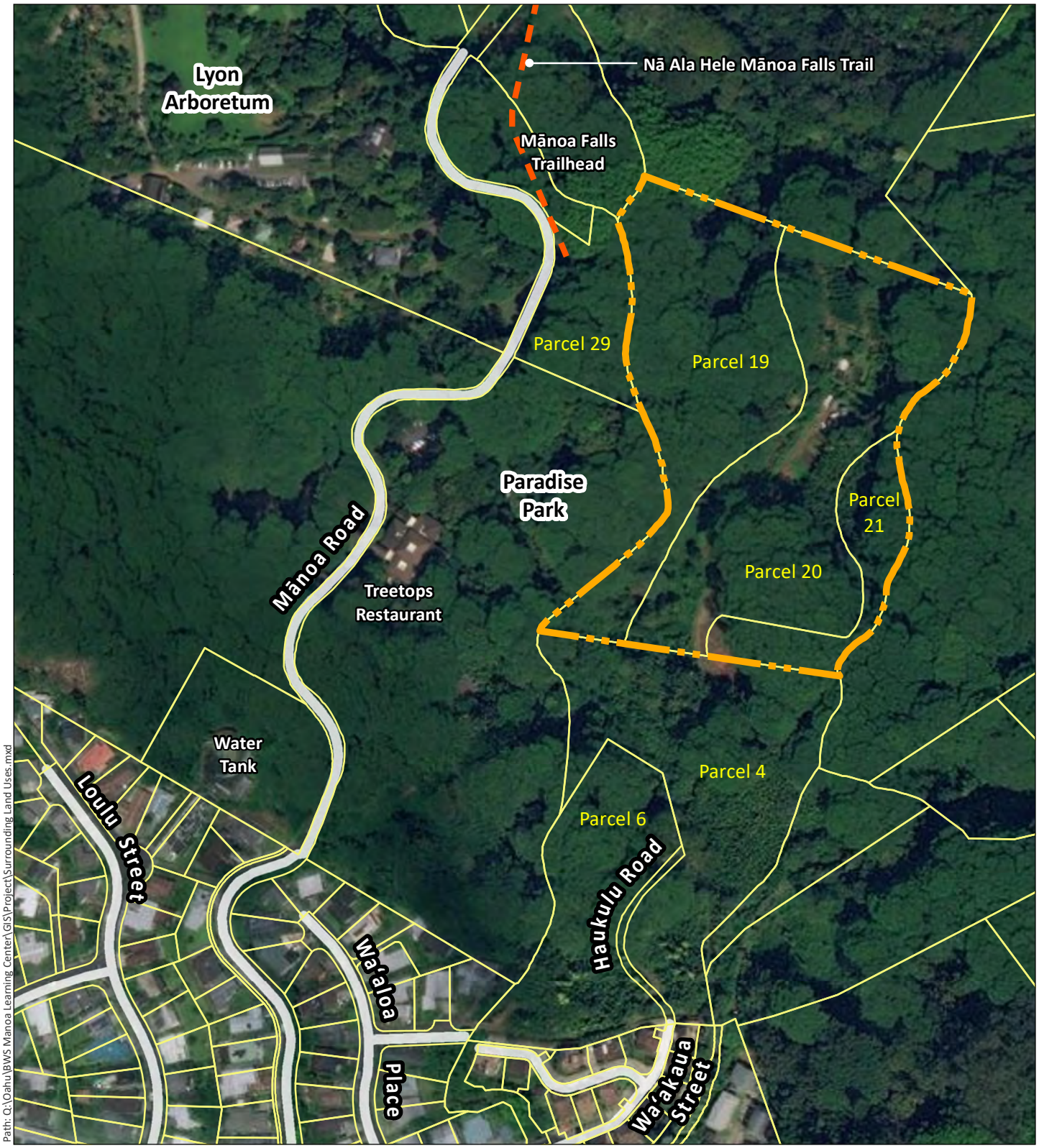
Linear Scale (feet)

0 1,250 2,500 5,000

PBR HAWAII & ASSOCIATES, INC.

Source: USGS The National Topo Base Map

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 7/19/2019

LEGEND

- Project Site
- TMK Parcels
- Na Ala Hele Trails

Figure 2
Surrounding Land Uses

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply — Island of O'ahu

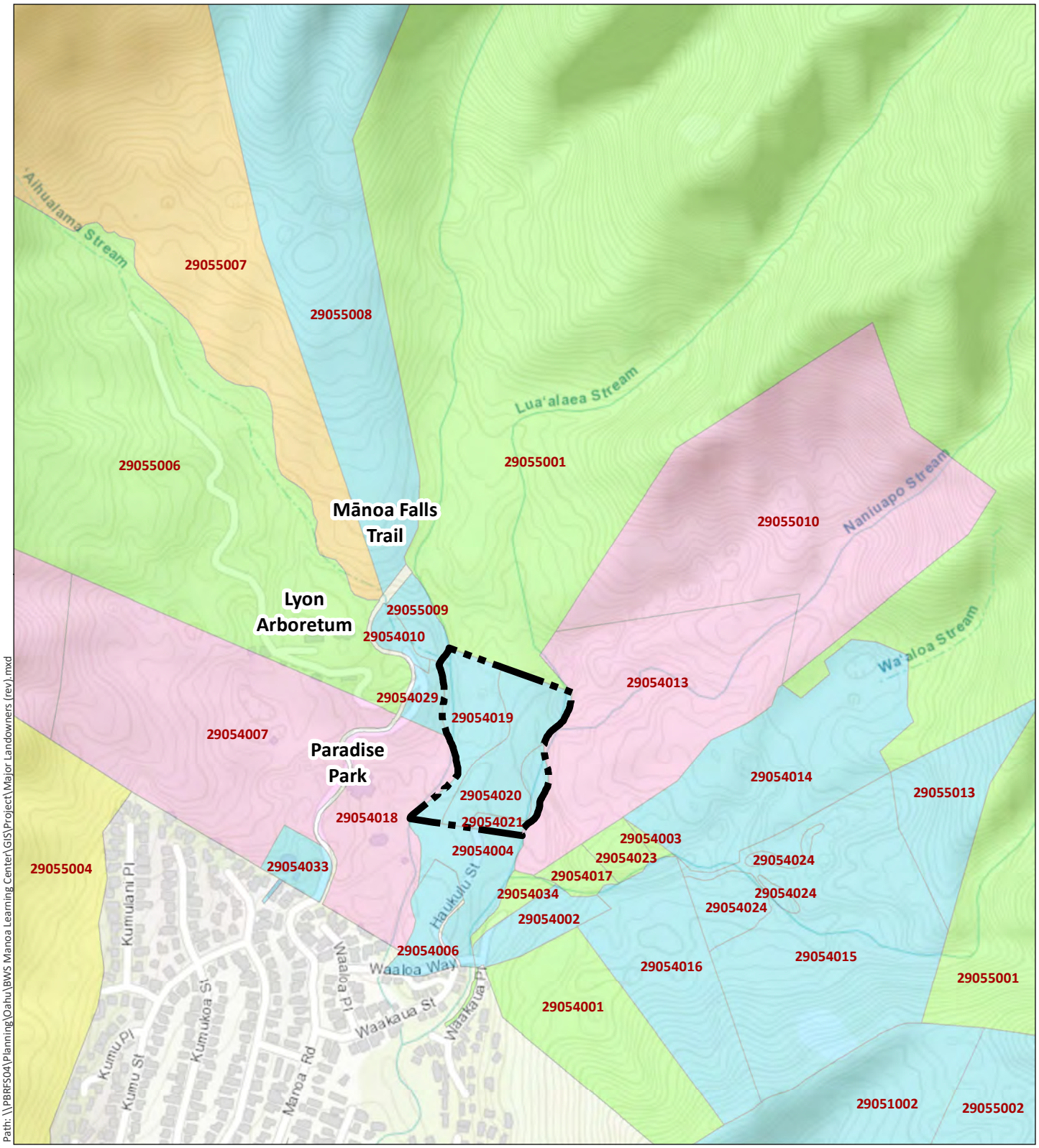
North

Linear Scale (feet)
0 75 150 300

PBR HAWAII & ASSOCIATES, INC.

Source: State DLNR (2014); City and County of Honolulu (2017, 2018); Google Maps, ESRI Online Basemaps.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 7/8/2019

LEGEND

- Project Site
- Kamehameha Schools
- Board of Water Supply
- Paradise Park
- State of Hawai'i
- University of Hawai'i
- Other Landowners

Figure 3
Major Landowners

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 200 400 800

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2018); ESRI Online Basemaps.
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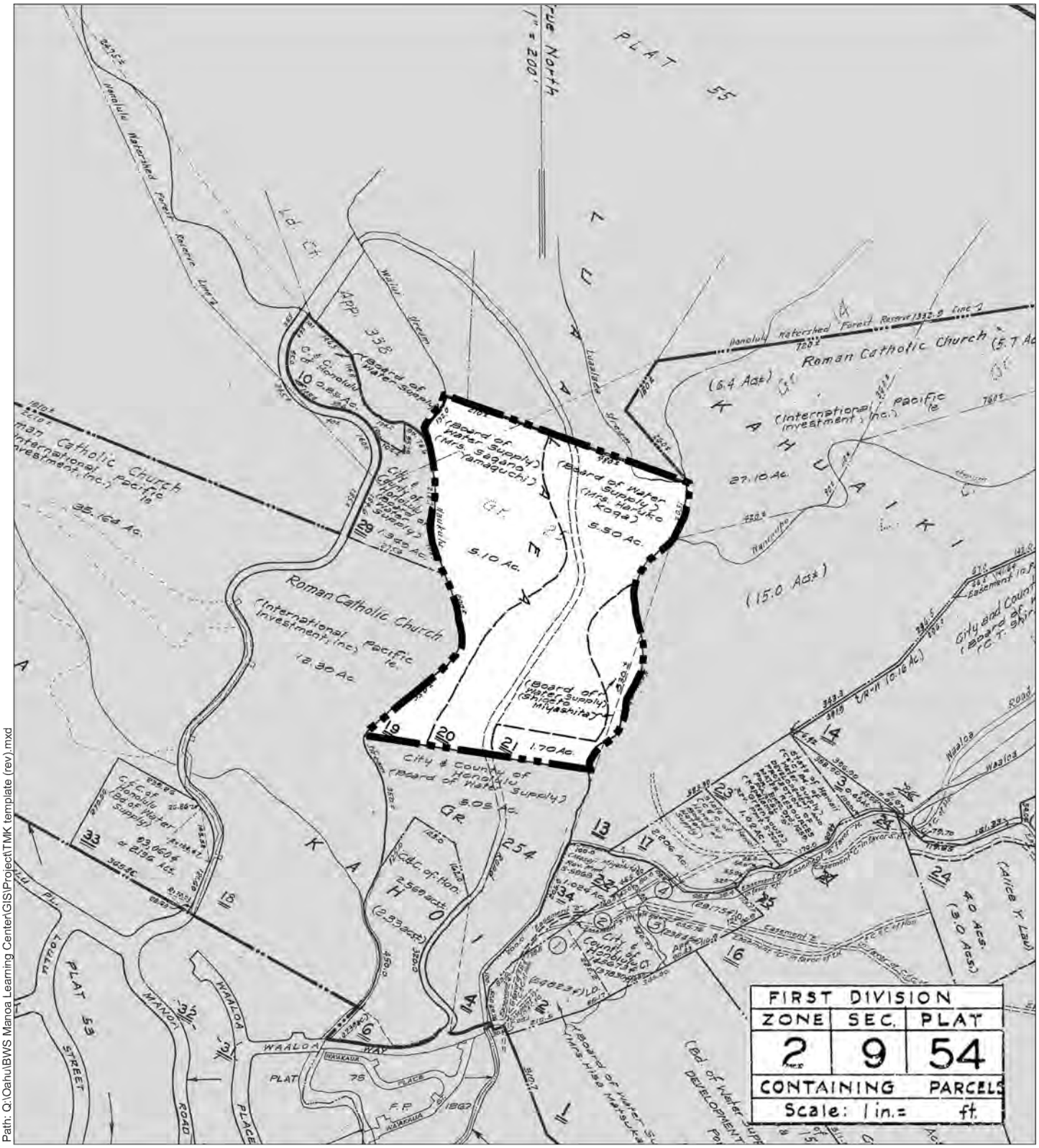

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DATE: 7/19/2019

LEGEND

Project Site

Figure 4
Tax Map Key

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: Tax Maps Bureau & Survey Department (1932, Updated 1983)
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2.0 PROJECT DESCRIPTION

This section provides background information and a general description of the BWS Hālau Wai Mānoa ("Project").

2.1 BACKGROUND AND NEED FOR THE PROJECT

2.1.1 History of the BWS Mānoa Property

The Project Site is located at the back of Mānoa Valley, which had historically been an area of extensive and continuous cultivation of loʻi kalo (wetland taro fields), from the pre-contact era (i.e., prior to European Contact) through post-contact and into the twentieth century. In addition to taro, Chinese immigrants began farming bananas, pineapple, and other crops in Mānoa starting in the late nineteenth century.

By the mid-twentieth century, however, the well-watered patchwork of loʻi that once carpeted the floor of Mānoa Valley fell by the wayside as the price of taro dropped and much of the stream waters were utilized for other agricultural uses and to support urbanization (see Section 4.1.1 below).

Several parcels including those of the Project Site and other properties in the vicinity were purchased by the BWS in the mid-twentieth century, following the passage of Gubernatorial Executive Order 1659 for the development and protection of water resources in the upper watersheds (see Figure 2 of the AIS in Appendix C).

In 1949, BWS acquired Parcels 19, 20, and 21 (TMK 2-9-054: 019, 020, 021), which had previously been used to farm tropical plants such as gardenias, as well as food crops, such as avocados and bananas. This agricultural use continued by subsequent tenants under a rental agreement with BWS.

2.1.2 Current Use

In 2010, BWS awarded an agricultural rental agreement to Kumuola Foundation (KF) for Parcel 20. Since 2011, this 501(c)(3) non-profit organization has been operating a cultural farm on the property (see Figure 5), involving the following activities:

- Restoration and maintenance of loʻi kalo served by an existing stream diversion;
- Use of temporary 20-foot by 20-foot portable tent structures for activity staging and rain cover for participants;
- Use of a shipping container for storage;
- Removal of albizia trees and other invasive plant species that have overgrown on the farm, to allow sunlight for the crops;
- Cultivation of flowers and native plants; and
- Educational programs and volunteer educational work days.

According to discussions with representatives of KF during a stakeholder meeting held on October 24, 2018, educational programs are provided at the site for groups from public schools and public charter schools, as well as private schools, University of Hawaiʻi at Mānoa (UHM), and

community colleges. In addition, cultural programs are provided for various groups (e.g., hula teachers), and a community volunteer work day is hosted by KF on the second Saturday of each month.

2.1.3 Project Need

The popularity of the Mānoa Falls Trail and other attractions in the vicinity of the Project Site has brought a growing number of visitors to Mānoa mauka; meanwhile, the area has also seen a rapid spread of invasive species such as albizia trees that pose a threat to the native forest and watershed. Consequently, watershed management activities to protect and sustain Mānoa's water resources have become increasingly critical. Situated at the confluence of multiple streams – ʻAihualama, Waihī, Luaʻalaea, Nāniuʻapo, Waiakeakua, and Waʻaloa – which all converge into Mānoa Stream, the Project Site is the "puna wai" (source spring) or "poʻo wai" (water source or head) for the stream system and is thus an ideal location for watershed education and management activities.

2.2 PROJECT OBJECTIVES

The mission of the BWS is to provide Oʻahu water users with a safe, dependable, and affordable drinking water supply now and into the future. Proper management of the watershed and groundwater supply, long-range planning, and development of alternative sources of water are important ways the BWS helps to ensure the long-term viability of Oʻahu's water supply. According to the BWS website:

> "Rainfall is Oahu's primary water resource for streams and groundwater supply. Healthy watersheds sustain the quality and quantity of Oahu's streams and groundwater supplies and we must care, protect and preserve these areas for future generations. One of the ways the BWS is protecting these important areas is by entering into watershed partnerships that protect and enhance the watershed through resource management."[1]

To help achieve its overall mission as well as its resource management and stewardship responsibilities, the BWS is proposing to continue the agricultural use at the Project Site, with a focus on promoting watershed protection, water conservation, native forest restoration and invasive species removal, loʻi restoration, and sustainable agriculture.

In addition to its primary agricultural use, the Proposed Project would also provide place-based, hands-on educational opportunities for members of the public to learn about watersheds, forest health and watershed protection, water conservation, and sustainable resource management practices. Additionally, from this location, community volunteer opportunities/work days for watershed restoration and sustainable agriculture would be provided.

A long-term goal of this Project is to facilitate the removal of invasive species such as albizia trees, paired with a reforestation plan toward conversion to a native forest, as part of BWS's broader watershed management objectives. Indeed, Hālau Wai Mānoa has been identified as one of the projects to meet the objectives of BWS's forthcoming Primary Urban Center (PUC) Watershed

[1] Source: https://www.boardofwatersupply.com/water-resources

Management Plan to promote sustainable watersheds; protect Native Hawaiian rights and traditional and customary practices; and facilitate public participation, education, and project implementation.

2.3 PROJECT NAME

The Proposed Project was originally named "Mānoa Learning Center" in its initial planning stages (the documents in the Appendices of this EA thus refer to the original project name); however, during meetings with stakeholders held between October and December 2018, concerns were raised that the name may cause confusion, not only because it sounds similar to the names of other organizations, but also because it does not readily communicate the Project purpose or objectives. Moreover, the phrase "learning center" may connote a school or brick-and-mortar institutional facility, which is not being proposed. It was thus recommended by several stakeholders to consider changing the name to something related to water, watershed stewardship, and/or place, with an appropriate Hawaiian name (see Appendix A-1).

Consequently, the Project was given the name "Hālau Wai". Many may find the word *hālau* common enough to relate it to the hula or canoe traditions, but would also have an understanding it would be related to learning. Historically and culturally, a hālau is a place or compound dedicated to the purpose for which it was built and the focus of what happens under its rafters. The name can be further understood by looking at the meaning of its constituent parts:

- HĀ – breath of life
- HĀLAU – long house, as for canoe or hula instruction; meeting house; large, numerous
- LAU – leaf; many, numerous, four hundred; a thatched mountain hut used by farmers, canoe makers, bird catchers
- WAI – fresh water

To this is added the place name: Mānoa.

- MĀNOA – thick, solid, vast, deep; capitalized "Mānoa" is the proper place name of the O‘ahu valley in which the Project is located
- MANOA – numerous, very many

Taken together, Hālau Wai Mānoa thus means: "a meeting place dedicated to fresh water in all aspects." This name calls to mind not only a place for learning, but also the numerous streams and water sources that converge at the Project Site and which breathe life into the valley.

2.4 KEY ELEMENTS OF THE PROPOSED PROJECT

Through an appropriate procurement method, the BWS intends to select a non-profit community group to operate Hālau Wai Mānoa on a long-term agreement. The Proposed Project is conceptualized as a:

- Farm (with small ancillary structures) to demonstrate and promote the BWS's goals of watershed management, water conservation, forest and lo‘i restoration, and sustainable agriculture;

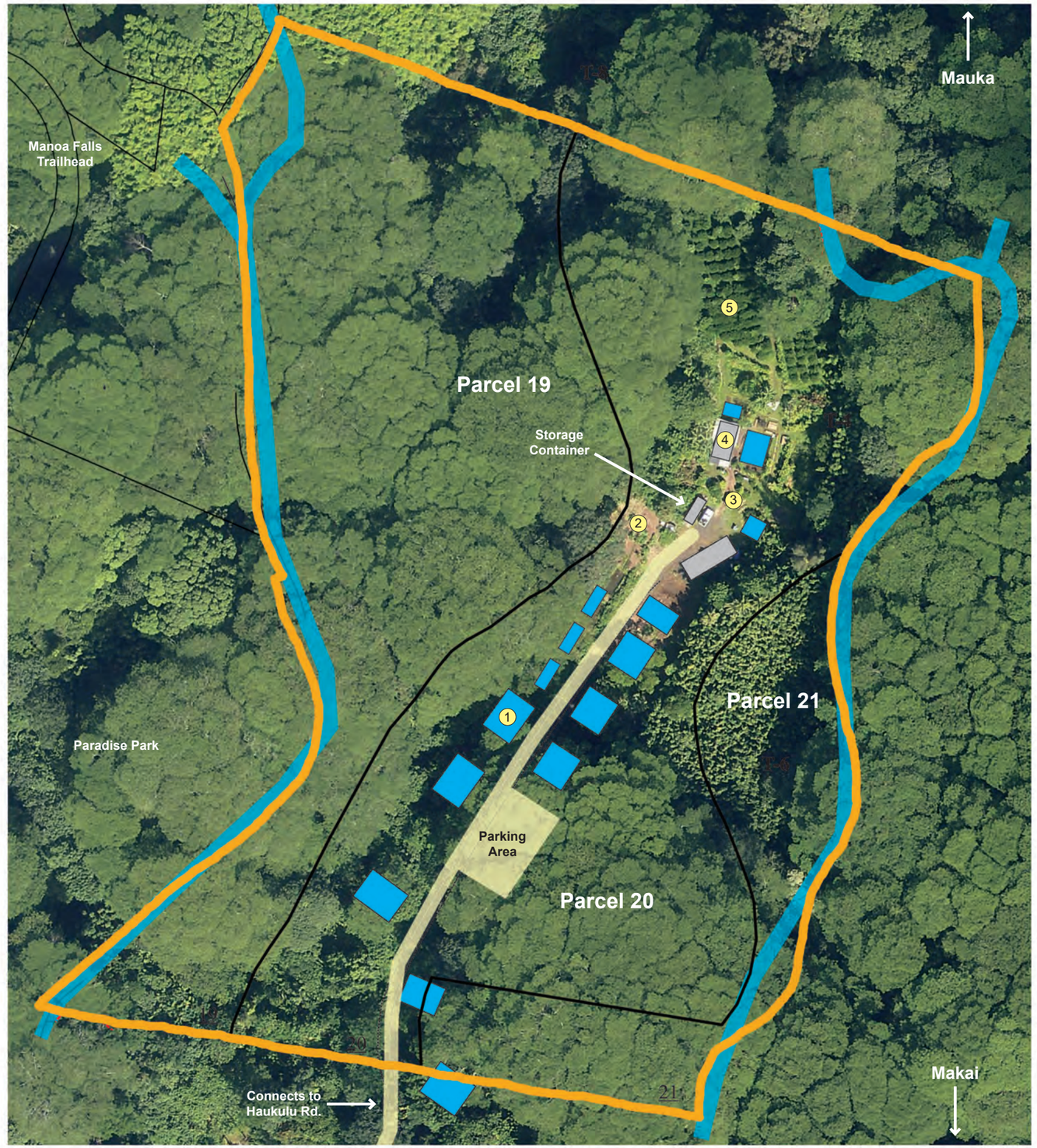
- Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo‘i, gardening/practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration and watershed/valley-wide partnership efforts in Mānoa (e.g., removal of invasive species; forest restoration with site appropriate native species; erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

1. Lo‘i (taro gardens)

2. Breadfruit trees and cut flowers

3. Flower processing station

4. Hale imu



5. Gardenia grove

LEGEND

- Modern taro lo‘i (taro patches)
- Tarp structure/ container
- Parcel boundaries
- Existing access road
- Stream
- Project boundary

07/08/2019

Figure 5: Existing Site Plan
BWS Hālau Wai Mānoa

Approx. linear scale
0 50 100
FEET

PBR HAWAII & ASSOCIATES, INC.

Source: Pictometry (2013); ASM Affiliates, Inc. (2018)
Disclaimer: This Graphic has been prepared for general Planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

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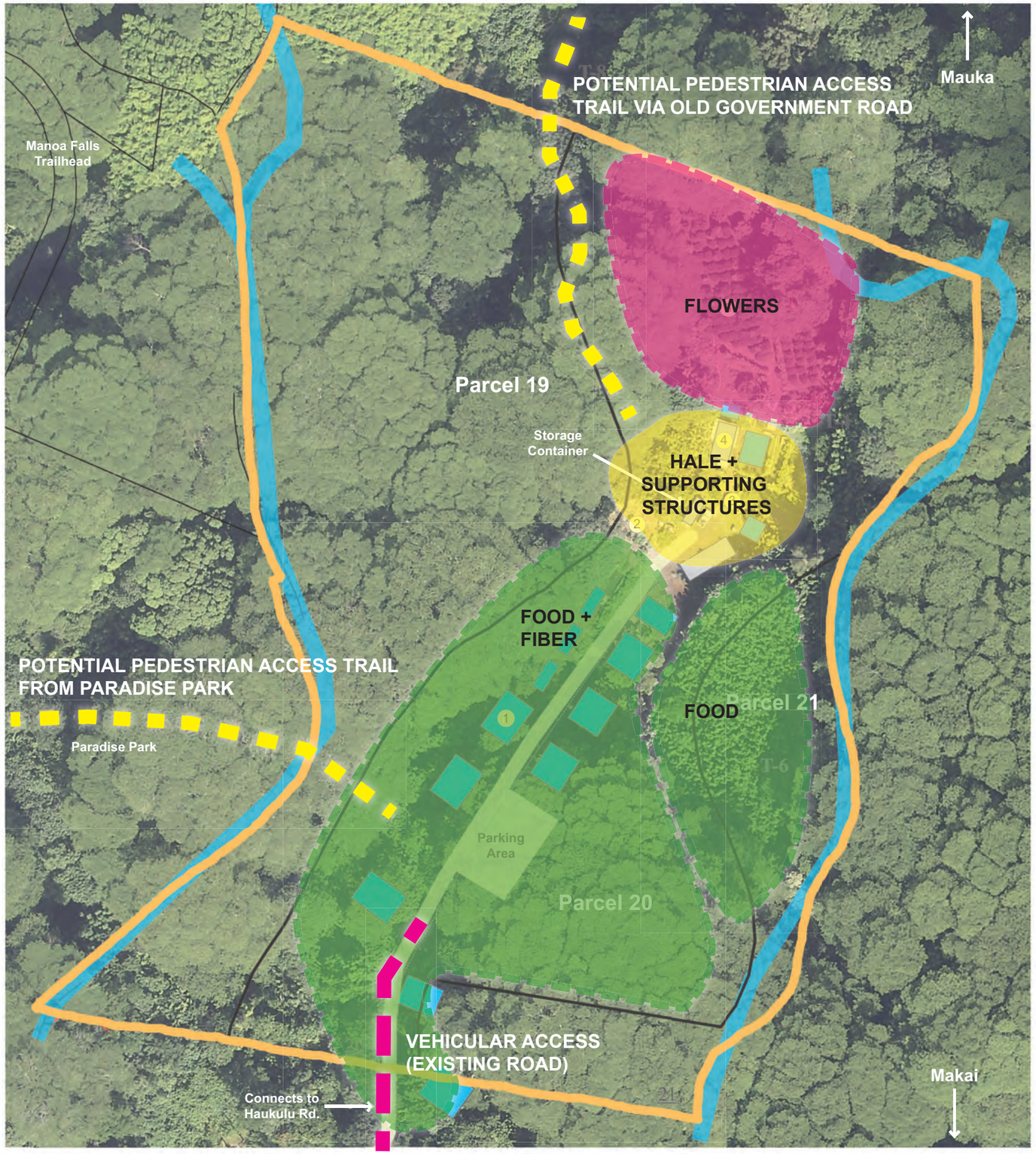
1. Lo'i (taro gardens)

2. Breadfruit trees and cut flowers

3. Flower processing station

4. Hale imu



5. Gardenia grove

LEGEND

- Modern taro lo'i (taro patches)
- Tarp structure/ container
- Parcel boundaries
- Existing access road
- Stream
- Project boundary
- Potential pedestrian access trail
- Vehicular access (existing road)

07/23/2019

Figure 6: Conceptual Site Plan
BWS Hālau Wai Mānoa

Approx. linear scale
0 50 100
FEET

PBR HAWAII & ASSOCIATES, INC.

Source: Pictometry (2013); ASM Affiliates, Inc. (2018)
Disclaimer: This Graphic has been prepared for general Planning purposes only and should not be used for boundary Interpretations or other spatial analysis.

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3.0 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the physical or natural environment. It also identifies potential impacts of the BWS Hālau Wai Mānoa to the environment and proposes mitigation measures to minimize impacts.

3.1 CLIMATE

Average annual daily minimum and maximum temperatures in the Project area are approximately 69 and 76 degrees Fahrenheit, respectively. The annual prevailing wind direction for this area of Oʻahu is east northeast, about 40 percent of the time, at approximately 5.2 knots (5.98 miles per hour) (Giambelluca, et al. 2014). This portion of Oʻahu experiences high rainfall: the estimated rainfall recorded at the nearby Lyon Arboretum during the period of January 1, 2018 through July 18, 2018, was 104.77 inches (National Weather Service n.d.). According to the 2014 *Climate of Hawaiʻi* online interactive map, the Project Site receives approximately 143 inches of rain annually (Giambelluca, et al. 2014).

Potential Impacts and Mitigation Measures
Due to the relatively small scale of the improvements, there is unlikely to be a significant impact to the area's existing climate.

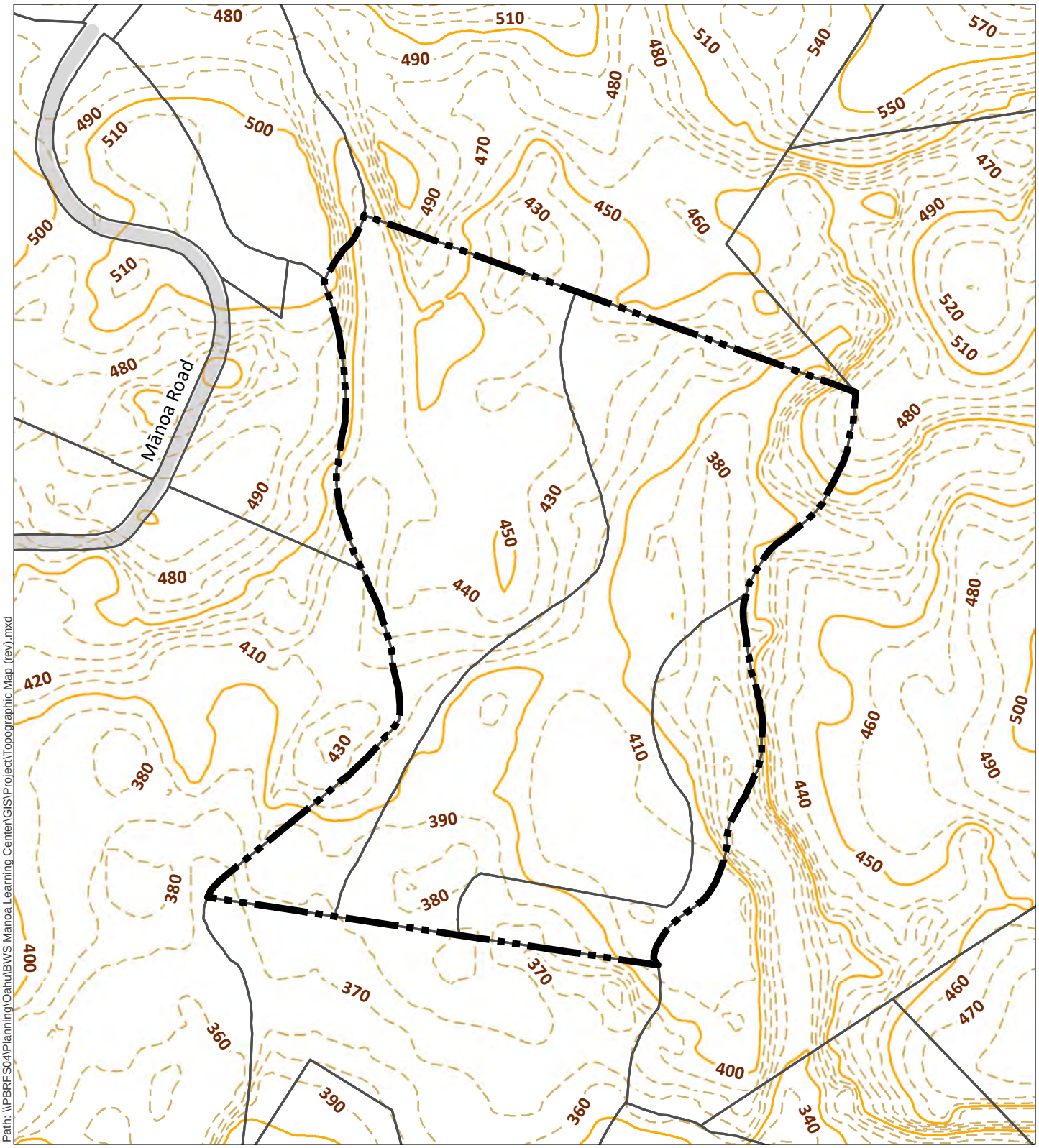
3.2 TOPOGRAPHY

The topography of the Project Site ranges from approximately 450 feet above mean sea level (AMSL) at the northwest corner of Parcel 19, to approximately 370 feet AMSL at the southern boundary of Parcel 20, with the land sloping down to Haukulu Stream near/along the western boundary of Parcel 19, and similarly sloping down to Luaʻalaea Stream near/along the eastern boundary of Parcel 21 (and a portion of the eastern boundary of Parcel 20) (Figure 7).

Potential Impacts and Mitigation Measures
Any proposed vertical improvements (such as a traditional hale for shelter from rain) will be built upon land that does not experience flooding. The proposed improvements will not have a significant impact on the topography of the area.

3.3 SOILS

Three soil suitability studies prepared for lands in Hawaiʻi principally focus on the relative agricultural productivity of different land types. These studies are: 1) the U.S. Department of Agriculture Natural Resource Conservation Service (NRCS) Soil Survey; 2) the University of Hawaiʻi Land Study Bureau Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawaiʻi (ALISH).



Path: \\PBRFS04\Planning\Oahu\BWS Manoa Learning Center\GIS\Project\Topographic Map (rev).mxd

DATE: 7/8/2019

LEGEND

- Project Site
- Tax Map Key (TMK) Parcels
- Elevation Contours (50-ft.)
- Elevation Contours (10-ft.)

Figure 7
Topography

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply — Island of O'ahu

North

Linear Scale (feet): 0 50 100 200

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2017); NOAA (2007).
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

3.3.1 Natural Resources Conservation Service (NRCS)

The *Natural Resources Conservation Service, Soil Survey for the Island of O'ahu*, classifies the soil underlying the Project area as: Hanalei stony silty clay (HoB), Lolekaa silty clay (LoC), Lolekaa silty clay (LoF), and Tantalus silt loam (TAE) (Figure 8).

HoB: *Hanalei stony silty clay, 2 to 6 percent slopes, (HoB).* This series consists of somewhat poorly drained to poorly drained soils that formed in alluvium derived from basic igneous rock. These soils are on bottom lands and low terraces along streams at elevations ranging from near sea level to 300 feet. This particular soil type is poorly drained, runoff is slow and permeability is moderate. This soil is used for taro, pasture, and vegetables.

LoC: *Lolekaa silty clay, 8 to 15 percent slopes, (LoC).* This series consists of well-drained soils on fans and terraces on the windward side of the island of Oahu. On this particular soil type, runoff is slow to medium and the erosion hazard is slight to moderate. This soil is used for pasture, homesites, papaya, and bananas.

LoF: *Lolekaa silty clay, 15 to 25 percent slopes, (LoF).* This series consists of well-drained soils on fans and terraces on the windward side of the island of Oahu. On this particular soil type, runoff is medium and the erosion hazard is moderate. This soil is used for pasture.

TAE: *Tantalus silt loam, 15 to 40 percent slopes, (TAE).* This series consists of well-drained soils on uplands on the island of Oahu. These soils developed in volcanic ash and material weathered from cinders. On this particular soil type, runoff is medium and the erosion hazard is moderate. This soil is used for water supply and recreation.

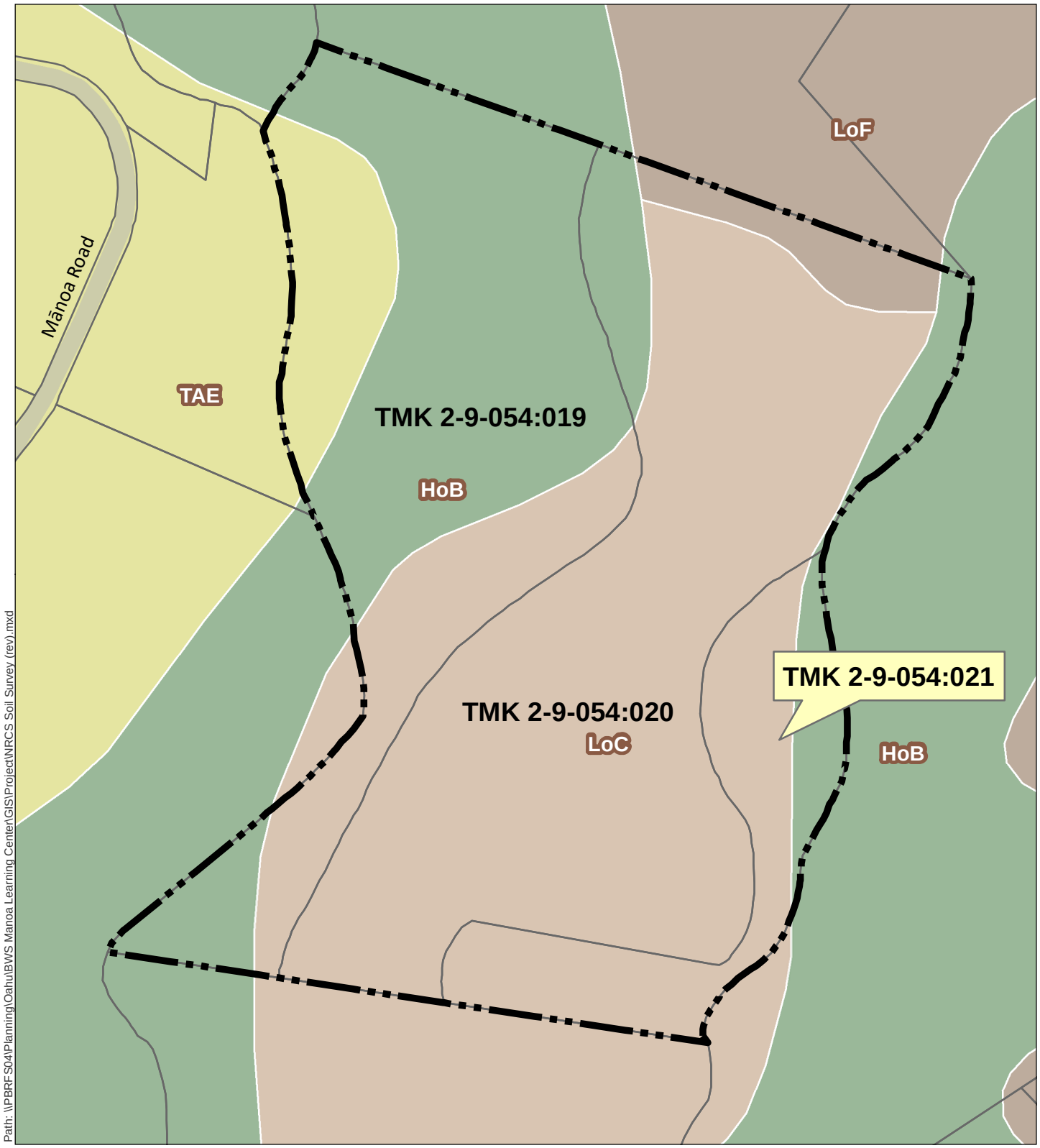
3.3.2 Land Study Bureau Detailed Land Classification

The University of Hawai'i Land Study Bureau document, *Detailed Land Classification, Island of O'ahu***,** classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The soils underlying the BWS Hālau Wai Mānoa are classified as C ('Fair') and E ('Very Poor') by the LSB study (Figure 9).

3.3.3 Agricultural Lands of Importance to the State of Hawai'i (ALISH)

The Agricultural Lands of Importance to the State of Hawai'i (ALISH) system classifies agricultural lands as Prime, Unique, or Other Agricultural Land (State of Hawai'i, Department of Agriculture 1977). The soils underlying BWS Hālau Wai Mānoa are not classified in the ALISH land classification system (Figure 10).

Potential Impacts and Mitigation Measures
The soils at the Project Site have varying classifications for the suitability for crop cultivation. Since the Project will continue the agricultural use of the site and will involve sustainable agricultural practices, the proposed Project will not reduce the inventory of productive lands available for agricultural uses in the region.



Path: \\PBRFS04\Planning\Oahu\BWS Manoa Learning Center\GIS\Project\NRCS Soil Survey (rev).mxd

DATE: 7/8/2019

LEGEND

- Project Site
- TMK Parcels
- HoB: Hanalei stony silty clay, 2 to 6 percent slopes
- LoC: Lolekaa silty clay, 8 to 15 percent slopes
- LoF: Lolekaa silty clay, 40 to 70 percent slopes
- TAE: Tantalus silt loam, 15 to 40 percent slopes

Figure 8
NRCS Soil Survey

BWS Hālau Wai Mānoa

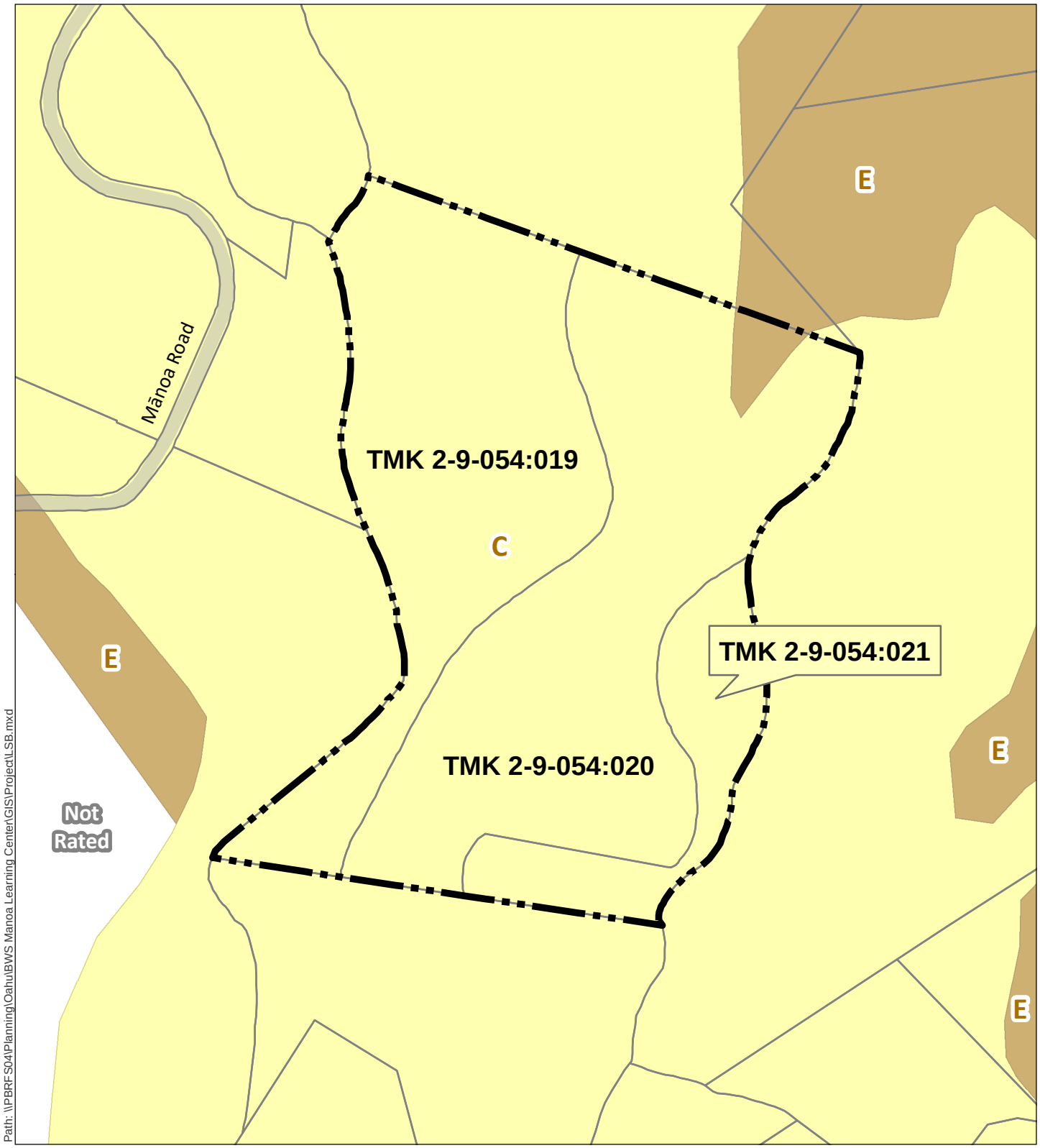
City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 75 150

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. Department of Agriculture Natural Resources Conservation Service (2017); City and County of Honolulu (2016).
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 7/8/2019

LEGEND

Project Site

TMK Parcels

Land Study Bureau (LSB) Ratings

C: Fair

E: Very Poor

Not Rated

Figure 9

Land Study Bureau
Detailed Land Classification

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 50 100 200

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. Department of Agriculture Natural Resources Conservation Service (1972); City and County of Honolulu (2016).
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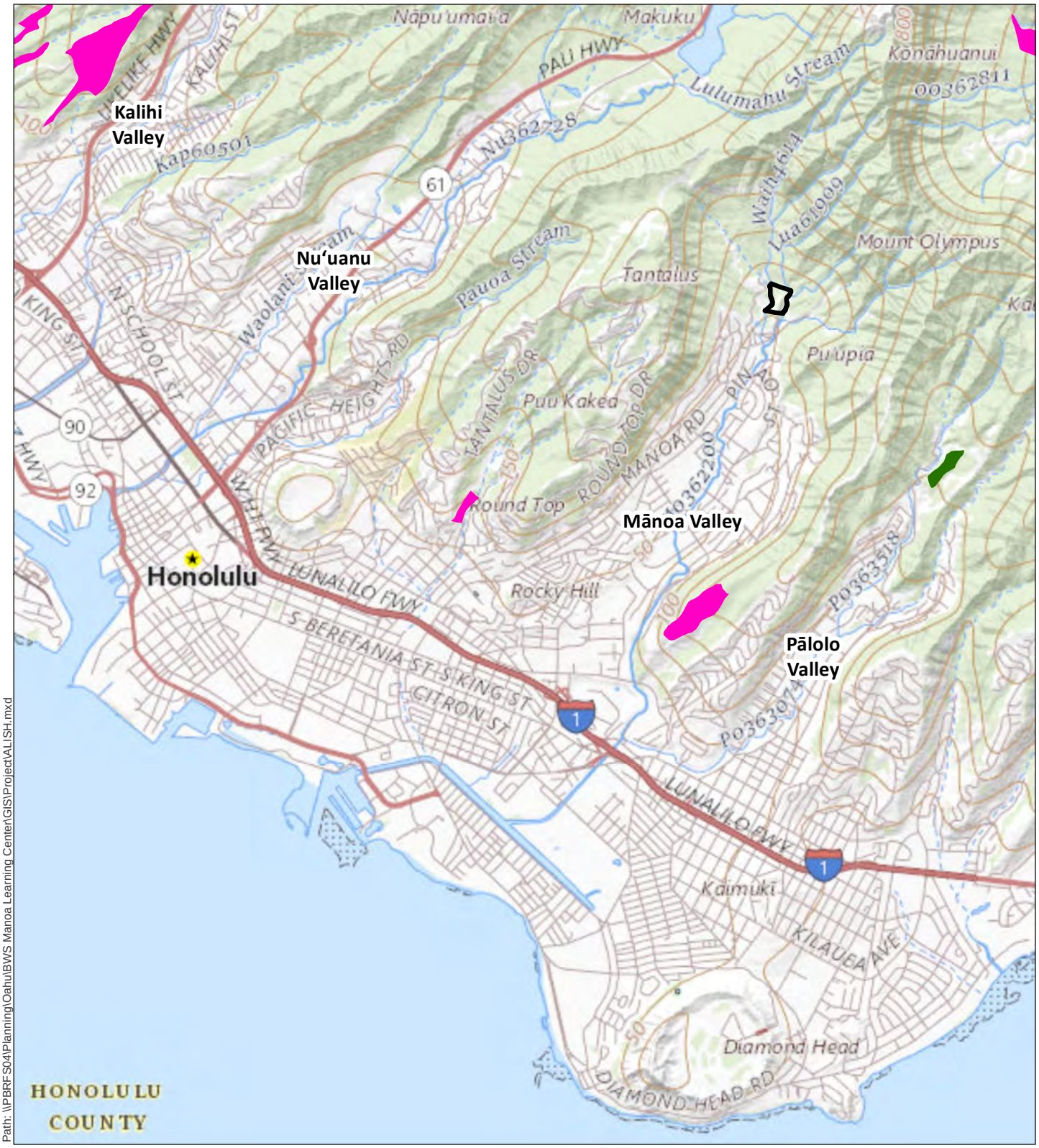


DATE: 7/8/2019

LEGEND

Project Site

ALISH Type

Prime ALISH (none on project site)

Other ALISH (none on project site)

Figure 10

Agricultural Lands of Importance to the State of Hawai'i (ALISH)

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 1,250 2,500 5,000

PBR HAWAII & ASSOCIATES, INC.

Source: State Department of Agriculture (1977); USGS The National Topo Base Map

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Short term soil impacts may include the potential for soil erosion and the generation of fugitive dust during minimal grading and construction of a meeting hale or similar open-air structure (if grading and construction are warranted), as well as grading during traditional agricultural practice. Any grading/construction activities will comply with all applicable federal, state, and county regulations and rules for erosion, sedimentation, and dust control. Best management practices (BMPs) will be implemented to minimize erosion during construction and planting, including watering loose soils during construction, and planting groundcover over areas where construction has been completed. Additionally, BMPs will be implemented to reduce impacts to streams along the Project Site. These measures will address any direct impacts from construction and avoid any secondary or cumulative impacts from erosion or fugitive dust caused by construction.

In the long term, any landscape plantings and cultural agricultural practices are intended to reduce not only the amount of pollutants infiltrating and contaminating the soils, but also the amount of erosion and runoff from the site.

3.4 NATURAL HAZARDS

Natural hazards like flooding, tsunami inundation, hurricanes, earthquakes, and volcanic eruptions have historically impacted the Hawaiian Islands. Climate change will also impact the Islands, as will the related sea level rise.

Flooding – According to the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program, the Project Site is located in "Zone X", meaning that it is located within areas determined to be outside the 0.2% annual chance floodplain. (Figure 11).

Tsunami – Since the early 1800s, approximately 50 tsunami have inundated Hawaiʻi's shores. Seven historical events have caused major damage. Two tsunami were generated locally. The proposed Project is located outside of the Tsunami Evacuation Zone, which is the area in which most of Oʻahu's tsunami warning events will occur. Moreover, the Project Site is located outside the newly designated Extreme Tsunami Evacuation Zone, which is the secondary evacuation zone for the much less common but very large (magnitude 9+) earthquake and tsunami (Figure 12).

Hurricanes – Since 1980, two hurricanes have had a devastating effect on Hawaiʻi: Hurricane ʻIwa in 1982 and Hurricane ʻIniki in 1992. Long-term prediction of future hurricanes is virtually impossible. However, one should reasonably anticipate the prospect of another hurricane impacting the islands.

Earthquakes & Volcanic Hazards – In Hawaiʻi, volcanic activity produces most earthquakes in contrast to other areas sitting on tectonic plate margins. Thousands of earthquakes occur in Hawaiʻi each year. However, the vast majority of them are undetectable through normal human senses. A few historical earthquakes have reached moderate and even disastrous magnitudes.

The last earthquakes felt statewide were magnitudes of 6.7 and 6.0. These earthquakes occurred at Kīholo Bay along Hawaiʻi Island's Kona Coast on October 15, 2006. These earthquakes resulted in more than $100 million in damages to the northwest area of Hawaiʻi Island and minimal damage on Oʻahu. From that same event, Oʻahu was also subject to an earthquake induced electrical

blackout that paralyzed the city of Honolulu and shut down the Honolulu International Airport for nearly a day.

Climate Change – As global temperatures increase, established patterns of weather and climate are shifting. These erratic changes in weather patterns have increased the severity of events like droughts, storms, floods, and even hurricanes, while at the same time causing these events to be more difficult to predict and protect against. The fragility of the ecosystems and unique island nature of O‘ahu and the Hawaiian Islands at large makes the state particularly vulnerable to the damaging effects of climate change.

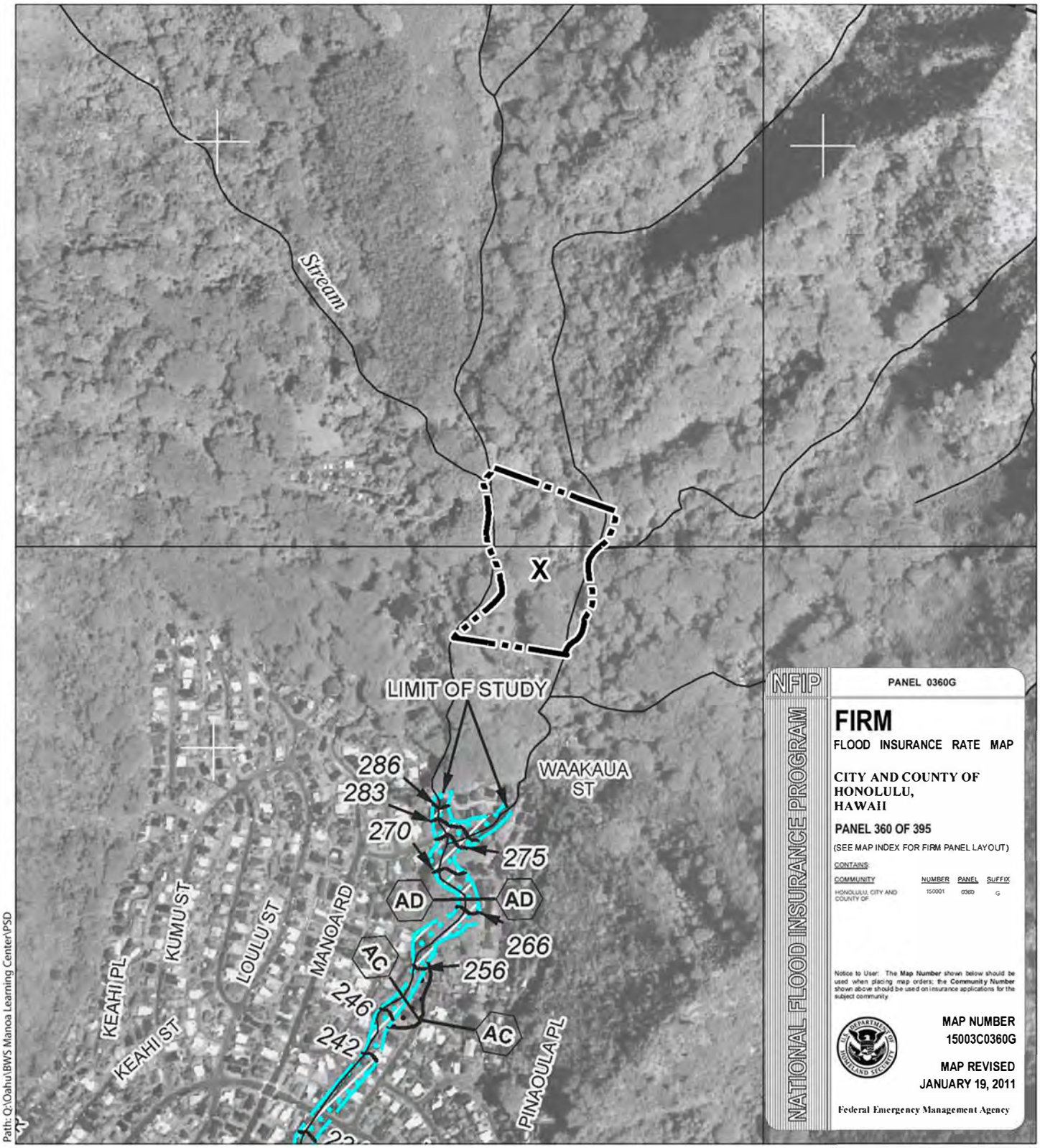
Sea Level Rise – Global sea levels are on the rise, and have the potential to erode and even inundate coastal areas over the course of the next century. The general consensus among climate scientists is that sea levels will likely rise 3.2 feet above mean higher high water (MHHW) by the year 2100. According to sea level rise (SLR) inundation maps created by the NOAA Office for Coastal Management, this 3.2-foot SLR is not anticipated to result in inundation of the Project Site (Figure 13). As the Project Site is located several miles inland and at an elevation between 300 and 400 feet above mean sea level (AMSL), even a scenario of a six-foot SLR would not result in inundation of the Project Site.

Potential Impacts and Mitigation Measures

The Project Site is not anticipated to experience normal flooding from storms, tsunami, or a 3.2-foot sea level rise. Because the Project does not involve alterations to the floodway, nor does it involve new buildings (other than a traditional meeting hale or similar open-air structure that will not be used for habitation and ancillary structures/storage container), it is not anticipated to have any significant impact or any deleterious effects on natural hazard conditions. No unique mitigation measures are planned.

During the pre-assessment consultation process and during the Draft EA public review period, the Federal Emergency Management Agency (FEMA) provided information relating to the National Flood Insurance Program (NFIP) floodplain management building requirements as described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65 (refer to letters in Appendices A and G). Also during the pre-assessment consultation process, the State of Hawai‘i Department of Land and Natural Resources (DLNR) Engineering Division provided information on the minimum NFIP standards, as well as their Flood Hazard Assessment Tool (FHAT). The letter is reproduced in Appendix A.

The U.S. Army Corps of Engineers (USACE) has recently prepared a feasibility report and environmental impact statement for the proposed Ala Wai Canal Flood Risk Management Study (“Ala Wai Study”), the goal of which is to reduce riverine flood risks in the Ala Wai Watershed, including Mānoa Valley (U.S. Army Corps of Engineers 2017). The proposed Ala Wai Study recommends, among other measures, the construction of two large debris/detention basins (earthen berm structures similar to dams) in the immediate vicinity of the BWS Hālau Wai Mānoa Project Site. The proposed Waihī Debris and Detention Basin would be located at the convergence of the Waihī and ‘Aihualama Streams at or near the northwest corner of Parcel 19, and the proposed Waiakeakua Debris and Detention Basin would be built at the convergence of the Waiakeakua and Lua‘alaea Streams to the southeast of Parcel 21. The proposed USACE project is expected to reduce the flood impacts in the area.



DATE: 1/8/2019

LEGEND

Project Site

Flood Zone

Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

Figure 11

Flood Insurance Rate Map

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

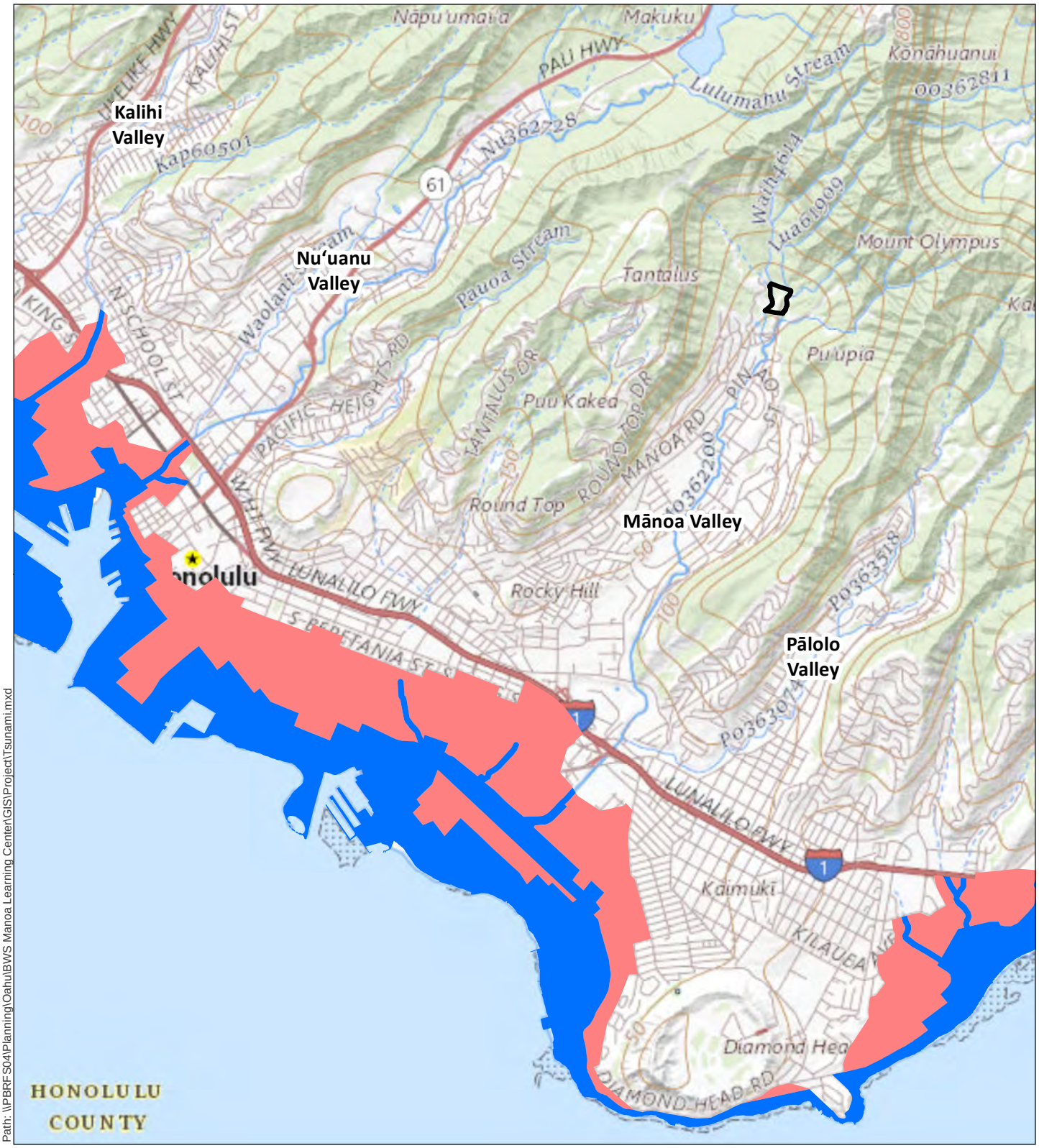
Linear Scale (feet)

0 200 400 800

PBR HAWAII & ASSOCIATES, INC.

Source: Federal Emergency Management Agency (2011); City and County of Honolulu (2018).

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 7/8/2019

LEGEND

- Project Site
- Tsunami Evacuation Zone
- Extreme Tsunami Evacuation Zone

Figure 12
Tsunami Evacuation Zone

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply — Island of O'ahu

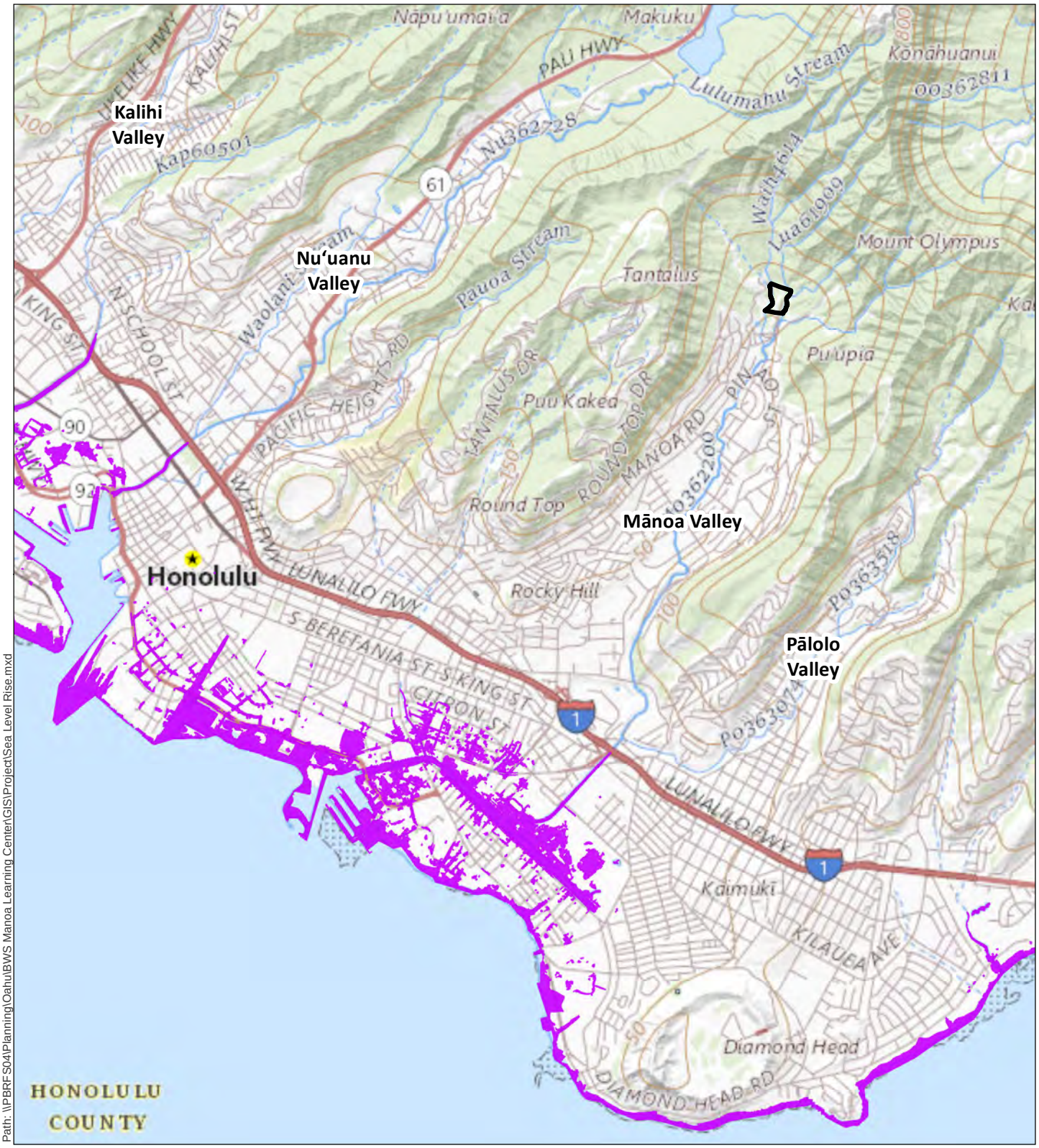
North

Linear Scale (feet): 0 1,250 2,500 5,000

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2010, 2015); USGS The National Topo Base Map

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 7/8/2019

LEGEND

Project Site

Exposure Area at 3.2 ft Sea Level Rise

Figure 13

Sea Level Rise (3.2 ft)

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 1,250 2,500 5,000

PBR HAWAII & ASSOCIATES, INC.

Source: SOEST, UH CGG, PacIOOS, Tetra Tech, Inc (2017); USGS The National Topo Base Map

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

3.5 FLORA & FAUNA

A biological resources study, which included both a botanical survey and a fauna survey, was completed in July 2018, by Robert Hobdy, an environmental consultant, for the purposes of this document (see Appendix B). The results of the botanical and fauna surveys are summarized below.

Existing Vegetation - A walk-through botanical survey method was used selecting routes to cover the entire area and all habitat types. Areas most likely to harbor native or rare plants were more intensively examined. Notes were made on plant species, distribution and abundance as well as on terrain and substrate. The vegetation in the project area can be characterized as a lowland non-native wet forest. Over the past 200 years this forest has been gradually overtaken by naturalizing ornamental and weedy plant species to the point that nearly all native Hawaiian plants have been eliminated. A total of 92 plant species were recorded during the survey including very large to small trees, shrubs, grasses, vines and ferns. Taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999) and Staples & Herbst (2005).

The most common plant species encountered were albizia (*Falcataria moluccana*), pothos (*Epipremum pinnatum*), parasol leaf tree (*Macaranga tanarius*), black bamboo (*Phyllostachys nigra henionis*), California grass (*Urochloa mutica*) and honohono (*Commelina diffusa*).

Six native plants were recorded: the endemic koa (*Acacia koa*) and five indigenous plants, bunchy sedge (*Cyperus polystachyos*), hala (*Pandanus tectorius*), koali awahia (*Ipomoea indica*), hau (*Hibiscus tiliaceus*) and pōpolo (*Solanum americanum*). All of these are common and three of them had been recently planted.

Ten Polynesian introduced plants were recorded: ‘ape (*Alocasia macrorrhyzos*), kalo (*Colocasia esculenta*), niu (*Cocos nucifera*), kī (*Cordyline fruticosa*), ‘ōlena (*Curcuma longa*), kukui (*Aleurites moluccana*), ‘ulu (*Artocarpus altilis*), ‘ōhi‘a ‘ai (*Syzygium malaccense*), ‘awa (*Piper methystichum*) and noni (*Morinda citrifolia*). All of these had been planted in recent years as a cultural enhancement.

No federally listed endangered or threatened plant species (USFWS, 2018) were found during the survey and no special native plant communities were identified either. Native plant diversity begins to increase about 0.5 mile further mauka on the steeper mountain slopes.

Existing Fauna - A walk-through fauna survey was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition, an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

No mammals were seen during the survey. Deep, dense vegetation made sighting difficult and made use of the habitat difficult for most mammals. Some non-native species, however, could be expected here, including rats (*Rattus* spp.), mice (*Mus domesticus*), cats (*Felis catus*), mongoose (*Herpestes auropunctatus)* and occasionally domestic dogs (*Canis familiaris*). Also, feral pigs (*Sus scrofa*) are known to occur in these forests. Taxonomy and nomenclature follow Tomich (1986).

An evening survey was made near the middle of the project area using a bat detecting device (Batbox IIID), set to the frequency of 27,000 Hertz these endemic bats are known to use when echolocating for nocturnal flying insect prey. No bats were detected with the use of this device.

Bird life was modest in both species diversity, and in total numbers. Taxonomy and nomenclature follow American Ornithologists' Union (2018). Nine species of birds were seen. Two species were common, the red-vented bulbul (*Pycnonotus cafer*) and the red-whiskered bulbul (*Pycnonotus jocosus*). The common myna (*Acridotheres tristis*) was of uncommon occurrence. Six other birds were rare in the project area.

One native waterbird, the endemic and Endangered ʻalaeʻula or Hawaiian moorhen (*Gallinula chloropus sandvicensis*) was seen in one of the small loʻi kalo. These waterbirds, which are more common in windward Oʻahu wetlands, found its way to this small water feature, highlighting the species wide-ranging flying ability in search of habitat.

While not seen, the indigenous ʻaukuʻu or black-crowned night-heron (*Nycticorax nycticorax hoactli*) has also been sighted by the caretaker in the above water feature. The ʻaukuʻu is fairly common around wetlands on Oʻahu.

Insect life was sparse throughout the project area due primarily to the lack of habitat diversity. Eight species were observed during two site visits. Taxonomy and nomenclature follow Nishida et al (1992). Two mosquito species were abundant, the Asian tiger mosquito (*Aedes albopictus*) and the Southern house mosquito (*Culex quinqefasciatus*). Three species were uncommon, the big-headed ant (*Pheidole megacepala*), the beet webworm moth (*Spoladea recurvalis*) and the globe skimmer (*Pantala flavescens*).

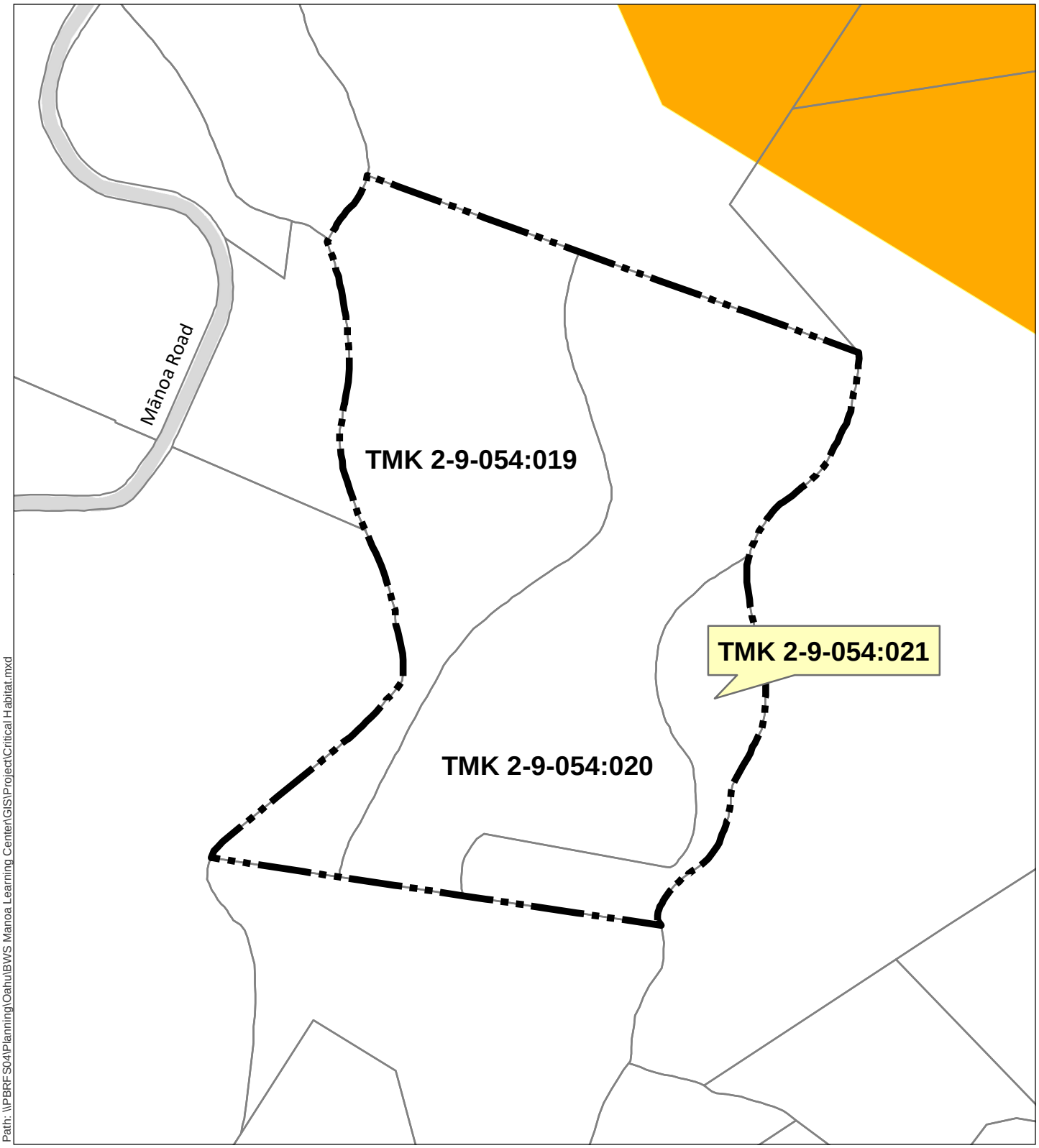
The indigenous globe skimmer was the only native insect. This dragonfly is common in many habitats in Hawaiʻi and has a nearly worldwide distribution. It is of no conservation concern.

Potential Impacts and Mitigation Measures

The Project Site is not located within a designated critical habitat for rare, threatened, or endangered flora or fauna species (Figure 14).

Because of the above existing conditions, the botanical survey determined that there is little of botanical concern in the project area. The anticipated disturbances associated with the project development are not expected to have a significant negative impact on the botanical resources in this part of Oʻahu. This project, however, represents an opportunity to landscape the grounds with native plants from this area along with Hawaiian cultural plants, and it is recommended that this theme be incorporated into the project design.

The development of the Hālau Wai Mānoa will likely result in temporary disturbances, but the water features will be retained and enhanced by the Project. This would continue to provide habitat for the ʻalaeʻula and perhaps other protected waterbirds. Because of the above existing conditions the fauna survey determined that there is little of wildlife concern in the project area, and that the anticipated disturbances associated with this project development are not expected to have a significant negative impact on the wildlife resources in this part of Oʻahu.



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DATE: 7/8/2019

LEGEND

- Project Site
- TMK Parcels
- Critical Habitat for ‘Oahu ‘Elepaio (bird)

Figure 14

Critical Habitats

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 50 100 200

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. Fish & Wildlife Service (2018); City and County of Honolulu (2016).

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

During the pre-assessment consultation process, the U.S. Fish & Wildlife Service (USFWS) Pacific Islands Fish and Wildlife Office (PIFWO) noted the protected species most likely to occur within the vicinity of the project area, and provided information on the PIFWO website (https://www.fws.gov/pacificislands/promo.cfm?id=177175840) regarding the recommended avoidance and minimization measures for these species, which are discussed below (see letter in Appendix A).

During the Draft EA public review period, the USFWS PIFWO provided a modified checklist of protected species most likely to occur within the vicinity of the project area: 1) Hawaiian hoary bat (ʻōpeʻapeʻa); 2) Band-rumped storm-petrel (ʻakēʻakē); 3) Hawaiian petrel (ʻuaʻu); 4) Newell's shearwater (ʻaʻo); and 5) Orangeblack Hawaiian damselfly (see letter in Appendix G).

Hawaiian hoary bat

The ʻōpeʻapeʻa roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To minimize impacts to the endangered Hawaiian hoary bat, the USFWS PIFWO recommends:

- Avoiding the disturbance, removal, or trimming of woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15); and
- Avoiding the use of barbed wire for fencing.

Hawaiian seabirds

"Hawaiian seabirds" is the collective term referring to the endangered Band-rumped storm-petrel/ ʻakēʻakē (*Oceanodroma castro*), the endangered Hawaiian petrel/ ʻuaʻu (*Pterodroma sandwichensis*), the threatened Newell's shearwater/ ʻaʻo (*Puffinus auricularis newelli*), the migratory Wedge-tailed shearwater/ ʻuaʻu kani (*Ardenna pacificus*), and the migratory White Tern/ manu-o-kū (*Gygis alba*).

Newell's shearwaters are found in the highest densities on Kauaʻi with lower densities on all of the other islands, except Lānaʻi. Hawaiian Petrel populations are greatest on Maui, Lānaʻi, and Kauaʻi with lower densities on Hawaiʻi and Molokaʻi. Band-rumped storm-petrels are found in low densities throughout the islands. All islands may experience overflight at night.

For all projects, Hawaiian seabirds may traverse the Project area at night during the breeding season (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the Project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable.

To minimize potential Project impacts to Hawaiian seabirds, the USFWS PIFWO recommends:

- Fully shielding all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary;
- Installing automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area; and
- Avoiding nighttime construction during the seabird fledging period, September 15 through December 15.

White tern

White terns or Manu-o-kū (*Gygis alba*) often nest in urban parks and residential areas from Hawaiʻi Kai to Hickam Air Force Base on the island of Oʻahu. This species is listed by the State of Hawaiʻi as endangered on Oʻahu. White terns breed during all months of the year, but the core breeding season is January through June, with a major peak in March. White terns do not build nests, instead they lay a single egg directly on a ledge, tree branch, or other suitable location. The egg will hatch after approximately 35 days, after which it takes 45 days for the chick to be mature enough to leave the tree on its own. Signs that white terns are present include accumulation of white feathers or white droppings underneath the tree.

To minimize potential Project impacts to White terns, the USFWS PIFWO recommends:

- Examining all trees slated to be cut to determine if there are white terns nesting in them, especially during the white tern breeding season (January through June), if tree trimming is part of the project;
- Avoiding trimming branches or removing trees with nesting white terns; and
- Avoiding the disturbance of a nesting tree or branch for at least 80 days from when the egg is laid.

Blackline Hawaiian damselfly and Orangeblack Hawaiian damselfly

Hawaiian damselflies are found in aquatic habitats across the islands, with high species endemism within islands. Breeding habitat includes anchialine pools, perennial streams, marshes, ponds, and even artificial pools and seeps. Major threats include introduced fish, amphibians, and invertebrates in streams, reduced stream flow from drought and water diversion, small isolated populations, reduced habitat quality from ungulates and nonnative plants, and possibly overcollection. All of the Hawaiian damselfly species are site specific, so it is recommended to check for detailed locations if stream work is occurring. The Blackline Hawaiian damselfly (*M. nigrohamatum nigrolineatum*) occurs in slow sections or pools along mid-reach and headwater sections of upland streams and seep-fed pools. The Orangeblack Hawaiian damselfly (*M. xanthomelas*) is known from Hawaiʻi, Maui, Lānaʻi, Molokaʻi, Oʻahu, and formerly Kauaʻi. It breeds in a widespread number of sites, including anchialine pools, coastal wetlands, small streams, and artificial ponds at low elevations.

To minimize potential Project impacts to Blackline and Orangeblack Hawaiian damselflies, the USFWS PIFWO offers the following recommendations:

- The USFWS-recommended BMPs for Work in Aquatic Environments should be incorporated into the project plan to minimize the degradation of water quality and impacts to fish and wildlife resources; and
- Damselflies cannot be surveyed without a permit, as accurate identification requires trapping, capturing, and holding. If work is occurring within a stream or within the riparian zone, the USFWS should be consulted.

If it is determined that the Project may affect federally listed species, the USFWS will be contacted early in the planning process to assist with the Endangered Species Act of 1973 (ESA) compliance.

Also during the pre-assessment consultation process, the State of Hawai‘i Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) commented that there "would be no known negative impacts to [any of DOFAW's projects, plans, policies, or programs]; however, there are specific species that could be negatively affected without proper consideration." DOFAW noted the Hawaiian hoary bat and Hawaiian seabirds may occur in the project vicinity, and similarly recommended the above avoidance and minimization measures for these species (see letter in Appendix A).

In addition, DOFAW commented:

> "DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e. climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawai‘i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home)."
>
> "You should avoid importing to O‘ahu soil or other plant material from off-island. Soil and plant material may have fungi (e.g., Rapid Ohia Death) and other pathogens that could harm our native species and ecosystems. We recommend consulting the Hawaii Interagency Biosecurity Plan at http://dlnr.hawaii.gov/hisc/plans/hibp/ in planning, design, and construction of the project."

As stated in Section 2.4 above, a key element of the Project is to serve as a base for mauka restoration and watershed/valley-wide partnership efforts in Mānoa, including the removal of invasive species, and forest restoration with site appropriate native species. Recognizing the need for carbon sequestration in Mānoa's forests, BWS intends for the removal of invasive species to be paired with a reforestation plan toward conversion to a native forest.

3.6 WATERS & WETLANDS

Most of the Project Site lies between Waihī Stream to the west and Lua‘alaea Stream to the east. Figure 15 shows the approximate locations of the streams in the vicinity of the Project Site. Near the northwest corner of the property, ‘Aihualama Stream converges with Waihī Stream, which then runs near/along the western boundary of Parcel 19. Meanwhile, Lua‘alaea Stream flows near/along the eastern boundary of the Project Site, converging with Nāniu‘apo Stream near the northeast corner of Parcel 20. Further downstream to the south of Parcel 21, Lua‘alaea Stream is then joined by Waiakeakua Stream. Approximately 1,200 feet makai (south) of the Project Site

and within the residential neighborhood, Waihī and Lua‘alaea Streams ultimately converge to form Mānoa Stream, which is the major stream that flows through the remainder of the valley.

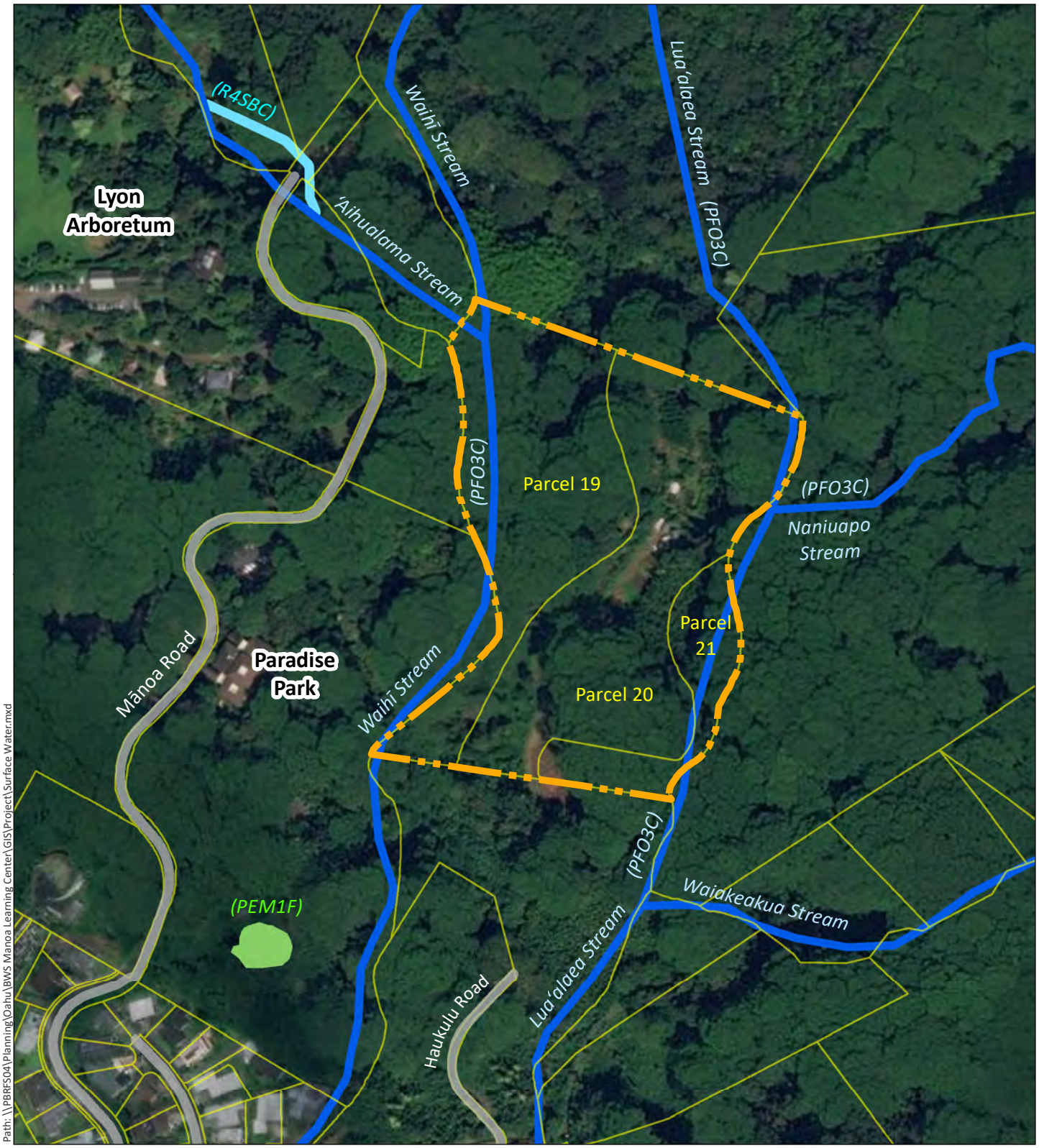
These streams comprise a 24.07-acre stream system which includes Mānoa Stream and its mauka tributaries and ends at its convergence with Pālolo Stream near Wai‘alae Avenue, makai of Kānewai Community Park. This stream system is designated by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory as a Freshwater Forested/Shrub Wetland habitat with the classification code PFO3C. According to the online USFWS Wetlands Mapper (https://www.fws.gov/wetlands/data/mapper.html), this type of habitat is described as:

- System **Palustrine (P)**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.
- Class **Forested (FO)**: Characterized by woody vegetation that is 6 m tall or taller.
- Subclass **Broad-Leaved Evergreen (3)**: Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that generally remain green and are usually persistent for a year or more; e.g. red mangrove (*Rhizophora mangle*).
- Water Regime **Seasonally Flooded (C)**: Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.

The current tenant on Parcel 20, Kumuola Foundation, is using an existing diversion #861 which was registered with the Commission of Water Resources in 1988-1989 by Mr. M. Miyashita (previous BWS tenant on Parcel 20 and 21). The diversion was in operation prior to BWS acquiring the property in 1949. The diversion is located off BWS property, which was common during that time to provide enough head to build pressure in the water lines. There is another existing diversion #639 under Mr. M. Koga (previous BWS tenant on Parcel 20), located near the top east corner of Parcel 20. Mr. Miyashita and Mr. Koga were past tenants of this land prior to BWS ownership and they remained tenants after BWS acquired the properties.

Potential Impacts and Mitigation Measures

Short term impacts to nearby wetlands may include the potential for soil erosion and runoff, and the generation of fugitive dust if grading and construction are warranted for the meeting hale or similar open-air structure. Any construction activities will comply with all applicable federal, state, and county regulations and rules for erosion, sedimentation, and dust control. Best management practices (BMPs) will be implemented to minimize erosion during construction and planting, including watering loose soils during construction, and planting groundcover over areas where construction has been completed. These measures will address any direct impacts from construction and avoid any secondary or cumulative impacts from erosion or fugitive dust caused by construction.



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DATE: 7/8/2019

LEGEND

- Project Site
- Roadway
- TMK Parcels

Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Riverine

Figure 15
Surface Water Features

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply — Island of O'ahu

North

Linear Scale (feet): 0 75 150 300

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2016, 2019); U.S. Fish and Wildlife Service National Wetlands Inventory (2017); ESRI Online Basemaps.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

During the Draft EA public review period, the State of Hawai‘i Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM) wrote (refer to letter in Appendix G):

> "There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality."

Long-term impacts will be mitigated by the implementation of Low-Impact Development (LID) measures to manage stormwater at this site before it is returned to the natural system. Examples of possible LID measures include bioretention areas, soil amendments, rain gardens, rainwater catchment, and minimization of impervious surfaces.

During the Draft EA public review period, CWRM wrote (refer to letter in Appendix G):

> "We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/"

The lo‘i kalo will also serve as stormwater runoff and erosion mitigation, and the ongoing removal of invasive species and restoration of native forest and vegetation would likewise aid in reducing stormwater impacts while improving water quality in the streams. As noted by the State of Hawai‘i Office of Planning (OP) in their pre-assessment consultation letter (Appendix A):

> "…the [Project] may be used as a base for restoration efforts by community groups in Manoa Valley. Watershed restorative actions by these groups may include the removal of invasive species, forest restoration, and erosion control/soil stabilization. These actions are known to be effective in the reduction of polluted runoff and the deposit of erosion related sediment loadings in streams and marine areas."

In addition, OP wrote (see Section 4.7.3 and refer to letter in Appendix A):

- "Pursuant to HAR§ 11-200-10(6) - identification and summary of impacts and alternatives considered; to ensure that the surface water and nearshore environment downslope of the project remain protected, the negative effects of storm water inundation from this project should be evaluated in the Draft EA."
- "Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, the potential vulnerability of surface water resources, the soil absorption characteristics in the project area, and the amount of permeable versus impervious surfaces. Assessing the need for mitigation measures in the protection for surface water resources and the coastal ecosystem should take this into account, pursuant to HAR § 11-200-10(7)."

- "The Draft EA should contain an analysis on stormwater runoff mitigation, erosion control, and the preservation of water quality."

During the pre-assessment consultation process, CWRM provided the following comments (see Section 4.7.1 and refer to letter in Appendix A):

- "A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel."
- "A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered."
- "A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water."
- "The DEA should discuss the projected water demands for the project, both potable and non-potable, and provide the calculations used to estimate demands. The DEA should identify the proposed water source(s) to support the project, and include a discussion of the potential impacts on water resources, other public trust uses of water, and describe any proposed mitigation measures."

As the Proposed Project will not involve any stream channel alterations or additional/expanded stream diversions, no Stream Channel Alteration Permits, Stream Diversion Works Permits, or Petitions to Amend the Interim Instream Flow Standards are anticipated for the Proposed Project. A discussion on public trust uses of water is provided in Section 4.7.1 below. According to recent consultations with the U.S. Army Corps of Engineers (USACE), it appears that since the project has no intentions of discharge of dredged or fill material into fresh water systems, wetlands, and/or streams, the project will not have any impacts to Waters of the U.S. (Refer to correspondence in Appendix H.)

As mentioned in Section 3.4 above, the USACE has recently prepared a feasibility report and environmental impact statement for the proposed Ala Wai Canal Flood Risk Management Study ("Ala Wai Study"), the goal of which is to reduce riverine flood risks in the Ala Wai Watershed, including Mānoa Valley (U.S. Army Corps of Engineers 2017). The proposed Ala Wai Study recommends, among other measures, the construction of two large debris/detention basins (earthen berm structures similar to dams) in the immediate vicinity of the BWS Hālau Wai Mānoa Project Site. The proposed Waihī Debris and Detention Basin would be located at the convergence of the Waihī and ʻAihualama Streams at or near the northwest corner of Parcel 19, and the proposed Waiakeakua Debris and Detention Basin would be built at the convergence of the Waiakeakua and Luaʻalaea Streams to the southeast of Parcel 21. The proposed USACE project is expected to reduce the flood impacts in the area.

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4.0 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, potential impacts of the BWS Hālau Wai Mānoa, and mitigation measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND CULTURAL RESOURCES

4.1.1 Archaeological Resources

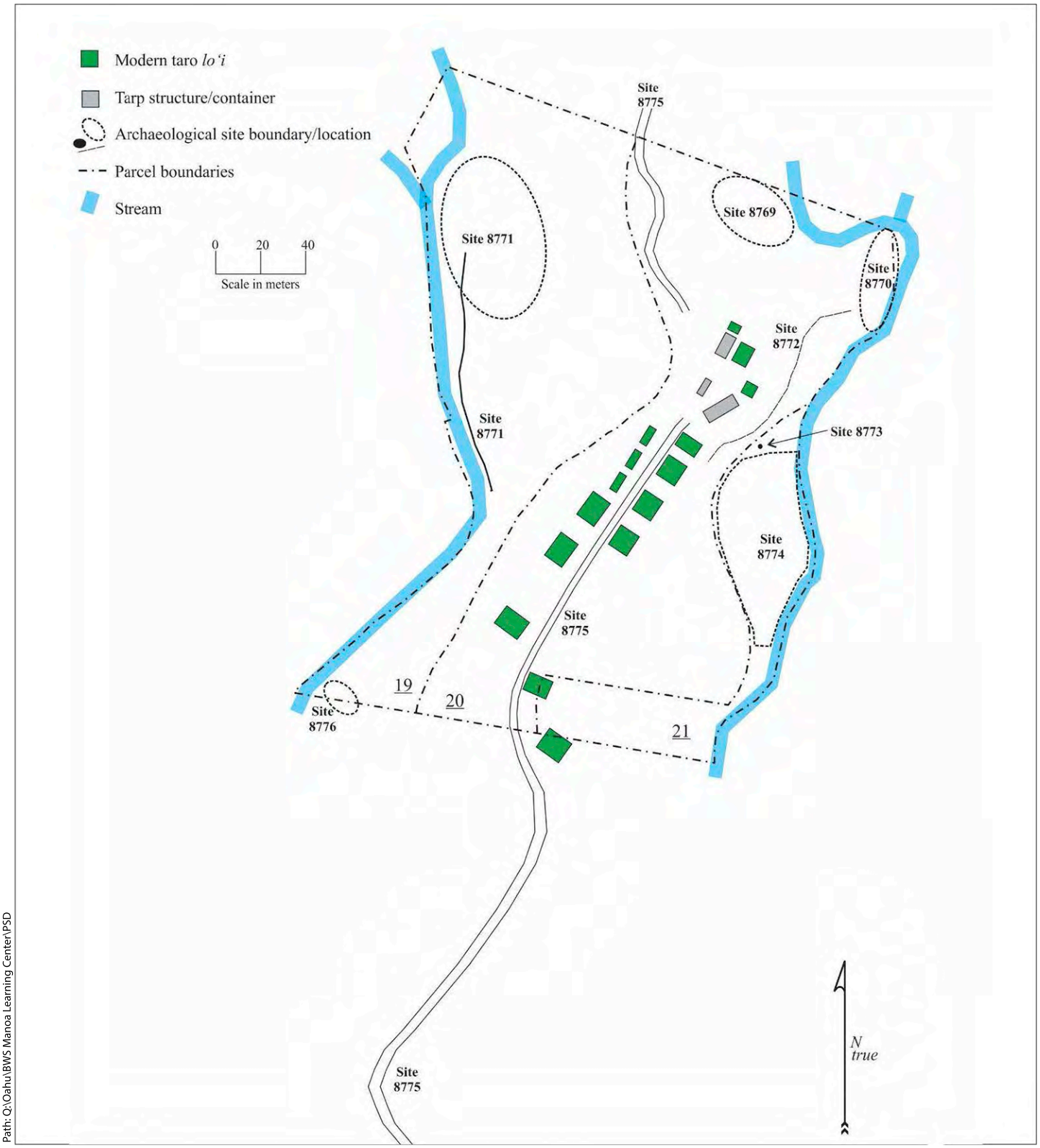
In October 2018, ASM Affiliates (ASM) completed an Archaeological Inventory Survey (AIS) of the roughly 12.8-acre study area, which comprises three adjacent parcels (TMKs (1) 2-9-054:019, 020, and 021), as well as two potential access corridors – a 700-foot-long existing road (Haukulu Road) leading into the southern end of the study area from the terminus of Waʻaloa Way, and a 250-foot-long by 50-foot-wide corridor leading west from the study area to the Lyon Arboretum parking lot access road (portions of TMKs (1) 2-9-054:004 and 029). All parcels in the study area are owned by BWS. The AIS can be found in Appendix C.

The AIS provides a cultural-historical context for the study area vicinity within Mānoa Valley and the greater Kona District. The Project Site is located in the back of Mānoa Valley, which is within the Waikīkī Ahupuaʻa, the largest of roughly a dozen traditional land divisions found in the District of Kona. Kona was one of six traditional moku or ʻokana (districts), situated between the Koʻolau Mountains and the sea along the leeward (southeastern) coast of the Island of Oʻahu. The current study area is located within the western portion of Kona District, which at the time of European Contact was the economic and demographic core of the district, with Waikīkī Ahupuaʻa (with Mānoa-Pālolo) the political center (AIS, p. 9).

Pre-contact (i.e., prior to European Contact), there was extensive and continuous cultivation of contiguous loʻi kalo (taro fields) in Mānoa. In traditional myths and legends, Mānoa Valley was known for its numerous water sources and intrinsic beauty (AIS, pp. 11-14).

Post-contact, the socioeconomic and demographic changes that took place in the years between 1790 and the 1840s promoted the establishment of a Euro-American style of land ownership, and the Māhele of 1848 became the vehicle for determining ownership of native lands. After the Māhele, during the latter half of the nineteenth century, native Hawaiians, along with Chinese immigrants, continued to grow taro on the floor of Mānoa Valley. In addition to cultivating approximately half of the taro lands in Mānoa Valley, Chinese farmers cultivated bananas, pineapple and other crops (AIS, p. 18).

According to historical accounts, Mānoa Valley was the site of a battle in 1895 led by first lieutenant of the rebel forces, Robert Wilcox, who led the Wilcox Rebellion against Kalākaua in 1889 for Liliʻuokalani, and by rebel leader Lot Lane (AIS, p. 22). The 1895 Battle of Mānoa followed the Battle of Mōʻiliʻili, which the royalist rebels lost against the government forces three days prior, and two days after Martial Law had been declared. As described in the AIS, Wilcox and his rebel compatriots "were camped in the rear of [Mānoa] valley in an area described as belonging to John Ena" (AIS, p. 23), which may coincide with the current Project area.



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DATE: 10/18/2019

Figure 16

Archaeological Resources

BWS Mānoa Learning Center

City and County of Honolulu Board of Water Supply — Island of O'ahu

PBR HAWAII & ASSOCIATES, INC.

Source: ASM Affiliates (2019)

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

By the mid-twentieth century, the well-watered patchwork of lo‘i that once carpeted the floor of Mānoa Valley fell by the wayside as the price of taro continued to drop and much of the stream waters were utilized for other agricultural uses and to support urbanization. In addition, several parcels in the vicinity of the Project area were purchased by the City and County of Honolulu’s BWS in the mid-twentieth century, following the passage of Gubernatorial Executive Order 1659 for the development and protection of water resources as in the upper watersheds, as depicted within the subject parcels and nearby parcels on the Tax Map Key map (see Figure 2 of AIS) (AIS, p. 24).

Per a deed dated March 17, 1949, Father H. Valentin and Hawaiian Trust Company, Ltd., trustees of the estate of John Ena conveyed Grant 257 and a portion of Grant 254 (Figure 18 of the AIS) to the City and County of Honolulu, Board of Water Supply. This fact supports the claim by DeLeon (1978) that rebel Wilcox and his compatriots fought the Battle of Mānoa within land belonging to John Ena. Although Ena’s land holdings were located throughout Mānoa and beyond, DeLeon qualifies his claim with the following details about the former Ena property, which was by the time of his writing in the late 1970s “the lower part of the water conservation district where Paradise Park is located” (1978, p. 6). Thus, it appears that the location of the last stand of the Wilcox Rebellion did take place within the current study area.

Potential Impacts and Mitigation Measures

As a result of the fieldwork for the AIS, eight archaeological sites totaling thirty-one individual features were recorded. All of the sites appear to date from the Historic Period, and include four agricultural complexes (State Inventory of Historic Places (SIHP) Sites 50-80-14-08769; 08770; 08771; and 08774), an ‘auwai (SIHP Site 50-80-14-08772), man-made cave shelter (SIHP Site 50-80-14-08773), roadway segments (SIHP Site 50-80-14-08775), and a middle twentieth-century refuse dump (SIHP Site 50-80-14-08776). While it was shown that all of the sites suffer varying degrees of reduced integrity as a result of impacts from invasive vegetation, all of the sites do retain sufficient aspects of location, design, setting, materials, workmanship, feeling, and association to be evaluated as being significant under Criterion d (HAR §13-284-6) for the information that has been collected from the sites relative to middle nineteenth-century through middle twentieth-century land use practices.

Although no physical evidence of any such activities was observed, it is possible that activities associated with the 1895 Battle of Mānoa may have taken place within the current study area. It is suggested that future curricula of the Hālau Wai Mānoa should include reference to this significant historical event.

Given the nature of the proposed land use within the study area (the development of the Hālau Wai Mānoa), it is ASM’s recommendation that all of the sites be preserved; and that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the Hālau Wai Mānoa. However, it is not the intention that such preservation will make these sites off-limits to appropriate use, or conversely that there should be any obligation to proactively protect the sites against the ravages of vegetation growth. Preservation can be passive and/or proactive and may include further archaeological study, restoration and reuse of the sites, as well as interpretation.

Based on the results of this study, no adverse impacts to archeological resources during construction (if any) are anticipated as long as the identified archaeological sites are not disturbed.

Should the inadvertent discovery of significant cultural or historic materials and/or burials occur during construction, all work in the immediate area of the find will cease and the State Historic Preservation Division (SHPD) will be notified, as outlined in HAR 13 § 13-275-12. No further mitigation measures are planned.

4.1.2 Cultural Resources

In addition to the archaeological study, ASM Affiliates also prepared a Cultural Impact Assessment (CIA) for the Proposed Project in April 2019, which presents the results of background archival research and oral-history consultations (interviews). The study can be found in Appendix D: Cultural Impact Assessment.

Potential Impacts and Mitigation Measures
As mentioned in Section 4.1.1 above, an AIS conducted by ASM Affiliates (Rechtman et al. 2018) of the current study area identified eight previously unidentified archaeological sites: four agricultural complexes (SIHP Sites 50-80-14-08769; 08770; 08771; and 08774), an *ʻauwai* (SIHP Site 50-80-14-08772), a man-made cave shelter (SIHP Site 50-80-14-08773), roadway segments (SIHP Site 50-80-14-08775), and a middle twentieth-century refuse dump (SIHP Site 50-80-14-08776). These sites appear to date from the Historic Period and most are likely associated with an agricultural function. Rechtman et al. (2018) recommended preservation for all eight sites. It is suggested that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the Hālau Wai Mānoa.

Based on the archival research and oral information collected for the CIA study, it is understood that Mānoa Valley formerly supported a large population with scores of *loʻi kalo* that were watered by the many freshwater streams, some of which flow through the study area. While no specific former traditional cultural practices were identified for the subject property, the study area is currently the site of active cultural practices. Since 2010, Kumuola Foundation has been providing cultural education to local students and visitors from abroad via plant-based learning activities that revolve around active *loʻi kalo* and the propagation of native plant species. Regarding the ongoing cultural practices of Kumuola Foundation within the current study area, ASM recommends that the spirit of what they have begun be perpetuated in the future Hālau Wai Mānoa. It is clear that the subject property holds significance to those who have been actively engaged in the perpetuation of cultural practices therein; thus, it is suggested that whatever entity is awarded the opportunity to develop the Hālau Wai Mānoa, they should consult with a Kumuola Foundation representative with respect to the cultural activities that have been occurring at the site.

Additionally, given that the subject property likely figured in the Rebellion of 1895 and specifically the Battle of Mānoa, it is suggested that future curricula of the Hālau Wai Mānoa should include reference to this significant historical event.

The interviewees made it clear that they revere the land that comprises the study area as life-giving and precious. Furthermore, it is their wish that the land and water be protected and that the study area does not become reduced to a tourist attraction. To that end, it is further recommended that Hālau Wai Mānoa collaborate with local community members, such as the members of Mālama Mānoa and Mānoa Heritage Center, as well as cultural practitioners to determine the best approach to creating a culturally sensitive learning space that will respectfully include the beliefs and traditional customs of the Native Hawaiian community of Mānoa and greater Waikīkī Ahupuaʻa.

It is the conclusion of the CIA that if the identified archaeological sites are treated subject to an SHPD-accepted preservation plan, the cultural history of the area (including a presentation of the Rebellion of 1895 and specifically the Battle of Mānoa) is incorporated into any future Hālau Wai Mānoa curriculum, and the BWS fosters continued consultation with the various cultural stakeholders, then the development of the Hālau Wai Mānoa within the subject property will not negatively affect any valued cultural, historical, or natural resources nor will it impair any traditional and customary native Hawaiian rights; and thus will not have a negative cultural impact.

4.2 TRANSPORTATION

As recommended by the City and County of Honolulu Department of Transportation Services (DTS) during the pre-assessment consultation process (see letter in Appendix A), an assessment of potential transportation impacts is included below.

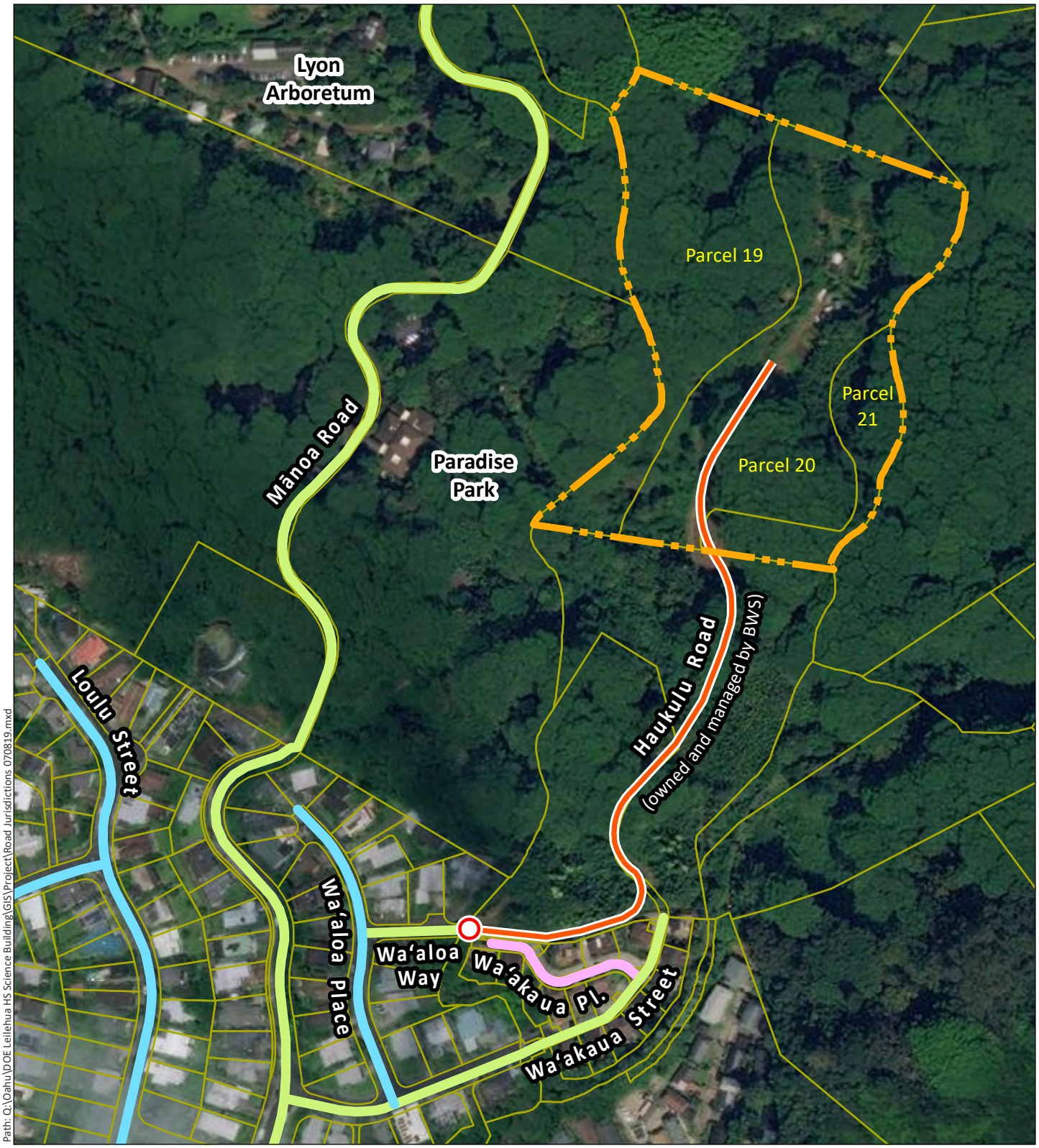
4.2.1 Roadways and Traffic

The Project Site is situated at the mauka end of Haukulu Road, which is accessed via a locked gate at the end of Waʻaloa Way, which, in turn, is reached via Waʻaloa Place, Waʻakaua Street, and Mānoa Road (Figure 17). Vehicular access to Haukulu Road is currently restricted to BWS-authorized vehicles.

Mānoa Road. Regional access to the Project Site is provided by Mānoa Road, a primarily two-lane City road. Mānoa Road is one of two major collector roads in Mānoa Valley providing access to principal east-west arterials such as the H-1 Freeway, Beretania Street, King Street and Ala Moana Boulevard/Nimitz Highway (State of Hawaiʻi Department of Transportation 2012). The gated entrance to Haukulu Road is located approximately 0.1 mile northeast of the intersection of Mānoa Road and Waʻakaua Street. Typically, during the morning peak hour traffic, residents of Mānoa are commuting to schools or employment located in the makai side (or out) of Mānoa Valley. Most mauka-bound traffic during the morning peak hour would be for destinations such as Lyon Arboretum or Mānoa Falls Trail and would represent significantly less traffic than the makai-bound morning peak hour traffic. During the afternoon peak hour traffic, traffic patterns would be reversed.

According to a feature in Google Maps, typical traffic conditions (four levels of traffic flow from "Fast" to "Slow") can be checked from 6:00 A.M. to 10:00 P.M. daily. According to Google Maps, on a typical Monday morning at 7:35 A.M., the flow of traffic is rated as "Fast" along the majority of Mānoa Road, except the makai-bound lane near the three-way intersection with Lowrey Avenue and Oʻahu Avenue, and the stretch of road makai of Aleo Place down to the intersection of Nehoa Street (where Mānoa Road becomes Punahou Street). These two stretches of Mānoa Road are rated "2" (on a scale of 1 to 4, with 1 representing "Fast" and 4 representing "Slow").

Similarly, on a typical Monday afternoon at 4:00 P.M., the flow of traffic is rated as "Fast" along the entire length of Mānoa Road (between Nehoa Street and Waʻakaua Street) except the mauka-bound lane near the three-way intersection with Lowrey Avenue and Oʻahu Avenue, and portions of the stretch between Nehoa Street and Judd Hillside Road. No stretches or intersections of Mānoa Road are rated "Slow". In both the A.M. and P.M. scenarios, the mauka end of Mānoa Road near Waʻakaua Street is rated "Fast."



Path: Q:\Oahu\DOE Leilehua HS Science Building\GIS\Project\Road Jurisdictions 070819.mxd

DATE: 7/8/2019

LEGEND

- Project Site
- TMK Parcels
- Existing Access Gate
- Existing Access Road (Unpaved)

Roadway
Owned by - Maintained by

- City - City
- Private - City
- Various - City

Figure 17
Roadway Jurisdictions

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 75 150 300

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2017, 2018); ESRI Online Basemaps.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Potential Impacts and Mitigation Measures

As currently envisioned, construction is limited to a traditional meeting hale (or similar open-air structure), consisting of natural materials, some of which may be harvested on-site. Vans or pick-up trucks will likely haul traditional hale building materials to the Project Site. There is a very low likelihood that construction at the Project Site would temporarily disrupt vehicular traffic in the surrounding neighborhood. The area Neighborhood Board will be kept apprised of the details of any construction project, and the impacts, if any, that project may have on the adjoining local street area network. However, no work is presently proposed on surrounding streets.

While not currently anticipated, if warranted, traffic cones and other directional devices will be placed in affected roadways to safely guide vehicles around work areas. Contractors will be required to implement measures to provide access past work sites and to minimize the inconvenience to the community. These mitigation measures may include the following:

- Posting flagmen for traffic control around work sites;
- Backfilling/covering all trenches at the end of the work day;
- Posting safety devices and signs for the duration of construction;
- Maintaining any existing pedestrian, bicycle, and vehicle access/crossing (including residential access) with the highest safety measures during construction;
- Scheduling the transferal of construction materials and equipment to and from the Project Site during non-peak traffic hours (8:30 A.M. to 3:30 P.M.), but not during school dismissal periods, to minimize any possible disruption to traffic on the local streets; and
- Scheduling construction activities requiring lane closures to occur during times that avoid the beginning and ending of work day and school day rush hours (8:30 A.M. to 3:30 P.M.).

While not currently anticipated, should construction activities require the temporary closure of any City street, traffic lane, or sidewalk, a Street Usage Permit will be obtained from DTS. Similarly, although not currently anticipated, should there be a need to transport any oversized equipment/overweight loads on State highway facilities, a DOT Highways Division permit will be prepared.

During the pre-assessment consultation process, the State of Hawai‘i Department of Transportation (DOT) wrote: “DOT has determined that it appears the proposed project will have no significant impact to State transportation facilities. Therefore, we have no comments to provide at this time” (refer to letter in Appendix A). The DOT provided a similar comment during the Draft EA public review period (refer to letter in Appendix G).

During the pre-assessment consultation process, DTS made the following recommendations (see letter in Appendix A):

- “**Roadway Jurisdiction.** The DEA should include a map of the various adjacent roadways and street jurisdictions.”

- "**Best Management Practice (BMP) Controls.** Best Management Practice controls should be included at the construction site to prevent trailing of dirt and debris on City roadways."
- "**Roadway Damage.** Any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards as well as meet Americans with Disabilities Act requirements."
- "**Disability and Communication Access Board (DCAB).** Plans should be reviewed and approved by DCAB to ensure full compliance with the ADA."
- "**Driveway Design.** All access driveways to the project site should be designed with the highest pedestrian and bicycle safety measures and constructed to current City standards."
- "**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."

As requested by DTS during the pre-assessment consultation process, a Traffic Management Plan (TMP) has been prepared, which provides "a discussion of the traffic impacts that the project may have on any surrounding City roadways and facilities, including short-term impacts during construction and long-term impacts after construction with corresponding measures to mitigate these impacts by applying Complete Streets principles" (see letter in Appendix A). The TMP is included in Appendix E.

In a subsequent letter dated September 27, 2019, DTS wrote: "Based on our review, we have no comments to offer at this time. However we recommend 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 of throughout the project and the impacts that the project may have on the adjoining local street area network." (Refer to letter in Appendix I.)

During the pre-assessment consultation process, the Honolulu Police Department (HPD) stated:

> "The Honolulu Police Department (HPD) anticipates short- and long-term impacts to pedestrian and vehicular traffic around the area of the project, in particular the roadways of Manoa Road, Waakaua Street, and Waaloa Place, as these roads lead into the proposed project area. The HPD recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor to facilitate the flow of traffic during the construction phase of the project" (see letter in Appendix A).

In the long-term, no significant increase in the number of visitors to the site is anticipated over existing conditions due to this Project, as its operations are anticipated to be similar to those of the current tenant, Kumuola Foundation (KF); consequently, no significant change in peak hour traffic is expected. Therefore, the Project's impact on the cumulative traffic impacts on major collector

roads in Mānoa Valley should be minimal. As such, the Project will not require permanent rerouting or alteration of roadway traffic.

4.2.2 Parking and Access

There is currently a small unpaved and unstriped parking area at the Project Site for the current tenant, volunteers and visitors, as well as for loading/unloading of cargo and deliveries. Access to this on-site parking area is via Haukulu Road, which leads from a locked gate at the end of Wa‘aloa Way. Access through this gate is restricted to BWS-approved vehicles.

According to KF representatives, school groups are currently brought in by school buses and are dropped off at the existing city bus stop nearby on Mānoa Road; they then access the site on foot via the gate at Wa‘aloa Way. On the second Saturday of each month, KF hosts a community work day, for which volunteers typically park on the nearby streets or arrive by public transportation, then access the site on foot via the Wa‘aloa Way gate.

Potential Impacts and Mitigation Measures
During the pre-assessment consultation process, DTS commented (see letter in Appendix A):

- “All parking needs for the proposed facility (employees, volunteers, and visitors) should be handled on-site.”
- “Include a discussion regarding how the facility will handle all of its parking needs on-site, including school bus parking and additional parking facilities.”
- “All loading and unloading needs, including delivery vehicles and school buses, should be handled on-site, rather than on City roadways.”
- “The project should be designed to accommodate TheHandi-Van para-transit vehicles on-site, which require a minimum 31-foot turning radius, a 10-foot, 6-inch height clearance, and the ability to exit the site without reversing onto public roadways.”

Access via the Wa‘aloa Way gate, as well as parking at the existing unpaved on-site parking area, will be restricted to (approximately a dozen) Hālau Wai Mānoa employees/workers. Loading and unloading needs for deliveries will also be handled on-site. To minimize impacts to the natural environment and to the residential areas near the existing Wa‘aloa Way access point – and to keep vehicular traffic on Wa‘aloa Way to a minimum – there will be a separate access for visitors and volunteers, potentially via Mānoa Road and Paradise Park. Parking for visitors and volunteers (including bus parking) and bus loading/unloading will be provided off-site – but not on City roadways – potentially at the existing parking facilities at Paradise Park (which will need to be discussed and coordinated with the landowner). Hālau Wai Mānoa visitor/volunteer parking could be limited to a proportion of the parking capacity at Paradise Park, accounting for Mānoa Falls Trail hikers who also use their parking facilities. Visitors/volunteers would then access the Project Site on foot, via a proposed unpaved trail from the Paradise Park parking lot to Hālau Wai Mānoa. In the future, the disused “Old Government Road” could potentially be cleared and restored to provide an alternative pedestrian trail from the proposed parking area to the Project Site.

During the pre-assessment consultation process, the Honolulu Fire Department (HFD) commented (see letter in Appendix A):

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; 2012 Edition, Section 18.2.3.2.2.)"
2. "A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2012 Edition, Section 18.2.3.2.1.)"

If a permanent building is constructed, fire department access requirements will be coordinated with the HFD, and para-transit vehicle and ADA access requirements will be coordinated with DTS and DCAB, including any modifications to the access road (Haukulu Road) leading from the Wa'aloa Way gate. However, no permanent structures are currently planned for the Project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; the Project may include a small traditional meeting hale, pavilion, or similar open-air structure.

As stated previously, BWS does not anticipate increased visitation to the site resulting from this Project. However, should an increase in the number of visitations occur, BWS desires to be a "good neighbor" and is sensitive to potential neighbors' concerns about increased traffic and parking from the proposed Hālau Wai Mānoa. The BWS has a representative who attends every Mānoa Neighborhood Board meeting. In the event that a concern (on matters such as Project-related traffic or parking) is raised by a nearby resident, BWS will analyze the concern and provide an appropriate and timely response.

4.2.3 Current Public Transportation

TheBus, which is the public transportation service provided by the City and County of Honolulu, provides bus routes to and from the vicinity of the BWS Hālau Wai Mānoa. The nearest bus routes that service the general vicinity are Routes No. 5 (connecting Ala Moana Center to Mānoa Road) and No. 6 (connecting Pauoa Valley to Woodlawn Drive). However, the closest bus stop to the site is located on Mānoa Road opposite Kumuone Street, and requires an approximately 4-minute walk (0.2 miles) to/from the gate at the end of Wa'aloa Way. This bus stop is serviced by Route No. 5 (Figure 18).

Potential Impacts and Mitigation Measures
While it is possible that some school groups going to the BWS Hālau Wai Mānoa may utilize TheBus, it is unlikely that school groups will do so. No significant demand in TheBus ridership is anticipated as a result of the Proposed Project; as such, no increase in public transit demand is anticipated. As requested in the DTS's initial pre-consultation letter, O'ahu Transit Services (TheBus, TheHandi-Van) will be informed of Project activities which may affect public transit routes, schedules, or other activities in order to mitigate potential impacts to the City's transit services.

4.2.4 Future Public Transportation

The County is constructing a high-capacity transit (rail) corridor project between East Kapolei and Ala Moana. At the time of writing, trains are expected to be running between Aloha Stadium and

East Kapolei in late 2020, and the full rail line is expected to be operable through Downtown Honolulu and Ala Moana Center by 2025.

Potential Impacts and Mitigation Measures
The Proposed Project is not anticipated to have any impact on the City's future public transit infrastructure. After the rail line is operational, school groups who live west of Mānoa Valley, may have greater public transportation options (rail/bus) than currently available.

4.2.5 Bicycle Infrastructure

Permanent bicycle facilities are limited in the vicinity of Mānoa Valley and end near the University Avenue and Alaula Way. From the nearby intersection of University Avenue (Oʻahu Avenue)/East Mānoa Road, Oʻahu Avenue varies in width, presenting some safety concerns until the three-way intersection of Oʻahu Avenue/Mānoa Road/Lowrey Avenue. From the latter intersection, in the mauka direction Mānoa Road is fairly wide (even with on-street parking) until Waʻakaua Street. Bicyclists do have the option of storing their bicycles while riding TheBus Routes No. 5 and No. 6.

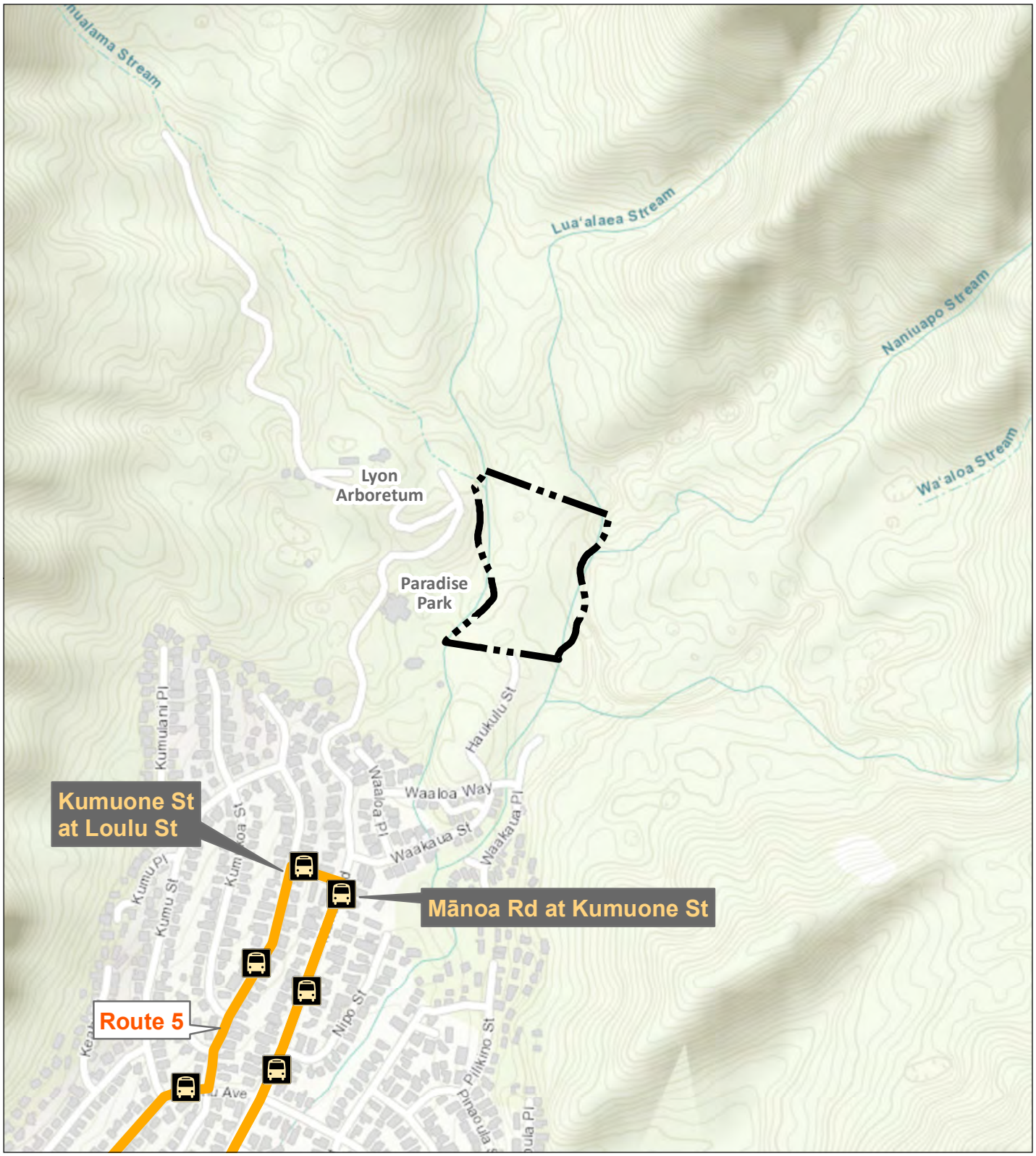
Potential Impacts and Mitigation Measures
The Project is not anticipated to have an impact on existing or future bicycle infrastructure. Bicyclists may access the Project Site via the Waʻaloa Way accessway. During the pre-assessment consultation process, DTS commented: "On-site bike racks and secure moped parking for the employees, volunteers, and visitors should be included and located on the site plan" (refer to letter in Appendix A). To encourage bicycling, the Hālau Wai Mānoa may consider providing bike racks on-site.

4.3 NOISE

Existing noise levels at and immediately adjacent to the proposed Project Site are those typical of a natural environment, including wind through vegetation, bird vocalizations, and stream flow, as well as louder cars, motorcycles, and occasional overflights by aircraft.

Potential Impacts and Mitigation Measures
Construction of the meeting hale and occasional vegetation-clearing activities for the Project may create temporary noise impacts. Should the hale be built using traditional methods, in comparison to conventional buildings which rely on hammers or nail guns, the hale's building elements would be cut with adzes and latched together with twine. Invasive vegetation clearing activities may involve some motorized equipment such as chainsaws and weed trimmers during removal of the invasive albizia trees. Pursuant to Chapter 11-46, HAR, all Project activities must comply with all community noise controls.

Once in operation, the Project will not generate long-term noise, with the exception of the noise associated with typical operations at the proposed Hālau Wai Mānoa. Noise levels may elevate during visits by school groups, but this will occur during daylight hours. Because the noise generated as a result of the proposed Project represents no substantial change from current noise occurrences, no mitigation measures are proposed.



DATE: 7/8/2019

LEGEND

Project Site

Bus Route

Bus Stop

Figure 18
Public Transportation

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 200 400 800

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2017, 2018); ESRI Online Basemap.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

4.4 AIR QUALITY

The State of Hawai‘i has a reputation as having some of the best air quality in the nation. This superior air quality is largely a function of the predominant tradewinds blowing from the northeast. The typical tradewind pattern blows man-made and volcanic pollutants out from inland (mauka) areas toward the ocean. However, during non-tradewind periods, man-made and volcanic pollutants tend to accumulate on island impacting visibility (also known as “vog”).

Potential Impacts and Mitigation Measures
It is recognized that there is the potential for impacts to air quality during use of some motorized equipment such as chainsaws and weed trimmers and during removal of albizia trees. However, the use of such equipment will be of a short-term duration and will be dispersed by wind.

When grading occurs, an effective dust control plan will be implemented as necessary. All vegetation removal and grading activities will comply with the provisions of Title 11, Chapter 59, HAR related to Ambient Air Quality Standards and Section 11-60.1-33, HAR related to Fugitive Dust. Measures to control dust during various phases of vegetation removal include:

- Providing an adequate water source at the site prior to start-up vegetation removal activities;
- Irrigating the site during periods of drought or high winds;
- Landscaping and rapidly covering bare areas, including slopes, starting from the initial grading phase;
- Disturbing only the areas that are in the immediate zone of vegetation removal and grading to limit the amount of time that the areas will be subject to erosion;
- Providing adequate dust control measures during weekends, after hours, and before daily start-up of vegetation removal activities; and
- Installing silt screening in the areas of disturbance.

The Proposed Project is not likely to have any long-term impact on air quality in the immediate vicinity. No long-term mitigation measures are proposed.

4.5 VISUAL RESOURCES

The proposed BWS Hālau Wai Mānoa will be located on a portion of the BWS property that is not visible from the nearest residences (Figure 2 and Figure 5). While the Proposed Project does include an above ground level structure, it will involve a meeting hale or similar open-air structure, built of natural materials.

Potential Impacts and Mitigation Measures
As the proposed improvements at BWS Hālau Wai Mānoa will involve a meeting hale built of natural materials, and will be surrounded by forested areas, no adverse impacts to any recognized view planes from the closest residences are anticipated. Because no visually adverse impacts are expected, no additional mitigation measures are proposed.

4.6 SOCIAL & ECONOMIC CHARACTERISTICS

Presently, the KF is utilizing the BWS property for a cultural farm "dedicated to taking care of native Hawaiian plants we need for life, for the practices and arts, for the healing, and feeding." On its website, KF reports that it provides: cultural education to school-aged children; removal of invasive species and planting of indigenous and endemic plants; farming (and selling of) of native food crops and medicinal plants; cultural training; and community service opportunities.

Potential Impacts and Mitigation Measures
Socio-economic impacts resulting from the Proposed Project are anticipated to be similar to those currently being provided at the site. The Proposed Project is conceptualized as a farm to demonstrate and promote the BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture.

The BWS Hālau Wai Mānoa would provide an alternative outdoor gathering space (e.g., a meeting hale or similar open-air structure for gathering out of the elements) for place-based, hands-on opportunities to learn about watersheds, forest health and watershed protection, water conservation, and sustainable resource management practices. Also, the Proposed Project would provide community volunteer opportunities/work days for watershed restoration and sustainable agriculture.

4.7 INFRASTRUCTURE AND UTILITIES

4.7.1 Water System

There is presently no connection to the BWS source, storage and transmission system. Irrigation water is provided by a diversion from Lua'alaea Stream. The current tenant on Parcel 20, Kumuola Foundation, is using an existing diversion #861 which was registered with the Commission of Water Resources in 1988-1989 by Mr. M. Miyashita (previous BWS tenant on Parcel 20 and 21). The diversion was in operation prior to BWS acquiring the property in 1949. The diversion is located off BWS property, which was common during that time to provide enough head to build pressure in the water lines. There is another existing diversion #639 under Mr. M. Koga (previous BWS tenant on Parcel 20), located near the top east corner of Parcel 20. Mr. Miyashita and Mr. Koga were past tenants of this land prior to BWS ownership and they remained tenants after BWS acquired the properties.

Potential Impacts and Mitigation Measures
During the pre-assessment consultation process, the BWS provided the following comments (refer to letter in Appendix A):

> "The existing water system cannot provide adequate fire protection to the proposed learning center development. The nearest fire hydrant is located approximately 1,300 linear feet away from the parcel along Waaloa Way. If permanent structures are proposed, the developer will be required to extend the water line and install a fire hydrant within 350 linear feet of the parcel along Haukulu Road to provide a flow of 1,000 gallons per minute.

> "The developer should investigate the feasibility of using non-potable water for irrigation of the proposed learning center and gardens. The evaluation of the feasibility of nonpotable source should be provided to the Board of Water Supply for review. If non-potable water is either unavailable or infeasible, a report of the investigation including proposed irrigation demands should be submitted to us before we will consider the use of potable water.
>
> "Water conservation measures are recommended for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.
>
> "The construction drawings should be submitted for our review, and the construction schedule should be coordinated to minimize impact to the water system.
>
> "The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department."

The Proposed Project will utilize the existing diversion, and the Project's irrigation water use is not anticipated to exceed that of the current tenant. If needed, the BWS will install a waterline to the Project Site for fire flow/hydrant. BWS records show there is an old, inactive water meter to the Project Site that may be utilized for possible potable water service in the future. The Project will incorporate water conservation measures, which may include water-efficient irrigation practices, rain catchment, drought tolerant plants, xeriscape landscaping, removal of high-water-use invasive plants, and utilization of a composting toilet. No significant impacts to the BWS water system are anticipated. No mitigation measures are proposed.

During the pre-assessment consultation process, the State of Hawai'i Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM) provided the following comments (refer to Section 3.6 and Appendix A):

- "A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel."
- "A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered."
- "A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water."
- "The DEA should discuss the projected water demands for the project, both potable and non-potable, and provide the calculations used to estimate demands. The DEA should identify the proposed water source(s) to support the project, and include a discussion of the potential impacts on water resources, other public trust uses of water, and describe any proposed mitigation measures."

As the Proposed Project will not involve any stream channel alterations or additional/expanded stream diversions, no Stream Channel Alteration Permits, Stream Diversion Works Permits, or Petitions to Amend the Interim Instream Flow Standards are anticipated for the Proposed Project.

According to recent consultations with the U.S. Army Corps of Engineers (USACE), it appears that since the project has no intentions of discharge of dredged or fill material into fresh water systems, wetlands, and/or streams, the project will not have any impacts to Waters of the U.S. (Refer to correspondence in Appendix H.)

Pursuant to Article IX, Section 1 of the Hawai‘i State Constitution, all public natural resources are held in trust by the State for the benefit of the people. Such natural resources include land, water, minerals and energy resources. Based upon the analyses contained and referenced in this assessment, the Proposed Project will be consistent with the public trust doctrine. No adverse impact on surface waters will be generated by the Project. The land and water resources of the Project area will be put to reasonable and beneficial uses which are consistent with public trust principles. The public’s future use of resources is not being compromised by the Proposed Project.

During the pre-assessment consultation process, the State of Hawai‘i Department of Hawaiian Home Lands (DHHL) provided the following comments (refer to letter in Appendix A):

> “DHHL generally supports this project in its efforts to protect and educate the broader public in water conservation needs. DHHL's own Water Policy Plan's priority policies are to:
>
> 1. “Expressly determine and plan for future water needs and actively participate in broader water management, use and protection efforts in Hawai‘i in order to secure water.
> 2. “Aggressively exercise, reclaim, and protect Hawaiian home land water kuleana.
> 3. “Develop, manage, and steward water in a manner that balances cost, efficiency measures, and Public Trust uses in the short and long term.
> 4. “Affirmatively communicate our decisions, our reasoning, and our performance in managing, stewarding, and using water before and after making major water decisions.”

During the Draft EA public review period, CWRM provided the following comments (refer to letter in Appendix G):

- “We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.”
- “We recommend the use of alternative water sources, wherever practicable.”
- “We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.”

- "The report identifies existing registered stream diversions as the supply source for irrigation needs and an old, inactive water meter that may be used for potable water service. However, no estimates for potable and non-potable needs are provided. As stated in our earlier comments during the pre-assessment consultation process, the DEA should discuss the projected water demands for the project, both potable and non-potable, and provide the calculations used to estimate demands."

As mentioned above, the Project will incorporate water conservation measures, which may include water-efficient irrigation practices, rain catchment, drought tolerant plants, xeriscape landscaping, removal of high-water-use invasive plants, and a proposed composting toilet, as well as landscape irrigation conservation best management practices (BMPs). No permanent structures are currently planned for the Project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; a small traditional meeting hale, pavilion, or similar open-air structure may also be planned for the Project Site. The water use will be limited to the water provided by the existing Lua'alaea Stream diversion #861, which has three pipes with the following flows: 5g/11.83s = 0.423g/s; 5g/9.17s = 0.545g/s; and 5g/7.94s = 0.630g/s. Based on gallon/second conversions, the estimated flow rate of this diversion is 138,000 gallons per day. No potable water demands have been identified at this time.

4.7.2 Wastewater System

There is presently no connection to the City and County of Honolulu wastewater collection, treatment and disposal system. Wastewater is currently collected via a camping toilet and disposed of by the current tenant off-site. Portable toilets ("porta-potties") are occasionally rented by the current tenant for certain large groups.

Potential Impacts and Mitigation Measures
The Proposed Project will include a composting toilet; therefore it is not anticipated to have any impact on the County sewer system. No mitigation measures are proposed.

During the pre-assessment consultation process, the Department of Planning and Permitting (DPP) provided the following comment: "Property has no sewer service. Privately owned wastewater treatment systems are under the jurisdiction of the State Department of Health" (refer to letter in Appendix A).

During the pre-assessment consultation process, the BWS commented: "All proposed developments shall verify with the State Department of Health in regards to wastewater disposal systems that are allowable within the 'No Pass Zone'" (refer to letter in Appendix A).

The proposed composting toilet would require the review and approval by the State Department of Health (DOH), pursuant to Section 11-62-35, HAR, related to Other Individual Wastewater Systems.

4.7.3 Drainage System

The Project Site is vegetated and the ground contours slope gradually down to the south while also dropping off sharply toward the streams along the western and eastern boundaries of the

property. Stormwater infiltrates on site, with surface runoff likely draining towards Lua‘alaea Stream to the east and Waihī Stream to the west.

Potential Impacts and Mitigation Measures

During any site grading, be it for invasive vegetation removal or for farming, temporary best management practices (BMPs) for stormwater management and erosion control will be implemented to minimize the impact of the Proposed Project to the nearby streams while maintaining on-site infiltration and preventing siltation from storm events. Examples of temporary BMPs include biosocks, silt fences, and covered stockpiles. Following any site grading, exposed soils will be planted over to control erosion. Any grading activity will comply with all applicable federal, state, and county regulations for erosion, sedimentation, dust control, and water quality.

Long-term impacts will be mitigated by the implementation of Low-Impact Development (LID) measures to manage stormwater at this site before it is returned to the natural system. Examples of possible LID measures include bioretention areas, soil amendments, rain gardens, rainwater catchment, and minimization of impervious surfaces. The accessways will incorporate measures to prevent erosion and runoff. Where feasible, permeable surfaces may be incorporated.

During the Draft EA public review period, the Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM) wrote (refer to letter in Appendix G):

> “We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/”

The Project’s lo‘i kalo will improve water quality in the streams by serving as sedimentation basins to mitigate stormwater runoff and erosion, and the ongoing removal of invasive species and restoration of native forest and vegetation would likewise aid in reducing stormwater impacts while improving water quality. As noted by the State of Hawai‘i Office of Planning (OP) in their pre-assessment consultation letter (Appendix A):

> “…the [Project] may be used as a base for restoration efforts by community groups in Manoa Valley. Watershed restorative actions by these groups may include the removal of invasive species, forest restoration, and erosion control/soil stabilization. These actions are known to be effective in the reduction of polluted runoff and the deposit of erosion related sediment loadings in streams and marine areas.”

In addition, OP wrote (see Section 3.6 and Appendix A):

- “Pursuant to HAR§ 11-200-10(6) - identification and summary of impacts and alternatives considered; to ensure that the surface water and nearshore environment downslope of the project remain protected, the negative effects of storm water inundation from this project should be evaluated in the Draft EA.”

- "Issues that may be examined include, but are not limited to, project site characteristics in relation to flood and erosion prone areas, the potential vulnerability of surface water resources, the soil absorption characteristics in the project area, and the amount of permeable versus impervious surfaces. Assessing the need for mitigation measures in the protection for surface water resources and the coastal ecosystem should take this into account, pursuant to HAR § 11-200-10(7)."
- "The Draft EA should contain an analysis on stormwater runoff mitigation, erosion control, and the preservation of water quality."
- "OP has developed the Stormwater Impact Assessment to assist in this matter. This document can serve as a resource to identify and evaluate hydrology stressors, evaluate the sensitivity of aquatic and riparian resources to this threat, and develop management measures to control runoff occurrences. Mitigation measures and best management practices listed in our Stormwater Impact Assessment can be applied to water runoff mitigation strategies, and aide in the planning to meet these environmental threats."

4.7.4 Electrical and Telecommunications Systems

The Project Site is not served by the Hawaiian Electric Company (HECO) for electrical service, Hawaiian Telcom for telephone service, or Spectrum (formerly Oceanic Time Warner Cable) for cable TV and internet service.

Potential Impacts and Mitigation Measures
As the Proposed Project will not require electricity or telecommunications service, it is not anticipated to have any impact on electrical or telecommunications systems or infrastructure. During the pre-assessment consultation process, Spectrum (Charter Communications) wrote: "At this time Spectrum does not have any proposed projects in the area. We [see] no conflict with your proposed project. Our service in the area is aerial" (Appendix A).

During the Draft EA public review period, Spectrum wrote:

> "According to our drawings, we should not be affected by this project. However, we are not responsible for any home owners that may have constructed underground conduits for our services. Contractors will be responsible to contact One call center to identify any underground facilities" (refer to letter in Appendix G).

Also during the Draft EA public review period, HECO wrote:

> "Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities" (refer to letter in Appendix G).

4.7.5 Solid Waste

Non-recyclable garbage is collected and hauled off-site by the current tenant for eventual collection and disposal by the City and County of Honolulu.

Potential Impacts and Mitigation Measures
Since the materials used in the construction of meeting hale will be natural (trees, vines, grasses, etc.), any leftover materials will be akin to "green waste" and likely to be used for mulching after processing. Solid waste that cannot be recycled will be disposed of at landfills, the incinerator, or transfer stations. A waste-to-energy combustor, H-POWER (Honolulu Program of Waste Energy Recovery) located at the Campbell Industrial Park incinerates about 1,800 tons of combustible waste per day. The electricity generated is bought by Hawaiian Electric Company. Currently, the H-POWER facility receives all residential and commercial packer truck wastes on the island. Waste contractors will be asked to submit disposal receipts and invoices to ensure proper disposal of waste. The proposed improvements will also comply with the provisions of Chapters 11-260 to 11-280, HAR, relating to hazardous waste, if applicable.

In the long-term, the Project is not anticipated to have a significant impact on solid waste services. The farm will keep non-recyclable solid waste to a minimum. It is recommended that school and volunteer groups practice zero-waste when visiting. No mitigation measures are proposed.

4.8 PUBLIC SERVICES AND FACILITIES

During the Draft EA public review period, the City and County of Honolulu Department of Design and Construction (DDC) wrote that it "does not have any comments at this time", and the Department of Facility Maintenance (DFM) wrote: "We have no comments at this time, as we do not have any facilities or easements on the subject property" (refer to Appendix G). Also during the Draft EA public review period, the State of Hawaiʻi Department of Accounting and General Services (DAGS) wrote: "The proposed project does not impact any of the Department of Accounting and General Services' existing facilities in the area, and we have no comments to offer at this time" (Appendix G).

4.8.1 Police Protection

The site is located within Honolulu Police Department (HPD) District 7. District 7 covers the area from Punahou Street to Makapuʻu Point and from the many valleys in the Koʻolau Range to the beaches from Diamond Head to Sandy Beach, which is a total area of approximately 40 square miles. The BWS Hālau Wai Mānoa is located in Sector 1, which covers Mānoa Valley and Mōʻiliʻili. The nearest police station is the Alapaʻi Police Headquarters, located approximately 4.6 miles away (Figure 19).

Potential Impacts and Mitigation Measures
During the pre-assessment consultation process, the HPD stated:

> "The HPD also has concerns with the security of the area when the project is completed, as there will be an increase in the transient population. The HPD would like to be involved in any future planning for this project to reassess its impact on police operations" (see letter in Appendix A).

During the stakeholder meetings, the issue of security was also raised, particularly regarding trespassing, theft, vandalism, and squatters. Possible mitigation measures were discussed, such as installing security cameras, signage, and fencing. Another suggestion by stakeholders was to

provide living quarters for an onsite manager to provide around the clock oversight (refer to Section 8.0 below, as well as the Summary of Stakeholder Meetings in Appendix A). The implementation of the Proposed Project will require further discussion with stakeholders (including the HPD) regarding security for the site. Appropriate security measures will be implemented should trespassing, theft, or vandalism become an issue.

The Proposed Project is not anticipated to significantly increase the number of visitors to the site above current levels as operated by Kumuola Foundation. As such, once operational, the Project is not anticipated to create an increased demand on police protection services.

During the Draft EA public review period, the HPD wrote:

> "The Honolulu Police Department (HPD) anticipates short-term impacts to pedestrian and vehicular traffic during the construction phase of the project. The HPD recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor to facilitate the flow of traffic during the construction phase of the project. In spite of mitigation measures, construction-related dust, noise, traffic, and odors would likely cause an increase in calls for police service to the area. However, once completed, there should be no impact on the facilities or operations of the HPD" (refer to letter in Appendix G).

As mentioned in Section 4.2.1 above, as currently envisioned, construction is limited to a traditional meeting hale (or similar open-air structure), consisting of natural materials, some of which may be harvested on-site. Vans or pick-up trucks will likely haul traditional hale building materials to the Project Site. There is a very low likelihood that construction at the Project Site would temporarily disrupt vehicular traffic in the surrounding neighborhood. The area Neighborhood Board will be kept apprised of the details of any construction project, and the impacts, if any, that project may have on the adjoining local street area network. However, no work is presently proposed on surrounding streets.

While not currently anticipated, should there be any construction, mitigation measures will be implemented to minimize the impacts of construction-related noise, dust, odors, and traffic (as discussed in Sections 4.2.1, 4.3, and 4.4 above).

4.8.2 Fire Protection

First response to any on-site emergency would originate from the Mānoa Fire Station Fire Station 22 located about 1.9 miles to the south of the Project Site (Figure 19). An engine company is posted at the station. A City and County of Honolulu emergency ambulance is also posted at the Mānoa Fire Station.

Potential Impacts and Mitigation Measures

The Proposed Project is not anticipated to create a significant increase in demand on fire protection services. During both the pre-assessment consultation process and the Draft EA public review period, the Honolulu Fire Department (HFD) provided the following comments (refer to letters in Appendices A and G):

- "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; 2012 Edition, Section 18.2.3.2.2.)"

- "A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2012 Edition, Section 18.2.3.2.1.)"
- "A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45,720 millimeters) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; 2012 Edition, Section 18.3.1, as amended.)"
- "Submit civil drawings to the HFD for review and approval."

During the Draft EA public review period, HFD added the following comment (please refer to letter in Appendix G):

- "The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1; 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.1.1.2, as amended)"

If a permanent building is constructed, fire department access requirements will be coordinated with HFD, and para-transit vehicle and ADA access requirements will be coordinated with DTS and DCAB, including any modifications to the access road (Haukulu Road) leading from the Wa‘aloa Way gate. However, no permanent structures are currently planned for the Project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; a small traditional meeting hale, pavilion, or similar open-air structure may also be planned for the Project Site.

During the pre-assessment consultation process, the BWS provided the following comments regarding fire protection (refer to letter in Appendix A):

> "The existing water system cannot provide adequate fire protection to the proposed learning center development. The nearest fire hydrant is located approximately 1,300 linear feet away from the parcel along Waaloa Way. If permanent structures are proposed, the developer will be required to extend the water line and install a fire hydrant within 350 linear feet of the parcel along Haukulu Road to provide a flow of 1,000 gallons per minute. …"
>
> "The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department."

On-site fire protection requirements will be coordinated with the Fire Prevention Bureau of HFD. As mentioned above, the Proposed Project will not involve a permanent building, but rather a small

traditional meeting hale or similar open-air structure. Should the hale be built according to the guidelines and requirements specified in Chapter 16, Article 12 of the Revised Ordinances of Honolulu (ROH) pertaining to Indigenous Hawaiian Architecture, then no fire protection would be required for the structure if it is located at least 100 feet from any existing structure or property line (pursuant to ROH Sec. 16-12.8). However, if needed, BWS will extend the existing water line to the Project Site for fire flow/hydrant.

4.8.3 Health Care Services

Health care facilities that provide emergency services located near the Project Site include Kapiolani Medical Center, Straub Medical Center and The Queen's Medical Center. A variety of health care providers can be found nearby in urban Honolulu (Figure 19).

Potential Impacts and Mitigation Measures
Although there may be an unavoidable and occasional need for emergency health care services by school groups, volunteers, or employees during the operation of the proposed BWS Hālau Wai Mānoa, the Proposed Project is not expected to significantly increase the need for emergency service, and is not expected to have a long-term adverse impact on emergency medical providers or their ability to service the community. No mitigation measures are proposed.

4.8.4 Recreational Facilities

Other recreational facilities near the BWS Hālau Wai Mānoa include: Lyon Arboretum, Mānoa Falls Trail, Waʻahila Ridge State Recreational Area, Puʻu ʻUalakaʻa State Wayside, and Mānoa Valley District Park (Figure 19).

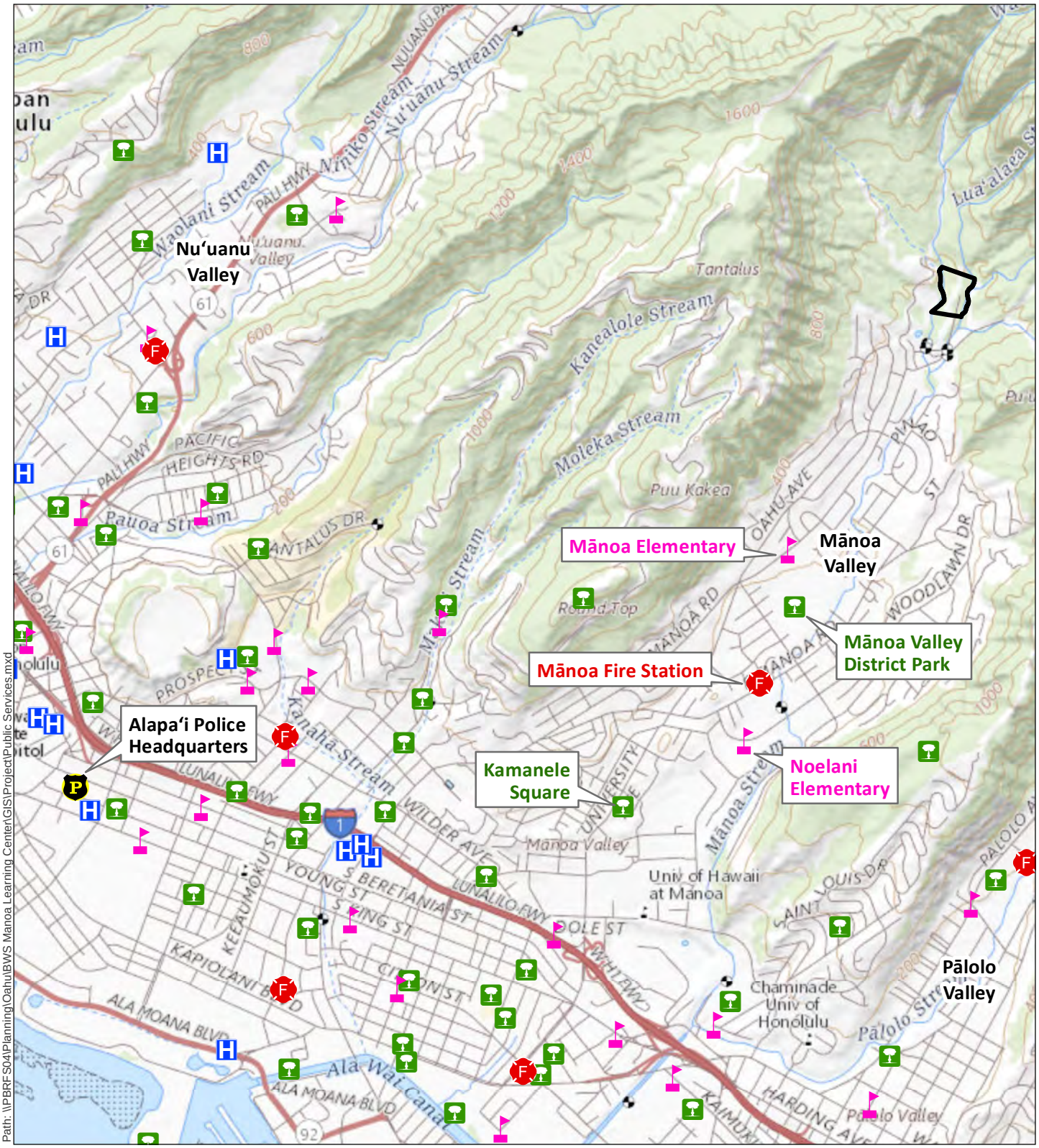
Potential Impacts and Mitigation Measures
The Proposed Project is not anticipated to displace any existing facilities or create any additional demand on recreational facilities in the vicinity of the Project. During the pre-assessment consultation process, the City and County of Honolulu Department of Parks and Recreation (DPR) stated: "The Department of Parks and Recreation has no comment. ... the proposed project will have no impact on any program or facility of the Department" (Appendix A).

4.8.5 Schools

A number of public and private schools are located in Mānoa Valley including: Mānoa Elementary School, Noelani Elementary School, University of Hawaiʻi at Mānoa, Punahou School, Maryknoll School, University Laboratory School and Hōkūlani Elementary School (Figure 19).

Potential Impacts and Mitigation Measures
The Project is not anticipated to have any impact on schools in the surrounding areas. The Proposed Project does not involve residential development and as a result will not introduce new school-aged residents that need to be provided public education by the State Department of Education. If the proposed Hālau Wai Mānoa is implemented, it will provide a learning experience for area schools on the topics of water and watershed management, Hawaiian culture and environmental sustainability.

During the pre-assessment consultation period, the State of Hawai‘i Department of Human Services (DHS), which licenses child care facilities throughout the state, wrote: “The Department of Human Service [sic] (DHS) has reviewed the site and mission for the [Project] and has no comment at this time” (Appendix A). During the Draft EA public review period, DHS wrote: “The DHS has no additional comments to our previous comment which were noted in the [Draft EA]” (please refer to letter in Appendix G).



DATE: 7/8/2019

LEGEND

- Project Site
- Police Station
- Fire Station
- Hospital
- Public School
- Park

Figure 19
Public Services

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 750 1,500 3,000

PBR HAWAII & ASSOCIATES, INC.

Source: State DOE (2017); State DLNR (2013); City and County of Honolulu (2017); USGS The National Topo Base Map
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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5.0 LAND USE CONFORMANCE

State and County land use plans and policies and required permits and approvals relevant to the Proposed Project are described below.

5.1 STATE OF HAWAIʻI

5.1.1 State Land Use Law, Chapter 205, Hawaiʻi Revised Statutes

The State Land Use Law (Chapter 205, HRS), establishes the State Land Use Commission (LUC) and authorizes this body to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, or Conservation. These districts are defined and mapped by the State Land Use Commission in order to ensure compatibility with neighboring land uses and protection of public health.

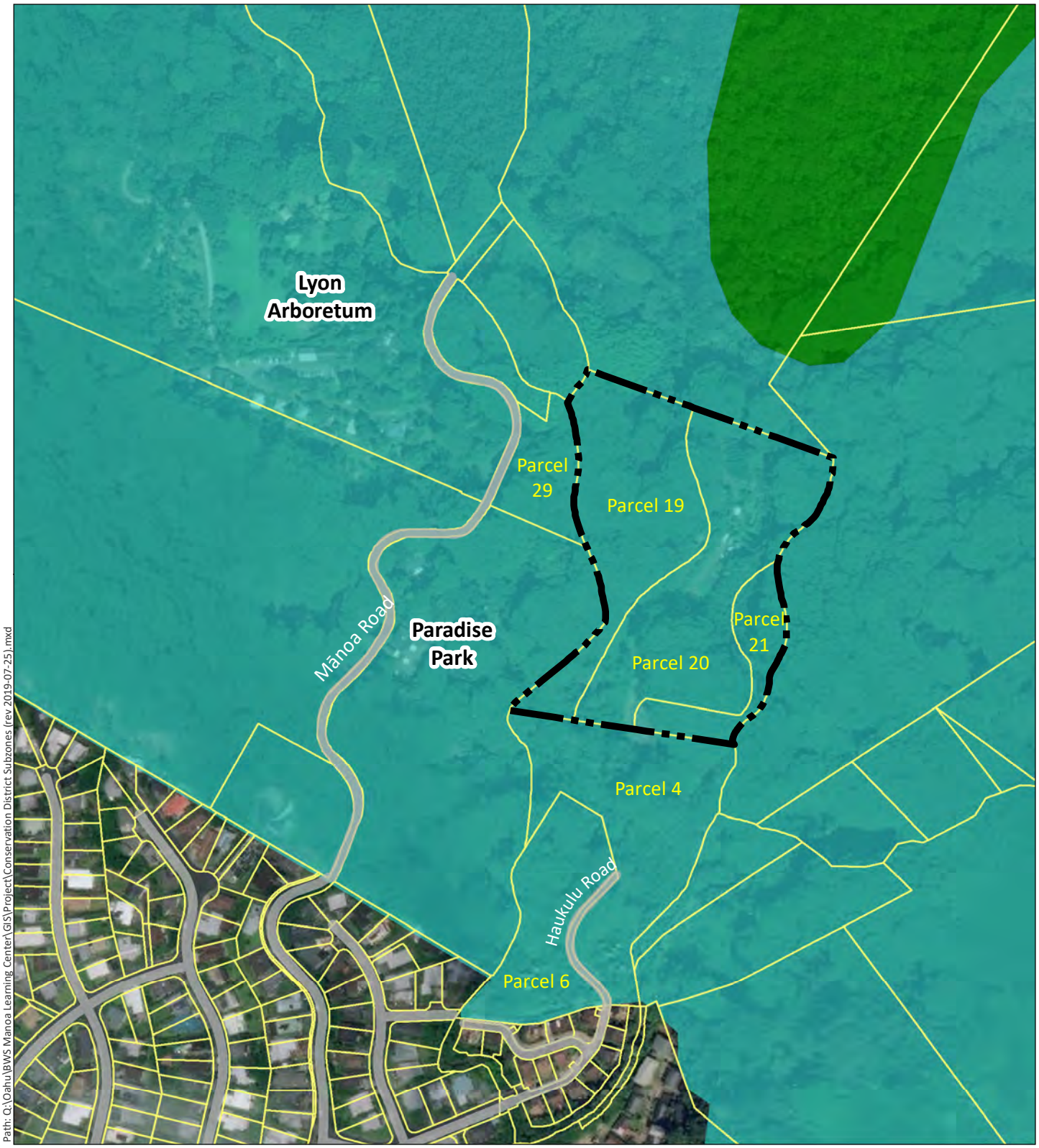
The proposed improvements are located within the State Conservation Land Use District (Figure 20). Uses that are permissible within the State Conservation Land Use District are detailed in Hawaiʻi Administrative Rules (HAR)13-5. The permissible uses are dependent on the "subzone" designation(s) of the portion(s) of the property within the State Conservation Land Use District. The Project Site lies entirely within the Conservation District Resource subzone.

During the pre-assessment consultation process, the Department of Land and Natural Resources (DLNR) Office of Conservation and Coastal Lands (OCCL) acknowledged that the Project Site lies within the Conservation District Resource subzone, and made the initial preliminary determination that the Proposed Project is "An Education Center [which] is an identified land use that could be applied for within the Conservation District pursuant to the Hawaii Administrative Rules (HAR), §13-5-22, P-6 PUBLIC PURPOSE USES (D-1)" (refer to letter in Appendix A-2).

Subsequent to discussions with stakeholders, BWS is clarifying that the primary land use is proposed to be agricultural (i.e., a farm to demonstrate and promote sustainable resource and watershed management practices), with a cultural and natural resource management educational component.

Upon further review of the proposed Hālau Wai Mānoa, OCCL later wrote in a letter dated January 9, 2020 (refer to letter in Appendix J):

> "The Hālau Wai Mānoa proposal appears to be an identified land use pursuant to HAR, §13-5-24 R-8 BOTANICAL GARDENS, PRIVATE PARKS, AND NATURE CENTERS (D-1) For a profit or non-profit establishment featuring plants or other natural resources and offering tours or other nature-based, outdoors educational and recreational activities, primarily during daylight hours. Facilities may include access road, restrooms, shelters, and not more than one structure for housing, administration, and maintenance not to exceed 1,200 square feet, under a management plan approved simultaneously with the permit, is also required. This proposed use would require the filing of a Conservation District Use Application (CDUA) and all required attachments such as an Environmental Assessment; HRS, 6E-8 compliance; and a Management Plan for a Board permit. Therefore, to allow, modify or deny the proposed use would be at the discretion of the Board of Land and Natural [Resources]."



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DATE: 7/25/2019

LEGEND

- Project Site
- Roadway
- TMK Parcels

Conservation District Subzones

- Protective Subzone
- Resource Subzone

Figure 20

State Land Use Conservation District Subzones

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: State Land Use Commission (2011); City and County of Honolulu (2017, 2018); ESRI Online Basemaps.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

> "It is most likely that a Public Hearing would be required. The OCCL strongly suggest community conversations with community organizations and the neighbors be initiated."

As stated by OCCL, the Proposed Project will require the filing of a Conservation District Use Application (CDUA) and all required attachments, including this EA. The State Historic Preservation Division (SHPD) will be advised of the potential effects, if any, the Proposed Project may have on historic properties pursuant to Chapter 6E, HRS, as part of the CDUA. An AIS has been conducted and is included in Appendix C of this EA. The BWS will be issuing a request for proposals to select an appropriate non-profit organization to operate the Hālau Wai Mānoa. The organization will be required to develop a management plan as a requirement of the request for proposals.

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

The Coastal Zone Management (CZM) Area, as defined in Chapter 205A, HRS, includes all the lands of the State. Therefore, the proposed improvements are within the CZM Area.

The CZM Program aims to provide recreational opportunities, protect historic resources, protect scenic and open space resources, protect coastal ecosystems, provide facilities for economic development, reduce hazards, and manage development.

During the pre-assessment consultation process, the State of Hawai'i Office of Planning (OP) wrote (see letter in Appendix A):

- "Pursuant to HRS § 205A-4, in implementing the objectives of the CZM program, agencies shall give full consideration to ecological, cultural, historic, esthetic, recreational, scenic, open space values, coastal hazards, and economic development."
- "As an action proposed by a government agency, HRS § 205A-5(b) maintains that the BWS is required to enforce the objectives and policies of the Hawaii CZM Program, HRS § 205A-2. The Draft EA should discuss the project's consistency with this statute."

The table below discusses the applicability of CZM Program objectives and policies (as described in §205A-2, HRS) to the proposed Project:

Table 1: Coastal Zone Management Act, Chapter 205A, HRS

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
RECREATIONAL RESOURCES			
Objective: *(A) Provide coastal recreational opportunities accessible to the public.*			
Policies:			
(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 replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such			**X**

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;			
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			**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 nonpoint 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; and			**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**
Discussion: The Proposed Project is an educational resource in the CZMA. A Project goal is to support minimization of non-point source pollution delivered to nearshore resources. The water quality standards are further discussed under the Coastal Ecosystems objectives and policies.			
HISTORIC RESOURCES			
Objective: *(A) Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.*			
Policies:			
(A) Identify and analyze significant archaeological resources;	**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: An Archaeological Inventory Survey (AIS) for the Project Site has been conducted, and will be reviewed by SHPD (see Section 4.1.1 above and Appendix C). As a result of the fieldwork for the AIS, eight archaeological sites totaling thirty-one individual features were recorded. All of the sites appear to date from the Historic Period, and include four agricultural complexes (SIHP Sites 50-80-14-08769; 08770; 08771; and 08774), an ‘auwai (SIHP Site 50-80-14-08772), man-made cave shelter (SIHP Site 50-80-14-08773), roadway segments (SIHP Site 50-80-14-08775), and a middle twentieth-century refuse dump (SIHP Site 50-80-14-08776). While it was shown that all of the sites suffer varying degrees of reduced integrity as a result of impacts from invasive vegetation, all of the sites do retain sufficient aspects of location, design, setting, materials, workmanship, feeling, and association to be evaluated as being significant under Criterion d for the information that has been collected from the sites relative to middle nineteenth-century through middle twentieth-century land use practices. Given the nature of the proposed land use within the study area (the development of the Hālau Wai Mānoa), it is the archaeologist’s recommendation that all of the sites be preserved; and that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the Hālau Wai Mānoa. It is not the intention that such preservation will make these sites off-limits to appropriate use, or conversely that there should be any obligation to proactively protect the sites against the ravages of vegetation growth. Preservation can be passive and/or proactive and may include further archaeological study, restoration and reuse of the sites, as well as interpretation.			

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Based on the results of the AIS, no adverse impacts to archeological resources during construction are anticipated as long as the identified archaeological sites are not disturbed. Should any archaeological or cultural remains be encountered during construction, all work in the immediate vicinity of the find will cease and the State Historic Preservation Division will be contacted for establishment of appropriate mitigation in accordance with Chapter 6E, Hawai‘i Revised Statutes.			
SCENIC AND OPEN SPACE RESOURCES			
Objective: *(A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*			
Policies:			
(A) Identify valued scenic resources in the coastal zone management area;	**X**		
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;	**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 Proposed Project is not located near the shoreline or is coastal dependent, and will not alter views towards the Ko‘olau Mountain Range or Tantalus.			
COASTAL ECOSYSTEMS			
Objective: *(A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*			
Policies:			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;	**X**		
(B) Improve the technical basis for natural resource management;	**X**		
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;	**X**		
(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 nonpoint source water pollution control measures.	**X**		
Discussion: The Proposed Project is anticipated to reduce impacts to the coastal ecosystem, through implementation of Low Impact Development techniques that manage stormwater in a way that better replicates natural systems, thereby slowing the flow of storm runoff from the site and reducing pollutants in the process. Additionally, the Proposed Project will provide school groups with education in conservation ethic, environmental stewardship, and natural resource management.			
ECONOMIC USES			
Objective: *(A) Provide public or private facilities and improvements important to the State's economy in suitable locations.*			
Policies:			
(A) Concentrate coastal dependent development in appropriate areas;			**X**
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and			**X**

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:			
(i) Use of presently designated locations is not feasible;			**X**
(ii) Adverse environmental effects are minimized; and			**X**
(iii) The development is important to the State's economy.			**X**
Discussion: These policies are not applicable because the Proposed Project is not coastal or shoreline dependent or located in such areas.			
COASTAL HAZARDS			
Objective: *(A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.*			
Policies:			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;			**X**
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;			**X**
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	**X**		
(D) Prevent coastal flooding from inland projects.	**X**		
Discussion: The Proposed Project is not in the tsunami evacuation zone, or should be impacted by storm waves, stream flooding, erosion, subsidence and pollution. Natural hazards were discussed in section 3.4 of this EA. Because the Project does not involve alterations to the floodway, nor does it involve new residential buildings or of modern construction materials, it is not anticipated to have any impact or any deleterious effects on natural hazard conditions. The use of LID techniques to manage stormwater at the Project Site will help prevent coastal flooding from this inland project.			
MANAGING DEVELOPMENT			
Objective: *(A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.*			
Policies:			
(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**		
Discussion: This EA discusses potential impacts and mitigation measures of the Proposed Project and will provide an opportunity for input during the Draft EA Public Comment period.			
PUBLIC PARTICIPATION			
Objective: *(A) Stimulate public awareness, education, and participation in coastal management.*			
Policies:			
(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**

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.			**X**
Discussion: This EA discusses potential impacts and mitigation measures of the Proposed Project and will provide an opportunity for input during the Draft EA Public Comment period.			
BEACH PROTECTION			
Objective: *(A) Protect beaches for public use and recreation.*			
Policies:			
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;	**X**		
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and			**X**
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.			**X**
(D) 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**
(E) 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: Since the Proposed Project is located miles away from the shoreline, it has no relationship to beach protection or access.			
MARINE RESOURCES			
Objective: *(A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*			
Policies:			
(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**
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and			**X**
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.			**X**
Discussion: The use of LID techniques to manage stormwater at the Project Site is a step toward ensuring marine and coastal resources are both ecologically sound and economically beneficial.			

5.1.3 Hawai‘i State Planning Act, Chapter 226, Hawai‘i Revised Statutes

The Hawai‘i State Plan, Chapter 226 HRS (2007) provides guidelines for the future growth of the State of Hawai‘i. The Hawai‘i State Plan identifies goals, objectives, policies, and priorities for allocating the State's resources, including public funds, services, human resources, land, energy, and water. The plan was enacted to achieve "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."

During the pre-assessment consultation process, the State of Hawai‘i Office of Planning (OP) wrote (see letter in Appendix A):

> "HAR§ 11-200-10(4) requires Draft and Final Environmental Assessments to provide a general description of the action's technical, economic, social, and environmental characteristics. The Draft EA should provide a discussion on the project and its ability to meet State goals and priorities as detailed in HRS Chapter 226."

The following tables outline the Proposed Project's conformance with each theme, goal, objective, policy, and guideline of the Hawai‘i State Plan.

5.1.3.1 Hawai‘i State Plan, Part I: *Overall Theme, Goals, Objectives and Policies*

Table 2: Hawai‘i State Plan, Chapter 226, HRS - Part I

HAWAI‘I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-1: Findings and Purpose			
HRS § 226-2: Definitions			
HRS § 226-3: Overall Theme.			
Hawai‘i's people, as both individuals and groups, generally accept and live by a number of principles or values which are an integral part of society. This concept is the unifying theme of the State Plan. The following principles or values are established as the overall theme of the Hawai‘i State Plan: *(1) Individual and family self-sufficiency refers to the rights of people to maintain as much self-reliance as possible. It is an expression of the value of independence, in other words, being able to freely pursue personal interests and goals. Self-sufficiency means that individuals and families can express and maintain their own self-interest so long as that self-interest does not adversely affect the general welfare. Individual freedom and individual achievement are possible only by reason of other people in society, the institutions, arrangements and customs that they maintain, and the rights and responsibilities that they sanction.* *(2) Social and economic mobility refers to the right of individuals to choose and to have the opportunities for choice available to them. It is a corollary to self-sufficiency. Social and economic mobility means that opportunities and incentives are available for people to seek out their own levels of social and economic fulfillment.* *(3) Community or social well-being is a value that encompasses many things. In essence, it refers to healthy social, economic, and physical environments that benefit the community as a whole. A sense of social responsibility, of caring for others and for the well-being of our community and of participating in social and political life, are important aspects of this concept. It further implies the aloha spirit--attitudes of tolerance, respect, cooperation and unselfish giving, within which Hawai‘i's society can progress.* *One of the basic functions of our society is to enhance the ability of individuals and groups to pursue their goals freely, to satisfy basic needs and to secure desired socio-economic levels. The elements of choice and mobility within society's legal framework are fundamental rights. Society's role is to encourage conditions within which individuals and groups can approach their desired levels of self-reliance and self-determination. This enables people to gain confidence and self-esteem; citizens contribute more when they possess such qualities in a free and open society.*			

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Government promotes citizen freedom, self-reliance, self-determination, social and civic responsibility and goals achievement by keeping order, by increasing cooperation among many diverse individuals and groups, and by fostering social and civic responsibilities that affect the general welfare. The greater the number and activities of individuals and groups, the more complex government's role becomes. The function of government, however, is to assist citizens in attaining their goals. Government provides for meaningful participation by the people in decision-making and for effective access to authority as well as an equitable sharing of benefits. Citizens have a responsibility to work with their government to contribute to society's improvement. They must also conduct their activities within an agreed-upon legal system that protects human rights.			
Discussion: The Proposed Project represents better stewardship of the Project Site and at the same time providing opportunities for environmental and cultural education.			
HRS § 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 fulfillment of the needs and expectations of Hawai'i's present and future generations.* *(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.* (3) *Physical, social and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring and of participation in community life.*			
Discussion: The Proposed Project includes measures to improve the physical environment through the replacement of invasive albizia trees and bamboo with native plants, and improved management of stormwater.			
HRS § 226-5: Objectives and policies for population.			
(a) Objective: *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) Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each county.			**X**
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			**X**
(3) Promote increased opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.			**X**
(4) Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population.	**X**		
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the 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: While the Proposed Project does not directly address the guidance of population growth, it will represent better management of the Project Site's land and water resources, while providing an opportunity for better public awareness of the importance of our limited natural resources.			

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-6: Objectives and policies for the economy in general.			
(a) Objectives: *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) Policies:			
(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**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.			**X**
(21) Foster a business climate in Hawai'i--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			**X**
Discussion: While the Proposed Project cannot be construed to be an economic development effort, implementation of the proposed project will have a secondary benefit of enhancing the Project Site's scenic beauty and Aloha spirit (welcoming students from urban Honolulu – and the general public – to a natural setting).			
HRS § 226-7: Objectives and policies for the economy – agriculture			
(a) Objectives: *Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*			
• *Viability of Hawai'i's sugar and pineapple industries.*			**X**
• *Growth and development of diversified agriculture throughout the State.*	**X**		
• *An agriculture industry that continues to constitute a dynamic and essential component of Hawai'i's strategic, economic, and social well-being.*			**X**
(b) Policies:			
(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**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			**X**
Discussion: The Proposed Project is conceptualized as a farm to demonstrate and promote the BWS's goals of watershed management, water conservation, forest restoration (including removal of invasive species such as albizia trees), lo'i restoration, and sustainable agriculture. By educating school groups and the public on sustainable agriculture and watershed management practices, Hālau Wai Mānoa is thus supportive of the State's policy to increase opportunities for an agricultural education and livelihood, while making best use of natural resources.			
HRS § 226-8: Objectives and policies for the economy – visitor industry			
(a) Objectives: *Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai'i's economy.*			
(b) Policies:			
(1) Support and assist in the promotion of Hawai'i's visitor attractions and facilities.			**X**
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people.			**X**
(3) Improve the quality of existing visitor destination areas by utilizing Hawai'i'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 Hawai'i's people.			**X**
(6) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the visitor industry.			**X**
(7) Foster a recognition of the contribution of the visitor industry to Hawai'i's economy and the need to perpetuate the aloha spirit.			**X**
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai'i's cultures and values.			**X**
Discussion: While nearly all of the above objectives do not apply as the Proposed Project is not intended to or cannot be construed to be a project for the visitor industry, one of the goals of the Proposed Project is to educate school groups and the general public that careful, sustainable management of natural resources can benefit traditional agricultural production.			
HRS § 226-9: Objective and policies for the economy – federal expenditures			
(a) Objective: *Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy.*			
(b) Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment.			**X**
(2) Promote Hawai'i's supportive role in national defense, in a manner consistent with Hawai'i'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 Hawai'i's economy.			**X**
(3) Promote the development of federally supported activities in Hawai'i that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai'i's environment.			**X**
(4) Increase opportunities for entry and advancement of Hawai'i's people into federal government service.			**X**
(5) Promote federal use of local commodities, services, and facilities available in Hawai'i.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i.			**X**
(7) Pursue the return of federally controlled lands in Hawai'i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			**X**
Discussion: The Proposed Project has no relation to the State's goals on federal expenditures.			
HRS § 226-10: Objectives and policies for the economy – potential growth and innovative activities.			
(a) Objective: *Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawai'i's economic base.*			
(b) Policies:			
(1) Facilitate investment and employment in economic activities that have the potential to expand and diversify Hawai'i's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors.			**X**
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawai'i through the export of services or products or substitution of imported services or products.			**X**
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements.			**X**
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity.			**X**
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus.			**X**
(6) Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people.			**X**
(7) Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.			**X**
(8) Accelerate research and development of new energy- related industries based on wind, solar, ocean, and underground resources and solid waste.			**X**
(9) Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new economic activities into the State.			**X**
(10) Provide public incentives and encourage private initiative to attract new industries that best support Hawai'i's social, economic, physical, and environmental objectives.			**X**
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research.			**X**
(12) Develop, promote, and support research and educational and training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i.			**X**
(13) Foster a broader public recognition and understanding of the potential benefits of new, or innovative growth-oriented industry in Hawai'i.			**X**
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawai'i's social, economic, physical, and environmental objectives.			**X**
(15) Increase research and development of businesses and services in the telecommunications and information industries.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation.			**X**
(17) Recognize and promote health care and health care information technology as growth industries.			**X**
Discussion: The Proposed Project has no relation to these objectives and policies.			
HRS § 226-10.5: Objectives and policies for the economy – information industry			
(a) Objective: *Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region.*			
(b) Policies:			
(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.			**X**
(9) Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.			**X**
Discussion: The Proposed Project has no relation to the State's goals on information and technology.			
HRS § 226-11: Objectives and policies for the physical environment – land-based, shoreline, and marine resources.			
(a) Objectives: *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) Policies:			
(1) Exercise an overall conservation ethic in the use of Hawai'i's natural resources.	**X**		
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	**X**		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	**X**		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	**X**		

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.	**X**		
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaiʻi.	**X**		
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			**X**
(8) Pursue compatible relationships among activities, facilities, and natural resources.	**X**		
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.	**X**		

Discussion: Implementation of the Proposed Project would be supportive of nearly all of these objectives and policies. The Proposed Project is conceptualized as a:

- Farm (with small ancillary structures) to demonstrate and promote the BWS's goals of watershed management, water conservation, forest and loʻi restoration, and sustainable agriculture;
- Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on loʻi, gardening/practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

HRS § 226-12: Objective and policies for the physical environment – scenic, natural beauty, and historic resources.			
(a) Objective: *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) Policies:			
(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: The Proposed Project will not alter views towards the Koʻolau Mountain Range or Tantalus, and will complement the natural beauty of upper Mānoa Valley. The Proposed Project will also preserve (either passively or proactively) significant archaeological, historic, and cultural resources as identified in the AIS.

HRS § 226-13: Objectives and policies for the physical environment – land, air, and water quality.			
(a) Objectives: *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) Policies:			
(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**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.			**X**
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.			**X**
(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.			**X**
(7) Encourage urban developments in close proximity to existing services and facilities.			**X**
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.	**X**		
Discussion: Implementation of the Proposed Project would be supportive of many of these objectives and policies. The Proposed Project is conceptualized as a: • Farm (with small ancillary structures) to demonstrate and promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture; • Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements); • Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and • Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).			
HRS § 226-14: Objective and policies for facility systems – in general.			
(a) Objective: *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) Policies:			
(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: The Project incorporates the growing understanding of best water practices and implements it in a public facility which supports this objective.			
HRS § 226-15: Objectives and policies for facility systems – solid and liquid wastes.			
(a) Objectives: *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) Policies:			
(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**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			**X**
Discussion: The Proposed Project will not be served by municipal collection of solid and liquid wastes, however, adequate measures will be taken to meet basic public health and sanitation standards.			
HRS § 226-16: Objective and policies for facility systems – water.			
(a) Objective: *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) Policies:			
(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 Proposed Project involves improved stormwater management through LID features which will serve to satisfy these objectives and policies, as well promote water conservation education to the general public.			
HRS § 226-17: Objectives and policies for facility systems – transportation.			
(a) Objective: *Planning for the State's facility systems with regard to transportation shall be directed toward 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) Policies:			
(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 interisland 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**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(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**
Discussion: The Proposed Project has no relationship to the provision or facilitation of transportation.			
HRS § 226-18: Objectives and policies for facility systems – energy.			
(a) Objectives: *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 Hawaii'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 Hawaii's utility customers a priority.			**X**
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand.			
(c) Other Policies:			
(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;			**X**
(B) Education;			**X**
(C) Adoption of energy-efficient practices and technologies; and			**X**
(D) Increasing energy efficiency and decreasing energy use in public infrastructure;			**X**
(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies;			**X**
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			**X**
(7) Promote alternate fuels and transportation energy efficiency;			**X**
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;			**X**
(9) Support actions that reduce, avoid, or sequester Hawai'i's greenhouse gas emissions through agriculture and forestry initiatives.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			**X**
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			**X**
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawai'i.			**X**
Discussion: While all of the above objectives do not apply as the Proposed Project cannot be construed to be an energy project, one of the goals of the Proposed Project is to be largely energy self-sufficient (outside of energy used to transport employees, volunteers and school groups to the site, and energy used by adults for any power tools used removing albizia trees, etc.).			
HRS § 226-18.5: Objectives and policies for facility systems – telecommunications.			
(a) Objective: *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) Other Policies:			
(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 Project has no relationship to the State's goals for telecommunications.			
HRS § 226-19: Objectives and policies for socio-cultural advancement – housing.			
(a) Objectives: *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) Policies:			
(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**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			**X**
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			**X**
(7) Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.			**X**
(8) Promote research and development of methods to reduce the cost of housing construction in Hawai'i.			**X**
Discussion: The Project has no relationship to the availability of housing in the State of Hawai'i.			
HRS § 226-20: Objectives and policies for socio-cultural advancement – health			
(a) Objectives: *Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:*			
(1) Fulfillment of basic individual health needs of the general public.			**X**
(2) Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities.			**X**
(3) Elimination of health disparities by identifying and addressing social determinants of health.			**X**
(b) Policies:			
(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 has no relationship to the State's objectives and policies for health (as described above).			
HRS § 226-21: Objective and policies for socio-cultural advancement – education.			
(a) Objectives: *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) Policies:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			**X**
(3) Provide appropriate educational opportunities for groups with special needs.			**X**
(4) Promote educational programs which enhance understanding of Hawai'i's cultural heritage.	**X**		
(5) Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.			**X**
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			**X**
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			**X**
(8) Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.			**X**
(9) Support research programs and activities that enhance the education programs of the State.			**X**

Discussion: Implementation of the Proposed Project would be supportive of promoting educational programs which enhance understanding of Hawai'i's natural and cultural heritage. The Proposed Project is conceptualized as a:

- Farm (with small ancillary structures) to demonstrate and promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture;
- Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

HRS § 226-22: Objective and policies for socio-cultural advancement – social services.			
(a) Objective: *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) Policies:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			**X**
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			**X**
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawai'i's communities.			**X**
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			**X**
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			**X**
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			**X**

Discussion: The Proposed Project has no relation to the provision of social services by the State of Hawai'i.

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-23: Objective and policies for socio-cultural advancement – leisure.			
(a) Objective: *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) Policies:			
(1) Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.	**X**		
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.	**X**		
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.	**X**		
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.	**X**		
(5) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.			**X**
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.	**X**		
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai'i's people.			**X**
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			**X**
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.			**X**
(10) Assure adequate access to significant natural and cultural resources in public ownership.	**X**		
Discussion: Implementation of the Proposed Project would be supportive of many of these objectives and policies. The Proposed Project is conceptualized as a: • Farm (with small ancillary structures) to demonstrate and promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture; • Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements); • Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/ practicing regenerative agricultural methods to grow own food/materials); and • Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).			
HRS § 226-24: Objective and policies for socio-cultural advancement – individual rights and personal well-being.			
(a) Objective: *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) Policies:			
(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**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: The Proposed Project has no direct relation to the provision of individual rights and personal well-being as described above.			
HRS § 226-25: Objective and policies for socio-cultural advancement – culture.			
(a) Objective: *Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.*			
(b) Policies:			
(1) Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.	**X**		
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.	**X**		
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.	**X**		
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors.	**X**		
Discussion: Implementation of the Proposed Project would be supportive of promoting educational programs which enhance understanding of Hawai'i's cultural heritage. The Proposed Project is conceptualized as a: • Farm (with small ancillary structures) to demonstrate and promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture; • Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements); • Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and • Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).			
HRS § 226-26: Objectives and policies for socio-cultural advancement – public safety.			
Objectives: *Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:*			
(1) Assurance of public safety and adequate protection of life and property for all people.			**X**
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			**X**
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's people.			**X**
(b) Policies related to public safety:			
(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) Policies related to criminal justice:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			**X**
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			**X**
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(d) Policies related to emergency management:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			**X**
(2) Enhance the coordination between emergency management programs throughout the State.			**X**
Discussion: The Proposed Project has no direct relation to the provision of public safety as described above.			
HRS § 226-27: Objectives and policies for socio-cultural advancement – government.			
(a) Objectives: *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) Policies:			
(4) Provide for necessary public goods and services not assumed by the private sector.			**X**
(5) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			**X**
(6) Minimize the size of government to that necessary to be effective.			**X**
(7) Stimulate the responsibility in citizens to productively participate in government for a better Hawai'i.			**X**
(8) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.	**X**		
(9) Provide for a balanced fiscal budget.			**X**
(10) Improve the fiscal budgeting and management system of the State.			**X**
(11) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			**X**
Discussion: The Proposed Project has no direct relation to government as described above.			

5.1.3.2 Hawai'i State Plan, Part II: *Planning Coordination and Implementation*

Part II of the State Plan establishes a statewide planning system to coordinate and guide all major state and county activities and to implement the overall theme, goals, objectives, policies, and priority guidelines. The system implements the State Plan through the development of functional plans and county general plans. Functional plans, general plans, and the formulation, administration, and implementation of state programs must be in conformance with the State Plan.

- **State Functional Plans**

State Functional Plans (SFPs) set forth the policies, statewide guidelines, and priorities within a specific field of activity, when such activity or program is proposed, administered, or funded by any agency of the state. Functional plans are developed by the state agency primarily responsible for a given functional area, which include: Agriculture, Conservation Lands, Education, Employment, Energy, Health, Higher Education, Historic Preservation, Housing, Human Services, Recreation, Tourism, and Transportation. Functional plans must identify priority issues in the functional area and contain objectives, policies, and implementing actions to address those priority issues. Actions may include organizational or management initiatives, facility or physical

infrastructure development initiatives, initiatives for programs and services, or legislative proposals. Functional plans are approved by the governor and serve as guidelines for funding and implementation by state and county agencies. In addition, functional plans shall be used to guide the allocation of resources for the implementation of state policies adopted by the legislature.

The overarching theme of the State Plan and every SFP is to promote balanced growth, as described in the introductions to the State Functional Plans:

> *"The major theme for these physical Functional Plans focus [sic] on the promotion of a balanced growth approach in the use of our limited resources. This recognizes the need for economic development while preserving our fragile environment and multi-cultural lifestyles throughout our island State. The strategies for each SFP are aimed at initiating desired development, while at the same time limiting or discouraging development which would impact negatively on our resource base. It also means enhancing our natural environment and cultural resources through actions aimed at protecting, preserving and promoting their significance. In order to achieve balanced growth, the Functional Plans address issues through the following interrelated elements: Resource Management which ensures the preservation and conservation of fragile, unique ecosystems and other natural physical and historical/cultural resources from loss or degradation; Resource Development which ensures the compatibility of development activities with surrounding communities and infrastructure, and ensures the diversification of economic activities to increase the viability and stability of our economic, environmental and social base; and Infrastructure and Service Supports that promote public and private partnerships for effective management and the timely provision of services and physical infrastructure."*

Discussion: The Proposed Project is supportive of the overall theme of the SFPs, as it promotes balanced growth by ensuring the preservation and conservation of fragile, unique ecosystems and other natural physical and historical/cultural resources from loss or degradation. Resource management and stewardship are promoted by the Project, which is conceptualized as a:

- Farm (with small ancillary structures) to demonstrate and promote the BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture;
- Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration and watershed/valley-wide partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

- **State Agriculture Functional Plan**

One of the applicable functional plans is the *State Agriculture Functional Plan* (SAFP 1991). The two fundamental objectives of the SAFP are: (1) continued viability in Hawai'i's sugar and

pineapple industries; and (2) continued growth and development of diversified agriculture throughout the State. Meanwhile, the mission is stated in Chapter II of the SAFP (p. II-2):

> *"The mission of the State Agriculture Functional Plan is ultimately to increase the overall level of agricultural development in Hawaii, in accordance with the two fundamental Hawaii State Plan objectives stated above. Agricultural development may be broadly defined as the organization of production and distribution of agricultural commodities to supply the demand within a market territory. The overall goal for the agricultural development process is to ensure the continued growth, diversification and increased self-sufficiency of diversified agriculture and the stability and viability of the sugar and pineapple industries. The organization of agricultural production and distribution to achieve the development goal is accomplished most effectively through agricultural commodity industries, which are associations, cooperatives, corporations, or other groups of agriculturalists committed to working together in their collective best interest."*

Specific SAFP objectives, policies, and actions applicable to the Proposed Project are discussed below.

> *OBJECTIVE D: Achievement of optimal contribution by agriculture to the State's economy.*
>
> - *Action D(1)(d): Support research and development of non-traditional [i.e., non-conventional] agricultural uses and cultural practices, including natural and organic methods.*
>
> *OBJECTIVE G: Achievement of effective protection and improved quality of Hawai'i's land, water, and air.*
>
> *OBJECTIVE I: Achievement of efficient and equitable provision of adequate water for agricultural use.*
>
> - *Policy I(2): Improve agricultural water resource management.*
>
> - *Action I(2)(a): In implementing the State Water Code, give priority consideration, where justified for the benefit of Hawai'i's people, to the maintenance of adequate water sources, supplies, and facilities for continued existing and planned beneficial agricultural uses.*
>
> *OBJECTIVE J: Achievement of maximum degree of public understanding and support of agriculture in Hawai'i.*
>
> - *Policy J(4): Foster increased public awareness and understanding of the contribution and benefits of agriculture as a major sector of Hawai'i's economy.*

Discussion: The Proposed Project is supportive of the second objective and the mission of the SAFP, as it represents a form of diversified agriculture while contributing to the overall agricultural production and self-sufficiency for the State. In accordance with the above SAFP objectives, policies, and actions, the Project will: (1) incorporate sustainable, organic methods and cultural practices; (2) promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and invasive species removal, thereby protecting and improving land and

water quality while improving water resource management; and (3) provide place-based educational programs to promote public understanding and support of sustainable agriculture and watershed management.

- **State Conservation Lands Functional Plan**

As the Project is located in the State Conservation Land Use District, the second applicable functional plan is the *State Conservation Lands Functional Plan* (SCLFP 1991). The objective of the SCLFP is "to provide for a management program allowing for judicious use of the State's natural resources balanced with the need to protect these resources to varying degrees" (p. 7).

Specific SCLFP objectives, policies, and actions applicable to the Proposed Project are discussed below.

> *OBJECTIVE IIB: Protection of fragile or rare natural resources.*
>
> - *Policy IIB(1): Develop protection and preservation of habitats of rare and endangered wildlife and native ecosystems in Hawai'i.*
> - *Policy IIB(4): Continue aggressive management to protect Hawaii's intact forested ecosystems.*
>
> *OBJECTIVE IIIA: Expansion and promotion of a public conservation ethic through education.*
>
> - *Policy IIIA(1): Develop and implement conservation education programs for the general public and visitors.*
> - *Implementing Action IIIA(1)a: Develop and implement ongoing environmental education and information programs to address subjects such as litter, vandalism, poaching, anchor damage of coral, depletion of recreational fisheries, and destruction of native upland ecosystems.*
> - *Implementing Action IIIA(1)b: Develop and implement ongoing interpretive programs to promote an appreciation and understanding of unique natural and cultural resources.*
> - *Policy IIIA(2): Develop and implement information and educational programs directed toward specific areas and users of lands and natural resources.*
> - *Policy IIIA(3): Develop and implement educational programs for schools.*

Discussion: In support of the above SCLFP objectives, policies, and actions, the Project will: (1) promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and invasive species removal, thereby protecting fragile or rare natural resources and native forested ecosystems; and (2) provide place-based educational programs for school groups and the general public to promote a public conservation ethic, particularly regarding the stewardship of native upland ecosystems.

- **County General Plan**

As established in Part II of the State Plan, a statewide planning system implements the State Plan through the development of SFPs and county general plans. The applicable county general plan is

the City and County of Honolulu General Plan, which is discussed in Section 5.2.1 of this EA below.

5.1.3.3 Hawai‘i State Plan, Part III: *Priority Guidelines*

Table 3: Hawai‘i State Plan, Chapter 226, HRS - Part III

HAWAI‘I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-101: Purpose. *The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.*			
HRS § 226-102: Overall direction. *The State shall strive to improve the quality of life for Hawai‘i’s present and future present and future population through the pursuit of desirable courses of action in five 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.*			
HRS § 226-103: Economic priority guidelines.			
(a) ***Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai‘i’s people and achieve a stable and diversified economy:***			
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			**X**
Encourage investments which:			
(i) Reflect long term commitments to the State;			**X**
(ii) Rely on economic linkages within the local economy;			**X**
(iii) Diversify the economy;			**X**
(iv) Reinvest in the local economy;			**X**
(v) Are sensitive to community needs and priorities; and			**X**
(vi) Demonstrate a commitment to provide management opportunities to Hawai‘i residents; and			**X**
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 Hawai‘i;			**X**
(iii) Investment interest from Hawai‘i residents;			**X**
(iv) Resources unique to Hawai‘i that are required for innovative activity; and			**X**
(v) Complementary or supportive industries or government programs or projects.			**X**
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			**X**
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			**X**
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			**X**
(5) Streamline the processes for building and development permit and review and telecommunication infrastructure installation approval and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where scientific evidence indicates that public health, safety, and welfare would not be adversely affected.			**X**
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawai‘i’s small-scale producers, manufacturers, and distributors.			**X**
(7) Continue to seek legislation to protect Hawai‘i from transportation interruptions between Hawai‘i and the continental United States.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			
(A) An industry that can take advantage of Hawai'i's unique location and available physical and human resources.			**X**
(B) A clean industry that would have minimal adverse effects on Hawai'i's environment.			**X**
(C) An industry that is willing to hire and train Hawai'i's people to meet the industry's labor needs at all levels of employment.			**X**
(D) An industry that would provide reasonable income and steady employment.			**X**
(8) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawai'i business.			**X**
Enhance the quality of Hawai'i's labor force and develop and maintain career opportunities for Hawai'i'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 Hawai'i's people by encouraging firms doing business in the State to hire residents.			**X**
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities.			**X**
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			**X**
(b) ***Priority guidelines to promote the economic health and quality of the visitor industry:***			
(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawai'i's residents and visitors.			**X**
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			**X**
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			**X**
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai'i's significant natural, scenic, historic, and cultural resources.			**X**
(5) Develop and maintain career opportunities in the visitor industry for Hawai'i's people, with emphasis on managerial positions.			**X**
(6) Support and coordinate tourism promotion abroad to enhance Hawai'i's share of existing and potential visitor markets.			**X**
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			**X**
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			**X**
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			**X**
(c) ***Priority guidelines to promote the continued viability of the sugar and pineapple industries:***			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			**X**
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai'i.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			**X**
(d) ***Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:***			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			**X**
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			**X**
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			**X**
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			**X**
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai'i's agricultural community.			**X**
(6) Seek favorable freight rates for Hawai'i's agricultural products from interisland and overseas transportation operators.			**X**
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			**X**
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			**X**
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			**X**
(10) Support the continuation of land currently in use for diversified agriculture.			**X**
(11) Encourage residents and visitors to support Hawai'i's farmers by purchasing locally grown food and food products.			**X**
(e) ***Priority guidelines for water use and development:***			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			**X**
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			**X**
(3) Increase the support for research and development of economically feasible alternative water sources.			**X**
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			**X**
(f) ***Priority guidelines for energy use and development:***			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			**X**
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			**X**
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			**X**
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			**X**
(g) ***Priority guidelines to promote the development of the information industry:***			
(1) Establish an information network, with an emphasis on broadband and wireless infrastructure and capability, that will serve as the foundation of and catalyst for overall economic growth and diversification in Hawai'i.			**X**
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			**X**
(3) Encourage the development of small businesses in the information field such as software development, the development of new information systems, peripherals, and applications;			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
data conversion and data entry services; and home or cottage services such as computer programming, secretarial, and accounting services.			
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			**X**
(5) Encourage research activities, including legal research in the information and telecommunications fields.			**X**
(6) Support promotional activities to market Hawai'i's information industry services.			**X**
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			**X**
Discussion: The Proposed Project has no direct relation to the economic priority guidelines as described above.			
HRS § 226-104: Population growth and land resources priority guidelines.			
(a) ***Priority guidelines to effect desired statewide growth and distribution:***			
(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.			**X**
(2) Manage a growth rate for Hawai'i's economy that will parallel future employment needs for Hawai'i's people.			**X**
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.			**X**
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			**X**
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			**X**
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			**X**
(7) Support the development of high technology parks on the neighbor islands.			**X**
(b) ***Priority guidelines for regional growth distribution and land resource utilization:***			
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.			**X**
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			**X**
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			**X**
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			**X**
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.			**X**
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			**X**
(7) Pursue rehabilitation of appropriate urban areas.			**X**
(8) Support the redevelopment of Kaka'ako into a viable residential, industrial, and commercial community.			**X**
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(10) Identify critical environmental areas in Hawai'i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.	**X**		
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			**X**
(12) Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	**X**		
(13) Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.	**X**		
Discussion: The Proposed Project is located within the State Land Use Conservation District and if implemented, will result in better management of the Mānoa watershed, and the education of students to better appreciate and protect watersheds and other conservation lands for future generations.			
HRS § 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			**X**
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			**X**
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			**X**
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			**X**
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			**X**
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			**X**
Discussion: The Proposed Project has no direct relationship to criminal justice.			
HRS § 226-106: Affordable housing.			
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 Hawai'i'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 Hawai'i's people for the purchase of initial owner- occupied housing.			**X**
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			**X**
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			**X**

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(8) Give higher priority to the provision of quality housing that is affordable for Hawai'i's residents and less priority to development of housing intended primarily for individuals outside of Hawai'i.			**X**
Discussion: The Proposed Project has no relationship to affordable housing.			
HRS § 226-107: Quality education.			
Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;			**X**
(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**
Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			
(A) The electronic exchange of information;			**X**
(B) Statewide electronic mail; and			**X**
(C) Access to the Internet.			**X**
Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			**X**
(5) Pursue the establishment of Hawai'i's public and private universities and colleges as research and training centers of the Pacific;			**X**
(6) Develop resources and programs for early childhood education;			**X**
(7) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			**X**
(8) Strengthen and expand educational programs and services for students with special needs.			**X**
Discussion: The Proposed Project has no relationship to priority guidelines for quality education as described above.			
HRS § 226-108: Sustainability.			
Priority guidelines and principles to promote sustainability shall include:			
(1) Encouraging balanced economic, social, community, and environmental priorities;	**X**		
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;	**X**		
(3) Promoting a diversified and dynamic economy;			**X**
(4) Encouraging respect for the host culture;	**X**		
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations			**X**
(6) Considering the principles of the ahupua'a system; and	**X**		
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i.	**X**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: Implementation of the Proposed Project would be supportive of promoting sustainability. The Proposed Project is conceptualized as a: • Farm (with small ancillary structures) to demonstrate and promote the BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture; • Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements); • Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and • Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams). During the pre-assessment consultation process, DTS wrote (see letter in Appendix A): "In addressing priority guidelines on sustainability through HRS§ 226-108, the Project should consider certification by a green building rating system, including but not limited to nationally recognized rating systems such as Leadership in Energy and Environmental Design (LEED), the Living Building Challenge, Green Globes, or another comparable State-approved, nationally recognized, and consensus-based guideline, standard, or system." "The DTS supports certification such as the LEED for Building Design and Construction Version 4.0 as it mitigates Location and Transportation (LT) impacts including but not limited to: minimizing the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff; reducing pollution by promoting alternatives to conventionally fueled automobiles; increasing access to quality transit; reducing Vehicle Miles Traveled (VMT) through the integration of bicycle facilities; and compact, walkable development that encourages a density and diversity of surrounding uses." As the Proposed Project would likely involve the use of natural materials in the construction of an open-air meeting *hale*, principles of sustainability (such as those promoted by nationally recognized rating systems such as LEED) will be incorporated in the design, construction, and operation of the Project.			
HRS § 226-109: Climate change adaptation priority guidelines.			
Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:			
(1) Ensure that Hawai'i's people are educated, informed, and aware of the impacts climate change may have on their communities;	**X**		
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;			**X**
(3) Invest in continued monitoring and research of Hawai'i's climate and the impacts of climate change on the State;			**X**
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;	**X**		
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;	**X**		
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;	**X**		

HAWAI'I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;	**X**		
(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;	**X**		
(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and	**X**		
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.	**X**		
Discussion: Implementation of the Proposed Project would be supportive of climate change adaptation priority guidelines by providing educational materials on climate change and its impact on O'ahu's watersheds.			

5.1.4 State Environmental Policy, Chapter 344, Hawai'i Revised Statutes

The State Environmental Policy, as defined in Chapter 344, HRS, establishes the policy of the State of Hawai'i on natural resource conservation and the environment. The Project's consistency with the State Environmental Policy is outlined in the table below:

Table 4: Hawai'i State Environmental Policy, Chapter 344, HRS

STATE ENVIRONMENTAL POLICY, CHAPTER 344, HAWAII REVISED STATUTES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
STATE ENVIRONMENTAL POLICY			
§344-3 Environmental policy. *It shall be the policy of the State, through its programs, authorities, and resources to:*			
(1) Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawaii.	**X**		
(2) Enhance the quality of life by:			
(A) Setting population limits so that the interaction between the natural and artificial environments and the population is mutually beneficial;			**X**
(B) Creating opportunities for the residents of Hawaii to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments;			**X**
(C) Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian; and			**X**
(D) Establishing a commitment on the part of each person to protect and enhance Hawaii's environment and reduce the drain on nonrenewable resources.	**X**		

STATE ENVIRONMENTAL POLICY, CHAPTER 344, HAWAII REVISED STATUTES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: While the Proposed Project does not directly address the guidance of population growth, it will represent better management of the Project Site's land and water resources, while providing an opportunity for better public awareness of the importance of our limited natural resources.			
GUIDELINES			
§344-4 Guidelines. *In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines:*			
(1) Population.			
(A) Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation;			**X**
(B) Recognize optimum population levels for counties and districts within the State, keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined.			**X**
Discussion: The Proposed Project will neither encourage nor discourage population growth.			
(2) Land, water, mineral, visual, air, and other natural resources.			
(A) Encourage management practices which conserve and fully utilize all natural resources;	**X**		
(B) Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;	**X**		
(C) Promote the recycling of waste water;			**X**
(D) Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas;	**X**		
(E) Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves;	**X**		
(F) Maintain an integrated system of state land use planning which coordinates the state and county general plans;			**X**
(G) Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.			**X**
Discussion: Implementation of the Proposed Project will result in better management of the Project Site's land and water resources, while providing an opportunity for better public awareness of the importance of our limited natural resources, including watersheds, water sources, forest reserves and open space areas.			
(3) Flora and fauna.			
(A) Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard;	**X**		
(B) Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.	**X**		
Discussion: The Project Site is not in any critical habitat areas, and will have no impact on endangered species. Should federally listed species of flora or fauna be detected in the Project Site, appropriate mitigation measures will be implemented (see Section 3.5). The proposed landscaping and bio-retention areas provide an opportunity to plant native or other compatible flora to further enhance the environment.			
(4) Parks, recreation, and open space.			
(A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;	**X**		
(B) Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities;			**X**

STATE ENVIRONMENTAL POLICY, CHAPTER 344, HAWAII REVISED STATUTES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(C) Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.	**X**		
Discussion: The Project is located within a public open space and seeks to preserve, maintain and enhance this space for educational, environmental remediation and cultural uses.			
(5) Economic development.			
(A) Encourage industries in Hawaii which would be in harmony with our environment;			**X**
(B) Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands;			**X**
(C) Encourage federal activities in Hawaii to protect the environment;			**X**
(D) Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment;			**X**
(E) Establish visitor destination areas with planning controls which shall include but not be limited to the number of rooms;			**X**
(F) Promote and foster the aquaculture industry of the State; and preserve and conserve productive aquacultural lands.			**X**
Discussion: The Project has no direct relationship to the State's economic development guidelines.			
(6) Transportation.			
(A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State;			**X**
(B) Adopt guidelines to alleviate environmental degradation caused by motor vehicles;			**X**
(C) Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.	**X**		
Discussion: The Proposed Project will include traffic management policies to minimize transportation by personal motorized vehicles, thereby alleviating environmental degradation caused by these motor vehicles.			
(7) Energy.			
(A) Encourage the efficient use of energy resources.			**X**
Discussion: While all of the above policy does not apply as the Proposed Project cannot be construed to be an energy project, one of the goals of the Proposed Project is to be largely energy self-sufficient (outside of energy used to transport employees, volunteers and school groups to the site and energy used for any power tools used removing albizia trees, etc.).			
(8) Community life and housing.			
(A) Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods which reflect the culture and mores of the community;			**X**
(B) Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation;			**X**
(C) Encourage the reduction of environmental pollution which may degrade a community;	**X**		
(D) Foster safe, sanitary, and decent homes;			**X**
(E) Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape	**X**		

STATE ENVIRONMENTAL POLICY, CHAPTER 344, HAWAII REVISED STATUTES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
plans and designs in urban areas; and preserve and promote mountain-to-ocean vistas.			
Discussion: The Proposed Project will help reduce environmental pollution while preserving scenic views and open spaces.			
(9) Education and culture.			
(A) Foster culture and the arts and promote their linkage to the enhancement of the environment;	**X**		
(B) Encourage both formal and informal environmental education to all age groups.	**X**		
Discussion: Implementation of the Proposed Project would be supportive of promoting education and culture. The Proposed Project is conceptualized as a: • Farm (with small ancillary structures) to demonstrate and promote BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture; • Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements); • Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/ practicing regenerative agricultural methods to grow own food/materials); and • Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).			
(10) Citizen participation.			
(A) Encourage all individuals in the State to adopt a moral ethic to respect the natural environment; to reduce waste and excessive consumption; and to fulfill the responsibility as trustees of the environment for the present and succeeding generations; and	**X**		
(B) Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.	**X**		
Discussion: Through the implementation of the Proposed Project, BWS will lead by example in adopting a moral ethic to respect and protect the natural environment. To promote citizen participation in the environmental review and decision making process, this EA discusses potential impacts and mitigation measures of the Proposed Project and will provide an opportunity for public input during the Draft EA Public Comment period.			

5.2 CITY AND COUNTY OF HONOLULU

5.2.1 General Plan

The City and County of Honolulu's General Plan is the policy document for the long-range development of the Island of O'ahu. The General Plan is a statement of general conditions to be sought in the 20-year planning horizon and policies to help direct attainment of the plan's objectives.

During the pre-assessment consultation process, the City and County of Honolulu Department of Planning and Permitting (DPP) wrote: "The EA should include a discussion of how the project objectives align with the Honolulu General Plan" (see letter in Appendix A).

Specific General Plan goals and policies applicable to the proposed Project are discussed below.

Natural Environment

Objective A *– To protect and preserve the natural environment*

Policies:

(2) Seek the restoration of environmentally damaged areas and natural resources.

(3) Retain the Island's streams as scenic, aquatic, and recreation resources.

(7) Protect the natural environment from damaging levels of air, water, and noise pollution.

(8) Protect plants, birds, and other animals that are unique to the State of Hawaii and the Island of Oahu.

(10) Increase public awareness and appreciation of Oahu's land, air, and water resources.

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

Policies:

(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.

(2) Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.

(4) Provide opportunities for recreational and educational use and physical contact with O'ahu's natural environment.

Culture and Recreation

Objective D *– To provide a wide range of recreational facilities and services that are readily available to all residents of O'ahu.*

Policies:

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

Discussion: The Project is in accordance with some the City & County of Honolulu's objectives and policies for Culture and Recreation, and for the Natural Environment, as the Proposed Project is conceptualized as a:

- Farm (with small ancillary structures) to demonstrate and promote the BWS's goals of watershed management, water conservation, forest restoration, and sustainable agriculture;
- Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

5.2.2 Primary Urban Center Development Plan

The City and County of Honolulu has adopted the Primary Urban Center Development Plan (PUCDP) as one of eight community-oriented plans to guide public policy, investment and decision making through the 2025 planning horizon. The document contains policies, principles, and guidelines specific to the Primary Urban Center region (Figure 21). These policies, principles, and guidelines are then implemented through ordinances such as the Land Use Ordinance (zoning code).

According to the 2004 PUCDP vision:

- *Protect and enhance Honolulu's natural, cultural, and scenic resources.*
- *Create livable neighborhoods with business centers, parks, plazas, and walkable streets.*
- *Provide in-town housing choices for people of all ages and incomes*
- *Make Honolulu the Pacific's leading city and travel destination.*
- *Create a balanced transportation system that provides excellent mobility for residents and visitors.*

During the pre-assessment consultation process, DPP wrote: "The EA should include a discussion of the Primary Urban Center Development Plan, especially as it relates to Section 3.1 Protecting and Enhancing the Natural, Cultural, and Scenic Resources" (see letter in Appendix A). Specific policies and guidelines applicable to the proposed Project are discussed below:

Section 3.1: Protecting and Enhancing Natural, Cultural, and Scenic Resources

§3.1.2: Policies

- *Preserve historic and cultural sites*
- *Preserve and protect natural resource and constraint areas*
- *Improve access to shoreline and mountain areas*
- *Develop stream greenbelts*

§3.1.3: Guidelines

§3.1.3.2 Mauka Conservation Areas

- *Prevent development on properties with average slopes of 40 percent or more, and on lands with slopes of 20 percent or more where development of the site would have a significant adverse visual impact when viewed from parks, major public streets, and other public places.*
- *Maintain public access points and hiking trails on the slopes of the Koolau Range in the areas beyond the Urban Community Boundary, and improve amenities for hiking, camping and nature study.*
- *In Preservation areas, avoid disturbance to native species and prevent the visual intrusion of structures, including utility and telecommunications installations, when seen from below and from hiking trails.*
- *Ensure access for traditional and customary practices and gathering rights, consistent with the provisions of the Constitution of the State of Hawaii.*

§3.1.3.5 Stream Greenways and Drainage

- *Establish riparian zones for all streams to prevent the encroachment of buildings and structures – other than those for drainage, flood control or recreational purposes – and to establish and enforce policies for the protection and enhancement of stream habitats and water quality.*
- *In developing drainage and flood control, seek to limit stormwater velocity and reduce the transport of sediment and pollutants to coastal waters.*

Discussion: Clearly, implementation of the Proposed Project would represent protecting and enhancing "Honolulu's natural, cultural and scenic resources," and would be supportive of the above policies and guidelines. Historic and cultural sites would be preserved as recommended in the AIS (see Appendix C); mauka conservation areas would be protected and better utilized; public access to hiking trails would be preserved and potentially enhanced; measures will be undertaken to avoid disturbance to native and endangered species (see Section 3.5 Flora & Fauna); and LID measures will be implemented to protect and enhance stream habitats and water quality and to reduce stormwater quantity and velocity (see Sections 3.6 Waters & Wetlands, 4.7.1 Water System, and 4.7.3 Drainage System).

5.2.3 Land Use Ordinance

Since the Project Site is zoned P-1 (or State Land Use Conservation District), the City and County of Honolulu has no zoning authority (Figure 22).

During the Draft EA public review period, the City and County of Honolulu Department of Planning and Permitting wrote (refer to letter in Appendix G):

> "The subject site is in the State Land Use Conservation District and zoned P-1 Restricted Preservation District, which is not regulated by Chapter 21 of the Revised Ordinances of Honolulu, Land Use Ordinance. All uses, structures and development standards within the P-1 Preservation District and State Land Use Conservation District shall be governed by the appropriate State agencies."

5.2.4 Special Management Area

The Project Site is located outside of the Special Management Area and therefore does not require a Special Management Area Use Permit.

5.2.5 Complete Streets

Complete streets are part of a transportation and design approach that aims to create a comprehensive, integrated network of streets that are safe and convenient for all people whether traveling by foot, bicycle, transit, or automobile, and regardless of age or ability. Complete Streets move away from streets designed with a singular focus on automobiles toward a design approach that is context-sensitive, multimodal, and integrated with the community's vision and sense of place. The end result is a road network that provides safe travel, promotes public health, and creates stronger communities.

The City and County of Honolulu is committed to complete streets solutions that improve safety, accessibility, and comfort for all users, encourage physical activity, and reflect community needs and character. In 2009, State Act 54, Session Laws of Hawai‘i (SLH) 2009 was passed, requiring all Counties and the State DOT to adopt a Complete Streets policy. The Honolulu Complete Streets Ordinance was passed by City Council and signed into law in 2012 as Ordinance 12-15 (Revised Ordinances of Honolulu (ROH) Chapter14, Article 33), establishing the complete streets policy for the City and County of Honolulu. In 2016, the City and County of Honolulu finalized its Complete Streets Design Manual and hired a Complete Streets Program Administrator to move toward implementation of improvements that make Honolulu’s streets and neighborhoods safe and inviting for all users, regardless of age or ability.

During the pre-assessment consultation process, DTS wrote:

> “The Application should contain discussion of compliance with County and State Complete Streets policies, pursuant to Act 54, Session Laws of Hawaii 2009, HRS §264-20.5 and ROH 12-15. The Project should elaborate on how it will comply with Complete Streets policies, including specific adherence to the following key Complete Streets principles: safety, Context Sensitive Solutions, accessibility and mobility for all, use and comfort of all users, consistency of design guidelines and standards, energy efficiency, and health and green infrastructure” (see letter in Appendix A).

The Complete Streets policy and principles are discussed below:

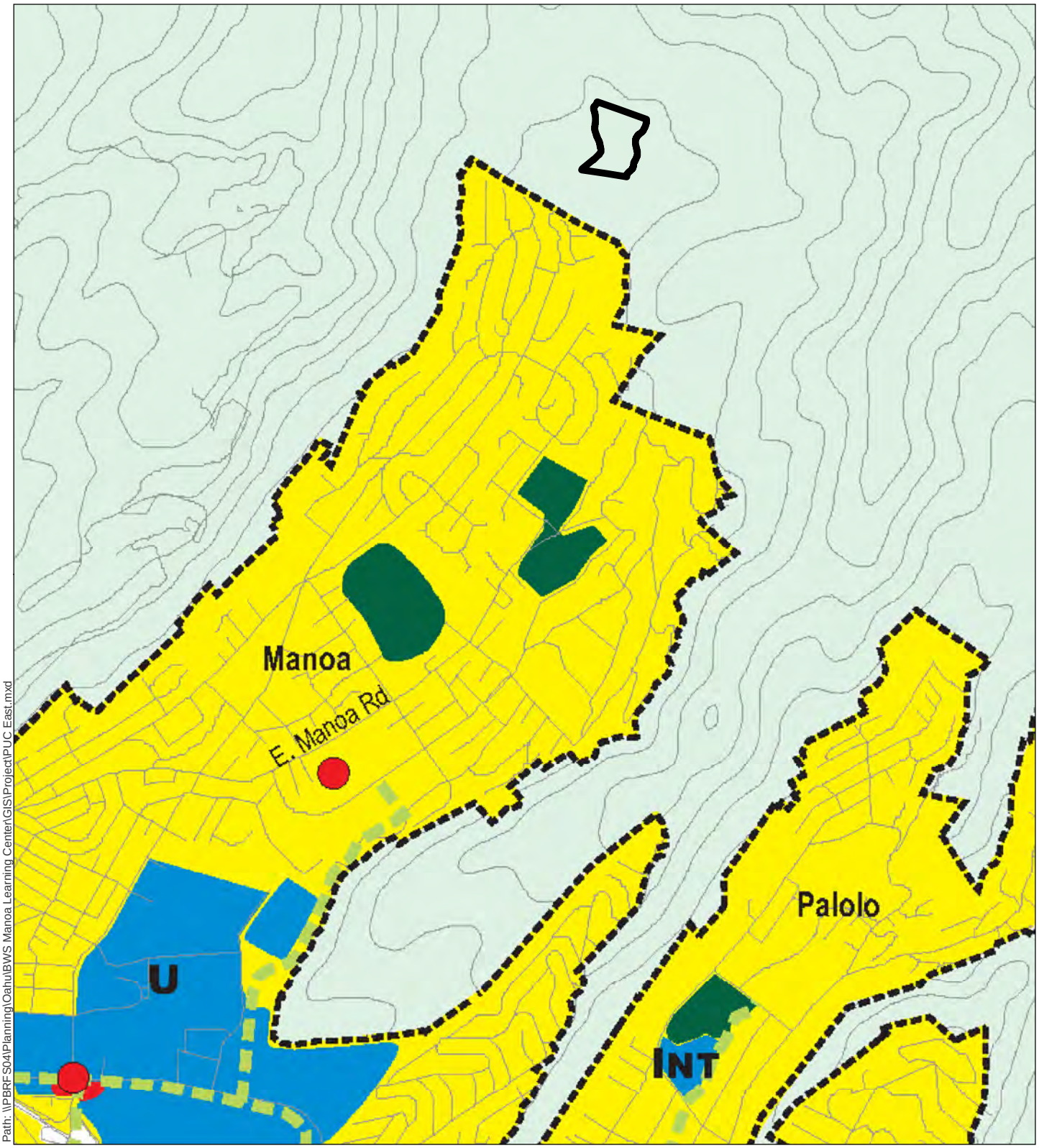
<u>ROH §14-33.2 Complete streets policy; principles</u>

(a) There is hereby established a complete streets policy and principles for the City and County of Honolulu to guide and direct more comprehensive and balanced planning, design, and construction of city transportation systems. Under this policy, the city hereby expresses its commitment to encourage the development of transportation facilities or projects that are planned, designed, operated, and maintained to provide safe mobility for all users. Every transportation facility or project, whether new construction, reconstruction, or maintenance, provides the opportunity to implement complete streets policy and principles. This policy provides that a context sensitive solution process and multi-modal approach be considered in all planning documents and for the development of all city transportation facilities and projects.

(b) Complete streets principles consist of the following objectives:

(1) Improve safety;
(2) Apply a context sensitive solution process that integrates community context and the surrounding environment, including land use;
(3) Protect and promote accessibility and mobility for all;
(4) Balance the needs and comfort of all modes and users;
(5) Encourage consistent use of national industry best practice guidelines to select complete streets design elements;
(6) Improve energy efficiency in travel and mitigate vehicle emissions by providing non-motorized transportation options;
(7) Encourage opportunities for physical activity and recognize the health benefits of an active lifestyle;
(8) Recognize complete streets as a long-term investment that can save money over time;
(9) Build partnerships with stakeholders and organizations statewide; and
(10) Incorporate trees and landscaping as integral components of complete streets.

Discussion: Currently, school groups and visitors to Kumuola are dropped off at the nearest city bus stop on Mānoa Road and must walk through the residential neighborhood to access the gate at the end of Wa‘aloa Way. With the implementation of the Proposed Project, safety would be improved by locating the visitor and bus parking and loading/unloading closer to the Project Site, potentially at the existing Paradise Park parking lot, with visitors then hiking a short trail to the Project Site. This would also encourage non-motorized transportation and physical activity for an active lifestyle. Meanwhile, ADA access would be provided via the existing entry gate at Wa‘aloa Way, allowing for TheHandi-Van access as well as loading/unloading at the existing on-site parking area (see Section 4.2 Transportation above). This context-sensitive solution would help to minimize impacts to residential areas while containing traffic within existing corridors.



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DATE: 7/8/2019

LEGEND

- Project Site
- Preservation
- Lower-Density Residential
- Major Parks and Open Space
- Institutional
- Urban Community Boundary
- Pedestrian Network
- Community/Neighborhood Commercial

Figure 21
Primary Urban Center Development Plan

BWS Hālau Wai Mānoa

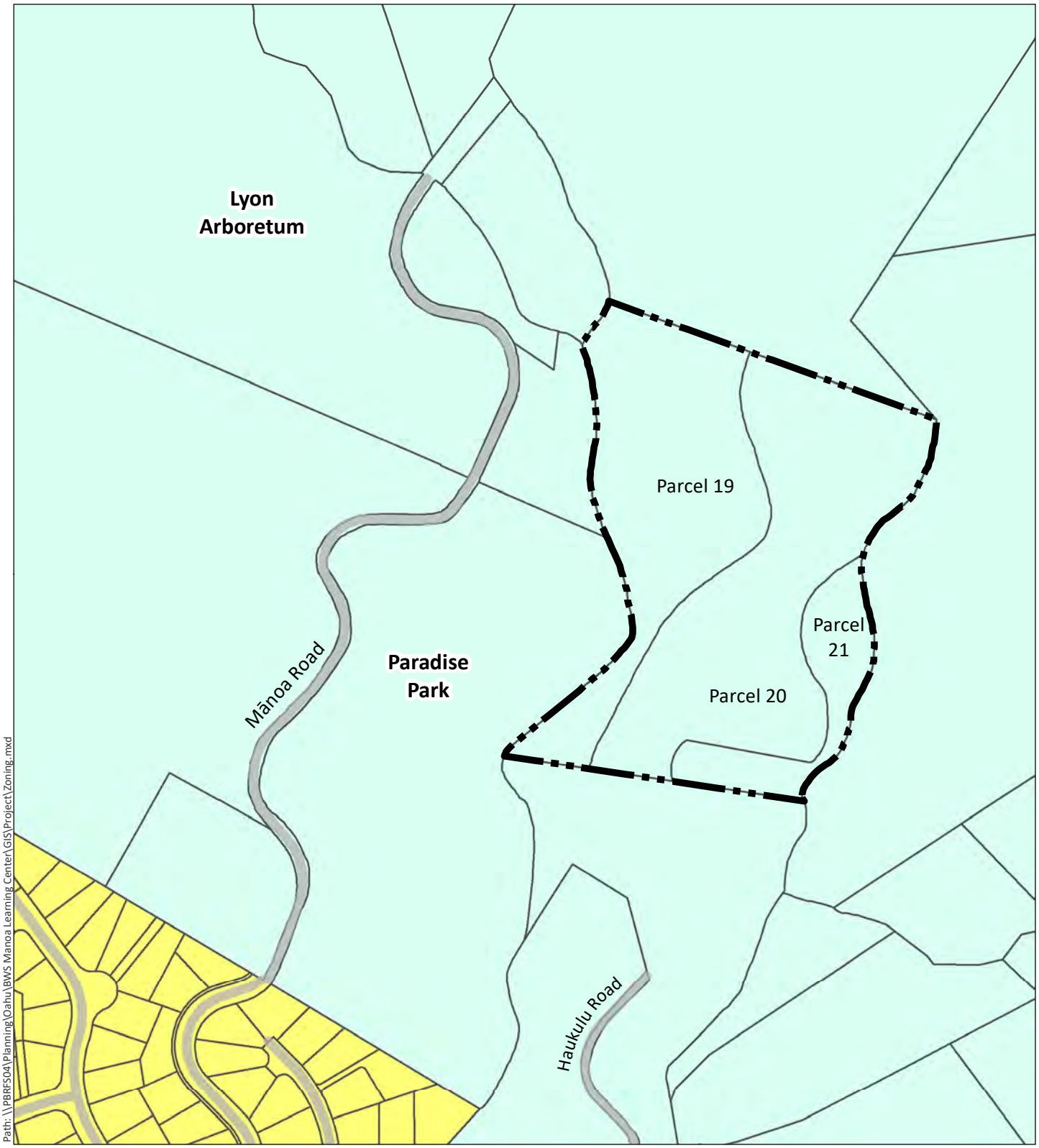
City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 500 1,000 2,000

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2004, 2017)
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



DATE: 7/8/2019

LEGEND

Project Site

TMK Parcels

Roadway

Zoning

P-1

R-7.5

Figure 22

City and County of Honolulu Zoning

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 75 150 300

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2017, 2018); ESRI Online Basemaps.

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

5.3 LIST OF REQUIRED PERMITS AND APPROVALS

Anticipated permits and approvals that may be required are outlined in Table 5, below.

Table 5: Required Permits and Approvals

AGENCY	PERMIT/APPROVAL
STATE OF HAWAI'I	
Office of Environmental Quality Control	• Chapter 343, HRS Compliance
Department of Land and Natural Resources – Office of Conservation and Coastal Lands	• Conservation District Use Approval
Department of Health	• Plan Review and (as necessary) Permits • Dust Control Plan (if necessary) • Noise Permit (if necessary) • Individual Wastewater System Permit (if necessary)
Department of Health – Disability and Communication Access Board	• Americans with Disabilities Act Compliance
Department of Transportation	• Highways Division Permit (if necessary)
CITY AND COUNTY OF HONOLULU	
Department of Planning and Permitting	• Grading Permit (if necessary) • Grubbing Permit (if necessary) • Stockpiling Permit (if necessary) • Building Permit (if necessary)*
Department of Transportation Services	• Street Usage Permit (if necessary)

**According to HRS §46-88(a)(10): "Nonresidential indigenous Hawaiian hale that do not exceed five hundred square feet in size, have no kitchen or bathroom, and are used for traditional agricultural activities or education" are exempt from building permit and building code requirements, "provided that they comply with all applicable state and county zoning codes."*

6.0 ALTERNATIVES

In compliance with the provisions of Section 11-200-17(f), HAR relating to Environmental Impact Statements, an environmental assessment must discuss potential alternatives to the proposed action which could attain the objectives of the action in sufficient detail to explain why they were rejected. The alternatives considered include:

6.1 NO ACTION

The no-action alternative would be to introduce no change to the existing site. Under this alternative, the proposed BWS Hālau Wai Mānoa would not be created, but the current use (the current lessee since 2010 is the Kumuola Foundation, which has been operating a cultural farm) may continue. Assuming the current lessee continues its operations on the Project Site, remaining invasive albizia trees and bamboo will continue to be removed, and the visual appearance will remain the same. In addition, current noise and air quality conditions will remain the same (assuming no significant increase in visitors or use of chainsaws or other landscaping equipment). However, visitors would not benefit from a meeting hale/open-air structure to provide improved protection from the elements; there would be no ancillary structures for the farm operations; access to the Site would not be improved; and archaeological sites would likely be passively preserved.

6.2 NO USE OF THE PROPERTY

This alternative would involve no use of the Project Site (including the current lessee). In this scenario, there would be less soil disturbed, resulting in less opportunity for soil erosion from exposure to wind and/or rain. However, it is likely that invasive species such as albizia trees and bamboo will continue to successfully compete with and dominate any native vegetation while increasingly harming the watershed. Moreover, with no one present, ungulates (pigs) would likely cause increased erosion at the Site. The positive impact of this scenario (assuming less public access) is that existing archaeological and historical resources will endure less damage and be preserved in place; however, these archaeological sites may be impacted by vegetation and roots growing under or through the sites. Not using the site would result in less human-generated noise, such as school children's voices or noise generated from landscaping equipment. The non-use of powered landscaped equipment would result in better air quality, even if current use is temporary and sporadic. The appearance of the site will gradually become more overgrown than the current conditions. Implementation of this alternative would obviate the need for potable water, sanitary wastewater disposal, and solid waste recycling and disposal. Unless there is a wildfire, there will be no need for fire protection services from the Fire Department. The non-existence of lessees, volunteers, or visits by school children would result in minimal to no demand for police protection or emergency medical services. However, implementation of this alternative would mean that the invaluable opportunities for environmental and cultural education on this Project Site for school children and the general public would be lost. Moreover, opportunities for watershed partnerships and native forest restoration could similarly be lost.

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7.0 FINDINGS, SUPPORTING REASONS, AND DETERMINATION

To determine whether the BWS Hālau Wai Mānoa may have a significant impact on the physical and human environment, all components and expected consequences of the proposed Project have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, the Approving Agency (Honolulu Board of Water Supply) issues a Finding of No Significant Impact (FONSI) for the Project. The supporting rationale for this finding is presented in this chapter.

7.1 PROBABLE IMPACT, INCLUDING CUMULATIVE IMPACTS

Cumulative impacts are impacts on the environment that result from the action when added to other past, present, and foreseeable future actions by other agencies or persons. Examples of possible cumulative impacts of a proposed action could be those related to traffic and demands on water, sanitary sewer and storm drainage capacity.

With more sustainable management of the Project Site and the opportunities for planned environmental and cultural education, the Proposed Project is anticipated to have beneficial long-term and cumulative impacts on the physical environment. This includes impacts to the local watershed and nearby water resources, especially when compared with the long-term and cumulative impacts of the Project Site's status quo operations.

Socio-economic impacts resulting from the proposed Project are anticipated to be beneficial. The Proposed Project will provide educational, environmental and cultural learning opportunities. Overall, the net cumulative impact is expected to have a positive effect on school groups and the broader community.

7.2 SIGNIFICANCE CRITERIA

Based upon the previous information presented in this document, the proposed BWS Hālau Wai Mānoa will likely have no significant environmental impacts. This determination is based upon the thirteen Significance Criteria outlined in Chapter 343, HRS, as amended and Title 11 Chapter 200, HAR (1996), and discussed below.

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

The Project Site's prior land disturbance suggests that the site is absent any resources potentially subject to irrevocable loss as a result of the Proposed Project (landscaping, construction of a traditional hale, and education).

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

The Proposed Project will not curtail the range of beneficial uses of the environment, as the Project Site was previously modified. However, implementation of the proposed BWS Hālau

Wai Mānoa will expand the current range of beneficial uses of the environment to allow for the Proposed Project, which is currently conceptualized as a:

- Farm (with small ancillary structures) to demonstrate and promote the BWS's goals of watershed management, water conservation, forest and lo'i restoration, and sustainable agriculture;
- Gathering space for place-based educational programs for schools and other groups (e.g., a traditional meeting hale or similar open-air structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration and watershed partnership efforts in Mānoa (e.g., removal of invasive species, forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

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

The Environmental Policies enumerated in Chapter 344, HRS promote conservation of natural resources, and an enhanced quality of life for all citizens. As detailed in Section 5.1.4 above, the Proposed Project is supportive of the State's long-term environmental policies, goals, or guidelines as expressed in Chapter 344, HRS, and will not significantly impact natural resources due to the fact that the Project Site is already developed.

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

The Proposed Project will positively influence social and economic welfare by facilitating the use of public lands in an environmentally responsible manner, while enhancing the educational, environmental and cultural experiences for future students and the public at large.

(5) ***Substantially affects public health;***

The potential public health impacts related to noise, air or water quality during construction will be mitigated through best management practices in compliance with Federal, State and County requirements. The BWS's initiative to manage water resources sustainably will help to ensure that the Proposed Project will not negatively affect public health. In the long-term, as the proposed BWS Hālau Wai Mānoa promotes environmentally sustainable surface water practices among the general public, the Proposed Project is anticipated to have a net positive effect on public health.

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

Implementation of the Proposed Project is anticipated to result in visits by school children, however, BWS is sensitive to traffic concerns in the area and will proactively monitor and manage school groups and how they are transported to and from the proposed BWS Hālau Wai Mānoa.

(7) ***Involves a substantial degradation of environmental quality;***

No substantial environmental degradation is anticipated. As a goal of the Proposed Project is to decrease the amount of surface water pollutants and improve the water quality of downstream water bodies, the Proposed Project is not anticipated to result in negative impacts to the environment.

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

The proposed action will not have any substantial negative secondary impacts on the environment. Implementation of the Proposed Project will not commit BWS to any other larger actions, and will not generate any additional actions having a cumulative effect on the environment.

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

The Proposed Project will occupy a site that is already committed to a portion of the property used for educational and traditional agricultural purposes. The site has been determined to contain no habitats for rare, threatened or endangered plant or animal species.

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

Air Quality: No State or Federal air quality standards will be violated during or after the development of the BWS Hālau Wai Mānoa.

Water Quality: No State or Federal water quality standards will be violated during or after the development of the BWS Hālau Wai Mānoa.

Ambient Noise Levels: Construction of the meeting hale and occasional vegetation-clearing activities for the Project may create temporary noise impacts. Should the hale be built using traditional methods, in comparison to conventional buildings which rely on hammers or nail guns, the hale's building elements would be cut with adzes and latched together with twine. Invasive vegetation clearing activities may involve some motorized equipment such as chainsaws and weed trimmers during removal of the invasive albizia trees. Pursuant to Chapter 11-46, Hawai‘i Administrative Rules, all Project activities will comply with all community noise controls.

(11) ***Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;***

The Project Site does not lie in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, estuary, freshwater or coastal waters. Likewise, the Project is not anticipated to have any impact on any natural hazard conditions.

(12) ***Substantially affects scenic vistas and view planes identified in County or State plans or studies; or,***

Since the Project will likely involve the construction of a traditional meeting hale or similar open-air structure for gathering out of the elements, and due to its forest location, it is not anticipated

to affect views to/from the surrounding built environment. No identified scenic vistas or view planes will be affected.

(13) ***Requires substantial energy consumption.***

The Proposed Project will not require substantial energy consumption beyond the energy required for construction of the Project components.

7.3 DETERMINATION

On the basis of impacts and mitigation measures examined in this document and analyzed under the above criteria, it is anticipated that the proposed BWS Hālau Wai Mānoa will not have a significant effect on the natural or human environments. Pursuant to Chapter 343, HRS, the approving agency, the Honolulu Board of Water Supply, issues a Finding of No Significant Impact (FONSI).

8.0 AGENCY AND PUBLIC CONTACTS

8.1 PUBLIC ENGAGEMENT

8.1.1 Stakeholder Meetings

The Board of Water Supply (BWS) and its consultant, PBR HAWAII (PBR), met with representatives from various stakeholder agencies and organizations, as well as elected officials, to introduce and share its ideas about the proposed Hālau Wai Mānoa, which was originally referred to as "Mānoa Learning Center" (MLC), and to listen to the stakeholders' thoughts, ideas, and concerns. The main purpose of the meetings was for information-gathering and visioning to explore possibilities, opportunities, and constraints for the Proposed Project. The meetings were held primarily between October and December, 2018. A summary of the stakeholder meetings is provided in Appendix A.

8.1.2 Neighborhood Board

Representatives from the BWS and PBR met with the Mānoa Neighborhood Board No. 7 ("MNB") Chair Benjamin Rotter on December 19, 2018, as part of the stakeholder meetings described above.

A brief announcement was made to the MNB at their monthly meeting on August 7, 2019. A representative from PBR announced the upcoming August 8th publication of the Draft EA and informed the MNB and the community members in attendance that the Draft EA public review period would end on September 9th. Flyers were provided with information about the project and how to comment on the Draft EA, including an option to provide comments online. See Appendix F for meeting minutes.

A presentation was subsequently made to the MNB at their following meeting held on September 4, 2019, providing an overview of the Proposed Project. The publication of the Draft EA was once again announced, as well as the September 9th public comment deadline. Flyers were provided with information about the project and how to comment on the Draft EA, including an option to provide comments online. It was also announced that there would be an additional opportunity for public comment during the CDUA process. See Appendix F for meeting minutes.

A third appearance was made to the MNB at their monthly meeting held on October 2, 2019, to answer questions from the MNB and the community. Flyers were once again provided with information about the project and how to access and view the Draft EA. It was also announced that there would be an additional opportunity for public comment during the CDUA process. See Appendix F for meeting minutes.

An additional appearance was made to the MNB at their monthly meeting held on June 3, 2020, to answer questions from the MNB and the community, and to announce the intention to file the Final EA. At the time of this writing, the meeting minutes are not yet available; see Appendix F for meeting agenda.

8.1.3 Mālama Mānoa

A representative from the BWS made an appearance at the Mālama Mānoa Board of Directors' meeting held on September 11, 2019. Barry Usagawa, Program Administrator of the BWS Water Resources Division, provided handouts and answered questions about the project.

8.2 PRE-ASSESSMENT CONSULTATION

A pre-assessment consultation was conducted from October 2018 through November 2018 prior to the preparation of the Draft EA. The purpose of the pre-assessment consultation was to consult with agencies, organizations, and individuals with technical expertise or an interest in, or will be affected by, the Proposed Project. This process is part of the scoping process for the Draft EA. Comments and input received during this period were used to identify environmental issues and concerns to be addressed in the Draft EA, which in turn underwent a 30-day public comment period.

As part of this early consultation process, agencies, organizations, and individuals indicated in Table 6 below were sent pre-assessment consultation letters. Those who provided written comments (either by hard copy or electronically) are also indicated in Table 6 below. Copies of the written comments and responses are reproduced in Appendix A.

8.3 PUBLIC REVIEW

The Draft EA was published in the State of Hawai'i Office of Environmental Quality Control's (OEQC's) *The Environmental Notice* on August 8, 2019, initiating a 30-day public review period that ended on September 9, 2019.

As part of the Draft EA public review process, the following agencies, organizations, elected officials, and individuals were sent either a hard copy of the Draft EA or a letter including a link to the online digital copy of the Draft EA, as well as a link to an online comment form. Those who provided written comments (either by letter or electronically) during the 30-day public review period are indicated in Table 6 below. Copies of the written comments and responses are reproduced in Appendix G.

Table 6: Pre-Assessment Consultation and Draft EA Correspondence

Agencies/Organizations/Individuals	Pre-Assessment Consultation Letter Sent	Pre-Assessment Comment Received	DEA Notification Letter Sent	DEA Comment Received
STATE				
Office of Environmental Quality Control (OEQC)	X		X	
Department of Accounting and General Services	X	X	X	X
Department of Agriculture	X		X	
Department of Business, Economic Development & Tourism (DBEDT)	X		X	
DBEDT – Hawai'i State Energy Office/Strategic Industries Division	X		X	
DBEDT - Office of Planning	X	X	X	

Agencies/Organizations/Individuals	Pre-Assessment Consultation Letter Sent	Pre-Assessment Comment Received	DEA Notification Letter Sent	DEA Comment Received
Department of Defense – Engineering Office	X		X	
Department of Education	X		X	
Department of Hawaiian Home Lands	X	X	X	
Department of Health (DOH)	X		X	
Department of Human Services	X	X	X	X
Department of Labor and Industrial Relations	X		X	
Department of Land and Natural Resources (DLNR)	X	X	X	X
DLNR – Historic Preservation Division	X		X	
DLNR – Division of Forestry and Wildlife (DOFAW)	X	X	X	
DLNR – DOFAW, Na Ala Hele	X		X	
Department of Transportation	X	X	X	X
Hawaiʻi Housing Finance and Development Corporation	X		X	
Hawaiʻi Tourism Authority	X		X	
Office of Hawaiian Affairs	X		X	
FEDERAL				
Federal Emergency Management Agency, Region IX	X	X	X	X
U.S. Army Corps of Engineers, Honolulu District	X		X	
U.S. Fish and Wildlife Service	X	X	X	X
University of Hawaiʻi Sea Grant College Program	X		X	
COUNTY				
Board of Water Supply	X	X	X	
Department of Community Services	X		X	
Department of Customer Services	X		X	
Department of Design and Construction	X		X	X
Department of Enterprise Services	X		X	
Department of Environmental Services	X		X	
Department of Facility Maintenance	X	X	X	X
Department of Parks and Recreation	X	X		
Department of Planning and Permitting	X	X	X	X
Department of Transportation Services	X	X	X	
Oʻahu Transit Services, Inc.			X	
Honolulu Authority for Rapid Transportation	X		X	
Fire Department	X	X	X	X
Police Department	X	X	X	X
ELECTED OFFICIALS				
State Senator Brian Taniguchi	X		X	
State Representative Della Au Belatti	X		X	
State Representative Isaac Choy	X			
State Representative Dale Kobayashi			X	

Agencies/Organizations/Individuals	Pre-Assessment Consultation Letter Sent	Pre-Assessment Comment Received	DEA Notification Letter Sent	DEA Comment Received
City Councilmember Ann Kobayashi	X		X	
Neighborhood Board No. 7 (Mānoa) Chair Dale Kobayashi	X			
Neighborhood Board No. 7 (Mānoa) Chair Benjamin Rotter	X		X	
Neighborhood Board No. 7 (Mānoa) Representative Ellen Watson			X	
Neighborhood Board No. 7 (Mānoa) Representative Elton Fukumoto			X	
Neighborhood Board No. 5 (Diamond Head/Kapahulu/St. Louis Heights) Chair Richard Figliuzzi			X	
Neighborhood Board No. 6 (Pālolo) Chair Randolph Hack			X	
Neighborhood Board No. 8 (McCully/Mōʻiliʻili) Chair Timothy Streitz			X	
Neighborhood Board No. 9 (Waikīkī) Chair Robert Finley			X	
Neighborhood Board No. 10 (Makiki/Lower Punchbowl/Tantalus) Chair Ian Ross			X	
Neighborhood Board No. 11 (Ala Moana/Kakaʻako) Chair Ryan Tam			X	
LIBRARIES				
Mānoa Public Library			X	
Hawaiʻi State Library - Hawaiʻi Documents Center			X	
NEWS MEDIA				
Honolulu Star Advertiser			X	
Honolulu Civil Beat			X	
UTILITIES				
Hawaiian Electric Company, Inc.	X		X	X
Hawaiian Telcom	X		X	
Spectrum	X	X	X	X
CITIZEN GROUPS/INDIVIDUALS, OTHER CONSULTED PARTIES				
Ala Wai Watershed Association	X		X	
Hawaiʻi Green Growth - Ala Wai Watershed Collaboration	X		X	
Hawaiʻi Association of Watershed Partnerships			X	X
Koʻolau Mountains Watershed Partnership			X	
Hawaiʻinuiākea School of Hawaiian Knowledge	X		X	
University of Hawaiʻi Office of Planning and Sustainability	X		X	
Kamehameha Schools	X		X	
Kumuola Foundation	X		X	

Agencies/Organizations/Individuals	Pre-Assessment Consultation Letter Sent	Pre-Assessment Comment Received	DEA Notification Letter Sent	DEA Comment Received
Lyon Arboretum	X		X	
Mālama Mānoa	X		X	
Mānoa Heritage Center	X		X	
Paradise Park	X		X	X
Ke One O Kakuhihewa (Oʻahu Island Council)			X	
Aha Moku o Oʻahu			X	
Papakōlea Community Development Corporation			X	
Hawaiʻi's Thousand Friends	X		X	
The Nature Conservancy of Hawaiʻi	X		X	
The Outdoor Circle	X		X	
Mānoa Outdoor Circle				X
Sierra Club of Hawaiʻi	X		X	
Surfrider Foundation Oʻahu Chapter	X		X	
Dylan Armstrong				X
Andrew Tabaque				X

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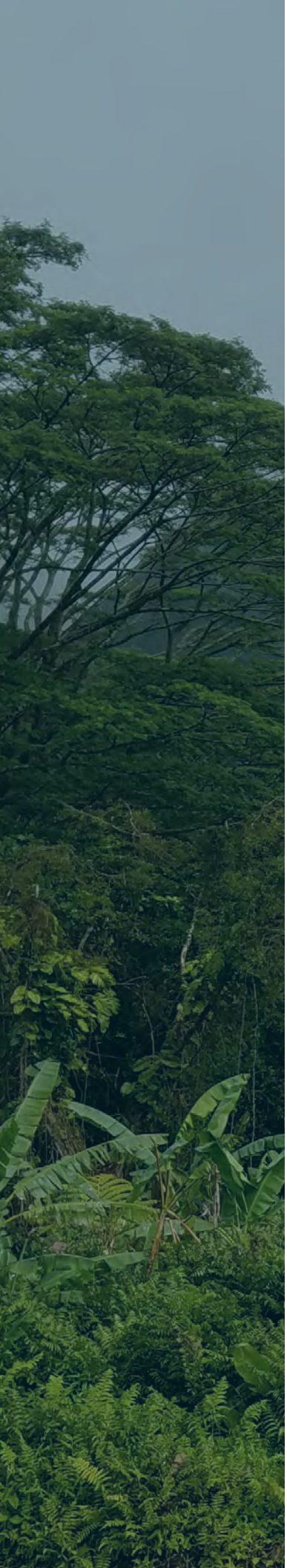

APPENDIX A
Community & Agency Engagement

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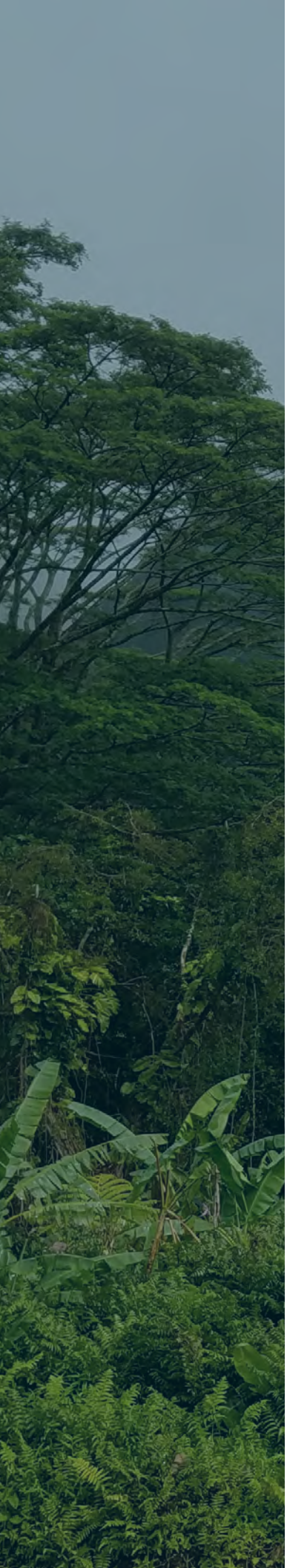

APPENDIX A-1
Summary of Stakeholder Meetings

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PBR HAWAII
& ASSOCIATES, INC.

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Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

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Senior Vice-President / Principal

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TOM SCHNELL, AICP
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MEMORANDUM

DATE: **December 27, 2018**

TO: **Amy Tsuneyoshi, Watershed Resource Specialist / BWS**

FROM: **PBR HAWAII**

DISTRIBUTION: **File**

SUBJECT: **BWS MĀNOA LEARNING CENTER STAKEHOLDER MEETINGS, OCTOBER 24 TO DECEMBER 6, 2018, SUMMARY**

Attachments: **Fact Sheet; Existing Site Plan; Image Board; Map of Major Landowners**

The Board of Water Supply (BWS) and its consultant, PBR HAWAII (PBR), met with representatives from various stakeholder agencies and organizations, as well as elected officials, to introduce and share its ideas about the proposed Mānoa Learning Center (MLC) and to listen to the stakeholders' thoughts, ideas, and concerns. The following is a list of stakeholder groups/entities consulted:

Date	Stakeholder Agency/Organization/Elected Official
5/29/18	Kamehameha Schools (KS)
10/24/18	Kumuola Foundation (KF)
10/25/18	Mānoa Heritage Center (MHC)
10/25/18	Paradise Park (PP)
11/5/18	State Senator Brian Taniguchi
11/5/18	Ala Wai Watershed Association (AWWA)
11/5/18	Hawai'i Green Growth (HGG)
11/5/18	Lyon Arboretum (LA)
11/13/18	Councilmember Ann Kobayashi
11/19/18	UH Office of Sustainability (UHOS)
11/20/18	Department of Land & Natural Resources – Division of Forestry & Wildlife (DLNR-DOFAW)
11/29/18	State Representative Della Au Belatti
12/4/18	Mālama Mānoa (MM)
12/6/18	Neighborhood Board (NB) No. 7 Chair Benjamin Rotter

Meeting Summary

- **What?** Stakeholder Meetings
- **Who?** Representatives from stakeholder agencies and organizations listed above
- **When?** Thirteen meetings between October 24 and December 6, 2018; each meeting was approximately 90 minutes. (In addition, one meeting was held earlier in May 2018.)

- **Where?** Most of the meetings were held at PBR HAWAII. Otherwise, the meetings were held at the stakeholders' offices or at BWS.
- **Why?** To introduce the proposed project and to solicit thoughts, ideas, and concerns from stakeholder groups.
- **Agenda?** Introduction to the goals and intent of the project, followed by discussion of potential synergies, opportunities, challenges, and/or concerns, as well as a "backcasting" exercise to envision an ideal future. A Fact Sheet was provided to the stakeholders, as well as a map of the major landowners in the vicinity of the Project Site. Posters of the Existing Site Plan (showing the current uses and identified archaeological sites on the property) and Image Board (showing examples of similar types of traditional loʻi kalo and open-air hale structures that could be a possibility for the MLC project) were shown to the stakeholders. It was emphasized that nothing has been planned or decided yet for the project (in terms of both function and form), and that this meeting is an information-gathering and visioning exercise to explore possiblities.

Key Findings:
The major themes, issues, concerns, questions, and ideas that were discussed during the meetings are summarized below.

1. **Watershed Partnerships:** Overall, the proposed concept was met with enthusiasm and support, primarily with regard to broader environmental goals related to:
    - sustainability;
    - watershed management and stewardship;
    - increased aquifer recharge;
    - native forest restoration;
    - invasive species management (e.g., removal of albizias, and ungulate control);
    - stream mitigation;
    - erosion control; and
    - improved flood control and stormwater management (i.e., improvement of stormwater quality and reduction of quantity).

    Stakeholders recognized the missions of the large landowners (BWS, DLNR, PP, UH/Lyon Arboretum) are largely in alignment, particularly in the areas of education and albizia removal which may lead to opportunities to help each other build capacity. There was strong support for partnerships between stakeholders and landowners in the interest of achieving *pono* stewardship of watershed resources throughout the entire ahuapuaʻa, mauka to makai, starting in Mānoa Valley and reaching as far as Waikīkī and the Ala Wai canal. Coordination between groups and networks such as the Ala Wai Watershed Association and the Ala Wai Watershed Collaboration (a program of Hawaiʻi Green Growth) could be mutually beneficial. Some also recommended the other stakeholders like hunters, be considered as potential partners since the they are already actively involved in the management of resources in the watershed (e.g., ungulate control), and the likelihood that hunting programs may be impacted. Others expressed the potential need for a

memorandum of agreement (MOA) between landowners acknowledging that should a partnership of sorts emerge, it is likely that people will be crossing property lines.

2. **Managed Access to Watershed:** Unique partnership opportunities exist for joint management of public access to mauka resources at the back of Mānoa Valley (incl. Paradise Park, Lyon Arboretum, Mānoa Falls Trail and other Nā Ala Hele Trails). Some recognized a need for more **education** (e.g., public education campaign) for both residents and tourists regarding appropriate behaviors – including respect for the host culture – on the trails and in the watershed areas. One idea is to have MLC serve a function similar to that of the visitor center at Hanauma Bay, which has an informational video and displays/signage to educate visitors on environmentally responsible behaviors within conservation areas. Other examples given included the Hawai‘i Nature Center in Makīkī (for visitor education); Lyon Arboretum (for visitor sign-in); hiker check-in stations (for access management); and the recently created gatekeeper program designed to manage sunrise viewing at Haleakalā National Park (limits the number of visitors per day). It was acknowledged that other mauka attractions elsewhere on O‘ahu (such as the Ha‘ikū Stairs and the Lanikai "Pillbox" trail) have been experiencing similar access issues in the age of social media visibility/popularity that have put a strain on natural resources and, in some cases, increased public safety risks.

3. **Site Access:** Visitor access via an unpaved trail either from the Mānoa Falls Trailhead or potentially from Paradise Park to the proposed MLC site was discussed. Clearing and restoring the Old Government Road for pedestrian access was considered though feasibility would need to be explored further. While BWS and MLC staff will continue to access the site via the gate at Wa‘aloa Way, it was recommended that visitor foot traffic be directed to an alternate access and be limited to daytime hours only in the interest of reducing impact to nearby residents. As required by law, provision of adequate access and turnaround space for EMS and fire response will also need to be considered.

4. **Parking and Traffic:** Several stakeholders raised concerns over potential impact of vehicular traffic in the neighborhood. Though the project is not anticipated to increase the volume of traffic above existing levels, the potential of more traffic and parking in the area would likely be a concern for area residents. One recommendation made was to restrict visitors from parking on residential streets and by locating visitor parking and bus drop-off areas at the existing parking lot at Paradise Park.

5. **Boundaries:** The property boundaries of the site will need to be clarified and confirmed. As part of the EA process for this project, BWS had a boundary survey conducted earlier this year. This information will be shared with the adjacent large landowners (PP and DLNR). Again, a MOA may be needed if people will be crossing property lines.

6. **Maintenance and Security:** Site maintenance would likely be difficult as the forest in this area requires constant work to keep under control. Security of the site could potentially also be an issue, particularly regarding trespassing, theft, vandalism, and squatters. One suggestion is to provide living quarters for an onsite manager to provide round the clock oversight. Other suggestions include installing security cameras, signage, and fencing.

7. **Name:** The name "Mānoa Learning Center" may cause some confusion, not only because it sounds similar to the "Mānoa Heritage Center," but also because it may sound institutional, as if it were a school or other brick-and-mortar facility. From the name alone, it is not readily apparent what the project is all about. It was recommended by several stakeholders to consider changing the name to something related to water (or watershed stewardship) and/or place; it could also have an appropriate Hawaiian name.

8. **Educational Programming:** There was some concern regarding whether the MLC will be duplicative of programs by other organizations, such as the ʻIolani School-sponsored program, Nā Wai ʻEkolu, which "is a group of K-12 educators along the Mānoa, Pālolo, and Makiki streams, who are developing and sharing curriculum, and working to monitor and restore the health of our watershed."[1] Another example is the place-based Welina Mānoa cultural curriculum developed by a partnership between the Mānoa Heritage Center, Lyon Arboretum, Ka Papa Loʻi ʻo Kānewai, and the Waikīkī Aquarium (see the website at https://welinamanoa.org/). There are opportunities for coordination and collaboration when developing any educational programming or curriculum, not only among these organizations, but also with the public and private schools in the ahupuaʻa, building upon and strengthening the existing networks and partnerships. Each existing organization with an interest in this watershed/ahupuaʻa has their own particular educational focus: for example, the Mānoa Heritage Center (MHC) focuses primarily on cultural heritage and (hi)stories; Lyon Arboretum's activities center mainly on botanical research; Paradise Park has expressed interest in contributing a zoological research focus; Ka Papa Loʻi ʻo Kānewai provides an immersive cultural experience in a thriving taro patch (loʻi kalo); and of course the Waikīkī Aquarium focuses on the marine environment. It was thus recommended by some stakeholders that the MLC have its own unique yet complementary focus that is more closely tied to the BWS's mission, thus revolving around the topic of water, water systems, the hydrological cycle, and watershed resource management and stewardship (with both scientific and cultural components). The MLC could be a way for BWS to showcase and promote their long-term vision for watershed management and what they are doing for the community and the environment. It was also suggested by a stakeholder that the MLC could implement and put into action the knowledge from the research conducted at Lyon Arboretum, UHM, and perhaps even Paradise Park. There is also potential to partner with UH, with possible practicum courses in which students assist with the planning, design, and/or implementation of the MLC.

[1] Source: https://www.nawaiekolu.org/

9. **Cultural Components:** It was recommended to cultivate (as part of the MLC project) culturally significant native plants that are used for traditional uses like hula and laʻau lapaʻau. It was also advised that the Hawaiian Elders Council be consulted. What cultural components would be appropriate for the MLC site and which are not duplicative of what is already being done elsewhere, such as at Ka Papa Loʻi ʻo Kānewai or the Mānoa Heritage Center? Or is duplication necessarily undesirable? There are different approaches/models that could be utilized – for example, there could be potential to rotate among the various organizations in Mānoa (e.g., seasonal-based). How might the MLC build upon what Kumuola has been doing at the site?

10. **Agricultural Components:** While there is support among stakeholders for a sustainable agricultural component to the MLC project similar to what is currently being practiced by Kumuola Foundation, there is the question of what will be done with the crops. What are the rules/regulations regarding what can be done with the crops? There are also opportunities to include a nursery component to the MLC project to aid in forest restoration efforts.

11. **USACE Ala Wai Flood Control Project:** Several stakeholders expressed major concerns about the impending U.S. Army Corps of Engineers (USACE) Ala Wai Flood Control Project, which would entail the construction of two large detention basins (dams) in the immediate vicinity of the MLC project site. The proposed Waihī Debris and Detention Basin would be located at the convergence of the Waihī and ʻAihualama Streams just outside the northwest corner of Parcel 19, and the proposed Waiakeakua Debris and Detention Basin would be built at the convergence of the Waiakeakua and Luaʻalaea Streams to the southeast of Parcel 21. These dams are proposed to be 30' or 35' tall, 200' wide, and 400' long. If built, these dams would likely impact the site, perhaps in unexpected and undesirable ways. For example, it is speculated that with heavy rainfall, the dams could get clogged up by debris and cause major flooding on the BWS, Paradise Park, Lyon Arboretum, and State (DLNR) properties. Upon the recommendation of stakeholders, an attempt was made to reach out to USACE to discuss the project, but no reply has been received.

12. **Restrooms:** Existing restrooms for the Mānoa Falls Trail are currently maxed out. Visitors to the trail currently use the restroom facilities at Paradise Park. Some sort of restroom facilities (e.g., composting toilet) would likely be necessary for the MLC project, which would need to comply with Department of Health rules and regulations to ensure proper disposal without posing a hazard to stream water quality or to food safety.

13. **Shared Facilities:** With partnerships between stakeholders, there are opportunities for sharing facilities for educational programs, etc. For example, Paradise Park and the newly renovated MHC have space/rooms that could potentially be utilized.

14. **Stormwater Collection Fee:** It was suggested that the stormwater collection (utility) fee be utilized as a possible source of funding for the MLC. There could be a watershed-wide special improvement district (maybe with a higher fee), to provide the maintenance piece. There are potentially two options for fees: (1) different rate for conservation lands, or (2) a base fee. Fees should then be spent for better managment and maintenance (e.g., implementation of forest management BMPs). The special improvement district will need an office; this could be a meaningful location.

15. **Public Outreach:** It was recommended by stakeholders that there be public outreach as soon as possible to inform the community of the proposed project and to receive further feedback and input.

BOARD OF WATER SUPPLY

MĀNOA LEARNING CENTER

WHAT: The Honolulu Board of Water Supply (BWS) is exploring the possibility of creating a place-based, hands-on learning area to promote the goals of forest restoration, watershed protection, water conservation, and sustainable agriculture. This learning center is conceptualized as a(n):

- Education center for place-based education programs for schools (e.g., a hale/open aired structure for gathering out of the elements);
- Place for hands-on opportunities to learn about watershed protection, sustainable agriculture/living (e.g., establishing and working on lo'i, gardening/ practicing regenerative agricultural methods to grow own food/materials); and
- Base for mauka restoration efforts in Mānoa (e.g., removal of invasive species [including ungulate control], forest restoration with site appropriate native species, erosion control/soil stabilization to reduce polluted runoff and sediment loading of the streams).

WHERE: Located in the upper Mānoa Valley (a BWS priority watershed area)

WHO: For school groups and the general public

WHY: To provide an alternative outdoor learning facility to learn about watersheds, forest health and watershed protection, water conservation, and sustainable resource management practices. Also, to provide community volunteer opportunities/work days for watershed restoration and sustainable agriculture.

WHEN: TBD (e.g., by appointment or on scheduled open/ work days).

Revised 9/20/2018

Photo Credit: PBR HAWAII
Header Photo Credit: Kent Nishimura

Photo Credit: Lyon Arboretum

Photo Credit: Kumula Foundation

Photo Credit: PBR HAWAII

Photo Credit: PBR HAWAII

Photo Credit: PBR HAWAII

Photo Credit: Kent Nishimura

BOARD OF WATER SUPPLY I MĀNOA LEARNING CENTER

LOCATION MAP

- Project Site
- Roadway
- Tax Map Key (TMK) Parcels
- Existing Unpaved Access Road
- Existing Access Gate
- Proposed Access Trail

Board of Water Supply

For further information, please contact:
Greg Nakai
PBR Hawaii & Associates, Inc.
(808) 521-5631

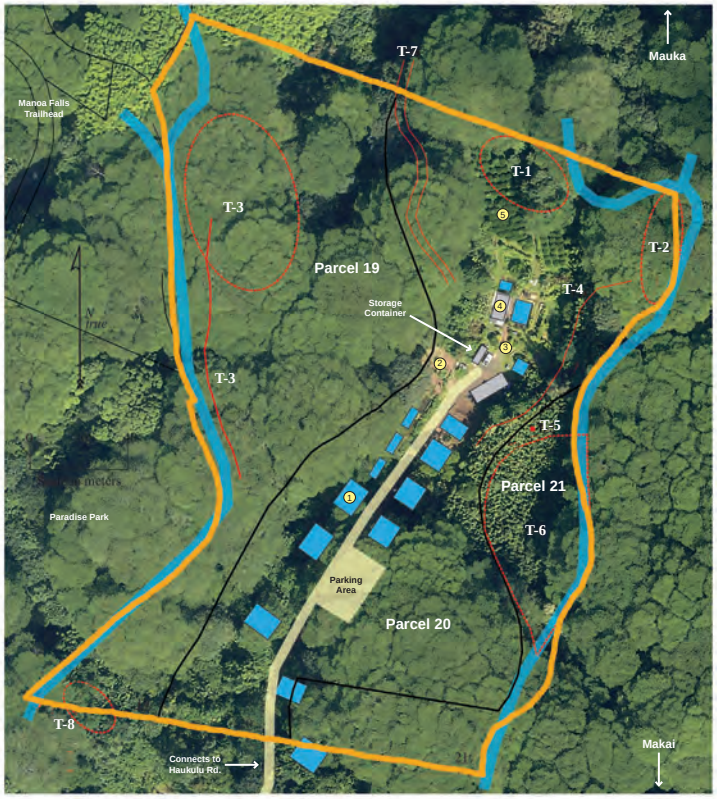
PBR HAWAII & ASSOCIATES, INC.

1. Lo'i (taro gardens)

2. Breadfruit trees and cut flowers

3. Flower processing station

4. Hale imu



5. Gardenia grove

LEGEND

- Modern taro lo'i (taro gardens)
- Tarp structure/ container
- Archaeological site boundary/ location
- Parcel boundaries
- Existing access road
- Stream
- Project boundary

ARCHAEOLOGICAL SITES

T-1: Terrace complex (lo'i)
T-2: Terrace complex (lo'i)
T-3: Mound/wall complex
T-4: Earthen ditch (*auwai*)
T-5: Man-made cave
T-6: Terrace complex (lo'i)
T-7: Road segment
T-8: Refuse dump

10/19/2018
Existing Site Plan
BWS Mānoa Learning Center
Honolulu — Island of O'ahu
Approx. linear scale 0 50 100 FEET
PBR HAWAII & ASSOCIATES, INC.

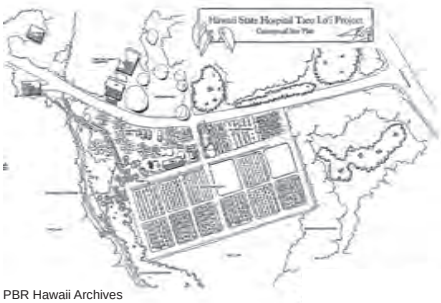
Sources: Pictometry (2013); ASM Affiliates, Inc. (2018).
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

Limahuli Garden & Preserve, NTBG
Hanalei, Kaua'i

Waimea, Kaua'i

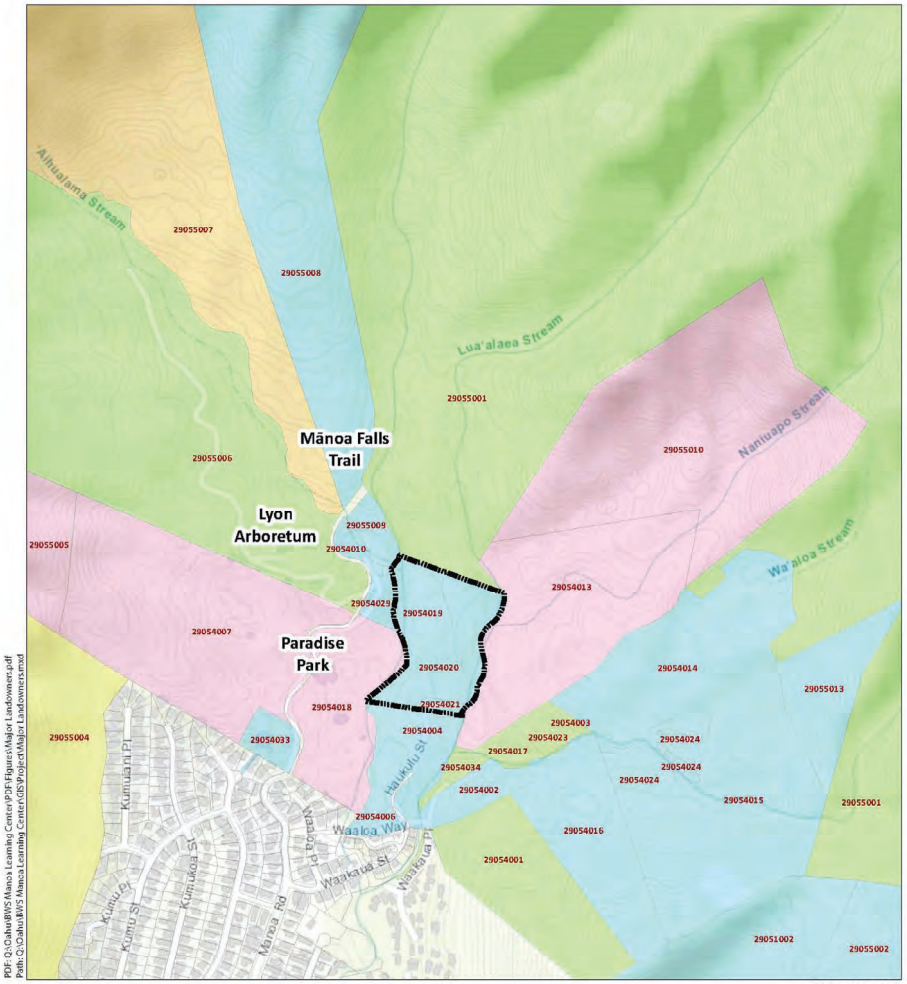
Ho'oulu 'Āina
Kalihi, O'ahu

Allerton Garden, NTBG
Kōloa, Kaua'i



PBR Hawaii Archives

DRAFT 09/04/2018
Image Board
BWS Mānoa Learning Center
Honolulu — Island of O'ahu
PBR HAWAII & ASSOCIATES, INC.



PDF: Q:\Oahu\BWS Manoa Learning Center\PDF Figures\Major Landowners.pdf
Path: Q:\Oahu\BWS Manoa Learning Center\GIS\Project\Major Landowners.mxd

DATE: 9/18/2018

LEGEND

- Project Site
- Other landowners
- Kamehameha Schools
- Board of Water Supply
- Paradise Park
- State of Hawai'i
- University of Hawai'i

Major Landowners

BWS Mānoa Learning Center

City and County of Honolulu Board of Water Supply — Island of O'ahu

North

Linear Scale (feet): 0 200 400 800

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2018); ESRI Online Basemaps.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

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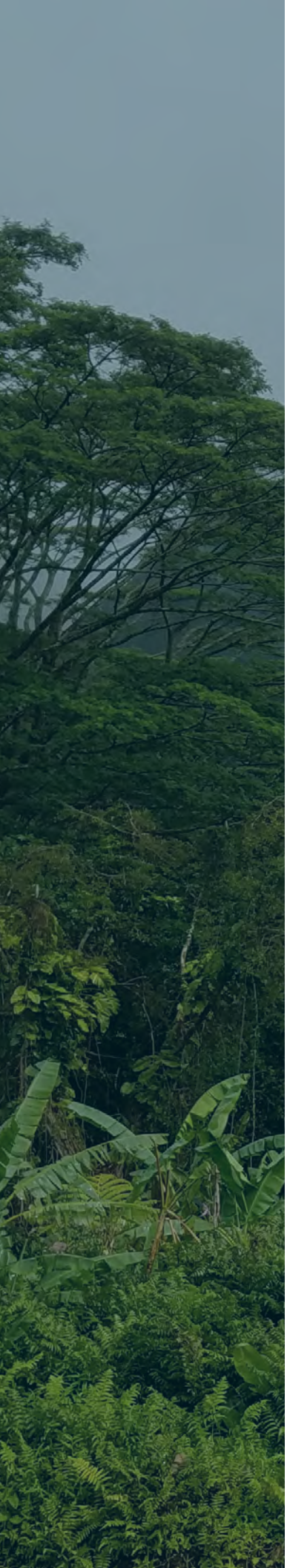

APPENDIX A-2

Pre-Assessment Consultation Comments & Responses

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DAVID Y. IGE
GOVERNOR

RODERICK K. BECKER
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1584.8

NOV 14 2018

Mr. Greg Nakai
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Pre-Assesssment Consultation for
Manoa Learning Center
Honolulu, Oahu, Hawaii
TMK: (1) 2-9-054: 019, 020, and 021 (por)

Thank you for the opportunity to provide comments for the subject project. This project does not impact any of the Department of Accounting and General Services' projects or existing facilities in this area, and we have no comments to offer at this time.

If you have any questions, your staff may call Ms. Gayle Takasaki of the Public Works Division at 586-0584.

Sincerely,

RODERICK K. BECKER
Comptroller

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
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RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
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BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Curt Otaguro
Comptroller
State of Hawai‘i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai‘i 96810-0119

Attn: Ms. Gayle Takasaki, Public Works Division

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Otaguro:

Thank you for your agency’s letter dated November 14, 2018 (your reference number (P)1584.8), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comment that the subject project does not impact any of the Department of Accounting and General Services' projects or existing facilities in this area, and that you have no comments to offer at this time.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Draft Environmental Assessment (DEA).

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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OFFICE OF PLANNING
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

DTS201811091451BE

November 09, 2018

Mr. Greg Nakai
Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Pre-Assessment Consultation for an Environmental Assessment
Proposed Manoa Learning Center, Honolulu, Oahu, Hawaii
TMK: (1) 2-9-054: 019, 020, and 021 (por)

Thank you for the opportunity to provide comments on the pre-assessment consultation request for the preparation of a Draft Environmental Assessment (Draft EA) for the Manoa Learning Center project. The pre-consultation review material was transmitted to our office via letter dated October 11, 2018.

It is our understanding the Honolulu Board of Water Supply (BWS) seeks to create a place-based learning center in Manoa Valley to promote long-range goals for the protection, conservation, and management of Oahu's water supplies and watersheds through adaptive and integrated strategies.

The Manoa Learning Center (MLC) will be used as an outdoor educational facility to raise public awareness and educate school groups on the importance of watershed protection, forest health, and water conservation; promote sustainable resource management, and demonstrate traditional agricultural practices. Additionally, once completed, the MLC may serve as a base for mauka restoration efforts for Manoa Valley by community and school groups. Restoration efforts include: invasive species removal, forest restoration with native plants, and erosion control/soil stabilization to reduce polluted runoff and limit sediment loss.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. <u>Compliance with Hawaii Revised Statutes (HRS) Chapter 343</u>
   We acknowledge that the review material does state the need for a HRS Chapter 343 environmental assessment (EA) based on the use of State Land Use Conservation District Lands and County funds. OP recommends that the Draft EA reaffirm this and detail any

relevant statutory trigger(s) listed in HRS § 343-5 or Hawaii Administrative Rules (HAR) § 11-200-6 on HRS Chapter 343 requirements.

2. The Hawaii State Planning Act.
HAR § 11-200-10(4) requires Draft and Final Environmental Assessments to provide a general description of the action's technical, economic, social, and environmental characteristics. The Draft EA should provide a discussion on the project and its ability to meet State goals and priorities as detailed in HRS Chapter 226.

The Hawaii State Planning Act, HRS Chapter 226, is divided into Part I - Overall Themes, Goals, Objectives, and Policies; Part II - Planning Coordination and Implementation; and Part III - Priority Guidelines. HRS Chapter 226 serves as a guide for long-range development of the State, provides guidance for growth, development, and the allocation of resources throughout the state.

The analysis on the Hawaii State Planning Act should examine the project's consistency with all three parts of HRS Chapter 226 or clarify where the project conflicts with them. If any of these statutes are not applicable to the project, the analysis should affirmatively state such determination, along with discussion paragraphs.

3. The Hawaii Coastal Zone Management Program
The coastal zone management (CZM) area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" (HRS § 205A-1).

Pursuant to HRS § 205A-4, in implementing the objectives of the CZM program, agencies shall give full consideration to ecological, cultural, historic, esthetic, recreational, scenic, open space values, coastal hazards, and economic development.

As an action proposed by a government agency, HRS § 205A-5(b) maintains that the BWS is required to enforce the objectives and policies of the Hawaii CZM Program, HRS § 205A-2. The Draft EA should discuss the project's consistency with this statute.

4. Stormwater Runoff and Erosion Control
Pursuant to HAR § 11-200-10(6) – identification and summary of impacts and alternatives considered; to ensure that the surface water and nearshore environment downslope of the project remain protected, the negative effects of stormwater inundation from this project should be evaluated in the Draft EA.

Issues that may be examined include, but are not limited to, project site characteristics in

relation to flood and erosion prone areas, the potential vulnerability of surface water resources, the soil absorption characteristics in the project area, and the amount of permeable versus impervious surfaces. Assessing the need for mitigation measures in the protection for surface water resources and the coastal ecosystem should take this into account, pursuant to HAR § 11-200-10(7).

It is noted that according to the review material, the MLC may be used as a base for restoration efforts by community groups in Manoa Valley. Watershed restorative actions by these groups may include the removal of invasive species, forest restoration, and erosion control/soil stabilization. These actions are known to be effective in the reduction of polluted runoff and the deposit of erosion related sediment loadings in streams and marine areas. The Draft EA should contain an analysis on stormwater runoff mitigation, erosion control, and the preservation of water quality.

OP has developed the Stormwater Impact Assessment to assist in this matter. This document can serve as a resource to identify and evaluate hydrology stressors, evaluate the sensitivity of aquatic and riparian resources to this threat, and develop management measures to control runoff occurrences. Mitigation measures and best management practices listed in our Stormwater Impact Assessment can be applied to water runoff mitigation strategies, and aide in the planning to meet these environmental threats.

The document can be viewed or downloaded via the OP website at: http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_stormwater_impact_assessments_guidance.pdf.

If you have any questions regarding this comment letter, please contact Joshua Hekekia of our office at (808) 587-2845.

Sincerely,

Leo R. Asuncion
Director

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

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MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Ms. Mary Alice Evans
Director
State of Hawai‘i
Office of Planning
P.O. Box 2359
Honolulu, Hawai‘i 96804

Attn: Mr. Joshua Hekekia

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Evans:

Thank you for your agency's letter dated November 9, 2018 (your reference number DTS201811091451BE), regarding the subject project (previously referred to as "Mānoa Learning Center"). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comments and provide the following response.

The Draft Environmental Assessment (DEA) will include a(n):

1. Identification of the specific triggers that require Hawai‘i Revised Statutes (HRS) Chapter 343 submission;
2. Discussion on the project and its ability to meet State goals and priorities as detailed in HRS Chapter 226 (the Hawai‘i State Planning Act);
3. Discussion of compliance with the Hawai‘i Coastal Zone Management program as listed in HRS Chapter 205A-2;
4. An analysis on stormwater runoff mitigation, erosion control, and the preservation of water quality, pursuant to Hawai‘i Administrative Rules (HAR) §11-200-10(6) and §11-200-10(7). We thank you for your direction toward State-developed resources relating to stormwater impact assessments.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

HONOLULU OFFICE
1001 Bishop Street, Suite 650
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Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

DOUGLAS S. CHIN
LT. GOVERNOR
STATE OF HAWAII

JOBIE M. K. MASAGATANI
CHAIRMAN
HAWAIIAN HOMES COMMISSION

WILLIAM J. AILA, JR.
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P. O. BOX 1879
HONOLULU, HAWAII 96805

October 30, 2018

PBR HAWAII & Associates, Inc.
Attention: Greg Nakai
1001 Bishop St., Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment - Manoa Learning Center, Honolulu, Hawaii, TMK: (1)2-9-054:019, 020 & 021 (POR.)

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.

DHHL generally supports this project in its efforts to protect and educate the broader public in water conservation needs. DHHL's own Water Policy Plan's priority policies are to:

1. Expressly determine and plan for future water needs and actively participate in broader water management, use and protection efforts in Hawai`i in order to secure water.
2. Aggressively exercise, reclaim, and protect Hawaiian home land water kuleana.
3. Develop, manage, and steward water in a manner that balances cost, efficiency measures, and Public Trust uses in the short and long term.
4. Affirmatively communicate our decisions, our reasoning, and our performance in managing, stewarding, and using water before and after making major water decisions.

The DHHL 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 Rae Ann Hyatt, at 620-9480 or contact via email at raeann.p.hyatt@hawaii.gov.

Sincerely,

M. Kaleo Manuel
Acting Planning Program Manager

PBR HAWAII
& ASSOCIATES, INC.

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Chairman / Principal

R. STAN DUNCAN, ASLA
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RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
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Principal

W. FRANK BRANDT, FASLA
Chairman Emeritus

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

RAYMOND T. HIGA, ASLA
Senior Associate

CATIE CULLISON, AICP
Senior Associate

MARC SHIMATSU, ASLA
Senior Associate

DACHENG DONG, LEED® AP
Senior Associate

MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Andrew H. Choy
Acting Planning Program Manager
State of Hawai‘i
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawai‘i 96805

Attn: Ms. Rae Ann Hyatt

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Choy:

Thank you for your agency’s letter dated October 30, 2018, regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comment that the Department of Hawaiian Home Lands (DHHL) does not anticipate any impacts to its lands or beneficiaries from the subject project due to its lack of proximity to Hawaiian Home Lands.

We thank you for your comment that “DHHL generally supports this project in its efforts to protect and educate the broader public in water conservation needs,” and we acknowledge the information on DHHL’s Water Policy Plan’s priority policies.

The Draft Environmental Assessment (DEA) will include a Cultural Impact Assessment (CIA) that assesses potential impacts to cultural and natural resources, access, and other rights of Native Hawaiians.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Draft Environmental Assessment (DEA).

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

O:\JOB18\1896.33 BWS Manoa Learning Center\EA\Pre-Consultation\Responses\STATE_DHHL response.docx

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DAVID Y. IGE
GOVERNOR

PANKAJ BHANOT
DIRECTOR

CATHY BETTS
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment and Support Services Division
1010 Richards Street, Suite 512
Honolulu, Hawai'i 96813

November 8, 2018

Re: 18-0577

PBR HAWAII & Associates, Inc.
Attn: Greg Nakai
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

SUBJECT: Pre-Assessment Consultation For A HRS Chapter 343 Environmental Assessment – Manoa Learning Center, Honolulu, Hawaii, TMKs (1) 2-9-054: 019, 020, & 021 (POR.).

The Department of Human Service (DHS) has reviewed the site and mission for the Manoa Learning Center and has no comment at this time.

If you should have any question regarding this matter, please contact Ms. Lisa Galino, Child Care Program Specialist at (808) 586-5712.

Sincerely,

Scott Nakasone
Assistant Division Administrator

C: Pankaj Bhanot, Director

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
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Principal

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NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Scott Nakasone
Assistant Division Administrator
State of Hawai‘i
Department of Human Services
Benefit, Employment, and Support Services Division
1010 Richards Street, Suite 512
Honolulu, Hawai‘i 96813

Attn: Ms. Lisa Galino, Child Care Program Specialist

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Nakasone:

Thank you for your letter dated November 8, 2018 (your reference number 18-0577), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge that your department has no comment at this time.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

O:\JOB18\1896.33 BWS Manoa Learning Center\EA\Pre-Consultation\Responses\STATE_DHS response.docx

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
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DAVID Y. IGE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

November 8, 2018

PBR Hawaii & Associates, Inc.
Attention: Mr. Greg Nakai
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division, (b) Land Division – Oahu District, (c) Office of Conservation and Coastal Lands and (d) Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa of the Land Division at 587-0410. Thank you.

Sincerely,

Suzanne D. Case
Chairperson

Enclosure(s)

c: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

'18 OCT-17 AM 10:26 ENGINEERING

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

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2018 OCT 23 AM 10:57
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STATE OF HAWAII

October 16, 2018

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM

TO

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**
LOCATION: Manoa, Island of Oahu; TMKs: (1) 2-9-054:019, 020, & 021
APPLICANT: Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments by **November 8, 2018**, and our response will be under the Chair's signature.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: _____

Print Name: Carty S. Chang, Chief Engineer
Date: 10/22/18

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for Manoa Learning Center, Manoa, Island of Oahu; TMKs: (1) 2-9-054:019, 020, & 021

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 10/22/12

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

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2018 OCT 18 AM 7:41
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STATE OF HAWAII

October 16, 2018

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
__ Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__ Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**
LOCATION: Manoa, Island of Oahu; TMKs: (1) 2-9-054:019, 020, & 021
APPLICANT: Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments by **November 8, 2018**, and our response will be under the Chair's signature.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: Darlene Bryant-Takamatsu

Print Name: Darlene Bryant-Takamatsu
Date: 10/17/18

Attachments
cc: Central Files

OA-19-74

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

October 16, 2018

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**
LOCATION: Manoa, Island of Oahu; TMKs: (1) 2-9-054:019, 020, & 021
APPLICANT: Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments by **November 8, 2018,** and our response will be under the Chair's signature.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: _____
Print Name: K. Tiger Mills
Date: 10-31-2018

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF
HAWAI'I

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
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES

OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAI'I 96809

REF:OCCL:TM

Correspondence: OA 19-74

NOV - 1 2018

MEMORANDUM

TO: Russell Tsuji, Administrator
Land Division

FROM: Samuel Lemmo, Administrator
Office of Conservation and Coastal Lands (OCCL)

SUBJECT: Pre-Assessment Environmental Assessment for the Proposed Mānoa Learning Center Located at Mānoa, O'ahu, TMKs: (1) 2-9-054:019, 020, 021

The Office of Conservation and Coastal Lands (OCCL) has reviewed the information regarding the subject matter. According to the information presented, the Honolulu Board of Water Supply is initiating the preparation of an Environmental Assessment for the proposed Mānoa Learning Center on portions of the subject parcels. The BWS is exploring the possibility of creating an educational facility for forest and watershed protection, water conservation and traditional practices in regards to resource management and agricultural practices. The proposed Center would also serve as a base for resource restoration, invasive species removal, and erosion control/run-off reduction. The project would serve and provide education on watershed restoration and sustainable activities for school groups, general public and provide community volunteer opportunities.

The OCCL notes the subject area appears to lie within the Conservation District Resource subzone. An Education Center is an identified land use that could be applied for within the Conservation District pursuant to the Hawai'i Administrative Rules (HAR), §13-5-22, P-6 PUBLIC PURPOSE USES (D-1) Not for profit land uses undertaken in support of a public service by an agency of the county, state, or federal government, or by an independent non-governmental entity, except that an independent non-governmental regulated public utility may be considered to be engaged in a public purpose use. Examples of public purpose uses may include but are not limited to public roads, marinas, harbors, airports, trails, water systems and other utilities, energy generation from_renewable sources, communication systems, flood or erosion control projects, recreational facilities, community centers, and other public purpose uses, intended to benefit the public in accordance with public policy and the purpose of the conservation district.

This project would require the filing of a Conservation District Use Application (CDUA) and all required attachments such as an Environmental Assessment. In addition the BWS should advise the State Historic Preservation of the potential effects, if any, the proposed project may have on historic properties pursuant to the Hawai'i Revised Statutes, 6E-8 as part of the CDUA. The proposed land use requires a Board permit, therefore to allow, modify or deny the project would be at the discretion of the Board of Land and Natural Resources.

However, an assessment of aerial photos over time indicates land uses have taken place on what seems to be parcel 020, without review by the OCCL. At this time, we would like the BWS to clarify what has taken place on the property. The OCCL notes pursuant to HAR, §13-5-6, we would be unable to process any application for land uses upon parcel 020 until these matters are resolved.

Should there be any questions regarding this correspondence, contact Tiger Mills of our Office at (808) 587-0382.

C: City-DPP

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

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2018 OCT 17 PM 4:15

October 16, 2018

MEMORANDUM

TO: **DLNR Agencies:**
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FR:

TO:

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**
LOCATION: Manoa, Island of Oahu; TMKs: (1) 2-9-054:019, 020, & 021
APPLICANT: Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments by **November 8, 2018**, and our response will be under the Chair's signature.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: /s/ Jeffrey T. Pearson, P.E.

Print Name: Deputy Director
Date: November 7, 2018

Attachments
cc: Central Files

FILE ID: RFD 4965.3
DOC ID: 20575J

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON

BRUCE S. ANDERSON, PH.D.
WILLIAM D. BALFOUR, JR.
KAMANA BEAMER, PH.D.
MICHAEL G. BUCK
NEIL J. HANNAHS
PAUL J. MEYER

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

November 7, 2018

REF: RFD.4965.3

TO: Mr. Russell Tsuji, Administrator
Land Division

FROM: Jeffrey T. Pearson, P.E., Deputy Director
Commission on Water Resource Management

SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for Manoa Learning Center

FILE NO.: RFD.4965.3
TMK NO.: (1) 2-9-054:019, 020 & 021

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

☐ 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

☐ 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

☐ 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.

☐ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.

☐ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/

☐ 6. We recommend the use of alternative water sources, wherever practicable.

☐ 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/green-business-program.

☐ 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at

http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

☐ 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

☐ 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.

☐ 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.

☐ 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☒ 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.

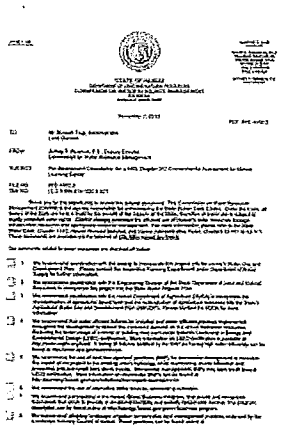
☒ 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.

☒ 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☒ OTHER: The DEA should discuss the projected water demands for the project, both potable and non-potable, and provide the calculations used to estimate demands. The DEA should identify the proposed water source(s) to support the project, and include a discussion of the potential impacts on water resources, other public trust uses of water, and describe any proposed mitigation measures.

If you have any questions, please contact Dean Uyeno of the Stream Protection and Management Branch at 587-0234 or Lenore Ohye of the Planning Branch at 587-0216.



Doc Review RFD.4965.3 Manoa Learning Center

Adobe Sign Document History 11/07/2018

Created:	11/07/2018
By:	Kathy Yoda (kathy.s.yoda@hawaii.gov)
Status:	Signed
Transaction ID:	CBJCHBCAABAAxdSII9_1CTEHneb-GGJcDshQ66Mq99mq

"Doc Review RFD.4965.3 Manoa Learning Center" History

Document created by Kathy Yoda (kathy.s.yoda@hawaii.gov)
11/07/2018 - 9:13:29 AM HST- IP address: 132.160.239.30

Document emailed to Jeffrey Pearson (jeff.pearson@hawaii.gov) for signature
11/07/2018 - 9:21:58 AM HST

Document viewed by Jeffrey Pearson (jeff.pearson@hawaii.gov)
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Document e-signed by Jeffrey Pearson (jeff.pearson@hawaii.gov)
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Signed document emailed to all eligible parties.
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ETS
STATE OF HAWAII

DAVID Y. IGE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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

November 13, 2018

PBR Hawaii & Associates, Inc.
Attention: Mr. Greg Nakai
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated November 8, 2018, enclosed are comments from Division of Forestry and Wildlife on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Suzanne D. Case
Chairperson

Enclosure(s)

c: Central Files

19230

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
LAND DIVISION
2018 NOV -9 AM 11:03
DEPT. OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

October 16, 2018

MEMORANDUM

TO: FROM:

DLNR Agencies:
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

TO:

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for **Manoa Learning Center**
LOCATION: Manoa, Island of Oahu; TMKs: (1) 2-9-054:019, 020, & 021
APPLICANT: Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments by **November 8, 2018**, and our response will be under the Chair's signature.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

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

Signed: [signature]

Print Name: for **DAVID G. SMITH, Administrator**
Date: 11/8/2018

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

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
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

November 5, 2018

MEMORANDUM

TO: Russel Y. Tsuji, Administrator
Land Division

ATTN: Lydia Morikawa

FROM: David G. Smith, Administrator MS

SUBJECT: Division of Forestry and Wildlife Comments on Hawaii Revised Statutes (HRS) Chapter 343 Environmental Assessment for proposed Honolulu Board of Water Supply Mānoa Learning Center

The Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW) has received your inquiry on behalf of the Honolulu Board of Water Supply regarding the proposed Mānoa Learning Center in upper Mānoa Valley on the Island of O'ahu, TMKs: (1) 2-9-054: 019, (1) 2-9-054: 020, and (1) 2-9-054: 021. The proposed project would consist of an outdoor educational facility for school groups and the general public, and would serve as a base for watershed restoration and agricultural activities in the area. The project proponent states the lands are within the State Land Use Conservation District, and the use of State lands and/or funds triggers the need to prepare an Environmental Assessment subject to the HRS Chapter 343 requirements. The request asks for input on the project and comments as to whether the proposed project may have an impact on any of DOFAW's projects, plans, policies, or programs that should be considered. There would be no known negative impacts to those broad elements; however, there are specific species that could be negatively affected without proper consideration, therefore we provide below information for those species.

The State and Federal listed Hawaiian hoary bat (*Lasiurus cinereus semotus*) has the potential to occur in the vicinity of the project area and may roost in trees. To avoid the potential for impacts to this tree-roosting species, site clearing should be timed to avoid disturbance during the bat birthing and pup rearing season (June 1 through September 15). If this cannot be avoided woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed without consulting DOFAW.

We note that artificial lighting can adversely impact seabirds that may pass through the area at night causing disorientation that could result in collision with manmade artifacts or grounding of birds. For nighttime lighting that might be required at the facility, DOFAW recommends that any lights be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e. climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home).

You should avoid importing to O'ahu soil or other plant material from off-island. Soil and plant material may have fungi (e.g., Rapid Ohia Death) and other pathogens that could harm our native species and ecosystems. We recommend consulting the Hawaii Interagency Biosecurity Plan at http://dlnr.hawaii.gov/hisc/plans/hibp/ in planning, design, and construction of the project.

We appreciate your efforts to work with our office for the conservation of our native species. 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 Jim Cogswell, Wildlife Program Manager at (808) 587-4187 or James.M.Cogswell@hawaii.gov.

PBR HAWAII
& ASSOCIATES, INC.

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KIMI MIKAMI YUEN, LEED® AP BD+C
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Project Director

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E-mail: sysadmin@pbrhawaii.com

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July 26, 2019

Suzanne D. Case, Chairperson
State of Hawai‘i
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai‘i 96809

ATTN: Lydia Morikawa; Carty S. Chang, Engineering Division; Darlene Bryant-Takamatsu, Land Division – O‘ahu District; Samuel Lemmo and Tiger Mills, Office of Conservation and Coastal Lands (OCCL); Jeffrey T. Pearson and Dean Uyeno, Commission on Water Resource Management (CWRM); and David G. Smith and Jim Cogswell, Division of Forestry and Wildlife (DOFAW).

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Case:

Thank you for your letters dated November 8 and 13, 2018, regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we provide the following responses to the comments from the Department of Land and Natural Resources (DLNR) Divisions listed below:

1. **Engineering Division.** We acknowledge the Engineering Division's comments regarding compliance with the rules and regulations of the National Flood Insurance Program (NFIP). The Draft Environmental Assessment (DEA) will include a Flood Insurance Rate Map (FIRM) indicating that the project is located within Zone X, an area of minimal hazard.

2. **Land Division – O‘ahu District.** We acknowledge that the Land Division – O‘ahu District has no comments.

3. **Office of Conservation and Coastal Lands (OCCL).** We acknowledge your comments and have provided a response in a separate letter dated February 21, 2019.

4. **Commission on Water Resource Management (CWRM).** As the Proposed Project will not involve any stream channel alterations or additional/expanded stream diversions, no Stream Channel Alteration Permits, Stream Diversion Works Permits, or Petitions to Amend the Interim Instream Flow Standards are anticipated for the Proposed Project.

   In addition, the DEA will address your comments regarding projected water demands; the proposed water source to support the project; and the potential impacts on water resources, other public trust uses of water, and any proposed mitigation measures.

5. **Division of Forestry and Wildlife (DOFAW).** We acknowledge your comment that there would be no known negative impacts to any of DOFAW's projects, plans, policies, or programs. The DEA will include the information regarding the State and Federal listed Hawaiian hoary bat (*Lasiurus cinereus semotus*), as well as the recommended avoidance and minimization measures. The DEA will also include your recommendations: (1) to fully shield any nighttime lighting to minimize impacts to seabirds; (2) to use native plant species for landscaping that are appropriate for the area and not to use invasive species; and (3) to avoid importing to Oʻahu soil or other plant material from off-island. We thank you for direction toward the Hawaiʻi-Pacific Weed Risk Assessment website as well as the Hawaiʻi Interagency Biosecurity Plan. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, your staff will be contacted as soon as possible.

We value your participation in the environmental review process. Your letters will be reproduced in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

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February 21, 2019

Samuel Lemmo, Administrator
Office of Conservation and Coastal Lands (OCCL)
State of Hawai‘i
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai‘i 96809

Attn: Tiger Mills, OCCL

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – MĀNOA LEARNING CENTER, HONOLULU, HAWAI‘I, TMK (1) 2-9-054: 019, 020, & 021 (POR.)

Dear Mr. Lemmo:

Thank you for your memorandum dated November 1, 2018 (your reference number OA 19-74), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we provide the following responses to the Office of Conservation and Coastal Lands' (OCCL's) comments.

1. It is acknowledged that the subject area lies within the Conservation District Resource subzone and that an Education Center is an identified land use that could be applied for within the Conservation District pursuant to the Hawai‘i Administrative Rules (HAR) §13-5-22, P-6 PUBLIC PURPOSE USES (D-1). However, subsequent to discussions with the community and stakeholders, BWS is clarifying that the primary land use is proposed to be agricultural (i.e., a farm to demonstrate and promote sustainable resource and watershed management practices), with a cultural and natural resource management educational component. It is our understanding that such a farm would be an identified land use that could be applied for within the Conservation District pursuant to HAR §13-5-23, L-1 AGRICULTURE (D-1).

2. It is acknowledged that the project would require the filing of a Conservation District Use Application (CDUA) and all required attachments such as an Environmental Assessment, and that the BWS should advise the State Historic Preservation Division of the potential effects, if any, the proposed project may have on historic properties pursuant to Chapter 6E of the Hawai‘i Revised Statutes as part of the CDUA. An archaeological inventory survey has been conducted and will be included in the Draft Environmental Assessment (DEA). We acknowledge that the proposed land use requires a permit and that allowing, modifying, or denying the project would be at the discretion of the Board of Land and Natural Resources.

3. It is also acknowledged that OCCL requests clarification regarding existing land uses on parcel 20. In 1949, BWS acquired parcel 20, which had previously been used to farm tropical plants such as gardenias, as well as food crops, such as avocados and bananas. This agricultural use continued by subsequent tenants under a rental agreement with BWS. In 2010, BWS awarded an agricultural rental agreement to Kumuola Foundation (KF) for parcel 20. Since 2011, KF's operations have involved the following activities:

    a. Restoration and maintenance of lo‘i kalo served by an existing stream diversion;
    b. Use of temporary 20-foot by 20-foot portable tent structures for activity staging and cover for participants;

c. Removal of albizias and other invasive plant species estimated at approximately 1 acre, that have overgrown on the farm to allow sunlight for the crops;
d. Cultivation of flowers and native plants; and
e. Invited hula halau; elementary, middle and high school groups; college programs and community members for volunteer educational work days.

As BWS formalizes this project, all land use requirements necessary to allow the proposed agricultural and educational uses will be disclosed in the DEA and included with the CDUA filing.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
DIRECTOR

Deputy Directors
ROY CATALANI
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
DIR 1148
STP 8.2547

October 25, 2018

Mr. Greg Nakai, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

Subject: Manoa Learning Center
Pre-Assessment Consultation
Honolulu, Oahu, Hawaii
TMK: (1) 2-9-054: 019, 020 and 021 (por.)

The Department of Transportation (DOT) has reviewed the pre-assessment consultation letter for a Honolulu Board of Water Supply Learning Center in upper Manoa Valley. The proposed project is understood to consist of an alternative outdoor/open-aired educational facility.

While detailed information has not been provided at this point, based on the proposed type of project and its location in the upper Manoa Valley, DOT has determined that it appears the proposed project will have no significant impact to State transportation facilities. Therefore, we have no comments to provide at this time.

If there are any questions, please contact Mr. Blayne Nikaido of the DOT Statewide Transportation Planning Office at telephone number (808) 832-7979 or by email at blayn.h.nikaido@hawaii.gov

Sincerely,

JADE T. BUTAY
Director of Transportation

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
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Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Jade Butay
Director
State of Hawai‘i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai‘i 96813-5097

Attn: Mr. Blayne Nikaido, DOT Statewide Transportation Planning Office

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Butay:

Thank you for your letter dated October 25, 2018 (your reference number DIR 1148, STP 8.2547), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge that your department has no comments to provide at this time.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

October 16, 2018

Greg Nakai
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

This is in response to your request for comments regarding the Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment – Manoa Learning Center, Honolulu, Hawaii, TMK (1) 2-9-054: 019, 020, and 021 (POR).

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the City and County of Honolulu (Community Number 150001), Maps revised November 5, 2014. Please note that the City and County of Honolulu, Hawaii is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- All buildings constructed within a coastal high hazard area, (any of the "V" Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The Honolulu City and County floodplain manager can be reached by calling Mario Siu-Li, at (808) 768-8098.

If you have any questions or concerns, please do not hesitate to call Michael Hornick of the Mitigation staff at (510) 627-7260.

Sincerely,

Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

cc:
Mario Siu-Li, NFIP Coordinator, City and County of Honolulu
Carol Tyau-Beam, State NFIP Coordinator, Hawaii Department of Land and Natural Resources
Michael Hornick, NFIP Planner, DHS/FEMA Region IX
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

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& ASSOCIATES, INC.

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Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch
United States Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

Attn: Mr. Michael Hornick, Mitigation Staff

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Blackburn:

Thank you for your letter dated October 16, 2018, regarding the subject project (previously referred to as "Mānoa Learning Center"). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and thank you for the detailed information relating to the National Flood Insurance Protection (NFIP) standards. We will include a figure in the Draft EA that documents the project site to be within Zone X, outside the 0.2 percent chance flood area.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

In Reply Refer To:
01EPIF00-2019-TA-0035

November 2, 2018

Mr. Greg Nakai
PBR Hawaii & Associates, INC
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Subject: Response to your Request for Technical Assistance, Manoa Learning Center, Oahu, Hawaii

Dear Mr. Nakai,

Thank you for your recent correspondence requesting technical assistance on species biology, habitat, or life requisite requirements. The Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) appreciates your efforts to avoid or minimize effects to protected species associated with your proposed actions. We provide the following information for your consideration under the authorities of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq.*), as amended.

Due to significant workload constraints, PIFWO is currently unable to specifically address your information request. The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area, in the '**Occurs In or Near Project Area**' column. Please note this list is not comprehensive and should only be used for general guidance. We have added to the PIFWO website, located at https://www.fws.gov/pacificislands/promo.cfm?id=177175840 recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality.

If you are representing a federal action agency, please use the official species list on our web-site for your section 7 consultation. You can find out if your project occurs in or near designated critical habitat here: https://ecos.fws.gov/ipac/.

Under section 7 of the ESA, it is the Federal agency's (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project "may affect" federally listed species or designated critical habitat. A "may affect, not likely to adversely affect" determination is appropriate when effects to federally listed species are expected to be discountable (*i.e.*, unlikely to occur), insignificant (minimal in size), or completely beneficial.

This conclusion requires written concurrence from the Service. If a "may affect, likely to adversely affect" determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have "no effect" on federally listed species and/or critical habitat do not require additional coordination or consultation.

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a "may affect, not likely to adversely affect" determination for your project. If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats, and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve endangered species. We regret that we cannot provide you with more specific protected species information for your project site. If you have questions that are not answered by the information on our website, you can contact PIFWO at (808) 792-9400 and ask to speak to the lead biologist for the island where your project is located.

Sincerely,

LEILA NAGATANI Digitally signed by LEILA NAGATANI Date: 2018.11.02 07:47:36 -10'00'

Acting Island Team Manager
Pacific islands Fish and Wildlife Office

The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. For your guidance, we've marked species that may occur in the vicinity of your project, this list is not comprehensive and should only be used for general guidance.

Scientific Name	**Common Name / Hawaiian Name**	**Federal Status**	**May Occur In Project Area**
Mammals			
Lasiurus cinereus semotus	Hawaiian hoary bat/ 'ōpe'ape'a	E	☒
Reptiles			
Chelonia mydas	Green sea turtle/honu - Central North Pacific DPS	T	☐
Erectmochelys imbricata	Hawksbill sea turtle/ Honu 'ea	E	☐
Birds			
Anas wyvilliana	Hawaiian duck/ koloa	E	☐
Branta sandvicensis	Hawaiian goose/ nēnē	E	☐
Fulica alai	Hawaiian coot/ 'alae kea	E	☐
Gallinula galeata sandvicensis	Hawaiian gallinule/ 'alae 'ula	E	☐
Himantopus mexicanus knudseni	Hawaiian stilt/ Ae'o	E	☐
Oceanodroma castro	Band-rumped storm-petrel/ 'akē'akē	E	☒
Pterodroma sandwichensis	Hawaiian petrel/ 'ua'u	E	☒
Puffinus auricularis newelli	Newell's shearwater/ 'a'o	T	☒
Ardenna pacificus	Wedge-tailed Shearwater/ 'ua'u kani	MBTA	☒
Gygis alba	White Tern/ manu-o-kū	MBTA	☒
Buteo solitarius	Hawaiian hawk/ 'io	E	☐
Insects			
Manduca blackburni	Blackburn's sphinx moth	E	☐
Megalagrion pacificum	Pacific Hawaiian Damselfly	E	☐
M. xanthomelas	Orangeblack Hawaiian Damselfly	E	☐
M. nigrohamatum nigrolineatum	Blackline Hawaiian Damselfly	E	☒

Plants				
Scientific Name	**Common Name or Hawaiian Name**	**Federal Status**	**Locations**	**May Occur In Project Area**
Abutilon menziesii	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=Hawai'i Island, L=Lāna'i, Mo=Moloka'i, Ka=Kaho'olawe, Ni=Ni'ihau, Le=Lehua

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July 26, 2019

Ms. Leila Nagatani, Acting Island Team Manager
United States Department of the Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Nagatani:

Thank you for your letter dated November 2, 2018 (your reference number 01EPIF00-2019-TA-0035), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and provide the following response.

Thank you for your guidance that the following species may occur within the vicinity of the project area:

1. Hawaiian hoary bat (‘ōpe‘ape‘a)
2. Band-rumped storm-petrel (‘akē‘akē)
3. Hawaiian petrel (‘ua‘u)
4. Newell’s shearwater (‘a‘o)
5. Wedge-tailed shearwater (‘ua‘u kani)
6. White tern (manu-o-kū)
7. Blackline Hawaiian damselfly

The Draft EA (DEA) will include the Pacific Islands Fish and Wildlife Office’s (PIFWO’s) recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species. The DEA will also note the best management practices to minimize and avoid sedimentation and erosion impacts to water quality as listed on the PIFWO website.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

July 10, 2019

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Manager and Chief Engineer

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

Mr. Greg Nakai
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Your Letter Dated October 11, 2018 Requesting Comments on the Pre-Assessment Consultation for the Environmental Assessment for Manoa Learning Center off Haukulu Street
Tax Map Key: 2-9-054: 019, 020, & 021

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

The existing water system cannot provide adequate fire protection to the proposed learning center development. The nearest fire hydrant is located approximately 1,300 linear feet away from the parcel along Waaloa Way. If permanent structures are proposed, the developer will be required to extend the water line and install a fire hydrant within 350 linear feet of the parcel along Haukulu Road to provide a flow of 1,000 gallons per minute.

The developer should investigate the feasibility of using non-potable water for irrigation of the proposed learning center and gardens. The evaluation of the feasibility of nonpotable source should be provided to the Board of Water Supply for review. If non-potable water is either unavailable or infeasible, a report of the investigation including proposed irrigation demands should be submitted to us before we will consider the use of potable water.

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

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

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.
All proposed developments shall verify with the State Department of Health in regards to wastewater disposal systems that are allowable within the "No Pass Zone".

If you have any questions, please contact Marc Chun of our Water Resources Division at 748-5906.

Very truly yours,

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

PBR HAWAII
& ASSOCIATES, INC.

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Cultural Sustainability Planner

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NATHALIE RAZO
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BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

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

Attn: Mr. Marc Chun, Water Resources Division

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Lau:

Thank you for your letter dated July 10, 2019, regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and provide the following response.

The Draft Environmental Assessment (DEA) will note your comments regarding: 1) provision of adequate fire protection for any permanent structures; 2) feasibility of using non-potable water for irrigation; 3) utilization of water conservation measures; 4) submittal of construction drawings to BWS for review and coordination of construction schedule; 5) coordination of on-site fire protection requirements with the Fire Prevention Bureau of the Honolulu Fire Department; and 6) verification with the State Department of Health regarding wastewater disposal systems that are allowable within the “No Pass Zone.”

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Amy Tsuneyoshi, BWS
Barry Usagawa, BWS

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR

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

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 18-631

October 29, 2018

Mr. Greg Nakai
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Pre-Assessment Consultation for HRS, Chapter 343
Environmental Assessment - Manoa Learning Center
TMK: (1) 2-9-054:019, 020 & 021 (POR.)

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

We have no comments at this time, as we do not have any facilities or easements on the subject property.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

for Ross S. Sasamura, P.E.
Director and Chief Engineer

PBR HAWAII
& ASSOCIATES, INC.

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ANN MIKIKO BOUSLOG, PhD
Project Director

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Cultural Sustainability Planner

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NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Ross S. Sasamura, P.E.
Director and Chief Engineer
Department of Facility Maintenance
City and County of Honolulu
1000 Ulu‘ohia Street, Suite 215
Kapolei, Hawai‘i 96707

Attn: Mr. Kyle Oyasato, Division of Road Maintenance

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Sasamura:

Thank you for your letter dated October 29, 2018 (your reference number DRM 18-631), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comment that the Department of Facility Maintenance (DFM) has no comment at this time, and that DFM does not have any facilities or easements on the subject property.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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DEPARTMENT OF PARKS & RECREATION

CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

October 18, 2018

Mr. Greg Nakai
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

SUBJECT: Pre-Assessment Consultation
HRS Chapter 343 Environmental Assessment
Manoa Learning Center, Honolulu, Hawaii
TMK (1) 2-9-054: 019, 020 & 021 (POR.)

Thank you for the opportunity to review and comment at the pre-consultation stage of the Draft Environmental Assessment for Board of Water Supply's proposed Manoa Learning Center.

The Department of Parks and Recreation has no comment. As the proposed project will have no impact on any program or facility of the Department, you may remove us as a consulted party to the balance of the EIS process.

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

Sincerely,

Michele K. Nekota
Director

MKN:jr
(747625)

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BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

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

Attn: Mr. John Reid, Planner

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Nekota:

Thank you for your letter dated October 18, 2018 (your reference number 747625), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comment that the Department of Parks and Recreation (DPR) has no comment and that the proposed project will have no impact on any DPR program or facility. As requested, you will be removed as a consulted party to the balance of the Environmental Assessment (EA) process.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Draft EA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

2018/ELOG-2031 (nc)

November 9, 2018

PBR HAWAII & Associates, Inc.
Attn: Greg Nakai
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

SUBJECT: Pre-Assessment Consultation for an HRS Chapter 343 Environmental Assessment – Manoa Learning Center
TMK: 1-2-054: 019, 020, and 021 (Por.)

Thank you for providing the Department of Planning and Permitting an opportunity to comment on the Pre-Assessment Consultation for the proposed Manoa Learning Center Environmental Assessment (EA).

1. The EA should include a discussion of how the project objectives align with the Honolulu General Plan.

2. The EA should include a discussion of the Primary Urban Center Development Plan, especially as it relates to Section 3.1 Protecting and Enhancing Natural, Cultural, and Scenic Resources.

3. Property has no sewer service. Privately owned wastewater treatment systems are under the jurisdiction of the State Department of Health,

Should you have any questions regarding these comments, please contact Noelle Cole, of our staff, at 768-8055.

Very truly yours,

Dina L.T. Wong
Acting Division Chief
Planning Division

DLTW:js

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& ASSOCIATES, INC.

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July 26, 2019

Ms. Dina L. T. Wong
Acting Division Chief
Planning Division
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

Attn: Ms. Noelle Cole

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Wong:

Thank you for your letter dated November 9, 2018 (your reference number 2018/ELOG-2031(nc)), regarding the subject project (previously referred to as "Mānoa Learning Center"). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comments and provide the following response.

The Draft Environmental Assessment (DEA) will:

1. Include a discussion on how the project objectives align with the Honolulu General Plan;

2. Include a discussion on the Primary Urban Center Development Plan, especially as it relates to Section 3.1 Protecting and Enhancing Natural, Cultural, and Scenic Resources; and

3. Note that the property has no sewer service and that privately owned wastewater treatment systems are under the jurisdiction of the State Department of Health.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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

KIRK CALDWELL
MAYOR

WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP10/18-747725R

November 9, 2018

Mr. Greg Nakai
Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

SUBJECT: Pre-Assessment Consultation Draft Environmental Assessment (DEA) for Manoa Learning Center, Manoa, Oahu, Hawaii

In response to your letter dated October 11, 2018, we have the following comments:

1. **Transportation Impact Assessment (TIA)**. The Manoa Learning Center is estimated to generate more people (school groups, general public and volunteers) to the project site. Therefore, a TIA should be completed to calculate and examine the vehicle, pedestrian, bicycle and public transit stress and comfort levels on the nearby roadways and intersections with corresponding improvements to mitigate these impacts by applying Complete Streets principles.

2. **Roadway Jurisdiction**. The DEA should include a map of the various adjacent roadways and street jurisdictions.

3. **Traffic Management Plan (TMP)**. The DEA should include a TMP which:

   a. Is jointly reviewed and accepted by the City's Department of Transportation Services (DTS) and the Department of Planning and Permitting.

   b. Provides a discussion of the traffic impacts that the project may have on any surrounding City roadways and facilities, including short-term impacts during construction and long-term impacts after

construction with corresponding measures to mitigate these impacts by applying Complete Streets principles.

c. Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.

4. **Complete Streets**. The Application should contain discussion of compliance with County and State Complete Streets policies, pursuant to Act 54, Session Laws of Hawaii 2009, HRS §264-20.5 and ROH 12-15. The Project should elaborate on how it will comply with Complete Streets policies, including specific adherence to the following key Complete Streets principles: safety, Context Sensitive Solutions, accessibility and mobility for all, use and comfort of all users, consistency of design guidelines and standards, energy efficiency, and health and green infrastructure.

5. **Bike Parking**. On-site bike racks and secure moped parking for the employees, volunteers, and visitors should be included and located on the site plan.

6. **Parking**.

a. All parking needs for the proposed facility (employees, volunteers, and visitors) should be handled on-site.

b. Include a discussion regarding how the facility will handle all of its parking needs on-site, including school bus parking and additional parking facilities.

7. **Loading and Unloading**.

a. All loading and unloading needs, including delivery vehicles and school buses, should be handled on-site, rather than on City roadways.

b. The project should be designed to accommodate TheHandi-Van para-transit vehicles on-site, which require a minimum 31-foot turning radius, a 10-foot, 6-inch height clearance, and the ability to exit the site without reversing onto public roadways.

8. **Driveway Design**. All access driveways to the project site should be designed with the highest pedestrian and bicycle safety measures and constructed to current City standards.

9. **Vehicle/Pedestrian Crossing**. Any existing pedestrian, bicycle and vehicle access/crossing shall be maintained with the highest safety measures during construction.

10. **Residential Access**. Residents should have access to their property at all times during the project. Any existing pedestrian, bicycle, and vehicle access/crossing shall be maintained with the highest safety measures during construction.

11. **Best Management Practice (BMP) Controls**. Best Management Practice controls should be included at the construction site to prevent trailing of dirt and debris on City roadways.

12. **Roadway Damage**. Any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards as well as meet Americans with Disabilities Act requirements.

13. **Priority Guidelines on Sustainability.** In addressing priority guidelines on sustainability through HRS § 226-108, the Project should consider certification by a green building rating system, including but not limited to nationally recognized rating systems such as Leadership in Energy and Environmental Design (LEED), the Living Building Challenge, Green Globes, or another comparable State-approved, nationally recognized, and consensus-based guideline, standard, or system.

    The DTS supports certification such as the LEED for Building Design and Construction Version 4.0 as it mitigates Location and Transportation (LT) impacts including but not limited to: minimizing the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff; reducing pollution by promoting alternatives to conventionally fueled automobiles; increasing access to quality transit; reducing Vehicle Miles Traveled (VMT) through the integration of bicycle facilities; and compact, walkable development that encourages a density and diversity of surrounding uses.

14. **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.

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

16. **Disability and Communication Access Board (DCAB)**. Plans should be reviewed and approved by DCAB to ensure full compliance with the ADA.

We reserve further comment pending review of the DEA.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,

Wes Frysztacki
Director

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
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July 26, 2019

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

Attn: Ms. Renee Yamasaki

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Frysztacki:

Thank you for your letter dated November 9, 2018 (your reference number TP10/18-747725R), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and provide the following responses.

1. **Transportation Impact Assessment (TIA)**. The Draft Environmental Assessment (DEA) will include an assessment of potential transportation impacts.

2. **Roadway Jurisdiction**. The DEA will include a map of the various adjacent roadways and street jurisdictions.

3. **Traffic Management Plan (TMP)**. The DEA will include a TMP with the requested information.

4. **Complete Streets.** The DEA will contain a discussion of compliance with County and State Complete Streets policies, pursuant to Act 54, Session Laws of Hawai‘i 2009, HRS §264-20.5 and ROH 12-15.

5. **Bike Parking.** To encourage bicycling, on-site bike racks may be considered for the Project.

6. **Parking.** A limited amount of parking for employees/workers will be provided at the existing unpaved parking area on-site. However, to minimize impacts to the natural environment and to the residential areas near the Wa‘aloa Way access point – and to keep vehicular traffic on Wa‘aloa Way to a minimum – parking for visitors and volunteers, including bus parking, will be provided off-site, potentially at the existing parking facilities at Paradise Park. Visitors/volunteers would then access the Project Site on foot, via a proposed unpaved trail from the off-site parking facilities. In the future, the disused “Old Government Road” could potentially be cleared and restored to provide an alternative pedestrian trail from the proposed parking area to the Project Site.

7. **Loading and Unloading.** Loading and unloading needs for deliveries will be handled on-site. However, to avoid impacts to the natural environment in the State Conservation District and to residential areas near the Waʻaloa Way access point, and to keep vehicular traffic on Waʻaloa Way to a minimum, bus loading and unloading will be handled off-site, potentially at the existing facilities at Paradise Park. If a permanent building is constructed, access requirements for para-transit vehicles will be coordinated with DTS, including any modifications to the access road (Haukulu Road) leading from the Waʻaloa Way gate. However, no permanent structures are currently planned for the Project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; the Project may include a small traditional meeting hale, pavilion, or similar open-air structure.

8. **Driveway Design.** The existing vehicular access at the Waʻaloa Way gate will be restricted to BWS/Hālau Wai Mānoa staff/workers. No modifications to the existing driveway are currently planned.

9. **Vehicle/Pedestrian Crossing.** The DEA will note that any existing pedestrian, bicycle and vehicle access/crossing shall be maintained with the highest safety measures during construction (if any). However, as mentioned above, no permanent structures are currently planned to be constructed for the Project.

10. **Residential Access.** The DEA will note that residents will have access to their properties at all times during the project, and that any existing pedestrian, bicycle, and vehicle access/crossing shall be maintained with the highest safety measures during construction. However, as mentioned above, no permanent structures are currently planned to be constructed for the Project.

11. **Best Management Practice (BMP) Controls.** The DEA will note that BMP controls should be included at the construction site to prevent trailing of dirt and debris on City roadways. However, as mentioned above, no permanent structures are currently planned to be constructed for the Project.

12. **Roadway Damage.** The DEA will note that any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards as well as meet Americans with Disabilities Act requirements. However, as mentioned above, no permanent structures are currently planned to be constructed for the Project.

13. **Priority Guidelines on Sustainability.** The DEA will note your comments regarding the priority guidelines on sustainability (HRS §226-108).

14. **Neighborhood Impacts.** The DEA will note your comments regarding notification of area representatives, neighborhood board, as well as area residents, businesses, emergency personnel, and Oahu Transit Services, etc.

15. **Street Usage Permit.** The DEA will note your comment that a street usage permit should be obtained from the DTS for any construction-related work that may require the temporary closure of any traffic lane on a City street. However, as mentioned above, no permanent structures are currently planned to be constructed for the Project.

16. **Disability and Communication Access Board (DCAB).** The DEA will note your comment that plans should be reviewed and approved by DCAB to ensure full compliance with the ADA.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR

MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

October 22, 2018

Mr. Greg Nakai, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Preassessment Consultation for Environmental Assessment
Manoa Learning Center
Honolulu, Hawaii 96822
Tax Map Keys: 2-9-054: 019, 020, and 021

In response to your letter dated October 11, 2018, 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; 2012 Edition, Section 18.2.3.2.2.)

2. A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2012 Edition, Section 18.2.3.2.1.)

3. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45,720 millimeters) from a water supply

on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; 2012 Edition, Section 18.3.1, as amended.)

4. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or email at wmasuda@honolulu.gov.

Sincerely,

SOCRATES D. BRATAKOS
Assistant Chief

SDB/TC:bh

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

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Principal

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ANN MIKIKO BOUSLOG, PhD
Project Director

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MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Socrates D. Bratakos
Assistant Chief
Honolulu Fire Department
City and County of Honolulu
636 South Street
Honolulu, Hawai‘i 96813-5007

Attn: Battalion Chief Wayne Masuda, Fire Prevention Bureau

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Bratakos:

Thank you for your letter dated October 22, 2018, regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and the Draft Environmental Assessment (DEA) will note your agency’s comments regarding:

1. Fire department access roads (pursuant to NFPA 1; 2012 Edition, Section 18.2.3.2.2 and Section 18.2.3.2.1 or as amended);
2. Water supply for the required fire flow for fire protection, if necessary; and
3. The provision of civil drawings to the Honolulu Fire Department (HFD) for review and approval.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813-3484
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POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
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KIRK CALDWELL
MAYOR

SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
JONATHON GREMS
DEPUTY CHIEFS

OUR REFERENCE EO-TS

October 30, 2018

Mr. Greg Nakai, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

This is in response to a letter for the Pre-Assessment Consultation for the proposed Honolulu Board of Water Supply Manoa Learning Center located in Honolulu, Oahu.

The Honolulu Police Department (HPD) anticipates short- and long-term impacts to pedestrian and vehicular traffic around the area of the project, in particular the roadways of Manoa Road, Waakaua Street, and Waaloa Place, as these roads lead into the proposed project area. The HPD recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor to facilitate the flow of traffic during the construction phase of the project.

The HPD also has concerns with the security of the area when the project is completed, as there will be an increase in the transient population. The HPD would like to be involved in any future planning for this project to reassess its impact on police operations.

If there are any questions, please call Acting Major Gordon Lum Kee of District 7 (East Honolulu) at 723-3369.

Sincerely,

ALLAN T. NAGATA
Assistant Chief
Support Services Bureau

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

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KIMI MIKAMI YUEN, LEED® AP BD+C
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Project Director

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NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Allan T. Nagata, Assistant Chief
Support Services Bureau
Honolulu Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawai‘i 96813

Attn: Acting Major Gordon Lum Kee, District 7 (East Honolulu)

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Nagata:

Thank you for your letter dated October 30, 2018 (your reference EO-TS), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and provide the following response.

The Draft Environmental Assessment (DEA) will note your agency’s concerns regarding: (1) short- and long-term impacts to pedestrian and vehicular traffic around the project area; and (2) security of the area. The DEA will also note that the Honolulu Police Department (HPD) would like to be involved in any future planning for this project to reassess its impact on police operations.

We value your participation in the environmental review process. Your letter will be included in the forthcoming DEA.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

HONOLULU OFFICE
1001 Bishop Street, Suite 650
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Charter
COMMUNICATIONS

PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Attention: Mr. Greg Nakai

Project: HRS Chapter 343 Environmental Assessm ent – Manoa Learning Center

Subject: CATV Comments

Dear Mr. Nakai,

At this time Spectrum does not have any proposed projects in the area. We seed no conflict with your proposed project. Our service in the area is aerial. If you have any questions, contact me at #625-8576.

Sincerely,

Lionel Aguiar
Spectrum
Construction Coordinator

200 Akamainui Street Mililani, HI 96789-3912 t (808) 625-2100

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
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NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
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BRIAN WOLF, ASLA, LEED® AP
Associate

July 26, 2019

Mr. Lionel Aguiar
Construction Coordinator
Spectrum
200 Akamainui Street
Mililani, Hawai‘i 96789

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Aguiar:

Thank you for your letter postmarked October 19, 2018 (your reference: “CATV Comments”), regarding the subject project (previously referred to as “Mānoa Learning Center”). As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comments that Spectrum does not have any proposed projects in the area and thus does not see any conflicts with the subject project. We also appreciate the information that your service in the area is aerial.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Draft Environmental Assessment.

Sincerely,
PBR HAWAII

Greg Nakai
Planner

cc: Board of Water Supply

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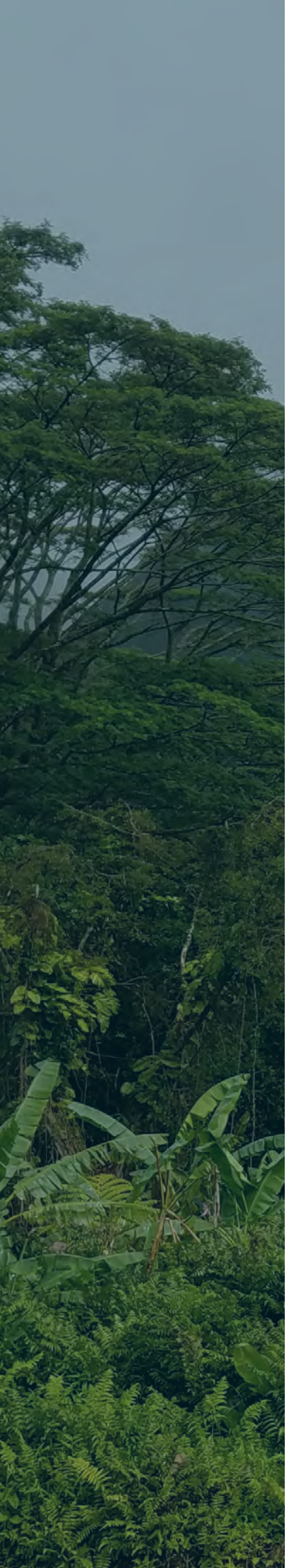

APPENDIX B
Flora and Fauna Study

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BIOLOGICAL RESOURCES SURVEY

for the

MĀNOA LEARNING CENTER

LUA′ĀLAEA, MĀNOA, O′AHU

by

Robert W. Hobdy
Environmental Consultant
Kokomo, Maui
July 2018

Prepared for:
Honolulu Board of Water Supply

BIOLOGICAL RESOURCES SURVEY
MANOA LEARNING CENTER
LUA'ĀLAEA, MĀNOA, O'AHU

INTRODUCTION

The Manoa Learning Center Project is located in upper Mānoa Valley on three parcels of land (TMK 2-9-54:19, 20,21) totaling 12.30 acres. This biological resources study was initiated by the Honolulu Board of Water Supply in fulfillment of environmental requirements of the planning process for this project.

SITE DESCRIPTION

This project site is situated on forested land adjacent to the lower boundary of the Honolulu Watershed Forest Reserve and lies between Haukulu and Naniuapo streams in the ʻili of Luaʻālaea between the elevations of 300 and 400 feet. The vegetation consists of large trees and dense wet undergrowth surrounding a small clearing. Rainfall here averages about 100 inches per year (Armstrong, 1983). Soils consist of damp to wet silty clay loams (Foote et al, 1972).

SURVEY OBJECTIVES

This report summarizes the findings of a biological resources survey of the proposed Mānoa Learning Center which was conducted in July 2018. The objectives of the survey were to:

1. Document what plant and animal species occur on the property or may likely occur in the existing habitat.

2. Document the status and abundance of each species.

3. Determine the presence or likely occurrence of any native flora and fauna species, particularly any that are federally listed as Threatened or Endangered. If such species occur, identify what features of the habitat may be essential for these species.

4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

BOTANICAL SURVEY REPORT

SURVEY METHODS

A walk-through botanical survey method was used selecting routes to cover the entire area and all habitat types. Areas most likely to harbor native or rare plants were more intensively examined. Notes were made on plant species, distribution and abundance as well as on terrain and substrate.

DESCRIPTION OF THE VEGETATION

The vegetation in the project area can be characterized as a lowland non-native wet forest. Over the past 200 years this forest has been gradually overtaken by naturalizing ornamental and weedy plant species to the point that nearly all native Hawaiian plants have been eliminated. A total of 92 plant species were recorded during the survey including very large to small trees, shrubs, grasses, vines and ferns.

The most common plant species encountered were albizia (*Falcataria moluccana*), pothos (*Epipremum pinnatum*), parasol leaf tree (*Macaranga tanarius*), black bamboo (*Phyllostachys nigra henionis*), California grass (*Urochloa mutica*) and honohono (*Commelina diffusa*).

Six native plants were recorded: the endemic koa (*Acacia koa*) and five indigenous plants, (*Cyperus polystachyos*) no common name, hala (*Pandanus tectorius*), koali awahia (*Ipomoea indica*), hau (*Hibiscus tiliaceus*) and pōpolo (*Solanum americanum*). All of these are common and three of them had been recently planted.

Ten Polynesian introduced plants were recorded: ʻape (*Alocasia macrorrhyzos*), kalo (*Colocasia esculenta*), niu (*Cocos nucifera*), kī (*Cordyline fruticosa*), ʻōlena (*Curcuma longa*), kukui (*Aleurites moluccana*), ‘ulu (*Artocarpus altilis*), ʻōhiʻa ʻai (*Syzygium malaccense*), ʻawa (*Piper methystichum*) and noni (*Morinda citrifolia*). All of these had been planted in recent years as a cultural enhancement.

DISCUSSION AND RECOMMENDATIONS

The vegetation within the project area consists mostly of non-native plants. Just six common native species were recorded and none of these are of any special conservation concern.

No federally listed endangered or threatened plant species (USFWS, 2018) were found during the survey and no special native plant communities were identified either. Native plant diversity begins to increase about 0.5 mile further mauka on the steeper mountain slopes.

Because of the above existing conditions it is determined that there is little of botanical concern in the project area. The anticipated disturbances associated with the project development are not expected to have a significant negative impact on the botanical resources in this part of Oahu.

This project, however, represents an opportunity to landscape the grounds around this learning center with native plants from this area along with Hawaiian cultural plants, and it is recommended that this theme be incorporated into the project design.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within four groups: Ferns, Conifers, Monocots and Dicots. Taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999) and Staples & Herbst (2005).

For each species, the following information is provided:

1. Scientific name with author citation.

2. Common English or Hawaiian name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

   Polynesian introduction = plants introduced to Hawai'i in the course of Polynesian migrations and prior to western contact.

   non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

   abundant = forming a major part of the vegetation within the project area.

   common = widely scattered throughout the area or locally abundant within a portion of it.

   uncommon = scattered sparsely throughout the area or occurring in a few small patches.

   rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
FERNS			
ATHYRIACEAE (Lady Fern Family)			
Diplazium esculentum (Retz.) Sw.	vegetable fern	non-native	uncommon
BLECHNACEAE (Chain Fern Family)			
*Blechnum appendiculatum*Willd.	palm fern	non-native	rare
CYATHEACEAE (Tree Fern Family)			
Spahaeropteris cooperi (Hook & F. Muell.)R.M.Tryon	Australian tree fern	non-native	rare
POLYPODIACEAE (Polypody Fern Family)			
Phlebodium aureum (L.) J. Sm.	rabbit's foot fern	non-native	rare
PTERIDACEAE (Brake Fern Family)			
Pityrogramma calomelanos (L.) Link	silver back fern	non-native	rare
SALVINIACEAE (Salvinia Fern Family)			
Azolla filiculoides Lam.	mosquito fern	non-native	rare
THELYPTERIDACEAE (Marsh Fern Family)			
Cyclosorus parasiticus (L.) Farw.	parasitic maiden fern	non-native	uncommon
CONIFERS			
ARAUCARIACEAE (Araucaria Family)			
Araucaria columnaris (G.Forster) J.D. Hooker	Cook pine	non-native	rare
MONOCOTS			
ARACEAE (Aroid Family)			
Alocasia cucullata (Louleiro) G. Don	Chinese 'ape	non-native	rare
Alocasia macrorrhizos (L.) G. Don	'ape	Polynesian	uncommon
Colocasia esculenta (L.) Schott	kalo	Polynesian	uncommon
Dieffenbachia maculata (Loddiges) G. Don	dumb cane	non-native	rare
Epipremnum pinnatum (L.) Engler	pothos	non-native	common
Monstera deliciosa Liebmann	monstera	non-native	rare
ARECACEAE (Palm Family)			
Archontophoenix alexandrae (F.Mueller) H. Wendl.	Alexandra palm	non-native	rare
Cocos nucifera L.	niu, coconut palm	Polynesian	rare
Dypsis lutescens (H.Wendl.) Beentje & J. Dransfield	golden-fruited palm	non-native	rare
Livistona chinensis (Jacq.) Martius	Chinese fan palm	non-native	rare
ASPARAGACEAE (Asparagus Family)			
Cordyline fruticosa (L.) A. Chev.	ki	Polynesian	uncommon
Dracaena fragrans (L.) Ker Gawler	fragrant dracaena	non-native	rare
Dracaena marginata Lam.	marginata, tricolor	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
CANNACEAE (Canna Family)			
Canna indica L.	canna, aliʻi poe	non-native	rare
COMMELINACEAE (Spiderwort Family)			
Commelina diffusa N.L. Burm.	honohono	non-native	common
Tradescantia zebrina Bosse	honohono 'ula	non-native	rare
COSTACEAE (Costus Family)			
Costus pulverulentus C. Presl.	----------	non-native	rare
Costus speciosus (J.Konig) Sm.	crepe ginger	non-native	uncommon
CYPERACEAE (Sedge Family)			
Cyperus polystachyos Rottb.	----------	indigenous	rare
Kyllinga nemoralis (J.R. & G. Forster) Dandy	kiliʻoʻopu	non-native	rare
HELICONIACEAE (Heliconia Family)			
Heliconia bihai (L.) L.	lobster claw	non-native	uncommon
Heliconia caribaea Lam.	Puerto Rican heliconia	non-native	rare
Heliconia latispatha Benth.	expanded lobster claw	non-native	rare
Heliconia psittacorum x spathicircinatum	golden torch	non-native	rare
MUSACEAE (Banana Family)			
Musa acuminata x balbisiana Colla	banana	non-native	uncommon
PANDANACEAE (Screwpine Family)			
Pandanus tectorius Parkinson ex Z.	hala	indigenous	rare
POACEAE (Grass Family)			
Axonopus compressus (Sw.) P. Beauv.	broadf-leaved carpetgrass	non-native	rare
Bambusa vulgaris J.C. Wendland	common bamboo	non-native	uncommon
Coix lacryma-jobi L.	Job's tears	non-native	rare
Eleusine indica (L.) Gaertn.	wiregrass	non-native	rare
Paspalum conjugatum Bergius	Hilo grass	non-native	rare
Phyllostachys nigra henionis (Lodd.) Munro	black bamboo	non-native	common
Urochloa mutica (Forssk.) T.Q. Nguyen	California grass	non-native	common
ZINGIBERACEAE (Ginger Family)			
Curcuma longa L.	ʻōlena, turmeric	Polynesian	rare
Hedychium coronata J. Konig	white ginger	non-native	uncommon
DICOTS			
ACANTHACEAE (Acanthus Family)			
Odontonema cuspidatum (Nees) Kuntze	firespike	non-native	uncommon

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
ANACARDIACEAE (Mango Family)			
Mangifera indica L.	mango	non-native	rare
ARALIACEAE (Ginseng Family)			
Schefflera actinophylla (Endl.) Harms	octopus tree	non-native	rare
ASTERACEAE (Sunflower Family)			
Ageratum conyzoides L.	maile hohono	non-native	rare
Erechtites valerianifolia (Wolf) DC.	fireweed	non-native	uncommon
Sphagneticola trilobata (L.) Pruski	wedelia	non-native	uncommon
BEGONIACEAE (Begonia Family)			
Begonia hirtella Link	Brazilian begonia	non-native	rare
BIGNONIACEAE (Bignonia Family)			
Crescentia cujete L.	calabash tree	non-native	rare
Spathodea campanulata P. Beauv.	African tulip tree	non-native	uncommon
CARICACEAE (Papaya Family)			
Carica papaya L.	papaya	non-native	rare
CARYOPHYLLACEAE (Pink Family)			
Drymaria cordata (L.) Willd.	pipili	non-native	rare
CASUARINACEAE (She-oak Family)			
Casuarina equisetifolia L.	common ironwood	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
Ipomoea alba L.	moon flower	non-native	rare
Ipomoea indica (J. Burm.) Merr.	koali awahia	indigenous	rare
Ipomoea triloba L.	little bell	non-native	rare
CUCURBITACEAE (Gourd Family)			
Momordica charantia L.	bitter melon	non-native	rare
EUPHORBIACEAE (Spurge Family)			
Aleurites moluccana (L.) Willd.	kukui	Polynesian	rare
Macaranga mappa (L.) Mull. Arg.	bingabing	non-native	rare
Macaranga tanarius (L.) Mull. Arg.	parasol leaf tree	non-native	common
FABACEAE (Pea Family)			
Acacia koa A. Gray	koa	endemic	rare
Falcataria moluccana (Miq.) Barneby & Grimes	albizia	non-native	common
Senna alata (L.) Roxb.	candle bush	non-native	rare
LAURACEAE (Laurel Family)			
Cinnamomum burmanni (Nees) Blume	padang cassia	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
Persea americana Mill.	avocado	non-native	rare
LOGANIACEAE (Strychnine Family)			
Fagraea berteroana Benth.	puakenikeni	non-native	rare
LYTHRACEAE (Loosestrife Family)			
Lythrum maritimum Kunth	pukamole	non-native	rare
MAGNOLICACEAE (Magnolia Family)			
Magnolia grandiflora L.	southern magnolia	non-native	rare
MALVACEAE (Mallow Family)			
Hibiscus tiliaceus L.	hau	indigenous	uncommon
MELASTOMATACEAE (Melastoma Family)			
Clidemia hirta (L.) D.Don	Koster's curse	non-native	rare
Dissotis rotundifolia (Sm.) Triana	dissotis	non-native	uncommon
MORACEAE (Mulberry Family)			
Artocarpus altilis (Z.) Fosberg	'ulu, breadfruit	Polynesian	rare
Ficus microcarpa L. fil.	Chinese banyan	non-native	rare
MYRSINACEAE (Myrsine Family)			
Ardisia elliptica Thunb.	shoebutton ardisia	non-native	rare
MYRTACEAE (Myrtle Family)		rare	
Syzygium cumini (L.) Skeels	Java plum	non-native	rare
Syzygium malaccense (L.) Merr. & Perry	'ōhi'a 'ai, mountain apple	Polynesian	rare
ONAGRACEAE (Evening Primrose Family)			
Ludwigia octovalvis (Jacq.) Raven	primrose willow	non-native	rare
Ludwigia palustris (L.) Elliot	marsh purslane	non-native	rare
PIPERACEAE (Pepper Family)			
Piper methysticum G. Forster	'awa	Polynesian	rare
PLANTAGINACEAE (Plantain Family)			
Plantago major L.	broad-leaved plantain	non-native	rare
RUBIACEAE (Coffee Family)			
Gardenia augusta (L.) Merr.	gardenia	non-native	uncommon
Morinda citrifolia L.	noni	Polynesian	rare
Paederia foetida L.	maile pilau	non-native	uncommon
SOLANACEAE (Nighshade Family)			
Solanum americanum Mill.	pōpolo	indigenous	rare
Solanum torvum Sw.	pea aubergine	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
URTICACEAE (Nettle Family)			
Cecropia obtusifolia Bertol.	guarumo	non-native	uncommon
VERBENACEAE (Verbena Family)			
Citharexylum caudatum L.	fiddlewood	non-native	uncommon
Clerodendrum chinense (Osbeck) Mabb.	pikake hohono	non-native	rare
Clerodendrum indicum (L.) Kuntze	tube flower	non-native	rare
Clerodendrum macrostegium Schauer	velvetleaf glory bower	non-native	uncommon

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities and location as well as observations of trails, tracks, scat and signs of feeding. In addition, an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

No mammals were seen during the survey. Deep, dense vegetation made sighting difficult and made use of the habitat difficult for most mammals. Some non-native species, however, could be expected here, including rats (*Rattus* spp.), mice (*Mus domesticus*), cats (*Felis catus*), mongoose (*Herpestes auropunctatus)* and occasionally domestic dogs (*Canis familiaris*). Also, feral pigs (*Sus scrofa*) are known to occur in these forests. Taxonomy and nomenclature follow Tomich (1986).

An evening survey was made near the middle of the project area using a bat detecting device (Batbox IIID), set to the frequency of 27,000 Hertz these endemic bats are known to use when echolocating for nocturnal flying insect prey. No bats were detected with the use of this device.

BIRDS

Bird life was modest in both species diversity, and in total numbers. Taxonomy and nomenclature follow American Ornithologists' Union (2018). Nine species of birds were seen. Two species were common, the red-vented bulbul (*Pycnonotus cafer*) and the red-whiskered bulbul (*Pycnonotus jocosus*). The common myna (*Acridotheres tristis*) was of uncommon occurrence. Six other birds were rare in the project area.

One native waterbird, the endemic and Endangered ʻalae ʻula or Hawaiian moorhen (*Gallinula chloropus sandvicensis*) was seen in one of the small kalo loʻi. These waterbirds, which are more common in windward Ōʻahu wetlands, found its way to this small water feature, highlighting the species wide-ranging flying ability in search of habitat.

While not seen, the indigenous ʻaukuʻu or black-crowned night-heron (*Nycticorax nycticorax hoactli*) has also been sighted by the caretaker in the above water feature. The ʻaukuʻu is fairly common around wetlands on Ōʻahu.

INSECTS

Insect life was sparse throughout the project area due primarily to the lack of habitat diversity. Eight species were observed during two site visits. Taxonomy and nomenclature follow Nishida et al (1992). Two mosquito species were abundant, the Asian tiger mosquito (*Aedes albopictus*) and the Southern house mosquito (*Culex quinqefasciatus*). Three species were uncommon, the big-headed ant (*Pheidole megacepala*), the beet webworm moth (*Spoladea recurvalis*) and the globe skimmer (*Pantala flavescens*).

The indigenous globe skimmer was the only native insect. This dragonfly is common in many habitats in Hawaii and has a nearly worldwide distribution. It is of no conservation concern.

DISCUSSION AND RECOMMENDATIONS

The fauna on the Mānoa Learning Center Project area were found to be mostly non-native species in a potentially rich but largely non-native habitat. One native bird and one native insect, however, were recorded during the survey and are here addressed.

The ʻalaeʻula is an endemic and Endangered waterbird that is presently found only on Ōʻahu and Kauaʻi. On Ōʻahu it primarily occurs in windward wetlands where it thrives and breeds. These secretive gallinules generally avoid intensive human activity, preferring quiet ponds and slow-moving streams and kalo loʻi with aquatic vegetation where they can feed, breed and raise their young.

It was therefor somewhat of a surprise to see a single ʻalaeʻula in s small water feature on the leeward side of the Koʻolau Range. This attests to their capability of wide-ranging flight in search of alternative habitat.

The development of this Mānoa Learning Center will undoubtably result in temporary disturbances, but the finished design call for the retention and enhancement of the water features. This would continue to provide habitat for the ʻalaeʻula and perhaps other protected waterbirds.

The globe skimmer is an indigenous dragonfly that is common throughout Hawaiʻi. It also has a nearly world wide range that makes it nearly ubiquitous. The globe skimmer is ranked as being of least conservation concern.

The ʻōpeʻapeʻa is an Endangered bat that is found on all the major islands in Hawaii. It is rarest, however, on Ōʻahu where it occurs mostly on the northeast corner of the island between Waimea bay and Kahuku. It was not detected during an evening survey in the project area. It is possible, however, that these wide-ranging bats could show up in the project area from time to time. They are difficult to detect without specialized equipment, but if found visiting the area, the U.S. Fish and Wildlife Service should be consulted for guidance.

No Endangered nēnē (*Branta sanvicensis*) are known from Ōʻahu except in captivity and are not expected in the project area.

No other recommendations regarding wildlife are deemed necessary.

Because of the above existing conditions it is determined that there is little of wildlife concern in the project area, and that the anticipated disturbances associated with this project development are not expected to have a significant negative impact on the wildlife resources in this part of Ō′ahu.

ANIMAL SPECIES LIST

Following is a checklist of the animal species inventoried during the field work. Animal species are arranged in descending abundance within three groups: Mammals, Birds and Insects. For each species the following information is provided:

1. Common name.

2. Scientific name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to Hawai′i; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

   non-native = all those animals brought to Hawai′i intentionally or accidentally after western contact.

   migratory = spending a portion of the year in Hawai′i and a portion elsewhere. In Hawai′i the migratory birds are usually in the overwintering/non-breeding phase of their life cycle.

4. Abundance of each species within the project area:

   abundant = many flocks or individuals seen throughout the area at all times of day.

   common = a few flocks or well scattered individuals throughout the area.

   uncommon = only one flock or several individuals seen within the project area.

   rare = only one or two seen within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MAMMALS (none)			
BIRDS			
PYCNONOTIDAE (Bulbul Family)			
Pynonotus cafer L.	red-vented bulbul	non-native	common
Pycnonotus jocosus L.	red-whiskered bulbul	non-native	common
STURNIDAE (Starling Family)			
Acridotheres tristis L.	common myna	non-native	uncommon
ANATIDAE (Duck Family)			
Anas platyrhyncos L.	mallard duck	non-native	rare
THRAUPIDAE (Tanager Family)			
Paroaria coronata Miller	red-crested cardinal	non-native	rare
PHASIANIDAE (Pheasant Family)			
Gallus gallus L.	chicken	non-native	rare
ESTRILDIDAE (Estrildid Finch Family)			
Lonchura malacca L.	chestnut mannikin	non-native	rare
RALLIDAE (Rail Family)			
Gallinula chloropus sandvicensis L.	'alae'ula	endemic	rare
MUSCICAPIDAE (Old World Flycatcher Family)			
Copsychus malabaricus Scopoli	white-rumped shama	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
INSECTS			
Order DIPTERA - flies			
CULICIDAE (Mosquito Family)			
Aedes albopictus Skuse	Asian tiger mosquito	non-native	abundant
Culex quinquefasciatus Say	Southern house mosquito	non-native	abundant
Order HYMENOPTERA - bees, wasps, ants			
FORMICIDAE (Ant Family)			
Pheidole megacephala Fabricius	big-headed ant	non-native	uncommon
Order LEPIDOPTERA - butterflies, moths			
CRAMBIDAE (Grass Moth Family)			
Spoladea recurvalis Fabricius	beet webworm moth	non-native	uncommon
PAPILIONIDAE (Swallowtail Butterfly Family)			
Papilio xuthus L.	Asian swallowtail butterfly	non-native	rare
PIERIDAE (White and Sulfur Butterfly Family)			
Pieris rapae L.	cabbage butterfly	non-native	rare
Order ODONATA - dragonflies, damselflies			
LIBELLULIDAE (Skimmer Dragonfly Family)			
Pantala flavescens Fabricius	globe skimmer	indigenous	uncommon
Order ORTHOPTERA - grasshoppers, crickets			
GRYLLIDAE (Cricket Family)			
Cycloptiloides americanus Saussure	scaly cricket	non-native	rare

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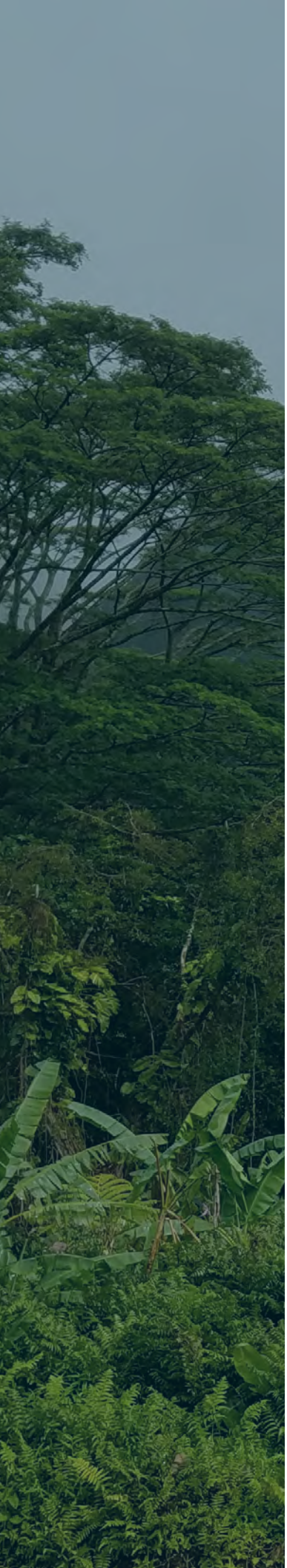

APPENDIX C
Archaeological Inventory Survey

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An Archaeological Inventory Survey for the Proposed Hālau Wai Mānoa in Upper Mānoa Valley

TMKs: (1) 2-9-054:019, 020 and 021; and portions of
TMKs: (1) 2-9-054:004 and 029

Waikīkī Ahupuaʻa
Honolulu District
Island of Oʻahu

DRAFT VERSION

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ASM Project Number 29440

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An Archaeological Inventory Survey for the Proposed Hālau Wai Mānoa in Upper Mānoa Valley

TMKs: (1) 2-9-054:019, 020 and 021; and portions

of TMKs: (1) 2-9-054:004 and 029

Waikīkī Ahupuaʻa
Honolulu District
Island of Oʻahu

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EXECUTIVE SUMMARY

At the request of Mr. Vincent Shigekuni of PBR Hawaii & Associates, on behalf of the Honolulu Board of Water Supply (BWS), ASM Affiliates conducted an Archaeological Inventory Survey of a roughly 12.8 acre property (Tax Map Keys [TMKs]: (1) 2-9-054:019, 020, and 021, and portions of (1) 2-9-054:004 and 029) within Mānoa Valley, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Island of Oahu. All of the parcels are owned by City and County of Honolulu Board of Water Supply, who will be putting out a request for proposal for development of the Hālau Wai Mānoa, a project with the goal of educating the public about the importance of watersheds, water conservation, and sustainable agriculture. The current study will accompany an Environmental Assessment being prepared in compliance with Hawaiʻi Revised Statues Chapter 343, and has been prepared in accordance with Hawaiʻi Administrative Rules §13–275 (*Rules Governing Procedures for Historic Preservation Review to Comment on Section 6E-8, HRS, Projects)*. The AIS was performed in compliance with the *Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports* as contained in Hawaiʻi Administrative Rules §13–276. Fieldwork for the current study was conducted between August 8 and 22, 2018, as a result of which, eight newly-identified archaeological sites totaling thirty-one individual features were recorded. All of the sites were assigned State Inventory of Historic Places (SIHP) numbers and appear to date from the Historic Period. The sites include four agricultural complexes (Sites 50-80-14-08769; 08770; 08771; and 08774), an *ʻauwai* (Site 50-80-14-08772), man-made cave shelter (Site 50-80-14-08773), roadway segments (Site 50-80-14-08775), and a middle twentieth-century refuse dump (Site 50-80-14-08776). While it was shown that all of the sites suffer varying degrees of reduced integrity as a result of impacts from invasive vegetation, all of the sites do retain sufficient aspects of location, design, setting, materials, workmanship, feeling, and association to be evaluated as being significant under Criterion d for the information that has been collected from the sites relative to middle nineteenth-century through middle twentieth-century land use practices. Given the nature of the proposed land use within the study area (the development of the Hālau Wai Mānoa), it is our recommendation that all of the sites be preserved; and that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the Hālau Wai Mānoa. With that said, it is not our intention that such preservation will make these sites off-limits to appropriate use, or conversely that there is should be any obligation to proactively protect the sites against the ravages of vegetation growth. Preservation can be either or both passive or proactive and may include further archaeological study, restoration and reuse of the sites, as well as interpretation.

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1. INTRODUCTION

At the request of Mr. Vincent Shigekuni of PBR Hawaii & Associates, on behalf of the Honolulu Board of Water Supply (BWS), ASM Affiliates (ASM) conducted an Archaeological Inventory Survey (AIS) of a roughly 12.8 acre property (Tax Map Keys [TMKs]: (1) 2-9-054:019, 020, and 021, and portions of (1) 2-9-054:004 and 029) within Mānoa Valley, Waikīkī Ahupuaʻa, Honolulu (Kona) District, Island of Oahu (Figure 1). The roughly 12.8-acre study area consists of three side-by-side parcels (TMKs: (1) 2-9-054:019, 020, and 021) that will form the area for the proposed Hālau Wai Mānoa (HWC), and two roughly 0.25-acre potential access corridors that traverse portions adjacent parcels TMKs: (1) 2-9-054:004 and 029 (Figure 2). All of the parcels are owned by BWS, who will be putting out a request for proposal for development of the HWC, a project with the goal of educating the public about the importance of watersheds, water conservation, and sustainable agriculture. Potential plans for the HWC may include construction of an interpretive facility with demonstration gardens and walking trails, along with improvements to the existing access road.

The current study will accompany an Environmental Assessment (EA) being prepared in compliance with Hawaiʻi Revised Statues (HRS) Chapter 343, and has been prepared in accordance with Hawaiʻi Administrative Rules (HAR) §13–275 (*Rules Governing Procedures for Historic Preservation Review to Comment on Section 6E-8, HRS, Projects)*. The AIS was performed in compliance with the *Rules Governing Minimal Standards for Archaeological Inventory Surveys and Reports* as contained in HAR §13–276.

The current report contains background information outlining the study area's physical and cultural contexts, a summary of relevant previous archaeological work conducted in the vicinity of the current study area, and survey expectations based upon the background information and the previous archaeological work. Also presented is an explanation of the archaeological field methods, a detailed description of the archaeological features encountered, interpretation and evaluation of those resources, and treatment recommendations for the documented sites.

STUDY AREA DESCRIPTION

The current study area is located in Mānoa Valley, approximately 7 kilometers inland from the shore at present-day Fort Derussy (see Figure 1). The majority of the study area is undeveloped, although some small-scale agriculture is taking place under a current lease. The study area is situated above existing residential development, and is bound by Waihī Stream to the west and Luaʻalaea and Nāniuʻapo Streams to the east (Figure 3). The roughly 12.8-acre study area comprises three adjacent parcels and two potential access corridors—a 700-foot-long existing road (Haukulu Road; Figure 4) leading into the southern end of the study area from the terminus of Waʻaloa Way, and a 250-foot-long by 50-foot-wide corridor leading west from the study area to the Lyon Arboretum parking lot access road. The latter represents a potential secondary pedestrian access to the study area. Elevation within the study area ranges from approximately 280-400 feet above mean sea level.

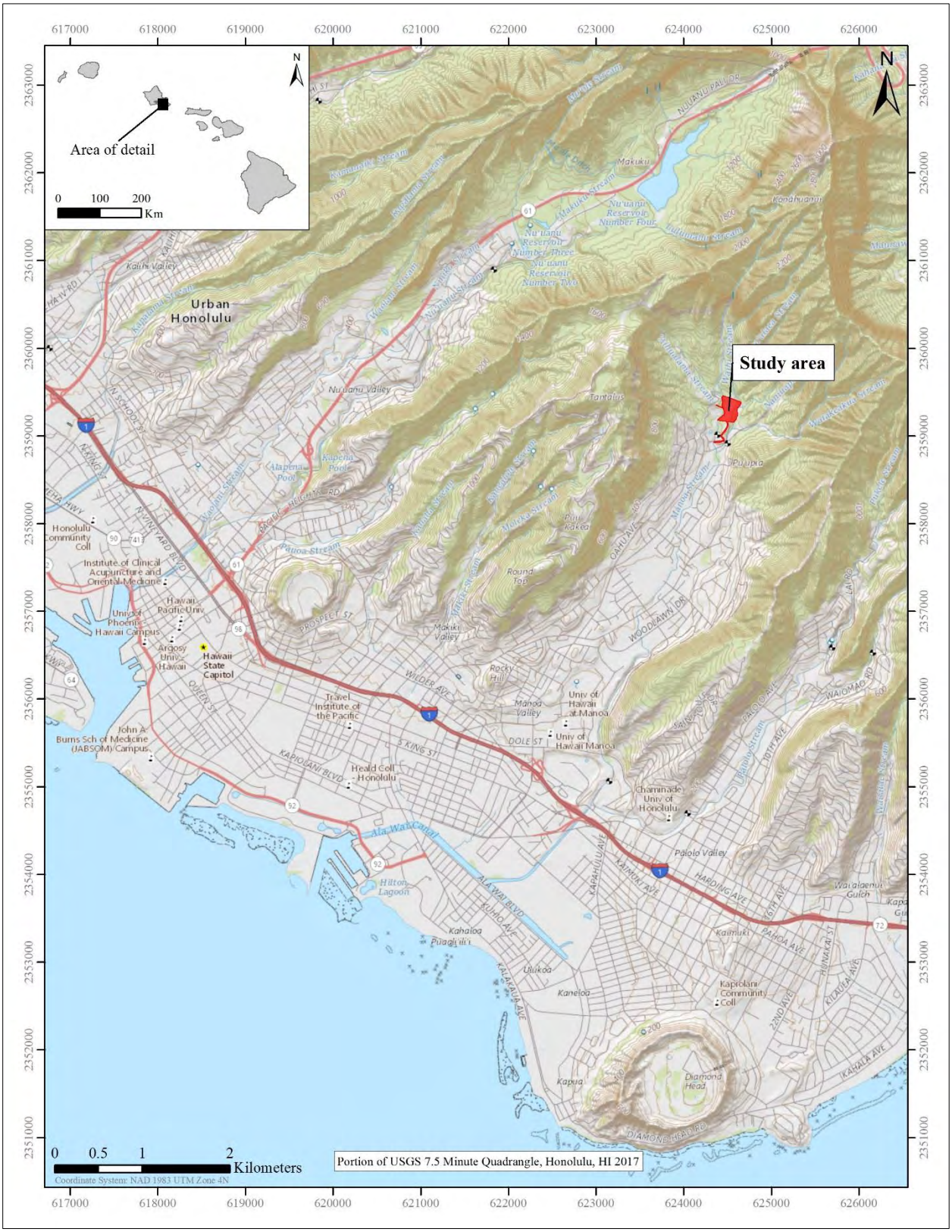


Figure 1. Study area location.

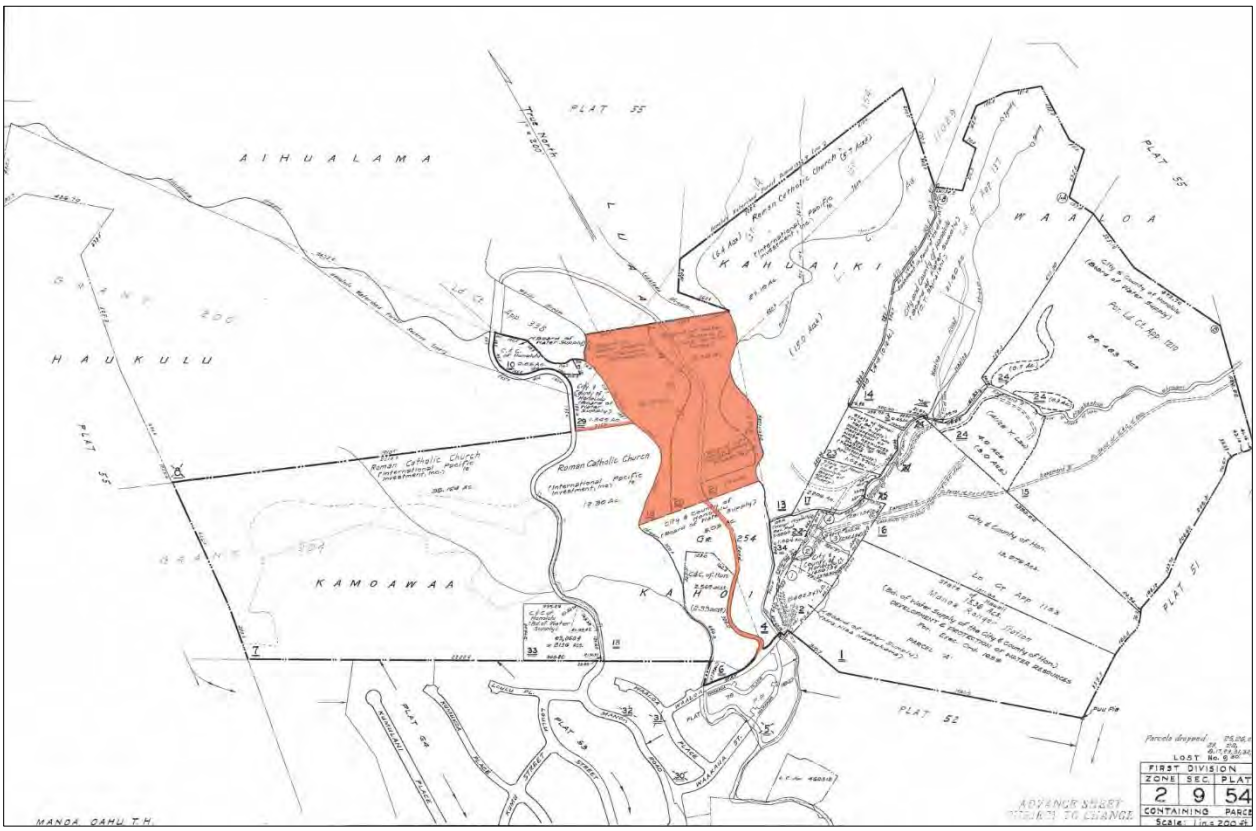


Figure 2. Tax Map Key (1) 2-9-054 showing the current study area (shaded red).

Geology, Soils, and Climate

The Mānoa Valley is an amphitheater-headed valley, situated on the southwestern flank of the Koʻolau Mountain Range. Two extinct shield volcanoes began forming the island around four million years ago, Koʻolau being the younger of the two. Deep, V-shaped valleys were formed by lava flows and erosional processes over millions of years along the western margin of the Koʻolau Caldera. More recent volcanic activity occurred between approximately 800 to 30 thousand years ago, forming several prominent landforms throughout eastern Oʻahu including the Koko Head, Diamond Head, and Punchbowl Craters, and Tantalus Peak. These later eruptions also acted to fill in the steep-walled valley of Mānoa.

The subsurface geology of Mānoa is classified as Pleistocene-aged Koʻolau Basalt (*QTid*) lava flows, with surficial deposits of older alluvium (*QTao*) and Pleistocene-aged tuff deposits (*Qott*) occurring on the valley floor (Sherrod *et al.* 2007*).* The northwest quadrant of the study area is overlain with Tantalus silt loam (TAE, 15 to 40 percent slopes) and Hanalei stony silty clay (*HoB; 2 to 6 percent slopes*). Lolekaa silty clays (*LoF; 40 to 70 percent slopes*) are present in the northeast quadrant; and Lolekaa silty clay soils (*LoC; 8 to 15 percent slopes*), which are classified as well-drained and prime farmland (NRCS 2018), are present within the more level topography of the central and southern portions of the study area, forming a central plateau between the two main drainages along the study area margins (Figure 5).

The climate of the Mānoa Valley is classified as Tropical Savanna, with annual temperatures ranging from 67^0 to 79^0 Fahrenheit (Western Regional Climate Center 2012). The upper valley where the study area is located receives high levels of precipitation, with a mean annual average of 3861 mm (152 inches) (Giambelluca et al. 2013).

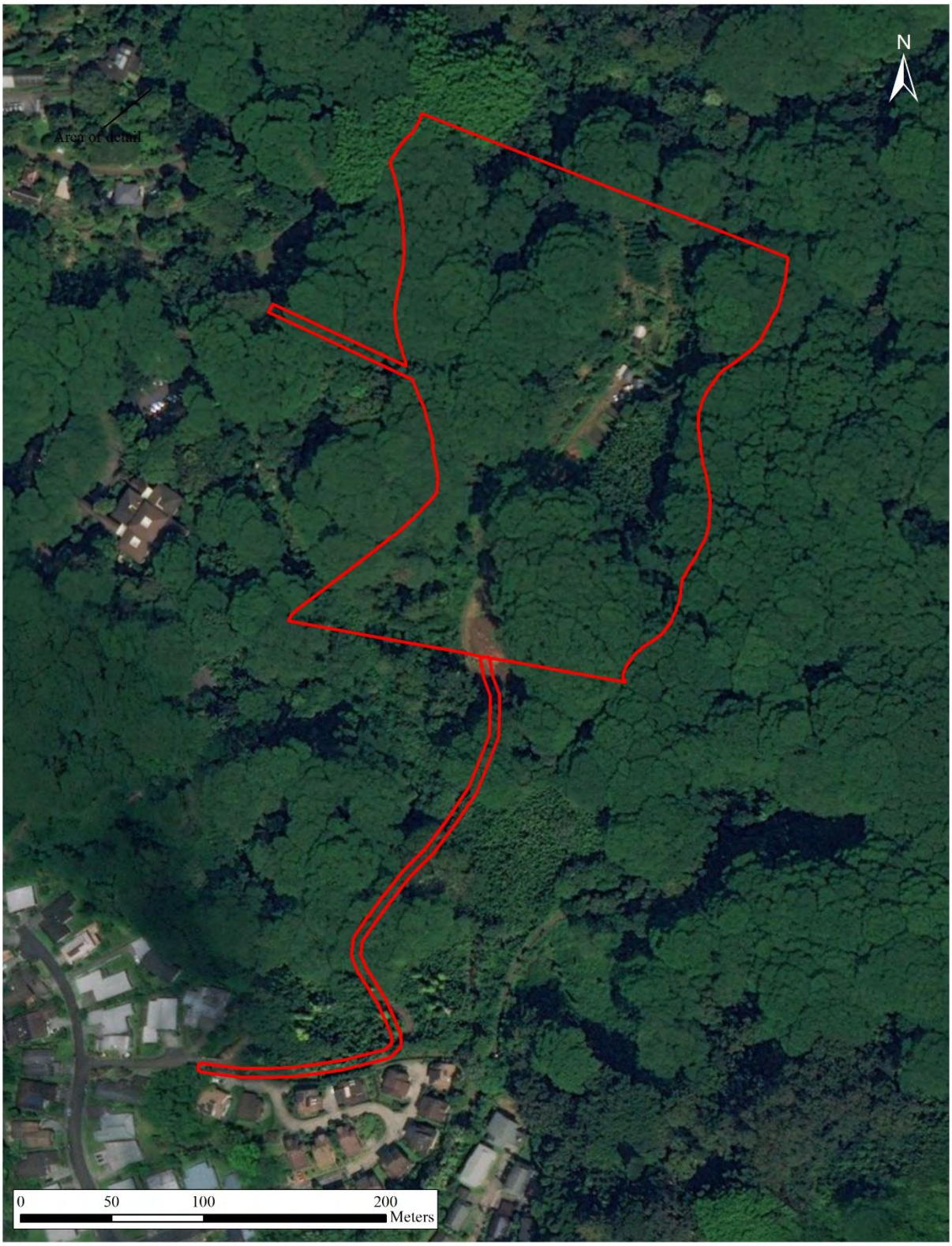


Figure 3. Satellite image showing study area outlined in red.

Figure 4. Access to the study area from the south via Haukulu Road (on left), view to the east.

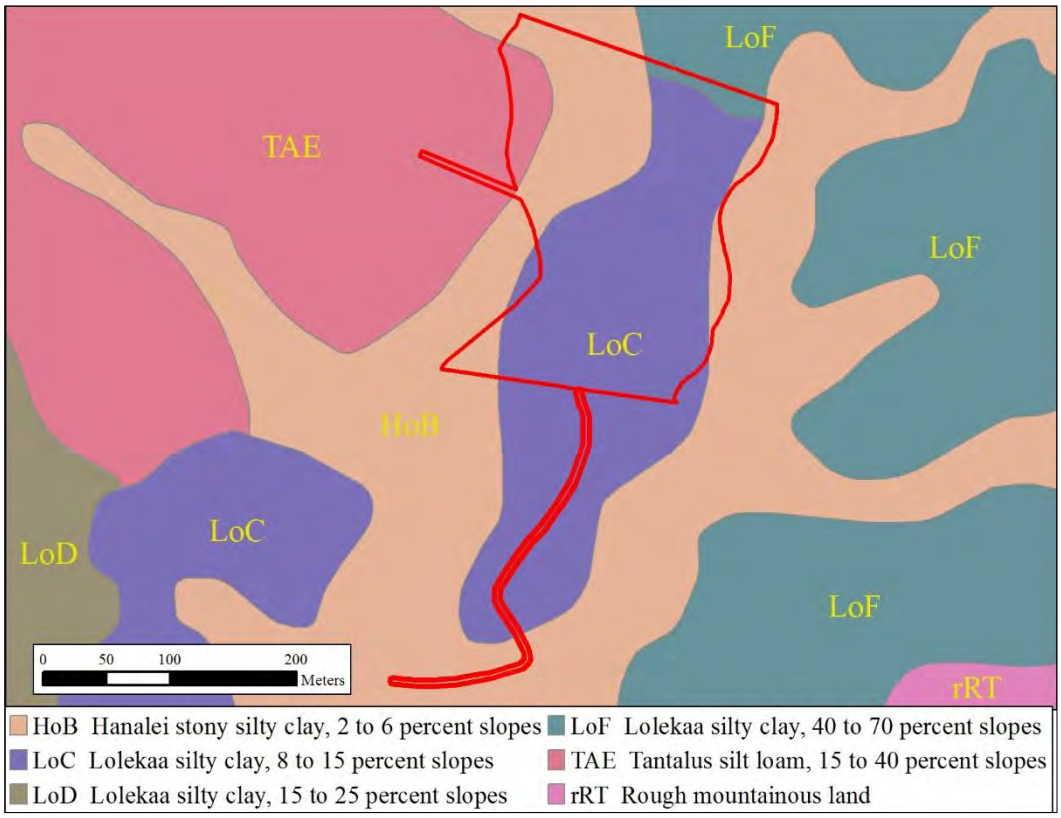


Figure 5. Soils map of the study area.

Vegetation

The study area is characterized as a lowland non-native wet forest. Vegetation within the study area consists of an abundance of non-native plant species, which have gradually replaced native Hawaiian plants over the last 200 years. Native and Polynesian-introduced plants were also recorded in the study area, the majority of which were recently planted. Of the ninety-two plant species recorded within the study area during a recent biological resources survey (Hobdy 2018), the most common species observed included albizia (*Falcataria moluccana*), pothos (*Epipremum pinnatum*), parasol leaf tree (*Macaranga tanarius*), black bamboo (*Phyllostachs nigra henionis*), *ʻawapuhi* (ginger [*Zingiber* sp.]) [California grass (*Urochloa mutica*) and honohono (*Commelina diffusa*).

A dense forest of *hau* (*Hibiscus tiliaceus*) is present in the northeast and north central portions of the study area (Figure 6), below which lies a swampland to the south, colonized by various species of ferns, shrubs and small trees; mature Chinese banyan trees (*Ficus micricarpa*) are also scattered throughout these areas. Dense stands of clumping bamboo are present along the eastern margin of the site (Figure 7). The central and southern portion of the study area have been subjected to modern disturbances, including clearing, grading, and agricultural activities, and consist of level grasslands and albizia trees interspersed with agricultural plots (Figures 8-10). Agricultural species currently being grown within the study area, generally within the central plateau area, include *kalo* (taro [*Colocasia esculenta*]), being cultivated in approximately twelve *loʻi* along the access road, *ʻulu* (breadfruit [*Artocarpus altilus*]), avocado (*Percea americana*), *ʻōlena* (turmeric, [*Curcuma longa*]), (kava [*Piper methysticum*]), awapuhi and Gardenias (*Gardenia augusta*).

Figure 6. *Hau* (*Hibiscus tiliaceus*) forest in the north-central study area, view to the south.

Figure 7. Bamboo growing along the bank of Lua‘alaea Stream on the study area’s eastern boundary, view to the north.

Figure 8. Evidence of ongoing clearing and rough grading within the central portion of the study area, view to the northeast.

Figure 9. Level grasslands in the central portion of the study area with mature Albizia grove in background, view to the east.

Figure 10. Active *lo‘i* near the terminus of Haukulu Road, view to the south.

2. BACKGROUND

To generate a set of expectations regarding the nature of archaeological resources that might be encountered within the study area and to establish an environment within which to assess the significance of any such resources, a general culture-historical context for the study area vicinity within Mānoa Valley and the greater Kona District is presented.

CULTURE-HISTORICAL CONTEXT

As previously mentioned, the subject property is located within western Waikīkī Ahupuaʻa, the largest of roughly a dozen traditional land divisions found in the District of Kona. Kona was one of six traditional *moku* or *ʻokana* (districts), situated between the Koʻolau Mountains and the sea along the leeward (southeastern) coast of the Island of Oʻahu. The present-day city of Honolulu falls within the district of Kona; thus, many people use the two names interchangeably when referring to the district. Several short valleys and narrow coastal plains make up the eastern portion of the Kona District, which extends westward from Kuliʻouʻou to Diamond Head and beyond to Moanalua; while the landscape to the west of Diamond Head comprises four long valleys cut by rivers, whose waters emptied out on to a wide coastal plain. The current study area is located within this western portion of Kona District, which Cordy describes at the time of European Contact as "the economic and demographic core of the district, with Waikiki *ahupuaʻa* (with Mānoa-Pālolo) the political center" (2002:5-7).

In the book, *Native Planters in Old Hawaii*, written in the 1930s, Handy et al. describe Kona in their discussion of areas of habitation as follows:

> There were [sic] abundant rain, ever flowing streams, springs, pools, verdant interior valleys, broad slopes and well-watered low-lands, fishpond areas, harbors, beaches, and lagoons. Altogether Kona was for Oahu, the area richest in natural resources and most pleasant for abundant and comfortable living. (1991:474)

The study area is situated deep within Mānoa Valley, between Makiki and Palolo Valley. The name "Mānoa" has been used to refer to the study area vicinity as both an *ahupuaʻa* and an *ʻili* (a land division smaller than an *ahupuaʻa*) on historical maps and in various sources over time. The literal translation of Mānoa is "vast" (Pūkuʻi et al. 1974:146), which may refer to the broad valley floor and/or the abundance of resources that were found there. Mānoa was known as a major subsistence area (Handy et al. 1991). Handy et al. relate the following about the study area vicinity:

> Prehistorically and historically, the area of densest population in all the Hawaiian Islands was that flanking Waikiki on the island of Oahu. Here the chiefs had their residences near the now famous beach and the offshore waters where conditions were ideal for their prized sport of surfriding. This in early times idyllic area was flanked by the great wet-taro lands of Manoa, and the area between that valley and the sea which was one continuous spread of taro land and fishponds. . . (Handy et al. 1991:270)

It is within this general context that the following discussion of the history of the study area is framed. The chronological summary presented below begins with a synthesis of Precontact settlement patterns and Historic land use that includes legendary and historical references to Mānoa and the greater Kona District. The discussion concludes with a review of the findings from prior investigations conducted in the study area vicinity. Combined, this information provides a means for understanding the study area within its culture-historical context.

Early Hawaiian Settlement Patterns

While the question of the timing of the first settlement of the islands of Hawaiʻi by Polynesians remains unanswered, several theories have been offered that derive from various sources of information (i.e., archaeological, genealogical, mythological, oral-historical, radiometric). However, none of these theories is today universally accepted because there is no archaeological evidence to support the proposed timing for the initial settlement, or colonization stage of island occupation. More recently, with advances in palynology and radiocarbon dating techniques, Kirch (2011) and others (Athens et al. 2014; Wilmshurst et al. 2011) have convincingly argued that Polynesians arrived much later in the Hawaiian Islands, sometime between A.D. 1000 and A.D. 1200 and expanded rapidly thereafter (c.f., Kirch 2011).

The initial settlement of Hawaiʻi is believed to have originated from the southern Marquesas Islands. In these early times, Hawaiʻi's inhabitants were primarily engaged in subsistence level agriculture and fishing (Handy et al. 1991). The Settlement Period was a time of great exploitation and environmental modification, when early Hawaiian

farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order; which was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought certain universal Polynesian customs and beliefs from their homeland, such as the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the *ʻaumakua* concept; and the concept of *mana*.

Initial permanent settlements in the islands were established at sheltered bays with access to fresh water and deep sea fisheries. The near shore fisheries and coastal fishponds, which were enriched by nutrients carried in the fresh water, also offered opportunities for resource extraction and stewardship. Communities shared extended familial relations and there was an occupational focus on the collection of marine resources. Clusters of houses were found in these coastal areas where, over time, agricultural production first became established. Over a period of several centuries, the areas with the richest natural resources became populated and perhaps even crowded, and inland elevations began to be used for agriculture and some habitation. Meanwhile, an increasing separation of the chiefly class from the common people began to emerge. As the environment reached its maximum carrying capacity, the result was social stress, hostility, and war between neighboring groups (Kirch 1985). Soon, large areas of the Hawaiian Islands were controlled by a few powerful chiefs.

As time passed, a uniquely Hawaiian culture developed. The portable artifacts found in archaeological sites from the Developmental Period reflect not only an evolution of traditional tools, but some distinctly Hawaiian inventions. The adze (*koʻi*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are ʻ*ulu maika* stones and *lei niho palaoa*. The latter was a status item worn by those of high rank, which indicates a trend toward greater status differentiation (Kirch 1985).

As the population continued to expand so did social stratification. By this time, most of the ecologically favorable zones of the windward and coastal regions of the major islands were settled, and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. It was during the Expansion Period that a second major migration settled in Hawaiʻi, this time from Tahiti in the Society Islands. The Expansion Period was characterized by major socioeconomic changes, intensive land modification, and the development of complex social hierarchies (Kirch 1985). Monumental architecture, such as *heiau* (religious temples), "played a key role as visual markers of chiefly dominance" (Kirch 1990:206).

The island of Oʻahu appears to have been divided into six traditional districts or *moku* during the Expansion Period; as previously mentioned, the current study area is located within the *moku* of Kona (Figure 11). The *moku* were further divided into distinct land units known as *ahupuaʻa*. According to Kirch's (1985) model, the concept of the *ahupuaʻa* was established sometime during the A.D. 1400s, adding another component to a then well-stratified society. The implications of this model include a shift in residential patterns from seasonal, temporary occupation, to permanent dispersed occupation of both coastal and upland areas. This land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupuaʻa* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resource management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources (Rechtman and Maly 2003). *Ahupuaʻa* were further divided into smaller sections such as *ʻili, moʻoʻāina, paukūʻāina, kīhāpai, kōʻele, hakuone*, and *kuakua* (Hommon 1986, Pogue 1978).

Ahupuaʻa were generally under the jurisdiction of an *aliʻi-ʻai-ahupuaʻa* (chief who controlled the *ahupuaʻa* resources), assisted by their appointed *konohiki*, (lesser chief). The *aliʻi-ʻai-ahupuaʻa* in turn answered to an *aliʻi-ʻai-moku* (chief who claimed the abundance of the entire district). Thus, *ahupuaʻa* resources supported not only the *makaʻāinana* (commoners) and *ʻohana* (families) who lived on the land, but also contributed support to the ruling class of higher chiefs and ultimately the crown. The *aliʻi* and the *makaʻāinana* were not confined to the boundaries of an *ahupuaʻa*; when there was a perceived need, they also shared with their neighbor *ahupuaʻa ʻohana* (Hono-ko-hau 1974). This emphasis on communal living within traditional Hawaiian society is evident in the following excerpt, which also addresses settlement patterns in places like Mānoa Valley:

> In localities like Waipiʻo on Hawaii or Manoa on Oahu, where there was extensive and continuous cultivation of contiguous *loʻi*, houses were not far apart, land holdings were interlocking, and the systems of waterways were controlled and serviced collectively. (Handy et al. 1991:290)

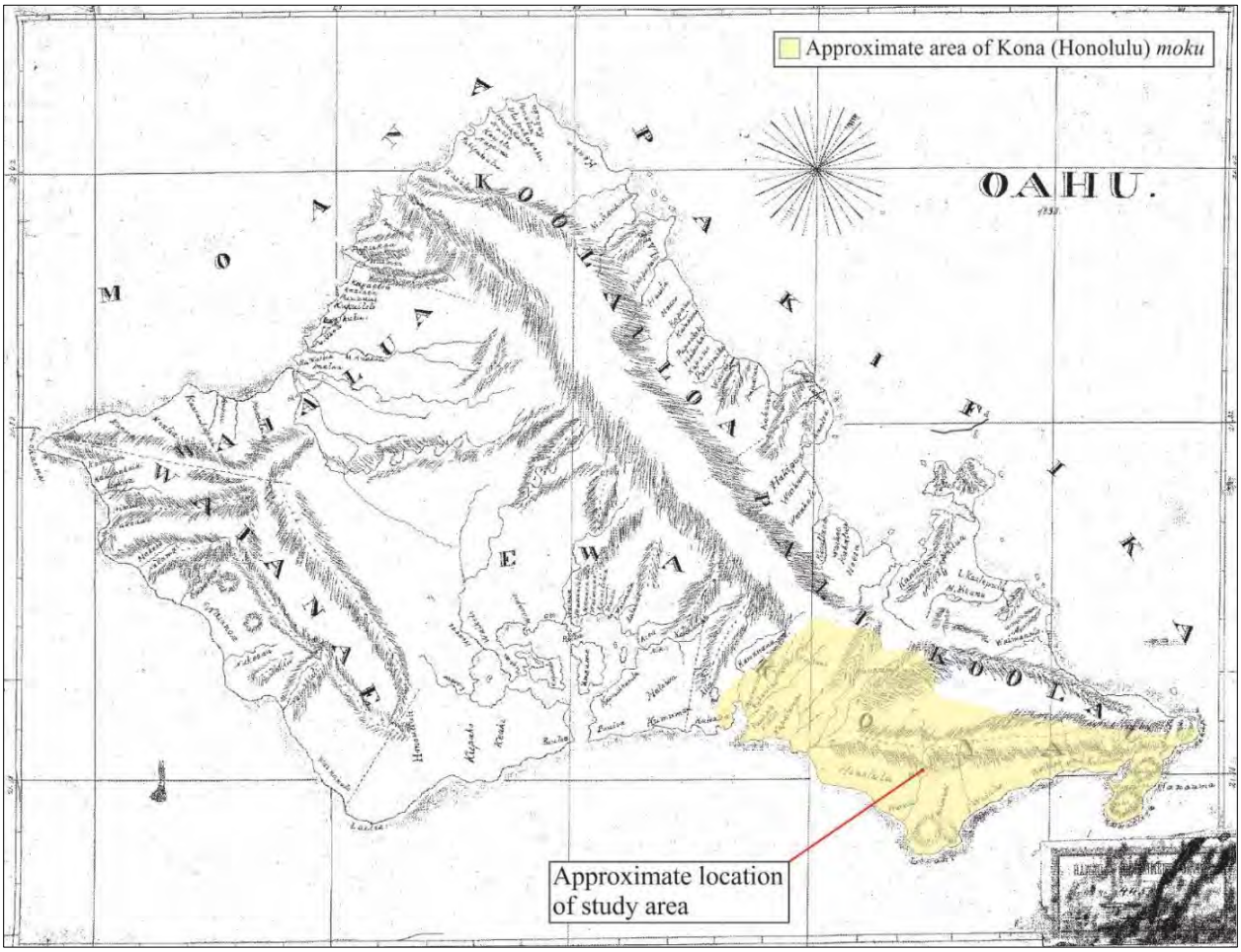


Figure 11. Hawaiʻi Register Map No. 455 showing traditional *moku* of Oʻahu ca. 1833.

Traditional and Legendary Accounts of Mānoa Valley

Traditional *moʻolelo* were passed down orally through the generations and many tales focus on *wahi pana* or legendary places. Some of these myths and legends tell of the *wahi pana* of Mānoa, most of which refer to Mānoa Valley's numerous water sources and intrinsic beauty. In *Legends of Honolulu,* Westervelt relates the story of Kāne and Kanaloa, two of the great gods from Kahiki known as "the water-finders" who opened "fountains and pools over all the islands" (1915:32). In one legend Kāne and Kanaloa, avid *ʻawa* (kava) drinkers, were seeking out water with which to mix their brew. After indulging in a strong brew in nearby Kalihi, "they passed Nuuanu Valley and went into the most beautiful rainbow valley of the world, Manoa Valley, the home of the rainbow princess" (ibid.:35). The legend continues thusly:

> Well-wooded precipices guard the upper end of the valley and make difficult the path to the tops of the mountains rising thousands of feet above.
>
> Here the gods found most excellent awa and Kanaloa cried, "O my brother, this is awa surpassing any other we have found; but where shall I go to find water?" Ka-ne replied, "Here in this hillside is water." So he took his staff and struck it fiercely against the precipice by which they had found awa. Rapidly the rocks were broken off. The precipice crept back from the mighty strokes of the god and a large pool of clear, cool water nestled among the great stones which had fallen. There

> they mixed awa and water and drank again and again until the sleep of the drunkard came and they rested by the fountain they had made. This pool is still at the head of Manoa Valley, and to this day is called Ka-Wai-a-ke-Akua (The water provided by a god).
>
> The servants of hundreds of chiefs have borne water from this place to their thirsty masters.
>
> In the days of Kamehameha I. [sic] very often messengers came from this pool of water of the gods with calabashes full of water swinging from the ends of sticks laid over their shoulders. When they came near any individual or group of Hawaiians they had to call out loudly, giving warning so that all by whom they passed could fall prostrate before the gift of the gods to the great king. (ibid.:36-37)

In a story entitled, "The Punahou Spring: A Legend", Emma Metcalf Nakuina (1892) tells the origin story of Punahou Spring, whose waters were used for the cultivation of *lo'i* in Mānoa Valley. The legend revolves around Kauawaahila (Waahila rain) and his twin sister Kauakiowao (mountain mist) who were relentlessly persecuted by their stepmother and hid away from her in Mānoa Valley (Nakuina 1892). She found them there by following the rainbows to the head of the valley. They ran and hid again, this time "in a small cave on the side of the hill of Kukaoo whose top is crowned by the temple of the Menehunes" (ibid.:102). Once again, their stepmother found them and they sought refuge in caves behind Punahou, in an area that was arid. Kauakiowao wanted to bathe, thus her brother consulted Kakea, the water god "who had charge of and controlled all the water sources of Manoa and Makiki valleys" to help him "open a water-course" to connect Kanawai Pond with their hiding place in Punahou (ibid.:103). Kakea helped the boy and diverted some of Wailele Spring into the endeavor, which resulted in the creation of Punahou Spring. Kauawaahila first built a swimming hole for his sister to bathe in and:

> . . .afterwards made some kalo patches, and people attracted by the water and consequent fertility of the place came and settled about. . . More and more kalo patches were excavated and the place became a thriving settlement. The spring became known as Ka Punahou (the new spring), and gave its name to the surrounding place" (ibid.:104).

Another legendary account explains the origin of Punahou Spring within the context of a drought and famine in Mānoa:

> They told of an aged couple who long ago dwelt near the present spring. At a time of drought and famine, the people were obliged to search the mountains for ti root and wild yams for food, and to trudge to Kamoiliili to fill their calabashes with drinking water. One night the old woman dreamed that a man appeared to her, to whom she complained bitterly about having to go so far for water, where-upon he said "He wai no" (there is water) and told her that beneath the trunk of an old hala tree nearby she would find it. She awoke her husband and told him the dream but he made light of it. The next night he had a similar dream. The apparition directed him to go to the sea and catch some red fish, to roast them in ti leaves, reserving a part as an offering to the family deities, and then to pull up the old hala tree by the roots. He awoke and lo! it was a dream. But the impression it made on him was so strong that in the morning he hastened to carry out the directions which he had received, when at last he pulled up the hala tree, water oozed out from beneath its roots. He dug out the place and thus formed a spring which was named Kapunahou. A pond was formed below the spring and by it were irrigated a dozen or more taro patches. (Alexander and Dodge Punahou School 1841-1941, pp 35-36 in Sterling and Summers 1978:284)

Mānoa was also the home of "Ka-ui-o-Manoa" (The Beauty of Mānoa), the daughter of Kaua'i chief Alala, who relocated to Mānoa Valley to marry the Mānoa chief Pawaa. They lived at Kahaloa in Mānoa Valley and had land at Kahoiwai in upper Mānoa Valley too (Westervelt 1915:158). Nakuina recounts the Mānoa Valley legend of Kahalaopuna under the title "The Valley of Rainbows" as follows:

> Kahalaopuna was the daughter of the chief of the district that included the beautiful Manoa Valley within its boundaries. These boundaries were varied from time to time at the pleasure of the reigning monarchs or through the exigencies of war. She had been betrothed from childhood to the young chief Kauhimahu, commonly called Kauhi, son of the chief of Waimanalo, Kailua, Kaneohe, and Heeia. As the future bride of the son of such an important chief, the father-in-law prospective demanded that the child be brought up in the strictest seclusion, seeing the face of no man until she was married to his son. (1904:41)

And so, it was that young Kahalaopuna grew to be so beautiful that the gods Kāne and Kanaloa became enamored

with her and "sent the rainbow to play continuously around her home as a sign to all people that there dwelt one who was especially favored by the gods" (ibid.:42). In addition, the princess's family and retainers composed *mele* (songs) celebrating her beauty. According to Nakuina, Kahalaopuna was the first of many beauties to emerge from the Mānoa Valley, thus the valley became known as "the valley of beauties, 'Ka ui o Manoa'" (ibid.). Two disfigured men who lived in the nearby mountains fell in love with Kahalaopuna sight unseen. They knew they would never win her love in real-life; thus, they spread rumors far and wide of their respective conquest of the fair maiden. Word reached her betrothed Kauhi, who believed their lies and felt that the only way to get over the betrayal was to kill her. He traveled from Kailua to Mānoa Valley and brought her back with him "on a trail across the mountains between Manoa and Nuuanu Valley that would eventually come out at Kaniakapupu above Luakaha" (ibid.:44). As part of their journey "they crossed over the Manoa streams, and went up the slopes of Aihualamaiki adjoining Kahaumakaawe. This slope was formerly covered by a grove of Koa and Lama trees" (ibid.). It was upon this slope that Kauhi struck a death blow to the chiefess; striking her with a bundle of sacred *hala* nuts that had been given him by the high priest of Kaulaa with the intention of being made into a *lei* for his future bride. As a result, "tradition has it that the gods were so shocked at the murderous use to which their sacred hala had been put that they cursed the trees, and the splendid lovely grove of Hala, Kukui, and Wiliwili of Kaualaa and Mahinauli died in a single night." (ibid.). However, Kahalaopuna had not breathed her last, for an owl god found her lifeless body and revived her. The young woman called to Kauhi with song, beseeching him to let her prove her fidelity. Kauhi tricked her into joining him on the mountain side so that he could kill her a second time. As a result, "and when the gods realized that their favored maiden had been murdered, they decreed that the rains should fall daily about the valley of beauty, their tears in memory of her graces" (ibid.:45).

In another account, Westervelt refers to Mānoa Valley as one of three "Celebrated owl localities" (ibid.:127) around Honolulu. Specifically, Westervelt recounts details about Pu'u Pueo (Figure 12), the home of the owl god who saved Kahalopuna's life in the legend above. He provides the following compelling description of the study area environs in "The Owls of Honolulu" from *Legends of Honolulu*:

> . . . The highest peaks of the island of Oahu are near the head of the valley. The winds which blow down the Pacific Ocean from the northeast strike these mountain-tops. Each cool breeze leaves its burden of moisture in a fleecy cloud to fall down the mountain-side into the valley. So cloud follows cloud, descending the slopes of the foothills in gentle rain.
>
> Almost all day long the valley is open to the sun, which looking on the luxuriant verdure and clinging mist, sends its abundant blessing of penetrating light, and rainbows upon rainbows are painted on the steep precipices at the head of the valley. There are arches and double arches of exquisite beauty, smashed fragments of scattered color, broad pillars of glorious fire blazing around green branches of ghost-like trees, great bands of opal hues lying in magnificent masses on the hillside, and lunar rainbows almost circular outlined in soft prismatic shades in the time of the full moon.
>
> When showers creep down the valley one by one, rainbows also chase each other in matchless symmetry of quiet, graceful motion. Sometimes the mist in the doorway of the valley has become so ethereal that splendid arches hang in the apparently clear sky without cloud support.
>
> It is no wonder that from time immemorial the Hawaiians have made the valley the home of royal chiefs, with the rainbow-maiden as their daughter. . . Ka-hala-o-Puna (The sweet-scented hala-flower of Puna). Woven into this legend is also the legend of the owl-god of the family to which this maiden belonged, for his home as well as hers was in Manoa Valley.
>
> Almost in the middle of the valley is a hill on which many years ago a temple was built and dedicated as the home of the owl-god Pueo. The hill now bears the name. . . "Puu-pueo," or "The hill of the owl."
>
> It was from this temple that the owl-god rescued the rainbow-maiden three times when she had been thrice killed and buried by her faithless suitor, a chief of Waikiki. . .
>
> At the head of Manoa Valley are many waterfalls pouring down the precipices. The longer and most feathery of these falls are said to be the tears of Ka-hala as she suffered from the attacks of the faithless chief of Waikiki.
>
> Pueo, the owl-god, was also Pueo-alii, or "king of owls." He had kahunas (priests) who consulted him by signs, and the aumakua, or ghost gods, sometimes oracles. . . (ibid.: 127-131)

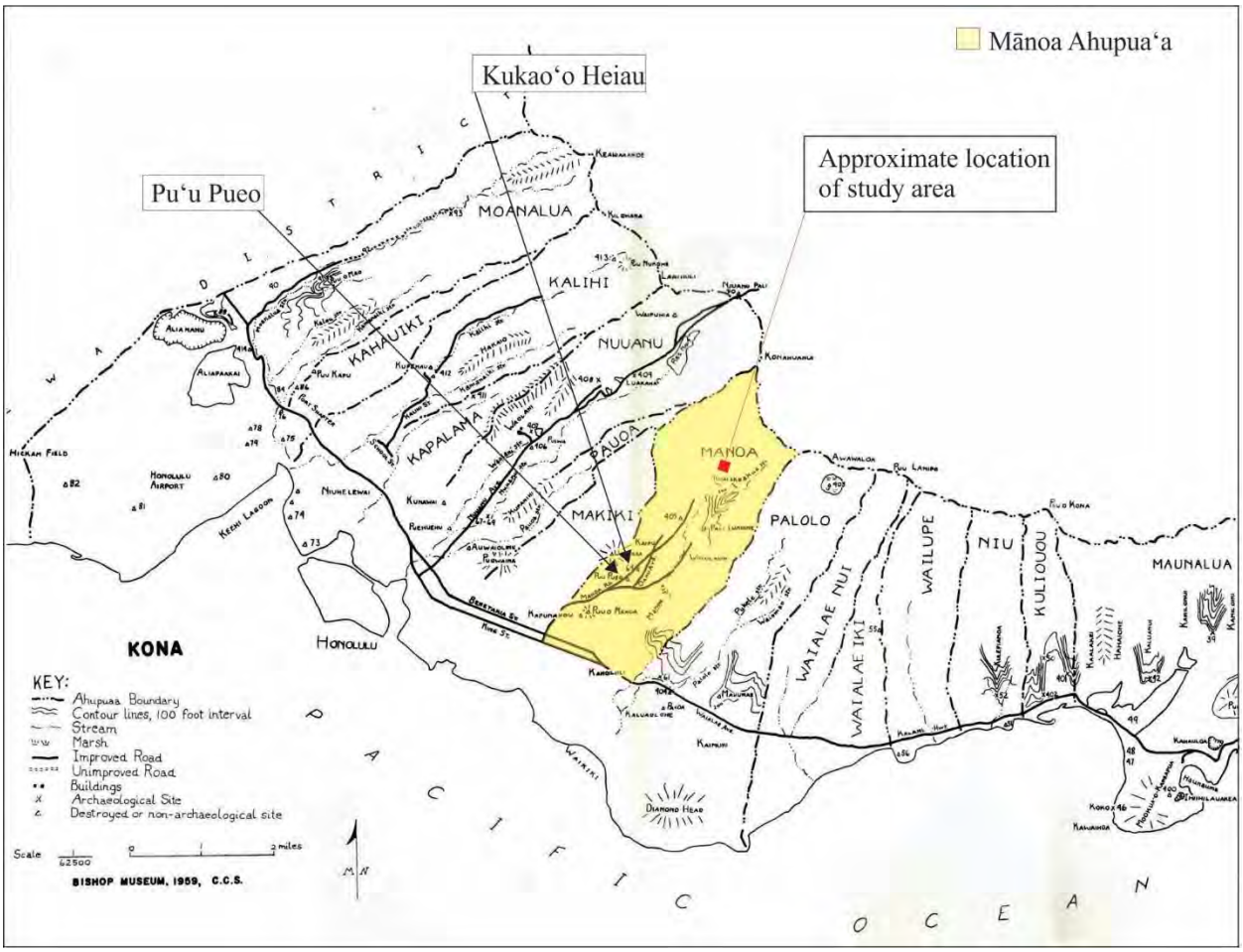


Figure 12. Annotated map showing *wahi pana* within Mānoa as discussed in text (after Sterling and Summers 1978:336).

In addition, the owl god of Mānoa was wise and merciful and governed over the entire valley from his home on Puʻu Pueo. When "one of the natives in the valley displeased him. He captured the man and at once ordered the death penalty" however, the man pleaded to be allowed the chance to prove his innocence (ibid.:131). As a result, "the owl-god established a law that a person must be proved guilty before he could be condemned and punished. This came to be a custom among the Hawaiians as the years passed by" (ibid.).

Westervelt also tells the tale of Menehune who lived in the upper valley of Mānoa, where they constructed a *heiau* with a fort just above it, "a little further up the valley above Puu-Pueo, at a place called Kukaoo" (1915:131; see Figure 12). At the time of his writing (ca. 1915), Westervelt related that "even now a spreading hau tree shelters under its branches the remaining walls and scattered stones of the Kukaoo Temple," which he further qualifies as a "very ancient" and "very noted temple site" (ibid.). Additional lore associated with Kukaoʻo and Mānoa Valley is illustrated in two versions of a legendary battle; the first fought between the owls and the Menehune, in which the Menehune were bested by the owls of Oʻahu and their reinforcements from Kauaʻi and ousted from the valley; the other version saw the Menehune battle against Oʻahu chief Kualiʻiʻs armies (ibid.). Kukaoʻo Heiau is further discussed in the forthcoming section regarding previous archaeological studies.

Mānoa After European Contact

The arrival of Western explorers in Hawaiʻi ca. 1778, signified the end of the Precontact Period, and the beginning of the Historic Period. With the arrival of foreigners such as British explorer Captain James Cook, in command of the ships *H.M.S. Resolution* and *H.M.S. Discovery*, Hawaiian culture and economy underwent drastic changes. Demographic trends during the late Precontact and early Historic Periods indicate population reduction in some areas,

due to war and disease, yet increase in others, with relatively little change in material culture. At first there was a continued trend toward craft and status specialization, intensification of agriculture, *ali‘i* controlled aquaculture, the establishment of upland residential sites, and the enhancement of traditional oral history (Kirch 1985; Kent 1983). The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha I had conquered O‘ahu, Maui and Moloka‘i, in 1795, Hawai‘i had seen the beginnings of a market system economy (Kent 1983). Some of the work of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early visitors. Introduced foods often grown for trade with Westerners included yams, coffee, melons, Irish potatoes, Indian corn, beans, figs, oranges, guavas, and grapes (Wilkes 1849). Later, as the Historic Period progressed, Kamehameha I died, the *kapu* system was abolished, Christianity established a firm foothold in the islands, and introduced diseases and global economic forces began to have a devastating impact on traditional life-ways in the Hawaiian Islands. This marked the end of the Precontact Period and the end of an era of uniquely Hawaiian culture.

Early Historic Accounts of Mānoa

Hawaiian Historian Samuel Kamakau mentions in *Ruling Chiefs of Hawaii* that Kamehameha I “cultivated land at Waikiki, Honolulu, and Kapalama” (1992:190), prior to conquering Kaua‘i and uniting all the islands under his rule. Similarly, Hawaiian historian John Papa ‘Ī‘ī, reports in *Fragments of Hawaiian History* that Kamehameha personally farmed with members of his court throughout the Kona District, “especially in Nuuanu. . . He also farmed at Ualakaa in Manoa, [located to the southwest of the current study area] in Waikiki, and in Kapalama” (1959:68). ‘Ī‘ī, also relates that Kamehameha personally attended to his farms, and that he “participated in all the projects” (ibid.). Furthermore, ‘Ī‘ī mentions that “the places Kamehameha farmed and the houses he lived in at those farms were show places” (ibid.:69), although the king resided primarily in Waikīkī and Honolulu.

During a visit to the Hawaiian Islands in 1816, Russian explorer Otto von Kotzebue recorded the following observations of O‘ahu and Waikīkī:

> . . . Woahoom[O‘ahu] is acknowledged, both by Europeans and by the natives, to be the most fruitful of the whole group; it is called the garden of the Sandwich Islands, and it has a right to this name, on account of its extraordinary high state of cultivation, united with the greatest natural beauties. . . you have scarcely sailed round the Yellow Diamond Hill [Diamond Head], when you are surprised by the most beautiful landscape. Close to the shore you see verdant vallies [sic] adorned with palm and banana-trees, under which the habitations of the savages lie scattered; behind this, the land gradually rises, all the hills are covered with a smiling verdure, and bear the stamp of industry. (1821: 319-320)

Kotzebue also provides the following account of cultivated taro lands near Mānoa, as he observed them in 1816:

> . . . The artificial taro fields, which may justly be called taro lakes, excited my attention. Each of them forms a regular square of 160 feet, and is enclosed with stone all round like our basins. . . The fields are gradually lower, and the same water which is led from an elevated spring or rivulet, can water a large plantation. . . In the spaces between the fields, which are from three to six feet broad, there are very pleasant shady avenues, and on both sides bananas and sugar-canes are planted. The taro fields afford another advantage; for the fish which are caught in distant streams thrive admirably when put into them. . . I have seen whole mountains covered with such fields, through which the water gradually flowed; each sluice formed a small cascade, which ran through avenues of sugar-cane, or bananas, into the next pond, and afforded an extremely picturesque prospect. Sugar plantations and taro fields alternately varied our way, with scattered habitations. . . (ibid.:340-341)

Following the death of Kamehameha I in 1819, the Hawaiian religious and political systems began a radical transformation; Ka‘ahumanu proclaimed herself “*Kuhina nui*” (Prime Minister); and within six months the ancient *kapu* system was overthrown and within a year, Protestant missionaries had arrived from America (Fornander 1969; ‘Ī‘ī 1959; Kamakau 1992). The work of the Christian missionaries was generally supported by the *ali‘i* in the 19th Century. In 1820, American missionary Hiram Bingham and members of the American Board of Commissioners for Foreign Missions (ABCFM) toured the island of O‘ahu seeking out communities in which to establish church centers for the growing Calvinist mission.

During his twenty-one-year residence in the Hawaiian Islands, Bingham recorded his observations in a journal (Bingham 1848), which offers a rare glimpse at the study area vicinity during the early 1800s. Bingham composed the following entry after he first sighted Oahu upon his arrival in 1820:

> Early in the morning of the 14th April, that island rose to our view, and, as we approached rapidly, presented successively its pointed mountains, covered with trees and shrubbery, its well-marked, extinguished craters near its shores, its grass covered hills, and more fertile valleys, its dingy thatched villages, its cocoanut groves, its fort and harbor, and its swarthy inhabitants in throngs. . . (1948:92)

Shortly after their arrival, Bingham and his companions scaled Punchbowl Hill and reported the following details about the view:

> From the highest part of the rim we had a beautiful view of the village and valley of Honolulu, the harbor and ocean, and of the principal mountains of the island. On the east were the plain and groves of Waikiki, with its amphitheatre of hills. . . Below us, on the south and west, spread the plain of Honolulu, having its fish-ponds and salt making pools along the sea-shore, the village and fort between us and the harbor, and the valley stretching a few miles north into the interior, which presented its scattered habitations and numerous beds of kalo (*arum esculentum*) in its various stages of growth, with its large green leaves, beautifully embossed on the silvery water, in which it flourishes. Through this valley, several streams descending from the mountains in the interior, wind their way, some six or seven miles, watering and overflowing by means of numerous artificial canals, the bottoms of kalo patches, and then, by one mouth, fall into the peaceful harbor. (ibid.:93)

The first governor of Oʻahu, Chief Boki, granted Bingham a piece of land near the mouth of Mānoa Valley called Kapunahou, which became the home of Oahu College, and later, Punahou School (De Leon 1978). This was also the location of the first dairy farm in the valley, founded in 1844 by William H. Rice (ibid.). Boki and Bingham were among a number of high-profile individuals who called Mānoa home or chose to visit there, to partake of the cooler environment as an escape from Honolulu and Waikīkī (Kanahele 1995). Other prominent visitors and inhabitants of Mānoa Valley include Haʻalilio, Princess Victoria, Kanaʻina, Lunalilo, Keʻelikōlani, Queen Liliʻuokulani, and Kaʻahumanu (Thrum 1892; De Leon 1978).

Access to Mānoa Valley was facilitated by foot trails that later became carriage roads which allowed visitors access to the interior of the valley. ʻĪʻī describes the former trail that linked Waikīkī with upper Mānoa Valley (Figure 13) as follows:

> . . . At Kawaiahao a trail passed in front of the stone house of Kaina, late father of Kikaha. The trail went above Kalanipuu's place, along the stream running down from Poopoo to the sea, close by Kaaihee in Makiki, to Puu o Manoa, then below Puupueo, where a trail branched off to go to upper Kaaipu and Kahoiwai, and another to go below Kaahulue, to Kapulena and Kolowalu. (1953:92)

In 1829, Missionary Charles Stewart recorded the following portrait of Mānoa Valley, which includes a mention of Kaʻahumanu's country home in upper Mānoa Valley, known as Kahoiwai (see Figures 12 and 13).

> The valley Manoa, you recollect, was always a favorite resort of mine—this afternoon Mr. Bingham drove me in a wagon to it. There is now a good carriage road, in that direction, as far as the country house of Kaahamanu, nearly five miles from Honolulu. Her residence is beautifully situated; and the selection of the spot quite in taste. The house in an inferior building, but stands on the height of a gently swelling knoll, commanding, in front, an open and extensive view of all the rich plantations of the valley; of the mountain streams meandering through them, and the humble habitations of the farmer sprinkled around; of the district of Waititi; and of Diamond Hill, and a considerable part of the plain, with the ocean far beyond. On the right, the ground rises rapidly for a few rods, to a thicket of hibiscus and Eugenia, at the foot of a magnificent mountain, exhibiting from the base to its summit—a perpendicular height of a thousand feet—as rich a variety of projecting cliff and wild recess, of dripping rocks and mantling foliage. . .
>
> Immediately behind the house and partially flanking it on either side, is a delightful grove of the dark leaved and crimson blossomed Ohia. . . The view of the head of the valley inland, from the clumps and single trees edging this copse, is very rich and beautiful; presenting a circuit of two or three miles, delightfully variegated by hill and dale, wood and lawn, and inclosed [*sic*] in a sweep of splendid mountains. . .

> In one edge of this grove. . . stands a little cottage built by Kaahamanu, for the accommodation of the missionaries who visit her when at this residence. It is scarce twelve feet square in the area, and not as many high. . . and is frequently occupied a day or two at a time. . . (Stewart 1831:143-145)

Kahoiwai was so dear to Kaahumanu that she chose to go there when she fell ill and subsequently took her last breath there in 1832 (Bingham 1848; Thrum 1892).

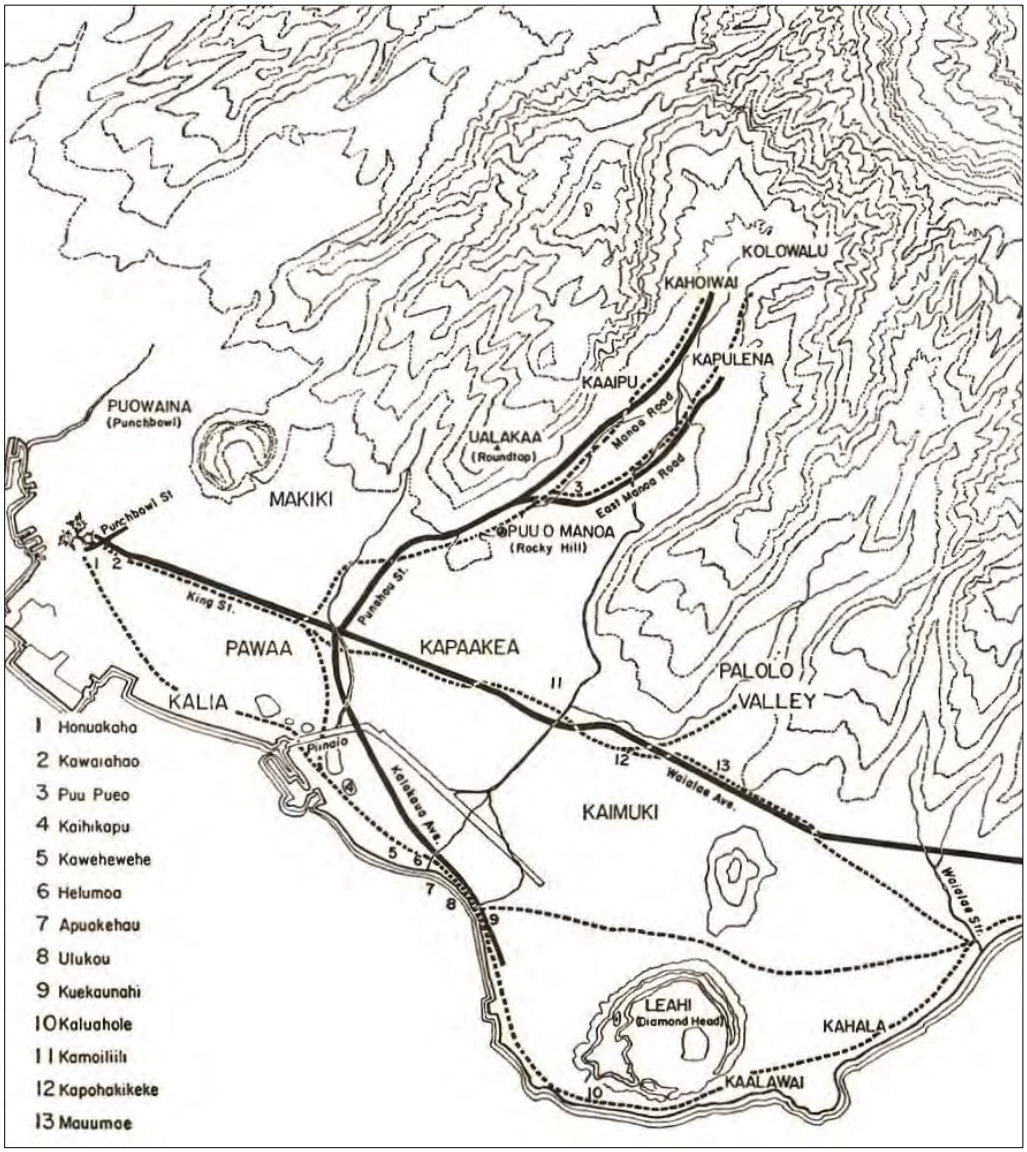


Figure 13. Map by Gerald Ober of trails as described by ‘Ī‘ī (1959:93).

The written accounts left by early visitors to the Island of O‘ahu, such as those reproduced above, offer valuable insight into what life may have been like for the earliest residents of Mānoa and greater Kona. By the 1830s-1850s, just fifty or so years after first European contact, the native population had already suffered a significant decline; meanwhile, the Western population kept increasing. Maly summarizes the reasons for the rapid decline of native populations thusly:

> Overall, historic records document the significant effect that western settlement practices had on Hawaiians throughout the islands. Drawing people from isolated native communities into selected village parishes and Hawaiian ports-of-call, had a dramatic, and perhaps unforeseen impact on native residency patterns, health, and social and political affairs. In single epidemics hundreds, and even thousands of Hawaiians died in short periods of time. (1998:36)

The *Māhele ʻĀina* of 1848

The socioeconomic and demographic changes that took place in the years between 1790 and the 1840s, promoted the establishment of a Euro-American style of land ownership, and the *Māhele* of 1848 became the vehicle for determining ownership of native lands. As a result of the *Māhele*, land interests of the King (Kamehameha III), the high-ranking chiefs, and the *konohiki* were defined. The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission and speeded the transfers (Chinen 1961).

All lands awarded during the *Māhele* were subject to the rights of the native tenants therein; those individuals who lived on the land worked it for their subsistence and the welfare of the chiefs (Sinoto and Kelly 1970). Native tenants could claim and acquire title to *kuleana* parcels that they actively lived on or farmed at the time of the *Māhele*. Not all lands that were claimed were awarded. The Board of Commissioners oversaw the program and administered the *kuleana* as Land Commission Awards where smaller parcels of land were awarded to *makaʻāinana*. Land-use descriptions stipulated the indicated agricultural use, house lots and pasture land (Grune 1992). The claims and ensuing awards were issued Land Commission Award (LCAw.) numbers, which in conjunction with the volumes of documentation, remain in use today to identify the original owners and their use of the *kuleana* lands.

As a result of the *Māhele*, different land divisions within Mānoa Valley were claimed and awarded to different *aliʻi*, unlike other awards that often comprised entire *ʻili* or *ahupuaʻa* awarded to a single chief (Tomonari-Tuggle 1998:38). To that end, the current study area was a portion of a large award to Pahu (LCAw. 12:7; R.P. 4520).

The Study Area Vicinity After the *Māhele*

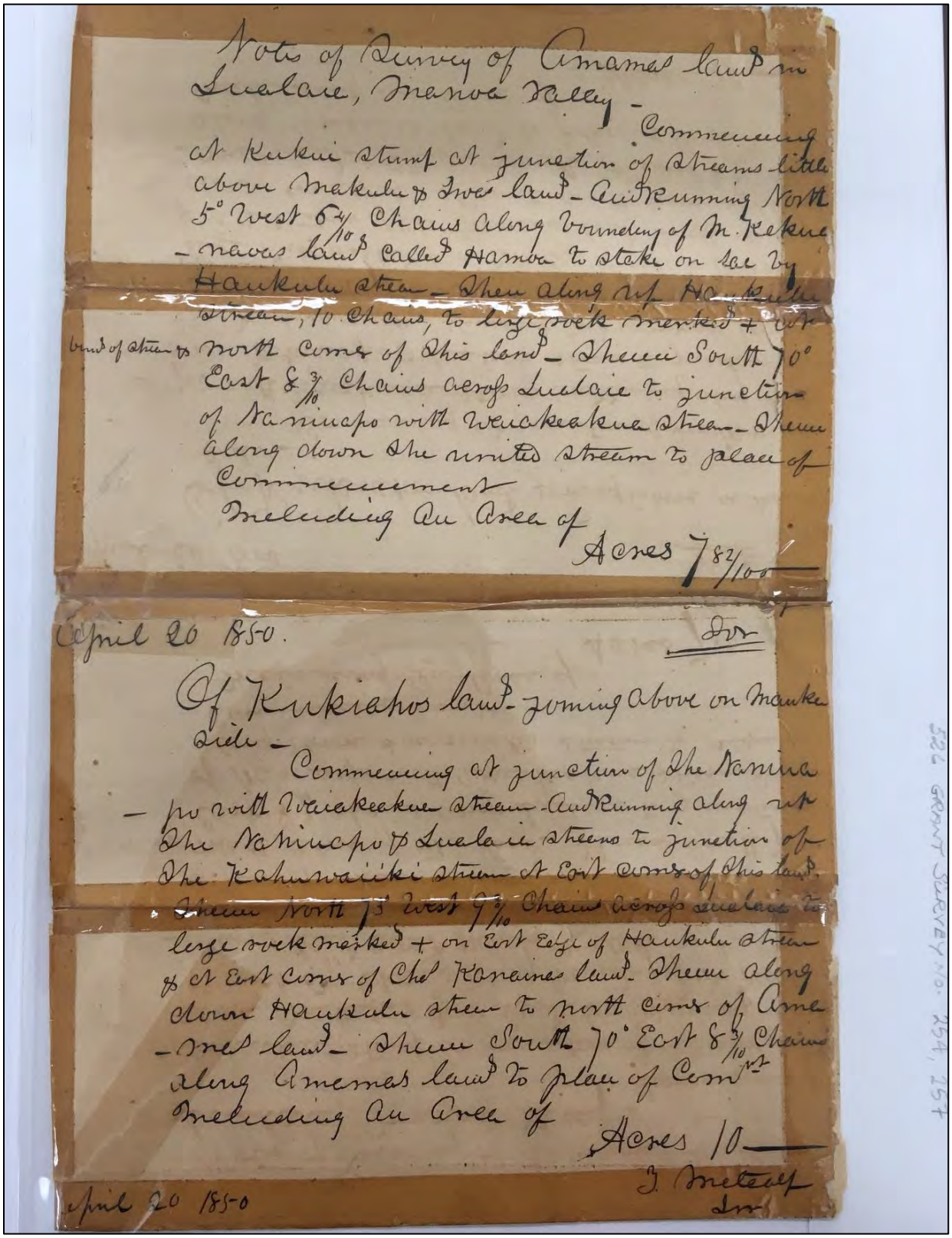
In conjunction with the *Māhele ʻĀina* of 1848, the King authorized the issuance of Royal Patent Grants (RP) to applicants for tracts of land, larger than those generally available through the Land Commission. The process for applications was clarified by the "Enabling Act," which was ratified on August 6, 1850. The Act resolved that portions of the Government Lands established during the *Māhele* should be set aside and sold as grants. The stated goal of this program was to enable native tenants, many of whom were not awarded *kuleana* parcels during the *Māhele*, to purchase lands of their own. Despite the stated goal of the grant program, in reality, many of the Government Lands were eventually sold or leased to foreigners. According to Tomonari-Tuggle, "as early as 1847, 30 parcels of these lands were sold as grants," which she qualifies as among the earliest such sales in the Hawaiian Islands (1998:38).

In 1850, the current study area lands were considered part of "Lualaie" (Luaʻalaea) a portion of which (7.82 acres) was granted to Amama as Grant 254. Immediately adjacent (above) Amama's land, on the mauka side, was another Grant to Kukiaho, Grant 257, that measured 10 acres. Land survey notes recorded on April 20, 1850 are reproduced as Figure 14 below.

Additional information about property boundaries can be gleaned from historical maps. The earliest map (Registered Map Number 1068) that includes the study area vicinity was drawn in 1882, and depicts *land divisions* within upper Mānoa Valley, including Aihualama, Haukulu, Waihii Iki, Luaalaea, Kahuaiki, Naniuapo, Waaloa, and Waiakeakua (Figure 15). Within the immediate study area vicinity, Luaalaea and Naniuapo Streams appear to the north and west of the study area. In addition, what appears to be an unimproved extension of Mānoa Road enters the southwestern portion of Grant 254 to Amama and approaches the west-central portion of Grant 257 to Kuhiaho (see Figure 15). Although no *kuleana* were awarded within the current study area, Map 1068 shows several nearby. LCAw. 11029 to Stevenson, to the east of the study area; LCAw. 1923 to Kekua, to the southeast of the study area; and LCAw. 1951 to Nui and LCAw. 4605 to Hakau are found to the south of the study area along the stream.

Another historical map (Registered Map Number 948) drawn in 1884 and labeled "Manoa Valley New Map of Grants" (Figure 16). Included on this map are Grants 257 to Kukiaho and Grant 254 to Amama and references to the *ʻili* Luaalaea (above the study area). Although unnamed, the streams that border the study area appear on this early map.

After the *Māhele*, during the latter half of the nineteenth century, native Hawaiians, along with Chinese immigrants, continued to grow taro on the floor of Mānoa Valley. In addition to cultivating approximately half of the taro lands in Mānoa Valley, Chinese farmers cultivated bananas, pineapple and other (Emory 1956). Rice cultivation in the valley had also been attempted in 1882, but ultimately the efforts proved unsuccessful due to high winds and cold rains common in the area (De Leon 1978).



Notes of Survey of Amanas land in Lualaie, Manoa Valley -

Commencing at Kukui stump at junction of streams little above Makuku & Ives land - And Running North 5° West 6 4/10 Chains along bounding of M. Kekuanaoas land called Hamoa to stake on sea by Haukulu stream - Then along up Haukulu stream, 10 chains, to large rock marked + at bend of stream & north corner of this land - Thence South 70° East 8 3/10 Chains across Lualaie to junction of Naniuapo with Waiakeakua stream - Thence along down the united stream to place of Commencement

Including an Area of

Acres 7 82/100

April 20 1850.

Dr

Of Kukiahos land - joining above on Mauka side -

Commencing at junction of the Naniuapo with Waiakeakua stream - And Running along up the Naniuapo & Lualaie streams to junction of the Kahuwaiiki stream at East corner of this land. Thence North 5° West 9 1/10 Chains across Lualaie to large rock marked + on East Edge of Haukulu stream & at East corner of Chas Kanaines land - Thence along down Haukulu stream to north corner of Amanas land - Thence South 70° East 8 3/10 Chains along Amanas land to place of Commt

Including an Area of

Acres 10

J. Metcalf
Dr

April 20 1850

526 GRANT SURVEY NO. 254, 257

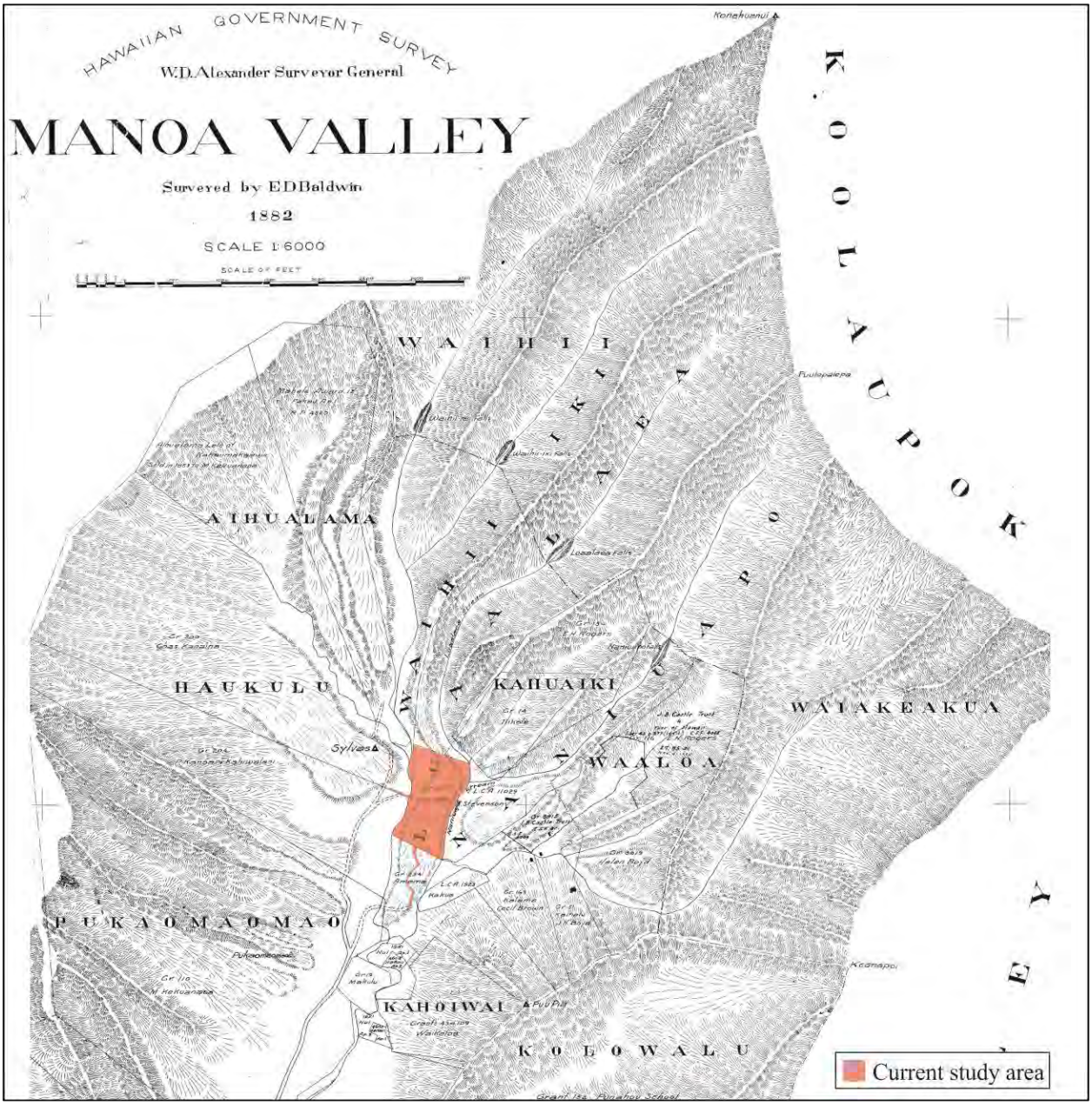


Figure 15. 1882 Hawai‘i Register Map No. 1068 of Mānoa Valley showing current study area.

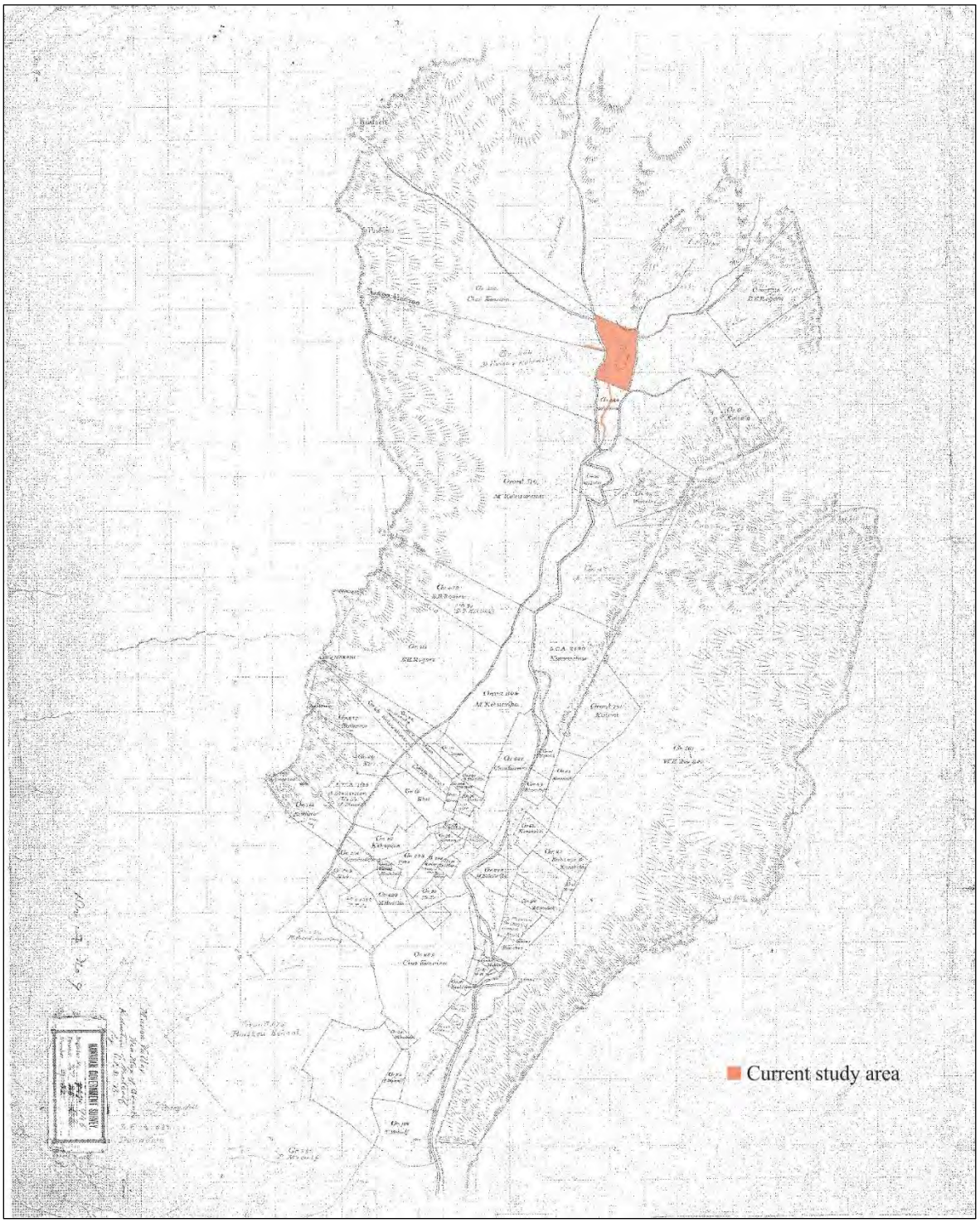


Figure 16. Hawai‘i Registered Map No. 948 (ca. 1884) showing Land Grants within the current study area.

By the late nineteenth century, dairy farming had become an important endeavor for Mānoa Valley. The Woodlawn Dairy and Stock Company, established in Mānoa in 1879 with ten cows, became the largest dairy with its herd of 700 head of cattle by 1890 (DeLeon 1978). However, by 1910, the dairy was closed and the land subdivided into Woodlawn subdivision (Yardley 1981). Thus, the east side of the upper Mānoa region still retains the Woodlawn name, along with Woodlawn Drive, a main thoroughfare that leads up the east side of the valley.

In 1892, Thrum composed an article titled *Manoa Valley. Descriptive, Historic and Legendary*, the following excerpts provide brilliant detail about the study area environs:

> Comparatively few of Honolulu residents seem to have more than a vague idea of the charm and beauty to be found in the valley of Manoa, though it is situate [sic] but a short distance from the heat and dust of the city, and is reached by a good carriage road leading back of Punahou. Those who are familiar with the various valleys proximate to Honolulu are agreed upon the individuality of Manoa, both as to general formation and scenic effect. . .
>
> Manoa is both broad and low, with towering hills on both sides that join the forest clad mountain range at the head, whose summits are often hid in cloud land, gathering moisture there-from to feed the springs in the various recesses that in turn supply the streams winding through the valley, or watering the vast fields of growing taro, to which industry the valley is devoted. The higher portions and foot hills also give pasturage to the stock of more than one dairy enterprise. . .
>
> . . . At this summit of the road the whole valley opens out to view, the extensive flat area set out in taro, looking like a huge checker-board, with its symmetrical emerald squares in the middle ground, surrounded by pasture fields on the slopes at the base of the guarding hills. Here and there ‘mid sheltering trees, humble dwellings dot the scene around, while up the rugged slopes the almost endless shades of green, with black worn seams of rock oft times lightened up by “silvery thread of torrent,” forms the background to one of the most charming pictures. . .

In his 1895 publication, Towse speaks of the war of 1895, which features a battle that was fought in Mānoa Valley lead by first lieutenant of the rebel forces, Robert Wilcox, who “led the revolution against Kalakaua in 1889 for Liliuokalani” (Towse 1895:1) and rebel leader Lot Lane a “half-caste ranch-man (ibid.:2). The battle of Mānoa followed the battle of Mōʻiliʻili, which the royalist rebels lost against the government forces three days prior, and two days after Martial Law had been declared (ibid.). The battle unfolded as follows:

> BATTLE OF MANOA
>
> Tuesday was given up to searching for the enemy and following up rumors. It was an active, nervous day for all. Troops went over the ground from Moiliili road to the foothills and from the road to Diamond Head. A few prisoners were taken and many guns were picked up. Twenty rifles that had never been fired were found in a little fort near Waialae.
>
> The battle of Manoa, Wednesday evening, shattered the rebellion completely. The forces were Co. A, N.G.H., under Capt. Paul Smith, a detail from Co. D, N.G.H., under Lieut. Jones, with Gunner Johnson and field piece, and the entire company of Sharpshooters under Capt. John Kidwell. Negative—Probably seventy-five rebels under Robt. Wilcox and Lot Lane. These were on the way to the high peaks, where they hoped to hold out and make terms with the government.
>
> Wilcox made quite a stand, first engaging Co. A. He wanted to best them and get their heavy rifles. The enemy was under cover. The loyal forces were in the open. Wilcox did not retire for some time after the Sharpshooters and artillery arrived. D’s detail came around from Punchbowl in as quick time as ever made. The Sharpshooters marched from town at double quick. It became too warm for the rebel leader. He left ten men behind as a cover and went into Pauoa valley. Two natives came in under a white flag. One of these had an ear cut by a bullet. They led the way to where a third was dead with a bullet in his brain. During the engagement a long skirmish line was maintained. Firing did not cease until an hour after darkness had fallen. While firing was on bullets dropped around the loyal forces, but none were injured.
>
> At Manoa, as at Diamond Head and Moiliili, the insurgents had the advantage of position. They were above the Republic’s force and well sheltered by timber, brush and rocks. The artillery company, at great peril, occupied a bald knob. To advance effectively it was necessary for Sharpshooters and Co. A men to be often in the open. The rebels were poor marksmen, and besides had very little desire to fight after Co. A, was reinforced. Manoa valley ends in what is called “the pen.” It has walls with a trail into Pauoa valley. Over this path the rebels fled. During this engagement Wilcox fired at some of his own men who started to surrender. In the hurry of his retreat Wilcox left the cloak of his Italian uniform. This is the suit he wore in the uprising of 1889. (1895:5-6)

> . . . When driven from Manoa on Wednesday the 9th [of January], Wilcox continued to travel with ten men. They crossed Pauoa and Nuuanu valleys and came into town down Kalihi valley. The ten followers scattered to their houses. Most of them were arrested afterwards. It had long been the boast of Wilcox and friends that the natives would flock to his support in any peril. The only friend he had was a half-caste woman.
>
> Wilcox reported that Lot Lane was in the hills with fifty men. (ibid.:8)

Wilcox was subsequently captured. As was Lot Lane:

> On the night of Wednesday the 17th, Lane called at the house of a relative in Manoa. He had been in that valley all that the time. He wanted to surrender, being completely starved down and worn out. . . He said he saw it was no use to offer battle further against drilled troops and artillery. . . Said he: "I went into this thing with my eyes open and on principle. We are whipped and I only hope that none of my friends on either side are hurt." Lot Lane is said by many to be the finest specimen of physical manhood on the Islands. He is over six feet tall, beautifully proportioned, with fine features and great strength. Lane's father claims to be a descendant of the kings of Ireland and they declare that the mother has in her veins Kamehameha blood. (Towse 1895)

According to DeLeon, Wilcox and his rebel compatriots "were camped in the rear of the [Mānoa] valley in an area described as belonging to John Ena" (1978:6), which may coincide with the current study area and is discussed in further detail in the next section.

Mānoa and the Study Area Vicinity during the Twentieth Century

During the first decade of the 1900s, the pasture and agricultural lands at the mouth of Mānoa Valley began to be subdivided and developed for residential use (DeLeon 1978). By the time of his writing, ca. 1915, Westervelt remarked that Mānoa Valley "is one of the well-settled suburbs of Honolulu" (ibid.:36). As previously mentioned the family name Ena is associated with the study area; and it first appears on Land Court Application (LCApp.) 0338 Map 1 dated 1916 (Figure 17). On this map, Grant 257 to Kukiaho is listed with "Ena Est., (owner)" upon it (see Figure 17). According to his obituary, John Kauluhinano Ena was a member of the Privy Council during the reign of Kalākaua and re-appointed to the Council by Liliʻuokalani, and his lands in Mānoa were referred to as a "farm" (The Hawaiian Star December 29, 1906:11). Additional information can also be gleaned from this resource. A portion of a roadway labeled "Government Loop Road" enters the study area from the north after crossing Waihī and Aihualama Streams. Also, it appears the entire study area and the land beyond it was originally a portion of LCAw. 12:7 awarded to Pahu (R.P. 4520) known as Aihualama.

Around this time, in 1919, the Hawaii Sugar Planters Association (HSPA) established a 124-acre experimental substation at the end of Mānoa Road, just beyond and to the west of the current study area in upper Mānoa Valley. HSPA cultivated sugar cane on the site from 1920 into the late-1940s (DeLeon 1978). Later, Dr. Harold Lyon, a plant pathologist with the HSPA, imported tree species from all over the pacific and established them at the substation in efforts to restore the Mānoa watershed, which by that time had been heavily damaged by agricultural activity and deforestation. The substation would eventually become the Lyon Arboretum, in association with University of Hawaii.

The 1920s saw a continued decrease in the number of farms within Mānoa Valley due to falling profits as the bottomlands of the valley were developed for residential use. As the local population of Chinese farmers decreased, Japanese farmers began moving into the upper valley to grow flowers, bananas, strawberries, dryland taro, Japanese burdock, radishes, sweet potatoes, lettuce, carrots and soybeans to sell at the Honolulu markets and in some cases for shipment to California (DeLeon 1978). Thus, several Japanese-owned businesses thrived in Mānoa prior to World War II, including three general stores, a laundry, a barber shop, and two gasoline stations (ibid.). Handy et al. made the following observations of land use within Mānoa Valley ca. 1931:

> Mānoa Valley had much well-watered level land which was better adapted to terracing than that of Nuʻuanu. In the upper valley all the bottom land was terraced. In 1931 much of this land was abandoned, covered with grass; now it is mostly in residences. In 1931, however, there were still about 100 terraces in which wet taro was planted, although these represented less than a tenth of the area that was once planted by Hawaiians. (1991:479-480)

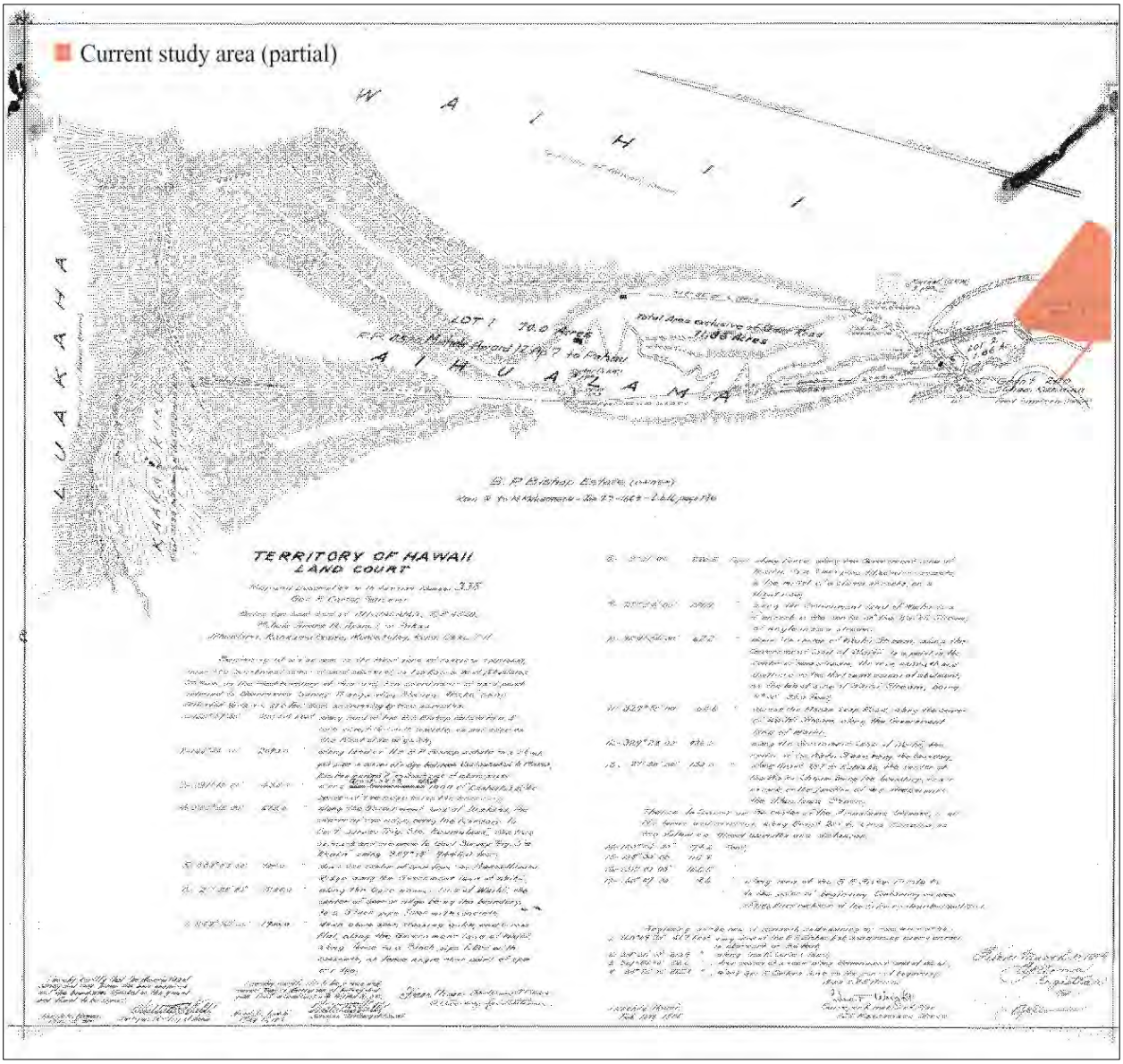


Figure 17. LCApp. 0338 Map 1 showing portion of the current study area beyond "Lot 2" ca. 1916.

Following the attack on Pearl Harbor in 1941, 982-unit Mānoa War Homes were constructed to house approximately 4,000 military and civilian defense contractors near the Woodlawn subdivision. After the war, the Mānoa War Homes were demolished and eventually replaced by residential and commercial development (Bouslog 1994:141-142). According to a study of land use and settlement conducted by Byron Emery, the population of Mānoa Valley "exploded" after World War II—from 5,000 souls to 15,000 between 1930 and 1955 (DeLeon 1978:14). Some of this growth can be attributed to the Mānoa War Homes development but the ongoing shift from agriculture to residential land use and the housing shortage felt across O'ahu after the war contributed as well.

By the mid-twentieth century, the well-watered patchwork of *lo'i* that once carpeted the floor of Mānoa Valley, fell by the wayside as the price of taro continued to drop and much of the stream waters were diverted to support O'ahu's island-wide urbanization. In addition, several parcels in the vicinity of the study area were purchased by the City and County of Honolulu's BWS in the mid-twentieth century, following the passage of Gubernatorial Executive Order 1659 for the development and protection of water resources as in the upper watersheds, as depicted within the subject parcels and nearby parcels on the Tax Map Key map (see Figure 2).

Per a deed dated March 17, 1949 Father H. Valentin and Hawaiian Trust Company, Ltd., trustees of the estate of John Ena conveyed Grant 257 and a portion of Grant 254 (Figure 18) to the City and County of Honolulu, Board of Water Supply. This fact lends credence to DeLeon's earlier claim that rebel Wilcox and his compatriots fought the Battle of Mānoa within land belonging to John Ena. Although Ena's land holdings were located throughout Mānoa and beyond, DeLeon qualifies his claim with the following details about the former Ena property, which was by the time of his writing in the late 1970s "the lower part of the water conservation district where Paradise Park is located" (1978:6). Thus, it appears that the location of the last stand of the Wilcox Rebellion did take place within the current study area.

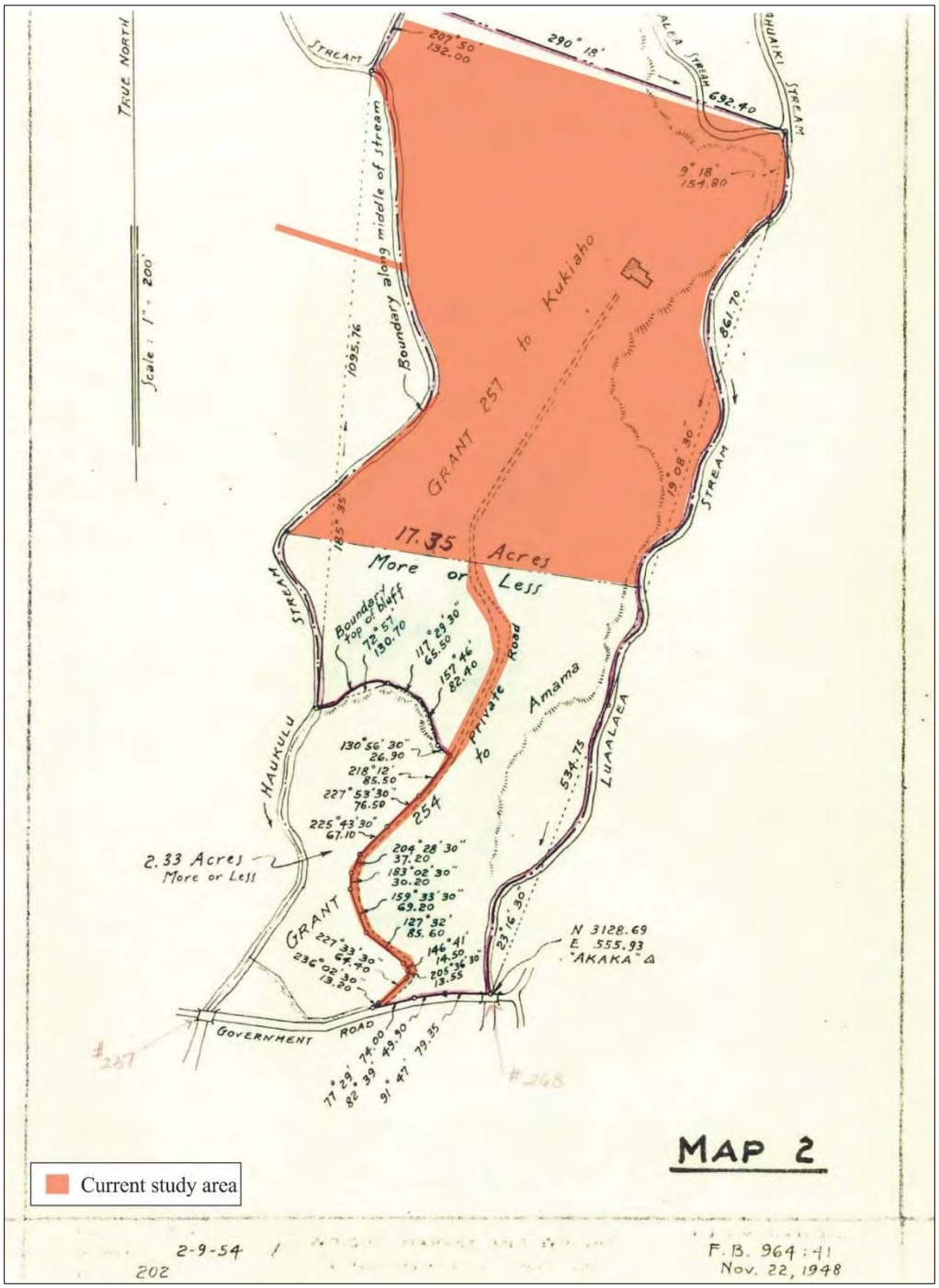


Figure 18. 1948 survey map accompanying deed between Ena Estate and BWS.

As mentioned by DeLeon above, a portion of the study area (within Grant 257) located on TMK: (1) 2-9-054:029 is the site of the former Paradise Park, a private zoological and botanical garden which operated from 1968-1994. Attractions at the park included exotic and native bird exhibitions, and trails through the park that highlighted native Hawaiian plants. A later addition to the park's exhibits comprised ethnic "gardens", which included reproductions of traditional Chinese, Japanese, Portuguese, and Filipino residences. The study area corridor passes through the a portion of Paradise Park near its northernmost border; where these recreated dwellings are located, along with associated trails, retaining walls, and a subterranean cistern. While the exact construction date of these deteriorating exhibits is unknown, they are assumed to date from the 1970s or later, based on construction materials and associated promotional brochures, a selection of which are reproduced as Figures 19 and 20.

Figure 19. Paradise Park brochure, ca. 1990s.

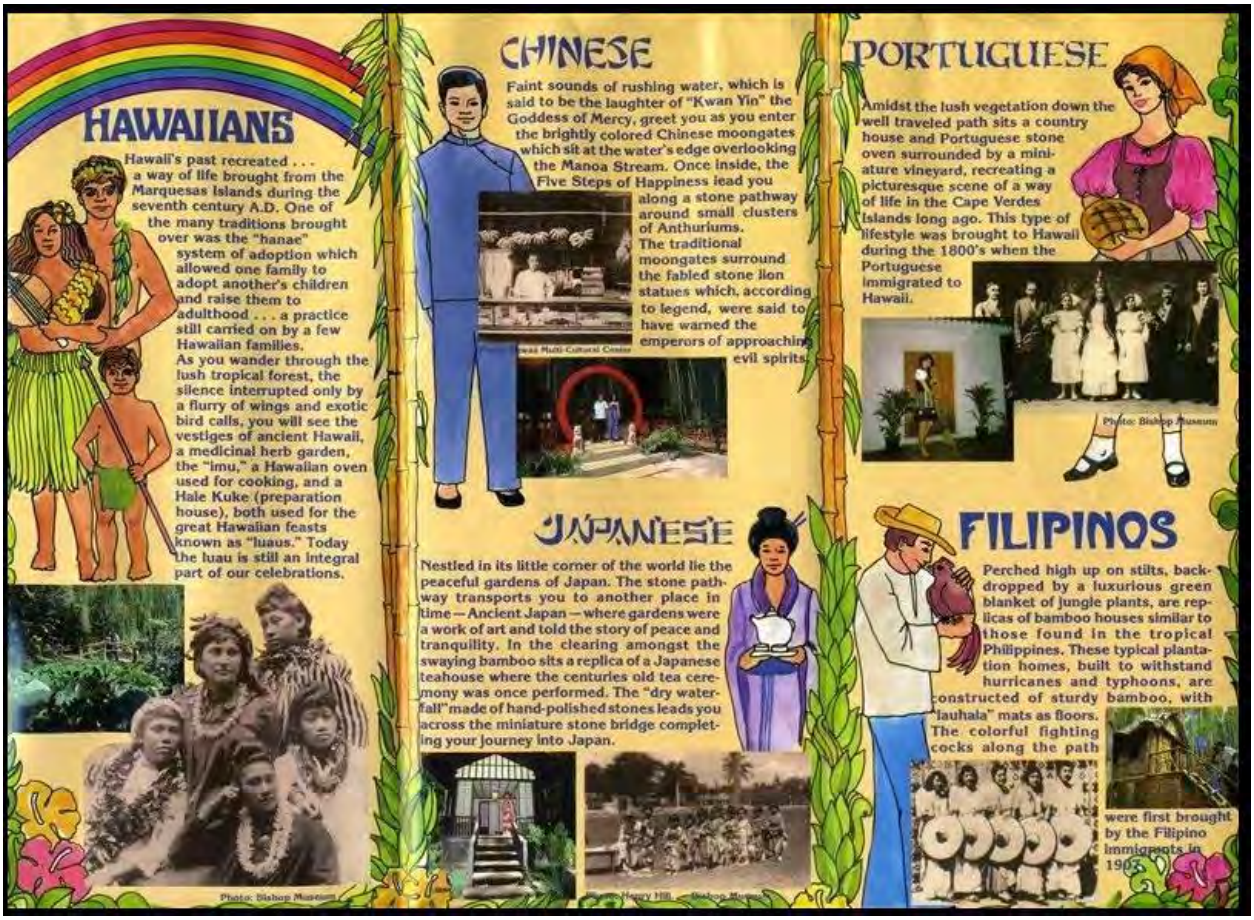


Figure 20. Paradise Park brochure, ca. 1990s.

Since 2010, the Kumuola Foundation has operated a working cultural farm in the study area, dedicated to sharing and teaching traditional Hawaiian arts and cultural practices with the local and greater world communities. The Kumuola Foundation operates several programs on the BWS-owned site, including: workshops and classes with traditional artists and practitioners, cultivation of traditional crops and medicinal plant species, and restoring and reviving the indigenous landscape with the assistance of students and community volunteers through the Kokua Program. The Kumuola Foundation partners with several educational, charitable, and cultural institutions such as Kamehameha Schools, Kapiʻolani Community College, Kuaʻana Native Hawaiian Student Development Services, and the Living Life Source Foundation.

PREVIOUS ARCHAEOLOGICAL STUDIES

The earliest archaeological investigation in the vicinity of the current study area appears to be that of Thomas G. Thrum, who created a list of the *heiau* of ancient Hawaiʻi in the early 1900s. Thrum published his list of *heiau* in a series of articles in the *Hawaiian Almanac and Annual,* beginning with the 1907 edition. Of his investigations, Thrum noted the following in a preliminary paper titled "Tales from the Temples" published in the 1907 annual:

> This much is being realized, and expressions of regret have been freely made, that we are at least fifty years too late in entering upon these investigations for a complete knowledge of the matter, for there are no natives now living that have more than hear-say information on the subject, not a little of which proves conflicting if not contradictory . . . While these difficulties may delay the result of our study of the subject, there is nevertheless much material of deep interest attending the search and listing of the temples of these islands that warrants a record thereof for reference and preservation. (1906:49-50)

Thrum and his associates compiled information on ninety-six *heiau* located throughout Oʻahu (Thrum 1908:42). One must take into consideration that Thrum listed *heiau* that had already been destroyed prior to his data collection efforts in the early 1900s. Of the *heiau* in Honolulu and its vicinity specifically, Thrum stated the following:

> . . . it is to be said that the patient delver finds a liberal reward, but of all the temples that have come down to us in name by historian none now remain, and but one is left of those famed in tradition. S.M. Kamakau left the names of several heiaus and the locations of others that have kept us busy identifying in this Nuuanu, Wakea first built heiaus for the gods, viz.: Kupuanuu, Kupualani, Pakaalana-lalo, and luna, in the valley of Waolani, on the ridge joining Kapalama overlooking the valley of Keanaakamano, and some overlooking Nuuanu. These heiaus are said to have been the places of the eepa people and the many wizards residing at Waiolani. (1906:56)

Thrum mentions three specific *heiau* or *heiau* sites within the study area vicinity—Kawapopo, Mauoki and Kukaoʻo. The first only appears as a brief entry in Thrum's "List of Heiaus" as follows: "Kawapopo Heiau—Upper Manoa, on premises formerly of Haalilio; a small heiau, said to have been torn down prior to 1850" (1906:45). While he provides some more detail for the other two heiau thusly:

> Mauoki is said to have been of traditional Menehune construction with stones brought one by one from Kawiwi, Waianae. It was a heiau of good size, walled on three sides and open to the west that stood at the foot of the slope dividing the Manoa and Palolo valleys, Kamoiliili. It was torn down by J.E. Bush, as Minister of the Interior, in 1883, and its stones used for street work. (ibid.56-57)
>
> Of the Pauoa and Manoa heiaus little information is gathered, and that of a conflicting nature. The only one still in evidence is the small one of Kukaoo, of traditional Menehune construction, in Manoa valley, said to have been wrested from them in battle and rebuilt by Kualii [around 1700 {ibid.45}]. (ibid.:60)

More than ten years prior to the publication of the information provided above, Thrum reported the following details about Kukaoʻo Heiau in his 1892 article on Mānoa Valley:

> . . . On a vast rock pile, still stands a walled enclosure known as the heiau of Kukaoo, now overgrown with lantana and night blooming cereus. This old heathen temple dates back many hundred years. Its erection is credited to the Menehune's—or class of pigmies—but was rebuilt during the reign of Kualii, who wrested it from them after a hard fought battle. The Menehune's fort was on the rock hill, Ulumalu, on the opposite side of the road, just above Kukaoo. Previous to the battle, they had control of all upper Mānoa. After Kualii obtained possession he made it the principal temple fort of a system of heiaus. . . (Thrum 1892:112)

Over the century that passed since these first reports were made, Kukaʻoʻo Heiau has been recorded in detail and reconstructed as part of modern archaeological studies by Kennedy (1991), Cleghorn and Anderson (1992), and Tomonari-Tuggle (1998), which are discussed in finer detail below. In addition, Kukaoʻo Heiau was included in the first formal archaeological survey of Oʻahu conducted by J. Gilbert McAllister on behalf of the Bishop Museum during nine months in 1930. McAllister's purpose was "to collect information regarding the archaeology of Oahu" (McAllister 1933:3) and he made it clear that his investigation was a beginning rather than a complete account of all the cultural resources on Oʻahu. McAllister also made the following statement regarding the state of cultural resources on Oahu at the time, in his introduction:

> As the archaeological remains are those of the people found in Hawaii by the early voyagers, contact with Hawaiians was an indispensable part of the work. Not only are the sites being destroyed by the changes wrought by European culture, but with the introduction of exotic vegetation many sites have been completely hidden. Such remains would be as good as lost, were it not for the knowledge of them still treasured by old residents (*kamaaina*) of Oahu. With the passing of these old people most of this information will disappear. (ibid.)

McAllister cites Thrum's data, presented above, but adds to the description of nearby Kukaʻoʻo Heiau, which he designated Site 64. Kukaoʻo is located approximately 1.5 miles southwest of the current study area (see Figure 12). He describes it as "a small heiau measuring 50 by 40 feet" located "on the premises of C.M. Cooke, Jr." in Mānoa Valley (McAllister 1933:79); and he provides two plan maps that are reproduced as Figure 21 below.

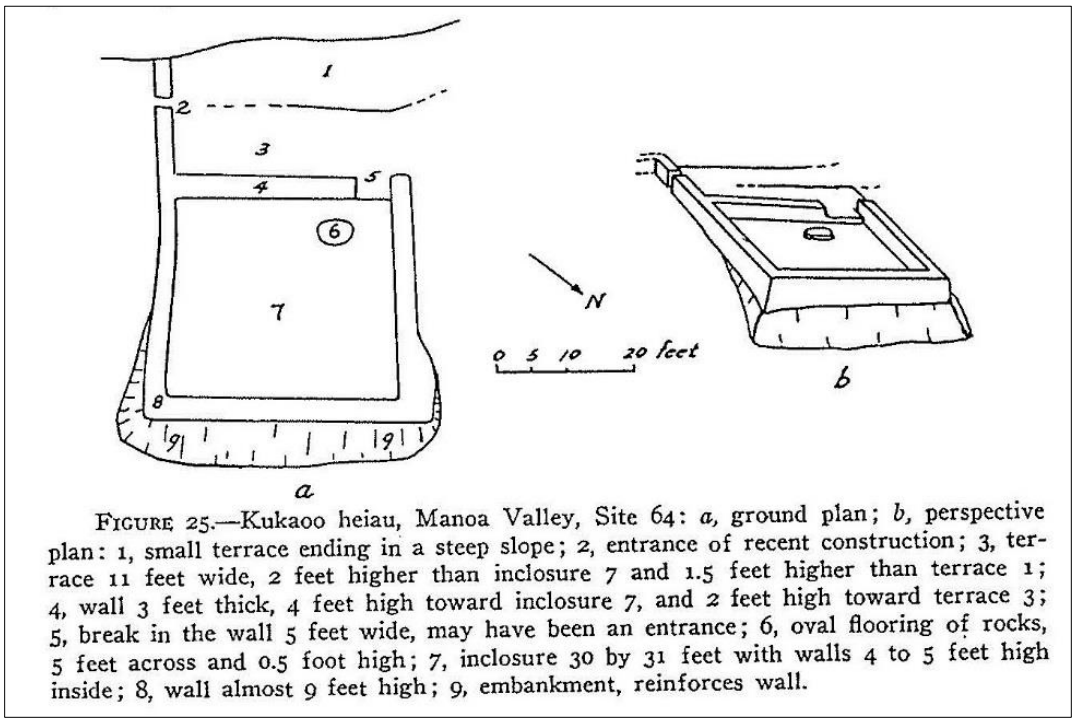


FIGURE 25.—Kukaoo heiau, Manoa Valley, Site 64: *a*, ground plan; *b*, perspective plan: 1, small terrace ending in a steep slope; 2, entrance of recent construction; 3, terrace 11 feet wide, 2 feet higher than inclosure 7 and 1.5 feet higher than terrace 1; 4, wall 3 feet thick, 4 feet high toward inclosure 7, and 2 feet high toward terrace 3; 5, break in the wall 5 feet wide, may have been an entrance; 6, oval flooring of rocks, 5 feet across and 0.5 foot high; 7, inclosure 30 by 31 feet with walls 4 to 5 feet high inside; 8, wall almost 9 feet high; 9, embankment, reinforces wall.

Figure 21. Site map of Kukaoʻo Heiau by McAllister (1933:79).

Regarding Kawapopo Heiau, McAllister was unable to locate the site although Thrum stated that Kawapōpō Heiau was located on land awarded to Haʻalilio. However, in 1975, "the remains of a platform that could be this *heiau* were archaeologically identified" (Tomonari-Tuggle 1998:30) by Luscomb (1975) at 2626 Ānuenue Street, approximately 200 meters southeast of Kukaʻoʻo Heiau. Tomonari-Tuggle reports that "new residents of the home at this address exposed a platform from which taro plants shortly thereafter appeared to spontaneously emerge, suggesting that corms may have been dormant in the structure for years" (1998:30). Luscomb recorded the roughly 7-meter square, raised platform that had a smaller (3-meter square) platform in its northwest corner with coral atop it. As reported by Thrum the property was part of R.P. 638 granted to Hana Haʻalilio.

With the advent of Cultural Resource Management (CRM) in the 1970s, and as a response to stricter historic preservation laws and increased modern development, archaeologists began recording more discrete sites and performing test excavations throughout the state. While there have been numerous studies conducted within Mānoa and the coastal portion of Waikīkī Ahupuaʻa, relatively few archaeological studies have been conducted within the immediate vicinity of the current project area. However, since the 2000s, a handful of studies have been conducted near the current study area, the results of which are summarized below and the locations of those nearest the study area are depicted in Figure 22.

In 1988, an archaeological survey was conducted by Marc Smith of the State Historic Preservation Division in support of the construction of the Puʻu Pia hiking trail, located approximately 0.5-mile east of the current study area (see Figure 22). During the survey, one new site was recorded, the Puʻu Pia Trail Site (SIHP Site 50-80-14-3726), consisting of a rectangular platform and a stone mound. Smith concluded that the site may be related to the development of a nearby *ti* plantation. During the survey, Smith also revisited a previously-identified site, the Mānoa Mounds Complex (50-80-14-1170), which consisted of two spatially-distinct components containing a stone wall, mounds, and modified outcrops. The author made no speculation as to the function or date of 50-80-14-1170 (Smith 1988).

During the 1990s, Archaeological Consultants of Hawaiʻi conducted an archaeological examination of Kukaoʻo Heiau (Kennedy 1991). A search of reports filed at the SHPD library failed to produce a copy of this letter report. However, Tomonari-Tuggle states that Kennedy "remapped the *heiau* and surveyed an adjoining area, both belonging to the Wrenn family at the time" (1998:46).

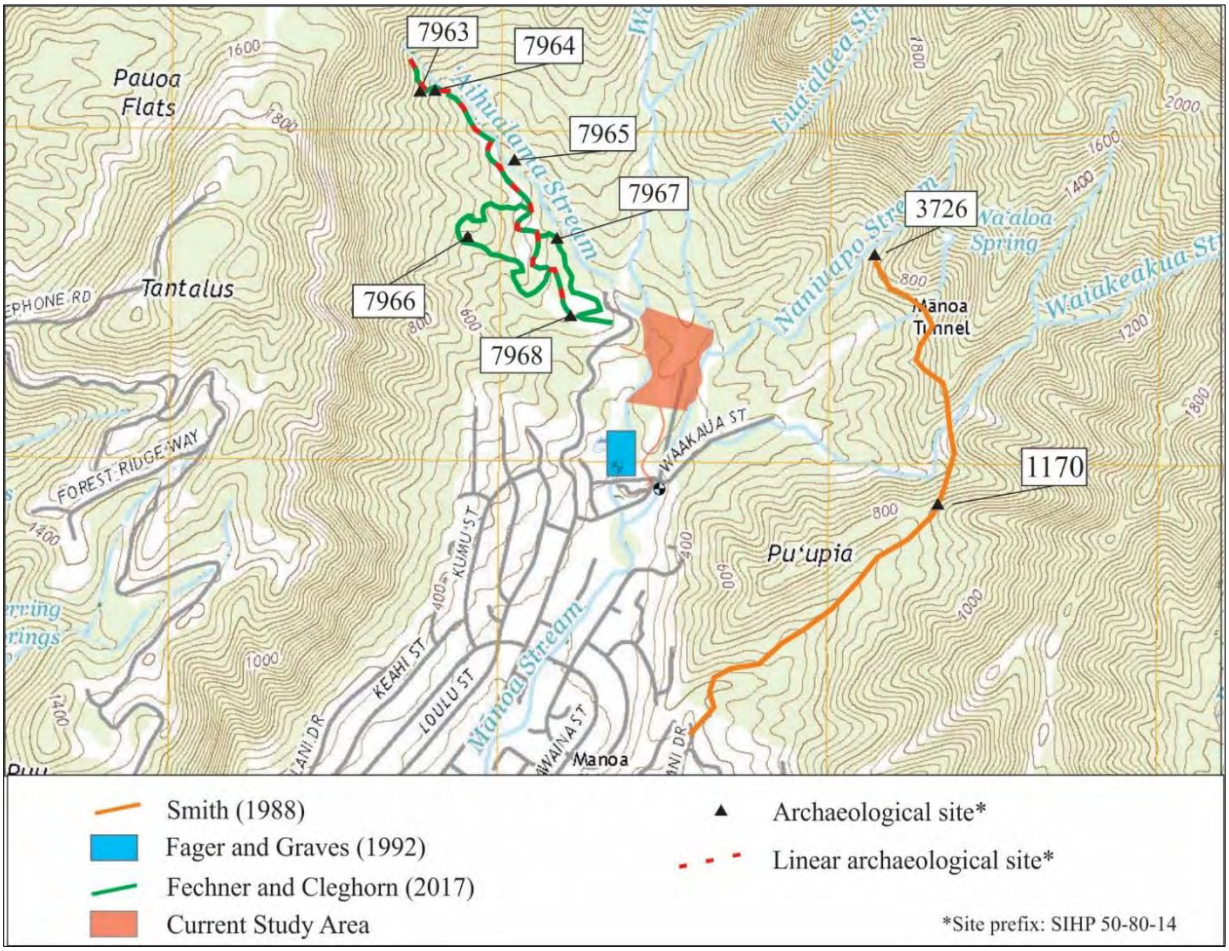


Figure 22. Locations of previously-identified archaeological sites and studies conducted near the current study area.

In 1992, Pacific Legacy conducted an archaeological inventory survey (Cleghorn and Anderson 1992) of a 2.7-acre parcel, located 1.5 miles south of the current study area. As part of the study, he Kūkaʻoʻo Heiau (SIHP Site 50-80-14-64) was revisited and documented in detail, and the authors provided recommendations for long-term preservation and interpretation at the site. In 1998, a historical research study (Tomonari-Tuggle 1998) of Site 64 was completed by International Archaeological Research Institute, Inc. as part of an Interpretive Master Plan for the Mānoa Valley Cultural Heritage Foundation that provided further recommendations for the continued preservation and interpretation of the *heiau*.

In 1992, PHRI completed an archaeological inventory survey to support the construction of a proposed well (Fager and Graves 1992) on a 0.34-acre parcel located approximately 0.1-miles southwest of the current study area (see Figure 22). No archaeological resources were identified as a result of the survey, and the authors recommended no further work at the project location.

In 2017, Pacific Legacy completed an archaeological inventory survey (Fechner and Cleghorn 2017) of the interpretive trail system at the Lyon Arboretum. The linear survey encompassed approximately two miles of existing trails, comprising an area of 0.67 acres, located within 0.75 miles northwest of the current study area (see Figure 22). Six newly-identified archaeological sites (SIHP Sites 50-80-14-7963, 7964, 7965, 7966, 7967, and 7968), comprising fifty-one individual features were recorded during the study. Sites 7963 through 7967 were interpreted as agricultural features; Site 7968 was identified as the ʻAihualama Falls Trail, which functions as the main access trail for the arboretum. The study concluded that all six sites likely dated to the mid to late twentieth century and were constructed in connection with the development of the arboretum. All six sites were determined significant under Criterion (d) and recommended for preservation, with the exception of Features A-C at 50-80-14-7968. On-call archaeological monitoring was recommended for construction related work on the project.

3. STUDY AREA EXPECTATIONS

The culture-historical context presented above for the Mānoa Valley, combined with the summary of previous archaeological research, provides a basis for predicting the type and location of archaeological resources that may be present within the current study area. Given the expected Precontact settlement patterns for leeward Oʻahu and the documentation of Historic land use within the larger Mānoa Valley, archaeological sites within the study area could date from any one of three relative time periods, including the Precontact Period, the early Historic Period, and the later Historic Period. However, given the absence of previously-identified Precontact sites in the immediate vicinity of the study area, the likelihood of encountering sites from the Precontact Period is minimal; however, if such sites are present, we would expect them to reflect agricultural activities along the streams.

As discussed above, during the Historic Period, the Mānoa Valley was used primarily for the cultivation of taro (Thrum 1892), and previous archaeological studies conducted in the vicinity of the study area (Smith 1988, Fager and Graves 1992, Fechner and Cleghorn 2017) have documented exclusively Historic Period sites associated with agriculture, infrastructure, and transportation functions. While Precontact and early Historic Period sites may be found within the study area, Precontact settlement patterns and later *Māhele* documentation suggest that the study area was primarily used following the issuance of Grants 254 and 257, issued in 1850 (see Figure 14). Later Historic Period archaeological sites related to agriculture, infrastructure and/or transportation, however, are expected to be present within the study area.

4. FIELDWORK

On July 3, 2018, ASM Principal Investigator Robert Rechtman, Ph.D. and Senior Archaeologist Teresa Gotay, M.A. conducted an initial site inspection to review the boundary of the study area and develop a comprehensive fieldwork strategy to identify and document the historic properties contained therein. The survey fieldwork, site identification, and documentation was conducted between August 8 and 22, 2018 by ASM Principal Archaeologist Matthew R. Clark, M.A., with assistance from Ryan Gross, M.A., and Teresa Gotay, M.A. A total of 120 labor hours were expended to complete the inventory survey fieldwork.

FIELD METHODS

On August 8, 2018, ASM field staff met with Mr. and Ms. Navales of the Kumuola Foundation, who provided a brief overview of current and former land use; and led field staff on a walking tour, pointing out modern cultivation features (*lo'i*) and possible historic sites located within the study area. This meeting provided the field crew with an intimate perspective of the study area, as well as the surrounding watershed.

During the archaeological field survey, the ground surface of the study area was visually inspected using pedestrian transects, with crewmembers spaced no more than 10 meters apart. Visibility ranged from good to completely obscured. When archaeological features were encountered, their positions were plotted on a map of the study area using a Garmin GPSMAP 64st handheld GPS unit (set to the WGS 84 datum); areas of previous disturbance, conspicuous landforms, and vegetation patterns were also plotted. Identified features were then cleared of vegetation, photographed (both with and without a meter stick for scale), depicted on a scaled drafted plan map, and described using standardized feature record forms. A Trimble Geo 7x Geo Explorer 6000 series handheld GPS receiver was used to collect additional locational information at selected features.

FINDINGS

As a result of the current fieldwork, eight archaeological sites totaling thirty-one individual features were recorded within the current study area (Table 1). The locations of the sites are shown on Figure 23. All of the sites appear to date from the Historic Period, however, it is possible that the four agricultural complexes (Sites 8769, 8770, 8771 and 8774) and the *'auwai* (Site 8772) may have origins in the Precontact Period. Five of the sites are directly related to former agricultural pursuits, one is a shelter that is likely indirectly related to the former agricultural pursuits, one is a former roadway, and one is a middle twentieth-century refuse dump (see Table 1). Detailed descriptions of the eight sites are presented below.

Table 1. Archaeological sites recorded during the current study.

*SIHP Site No.**	*Type*	*Function*	*Age*
8769	Terrace complex (*lo'i*)	Agricultural	Historic
8770	Terrace complex (*lo'i*)	Agricultural	Historic
8771	Mound/wall complex	Agricultural	Historic
8772	Earthen ditch (*'auwai*)	Agricultural	Historic
8773	Man-made cave	Shelter	Historic
8774	Terrace complex (*lo'i*)	Agricultural	Historic
8775	Road segment	Transportation	Historic
8776	Refuse dump	Residential	Historic

*site numbers area preceded by 50-80-14-

Several modern structures, including historical recreations, in various states of disrepair (Figures 24, 25, 26, 27, and 28) were observed within the western corridor portion of the study area between Waihī Stream and the Lyon Arboretum Access Road. These structures were associated with Paradise Park, a former cultural, botanical, and zoological attraction and theme park which operated from 1968 to 1994.

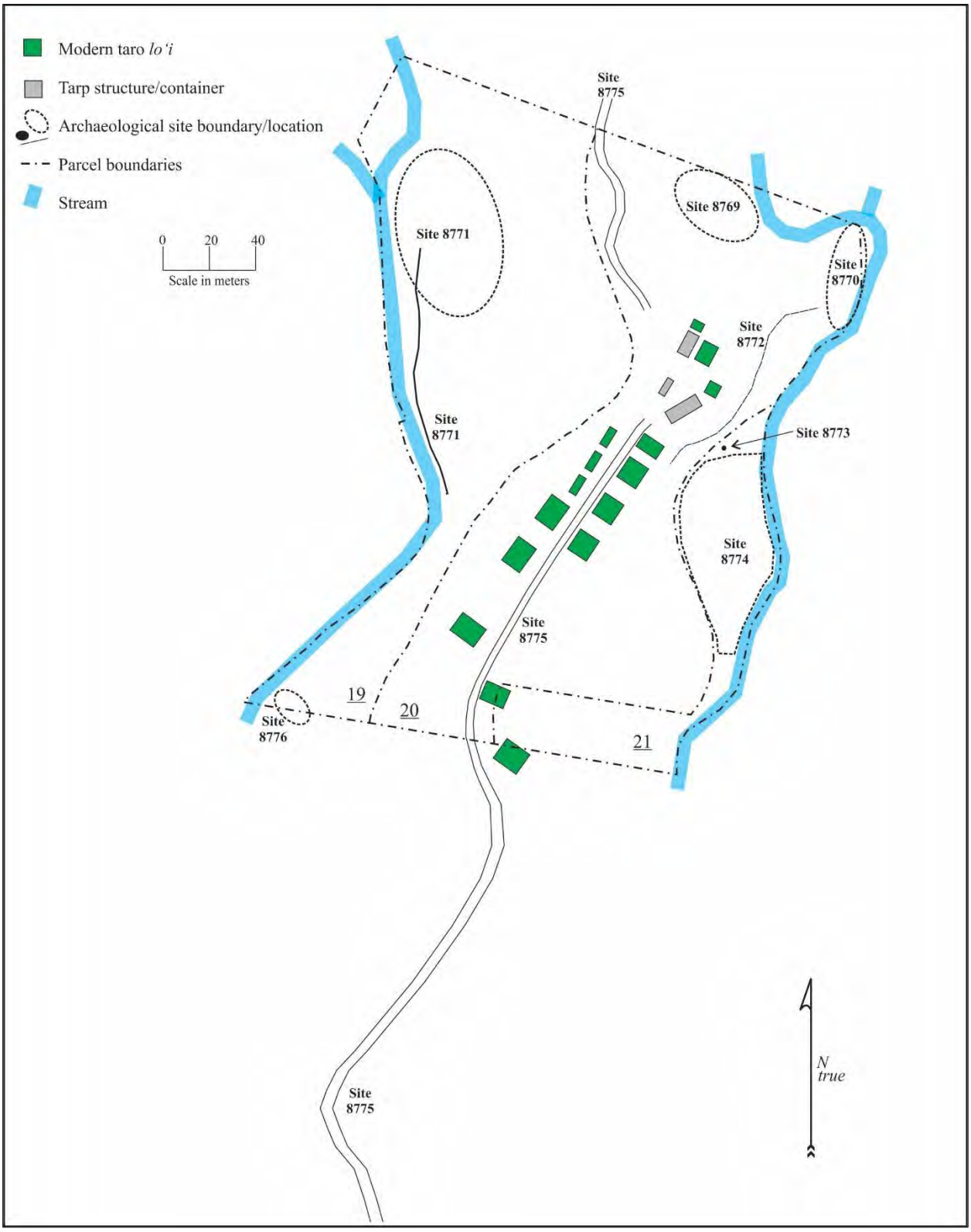


Figure 23. Locations of sites recorded within the current study area.

Figure 24. Paradise Park walkway features within current study area.

Figure 25. Paradise Park “Chinese Village” features within current study area.

Figure 26. Paradise Park “Filipino Village” features just outside the current study area.

Figure 27. Paradise Park “Portuguese Village” features within current study area, view to the north.

Figure 28. Paradise Park “Portuguese Village” features within current study area, view to the east.

SIHP Site 50-80-14-08769

Site 8769 (Figure 29) is an agricultural complex with five features (A-E) including an earthen ditch, retaining walls and an enclosed area, all likely representing a former *lo'i kalo* (Figure 29). The site is located along the northern boundary of the study area, and is situated on a gently sloping natural terrace west of and adjacent to Lua'alaea Stream (see Figure 23). Measuring approximately 30 meters (N/S) x 25 meters (E/W), the site is in fair condition with moderate impacts from alluvial erosion, treefall, and vegetation root intrusions.

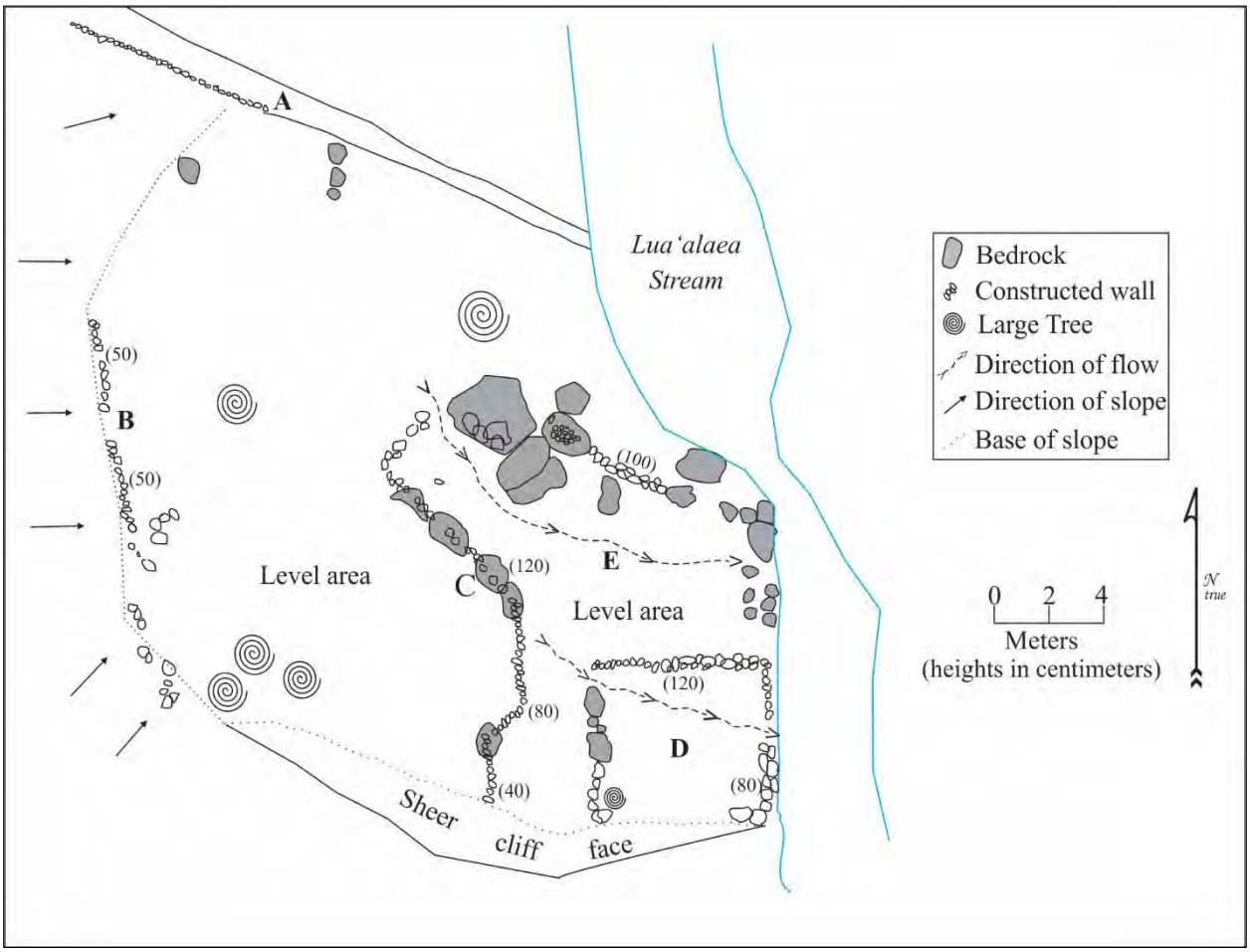


Figure 29. SIHP Site 8769 plan view.

Feature A is an earthen ditch (Figure 30) located along the northern site boundary (see Figure 29). The ditch is oriented northwest-southeast and ranges between 1 and 1.5 meters in width and is 20 meters in length. Small-sized basalt cobbles are dry-stacked in one to three courses along the edges of the ditch in the central and westernmost portions of the feature, likely placed to control erosion. The westernmost third of the ditch descends a moderate (~35^0) slope where abandoned metal and PVC water pipes were observed; the remaining eastern portion of the ditch extends across a gently sloping floodplain to the southeast, terminating at Lua'alaea Stream. This feature appears to have once carried water either to or from, but beyond the limits of the current site boundary.

Feature B is a retaining wall located along the western site boundary (see Figure 29). The wall is oriented roughly north-south and is approximately 0.5 meters in height and 14 meters in overall length. Small to medium-sized basalt cobbles are dry-stacked in three to four courses along a natural contour and retain soil to the west of the feature. Small segments of the wall are collapsed or missing (Figure 31), creating gaps of up to 1.5 meters in length.

Figure 30. SIHP Site 8769 Feature A, view to the west.

Figure 31. SIHP Site 8769 Feature B, view to the south.

Feature C is a retaining wall (Figure 32) located in the central portion of the site (see Figure 29) and forms a planting area between Features B and C; the south end of the wall terminates at a nearly-vertical cliff face which forms the southern boundary of the site. The retaining wall, measuring approximately 18 meters in length, is curvilinear but is generally oriented north-south along a contour that parallels the stream channel below. Feature C is constructed of medium to large-sized basalt cobbles which have been dry-stacked in four to six courses to a maximum height of 1.2 meters; bedrock outcrops and large boulders up to two meters in diameter were also incorporated in the construction of the feature. The northern segment of the wall is heavily collapsed where a small rivulet flows southeast into Lua‘alaea Stream.

Feature D is an enclosed area (Figure 33) formed by three rock walls against a nearly-vertical cliff face. Water seems to have flowed in a small channel through breaks in the walls from the northwest to the southeast. This square-shaped feature is in the southeastern portion of the site (see Figure 29) and encloses an area of approximately 36 square meters; the feature measure 6 meters on a side. The north (Figure 34) and east walls of the enclosure are constructed of concrete reinforced basalt masonry ranging in height from 0.8-1.2 meters, with some collapse having occurred along the west half of the north wall. The west wall, ranging in height from 20 to 80 centimeters is constructed of small to large-sized cobbles and boulders dry-stacked on bedrock, without added concrete. The southern boundary of the enclosed space is a near-vertical cliff face. The interior area appears to have supported cultivation.

Feature E is a short retaining wall alignment on bedrock (Figure 35); the ends of this curvilinear feature are marked with large boulders 0.8-2.0 meters in diameter, topped with medium-sized, dry-stacked cobbles, while the central portion of the feature consists of dry-stacked small to medium-sized basalt cobbles five to seven courses high with a maximum height of 1 meter. The alignment is oriented roughly northwest-southeast and is approximately 8 meters in length. The northwest end of the wall appears to coincide with the north end of Feature C, while the southeast end terminates at Lua‘alaea Stream (see Figure 29). A large fallen tree and alluvial erosion appear to have heavily-impacted the feature, which may have originally functioned facilitate water flow.

Figure 32. SIHP Site 8769 Feature C, view to the southwest.

Figure 33. SIHP Site 8769 Feature D, view to the east.

Figure 34. SIHP Site 8769 Feature D north wall, view to the north.

Figure 35. SHIP Site 8769 Feature E, view to the north.

SIHP Site 50-80-14-08770

Site 8770 is a remnant *lo‘i* complex with two features (Features A and B): both retaining wall along and above the western bank of Lua‘alaea Stream (Figure 36). The site is located in the northeast corner of the study area, below the confluence of Aihualama and Lua‘alaea Streams, and just downstream from Site 8769 (see Figure 23). Site 8770 is situated on a fairly-level floodplain terrace with a southern aspect within a bamboo grove. Presently the site occupies an area that measures roughly 25 meters (N/S) x 25 meters (E/W). The site is in poor condition, with significant impacts from vegetation and alluvial erosion, both of which seem to have removed or otherwise obscured aspects the former rock terracing.

Feature A is a retaining wall located in the northeast portion of the site (see Figure 36). The wall, approximately 24 meters in length with a maximum height of 0.75 meters, is curvilinear and parallels the natural bow of the stream. It is constructed of small to medium-sized basalt cobbles that are dry stacked in 3-4 courses on top of boulders embedded into the streambank, and acts to reinforce the streambank from erosion, while at the same time retaining a level terrace area. Bamboo growth and erosion have significantly impacted the feature (Figure 37).

Feature B is a modified outcrop located approximately 10 meters west of Feature A (see Figure 36). Two adjacent basalt bedrock outcrops interspersed and with small to medium-sized basalt cobbles stacked between and on top of the outcrops (Figure 38), forms a terrace wall approximately ten meters in length and 1.2 meters in height. This modified outcrop/terrace wall feature is curvilinear and oriented parallel to both Feature A and the stream, and retains a level terrace area on its western side.

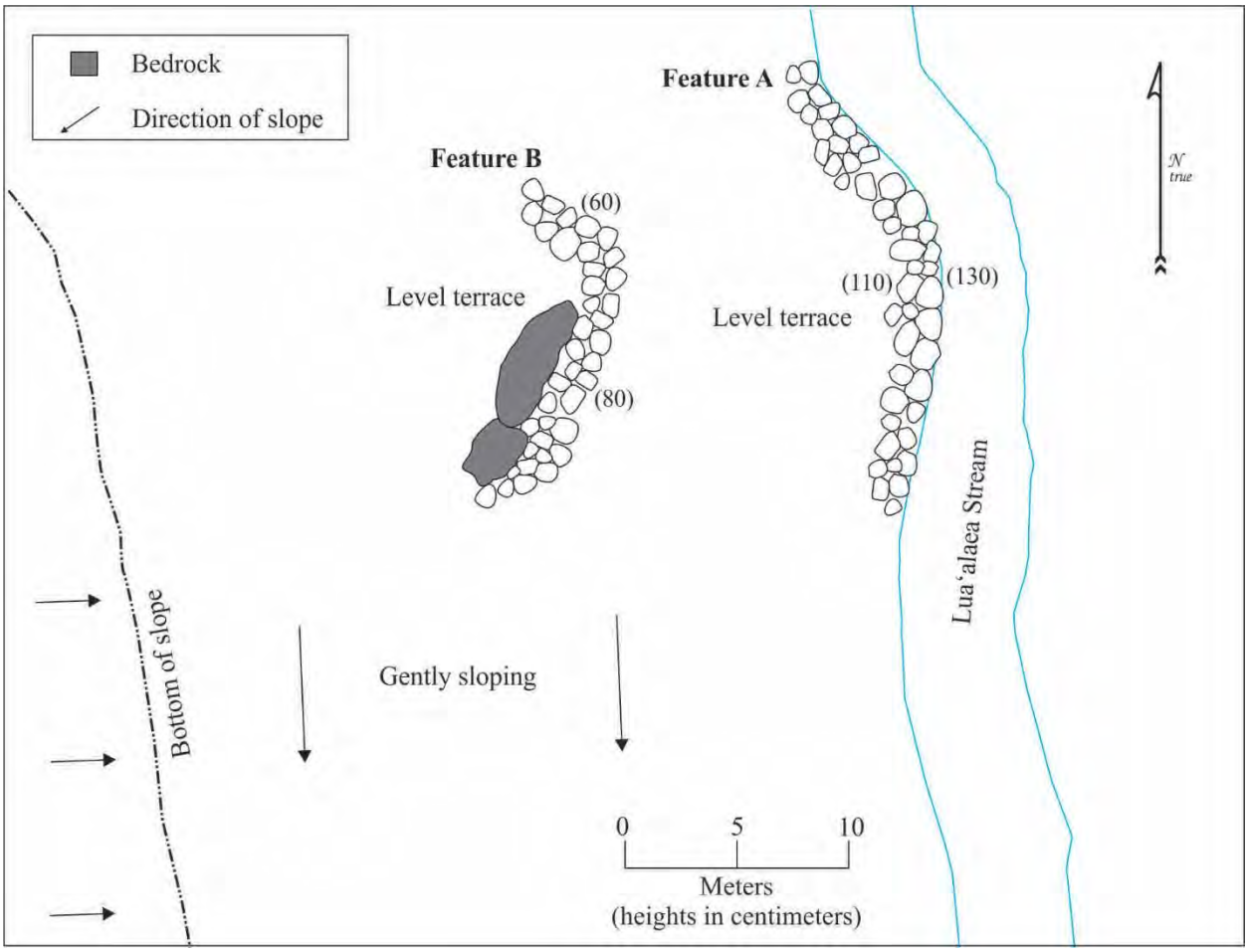


Figure 36. SIHP Site 8770 plan view.

Figure 37. SIHP Site 8770 Feature A, view to the south.

Figure 38. SIHP Site 8770 Feature B, view to the west.

SIHP Site 50-80-14-08771

Site 8771 is an agricultural complex with fifteen features (A-O), located in the northwestern corner of the study area (see Figure 23). Features within the site include mounds, modified outcrops, walls, and a cairn. The core of the site is situated on a gently-sloping plateau above Waihī Stream (Figure 39); Feature O extends for approximately eighty-five meters to the south beyond the site's other features. The site dimensions are approximately 55m (N/S) x 38m (E/W), excluding Feature O. Site 8771 is bound to the southwest and northeast by naturally-occurring embankments, and this location seems to correspond to the distribution of a particular soil type (see Figure 5). This site appears to take advantage of a dryer location, then the surrounding area, for non-irrigated agricultural activity. The site is in fair condition with impacts from fallen trees and invasive vegetation growth. The site's fifteen features are described below.

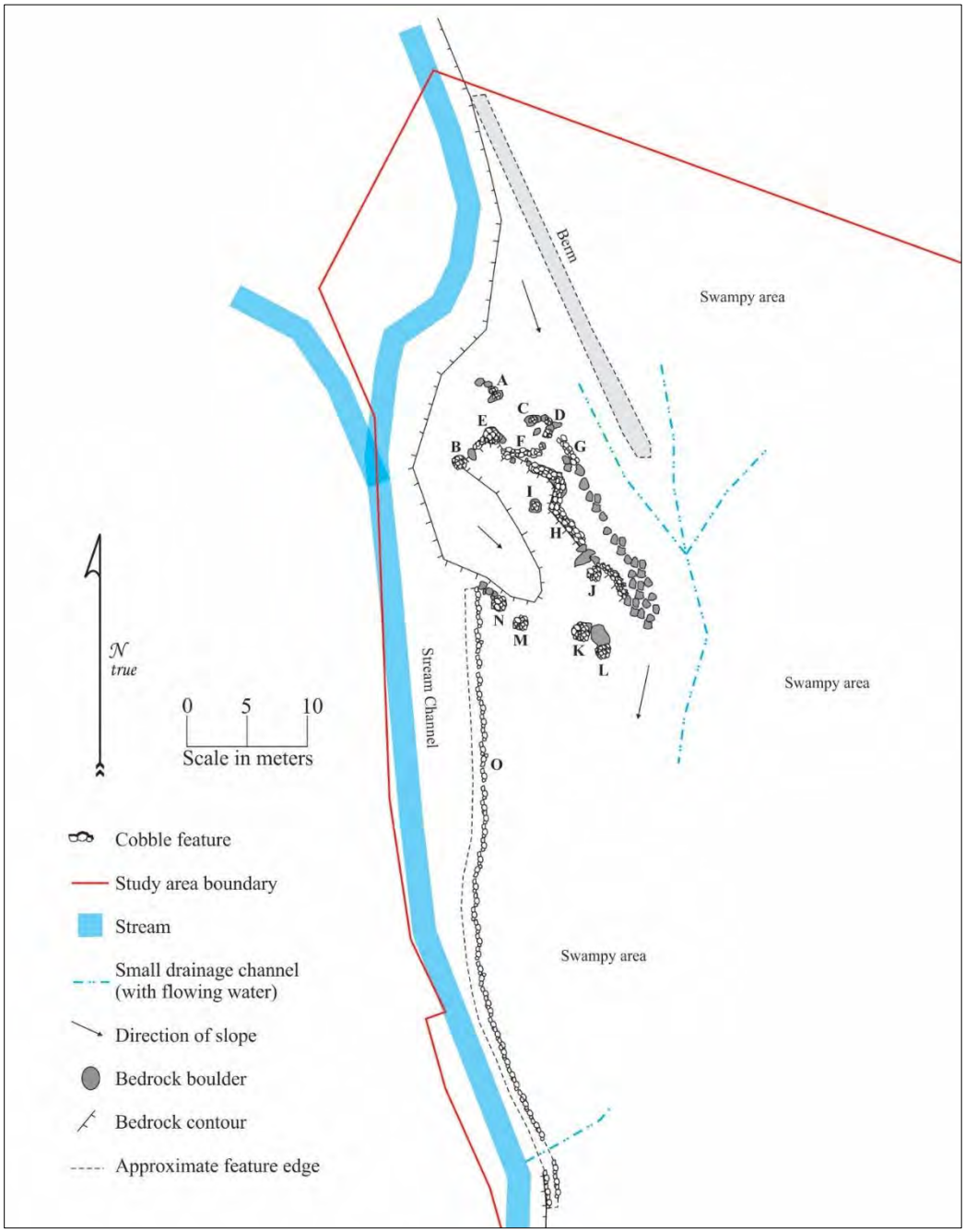


Figure 39. SIHP Site 8771 plan view.

Feature A is a low-lying basalt outcrop located in the northern end of the site (see Figure 39) and measures roughly 3 meters x 1.5 meters. Approximately sixty cobbles ranging in size from 5-35 centimeters in diameter are stacked on top of the outcrop, most however are about 20 centimeters in diameter (Figure 40). The maximum height of the feature is 80 centimeters above the surrounding ground surface. This feature appears to be an accumulation of rocks that were cleared from the adjacent area, perhaps in an effort to enhance the soil for planting purposes.

Feature B is a mound located in the northwestern portion of the site (see Figure 39), measuring approximately 2.5 meters in diameter and 80 centimeters in height. The mound is comprised of approximately twenty larger cobbles dry-stacked in three to four courses, upon which thirty to forty fist-sized cobbles have been placed (Figure 41).This feature appears to be a clearing pile.

Figure 40. SIHP Site 8771 Feature A, view to the northwest.

Figure 41. SIHP Site 8771 Feature B, view to the west.

Feature C, located 3 meters southeast of Feature A (see Figure 39), is a large boulder outcrop measuring 2.5 meters in diameter. Approximately one hundred cobbles are stacked on top of the outcrop (Figure 42); most are fist-sized, but as many as twenty are up to 25 centimeters in diameter. The maximum height of the feature is 1.1 meters. Like Feature B, this feature appears to be a clearing pile.

Figure 42. SIHP Site 8771 Feature C, view to the west.

Feature D is located adjacent to Feature C (see Figure 39), and is a low-lying outcrop measuring approximately 2 meters x 3 meters. The westernmost portion of the outcrop has five larger (20-30centimeter diameter) cobbles stacked on top. Approximately fifty smaller, fist-sized cobbles are stacked on top of the eastern portion of the outcrop. The maximum height of the feature is 60 centimeters (Figure 43). This feature appears to be a product of clearing activities.

Figure 43. SIHP Site 8771 Feature D, view to the southeast.

Feature E is a large mound constructed against the largest natural outcrop in the northern area of the site (see Figure 39). The mound measures approximately 3 meters x 5 meters and has a maximum height of 1.5 meters. Several hundred rocks were used in the construction of the mound, ranging in size from handheld cobbles to large boulders up to 60 centimeters in diameter; an aluminum saucepan was observed at the base of the feature (Figure 44). Several tree saplings are growing on top of the feature.

Figure 44. SIHP Site 8771 Feature E, view to the west.

Feature F, southeast of Feature E (see Figure 39), is a rock wall measuring 6.5 meters long and up to one meter wide, having a maximum height of 1.6 meters. The wall is oriented roughly east-west and is constructed of medium-sized boulders (40-60 centimeters in diameter), dry-stacked in three to four courses and underlying four to five courses of fist-sized cobbles which form the upper portion of the wall (Figure 45). A large tree is growing on top of the feature.

Figure 45. SIHP Site 8771 Feature F, view to the northeast.

Feature G, south of Feature D (see Figure 39), is a low-lying rock wall, possibly representing the clearing pile of rocks in a linear fashion rather than a formally-constructed wall. The feature is oriented northwest-southeast and is approximately 7 meters long, 50 centimeters high, and 1.2 meters wide at the base. A recent treefall lays across the top of the feature (Figure 46).

Figure 46. SIHP Site 8771 Feature G, view to the southeast.

Feature H (see Figure 39) is a modified outcrop that transitions to a more formally-constructed wall on its south end (Figure 47). It is constructed of several hundred small to large-sized boulders, with larger materials forming the base and smaller cobbles topping the wall. The overall length of Feature H is 14 meters, with a maximum height of 1.6 meters. The function of this feature may have been to retain soil to the northeast to create a planting area.

Figure 47. SIHP Site 8771 northern segment of Feature H, view to the southeast.

Feature I, located to the west of Feature H, is a rock cairn stacked on a low-lying outcrop within a small drainage in the central area of the site (see Figure 39). It is composed of five medium-sized boulders approximately 50 centimeters in diameter, and stacked to a maximum height of 80 centimeters (Figure 48).

Figure 48. SIHP Site 8771 Feature I, view to the south.

Feature J (see Figure 39) is a low-lying bedrock outcrop, around 1.5 meters in diameter, with approximately twenty small to medium-sized cobbles stacked on top in a single layer (Figure 49). This feature appears to be a product of clearing activities.

Figure 49. SIHP Site 8771 Feature J, view to the northeast.

Feature K is a mound located in the central portion of the site (see Figure 39), that measures approximately 2.5 meters in diameter and 1 meter in height. The mound is comprised of several hundred cobbles ranging in size with larger boulders forming the base and smaller cobbles stacked on top (Figure 50). A large tree is growing on top of the feature. This feature appears to be a product of clearing activities.

Figure 50. SIHP Site 8771 Feature K, view to the east.

Feature L is a mound located just southeast of Feature K (see Figure 39), measuring approximately 3 meters in diameter and 60 centimeters in height. The mound is composed of approximately forty larger cobbles dry-stacked in two to three courses, upon which thirty to forty fist-sized cobbles have been placed (Figure 51). This feature appears to be a product of clearing activities.

Figure 51. SIHP Site 8771 Feature L, view to the east.

Feature M is a mound located in the central western portion of the site (see Figure 39), measuring approximately 3 meters in diameter and 40 centimeters in height. The mound is deflated and was heavily overgrown at the time of the recording (Figure 52). This feature appears to be a product of clearing activities.

Figure 52. SIHP Site 8771 Feature M, view to the northeast.

Feature N is a mound located just northwest of Feature M (see Figure 39). Feature N measures approximately 2.5 meters in diameter and 90 centimeters in height; a large tree is currently growing against the east side of the feature (Figure 53). This feature appears to be a product of clearing activities.

Figure 53. SIHP Site 8771 Feature N, view to the north.

Feature O is a dry-stacked rock wall extending south for 85 meters from the northern end of Feature N (see Figure 39). The feature follows along the top of the eastern upper stream bank of Waihī Stream along the western margin of the study area (see Figure 23). The north end of the wall (Figure 54) is a low-lying, single course of medium-sized basalt boulders, and increases in height as it extends southward, reaching a maximum height of 1.8 meters toward its southern end (Figure 55). Metal water pipes were observed near the southern end of the wall, where there is a large gap that opens to the stream. The wall may have collapsed in this area, or alternatively this gap may be functional with respect to conveying water from (drying out) Site 8771 to the stream.

Figure 54. SIHP Site 8771 Feature O, collapsed section of wall in southernmost segment, view to the southwest.

Figure 55. SIHP Site 8771 Feature O, northernmost segment of wall, view to the northwest.

SIHP Site 50-80-14-08772

Site 8772 is an earthen ditch oriented northeast-southwest that extends along the upper edge of the slope to the west of Lua‘alaea Stream (Figure 56), and may have once provided a watercourse between Site 8770 to the north and Site 8774 to the south (see Figure 23). The ditch ranges between 0.9 and 1.2 meters in width and extends in total length for roughly 95 meters. While this site appears to be an *‘auwai* channel, it is unclear from where the water came. Alluvial erosion has heavily impacted the ditch, which has been infilled with soil or obscured by dense stands of bamboo at each end as they descend the floodplain to the east. The northern end of ditch (Figure 57) is more of a terraced pathway extending downslope toward Site 8770. The central (Figure 58) and southern portion of Site 8772 is an earthen ditch, roughly 1.2 meters wide by 30 centimeters deep, with an earthen berm along its southeast edge, 1 meter wide by 40 centimeters tall on average. The ditch is currently overgrown with bamboo, and a large tree in the channel attests to the site’s antiquity. This ditch seems have once emptied into the Site 8774 *lo‘i* system. Recently excavated ditches from modern *lo‘i* cultivated by the Kumuloa Foundation currently drain into Site 8772 at its southern end. Site 8772 is in poor condition due to the spread of invasive vegetation.

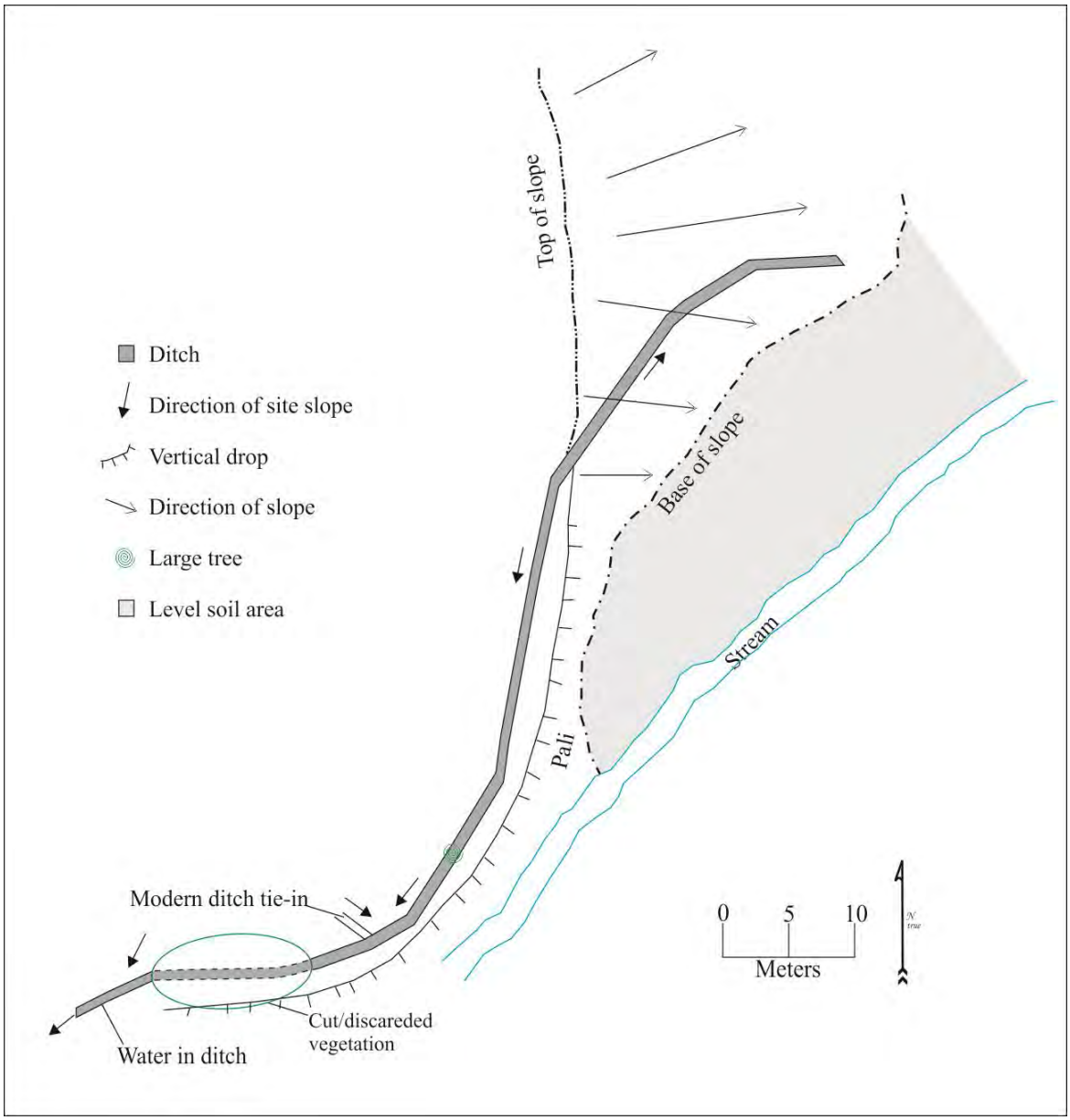


Figure 56. SIHP Site 8772 plan view.

Figure 57. SIHP Site 8772 northern portion of ditch, view to the northeast.

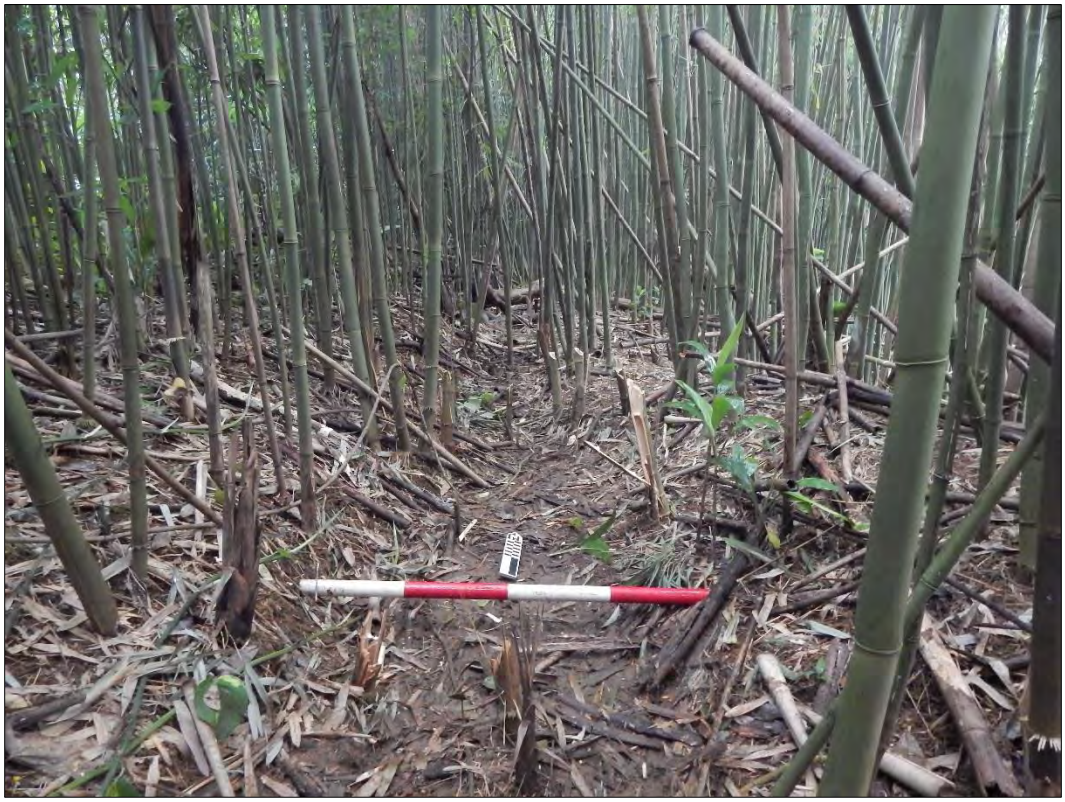


Figure 58. SIHP Site 8772 central portion of ditch, view to the north.

SIHP Site 50-80-14-08773

Site 8773 is a shallow, man-made cave, excavated into the base of a near-vertical basalt cliff face just west of Lua‘alaea Stream (Figure 59). The site is located on the east end of the study area (see Figure 23), between Sites 8770 (to the north) and 8774 (to the south). The cave has a rectangular opening (see Figure 59) approximately 1.2 meters wide and 1.4 meters high and extends 2.4 meters into the cliff face; the interior of the cave widens to 2.1 meters along the back wall, and is dome-shaped, with a maximum height at the apex approximately 1.75 meters (Figure 61). Tool marks are visible on the interior walls (Figure 61), indicating construction techniques likely involved hammer(s) and metal chisel(s). A colorless glass vessel fragment was observed in the cave, and a moderately dense scatter of historic/modern trash is located both above and below the site. The function of 8773 is unknown, although the general dimensions and location suggest an association with the surrounding agricultural complexes and its use as a possible shelter or for storage.

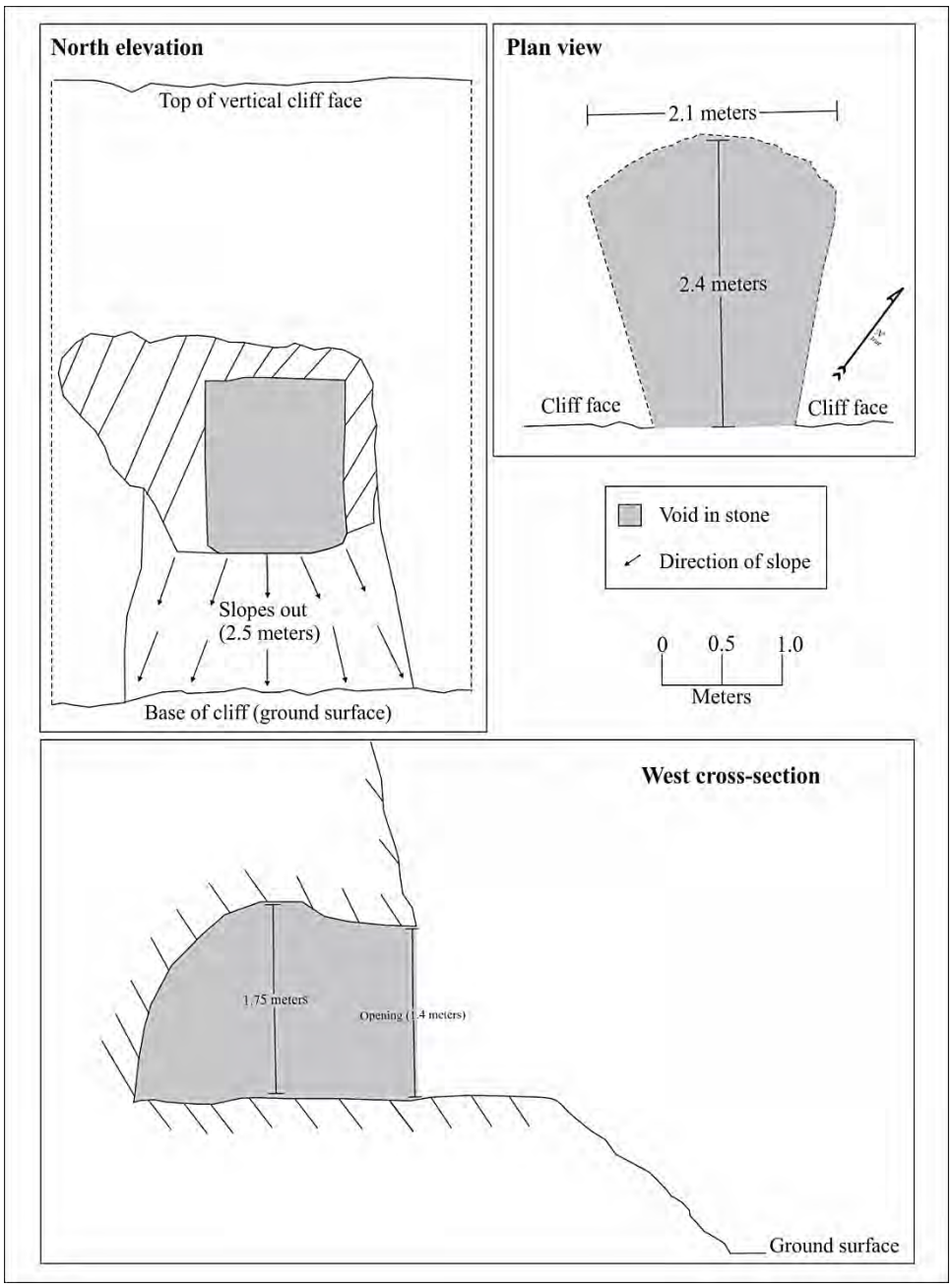


Figure 59. SIHP Site 8773 multiple views.

Figure 60. SIHP Site 8773, entrance to rock-cut cave, view to the northwest.

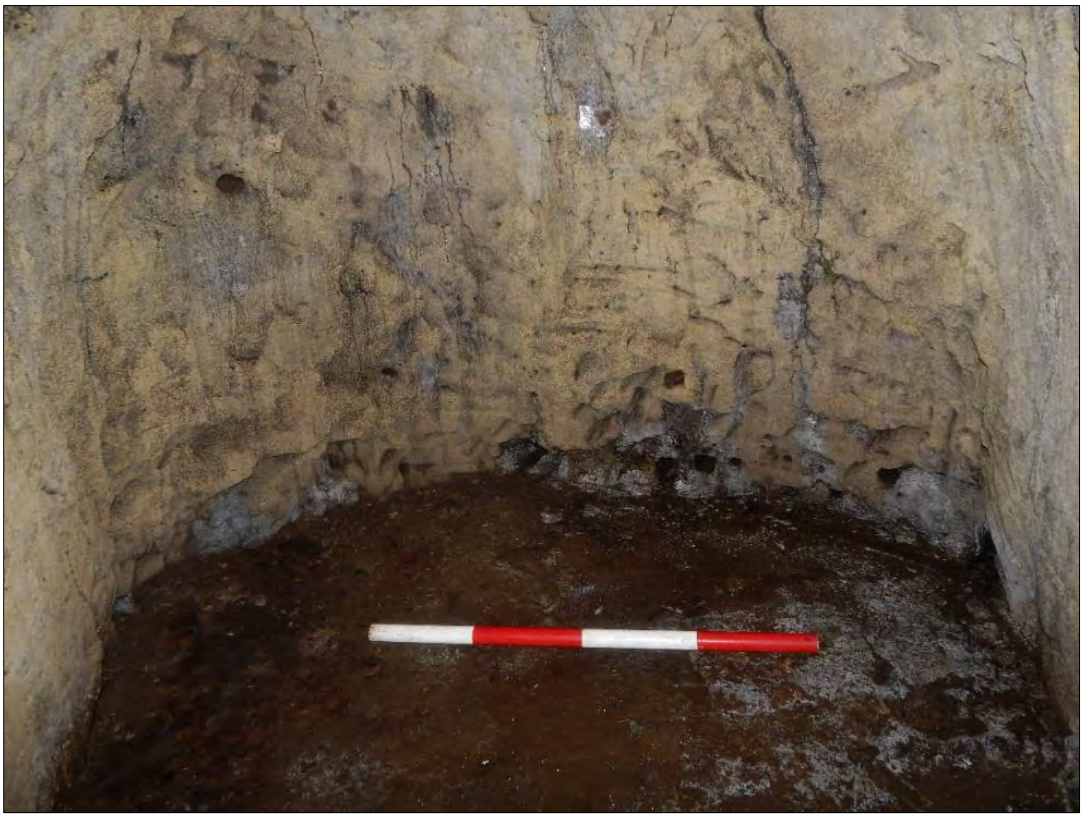


Figure 61. SIHP Site 8773, interior of rock-cut cave showing tool marks, view to the northwest.

SIHP Site 50-80-14-08774

Site 8774 is a *lo'i* complex that occupies a roughly 90 meter (N/S) x 50 meter (E/W) low-lying area adjacent to the western bank of Lua'alaea Stream within the east central portion of the study area (see Figure 23). The site area is defined on its western side by a steep crescent-shaped slope that originates and terminates at the stream (Figure 62). The entire site is heavily-vegetated in dense bamboo, which has been recently cut and left to decay over the western portion of the *lo'i* area, making it impossible to record this portion of the site. This former *lo'i* system appears to have been fed by the Site 8772 *'auwai*, but the area where the connection would be observed is completely obscured. Water presumably from the *'auwai* channel currently flows through the cut bamboo and enters the stream (Figure 63) in the southern portion of the site (see Figure 62). Two sets of interconnected walls (Features A and B) and third wall segment (Feature C) define four relatively level soil areas that were likely used for wet cultivation of taro. This site is in poor to fair condition as a result of invasive bamboo growth. Features A, B, and C are described below.

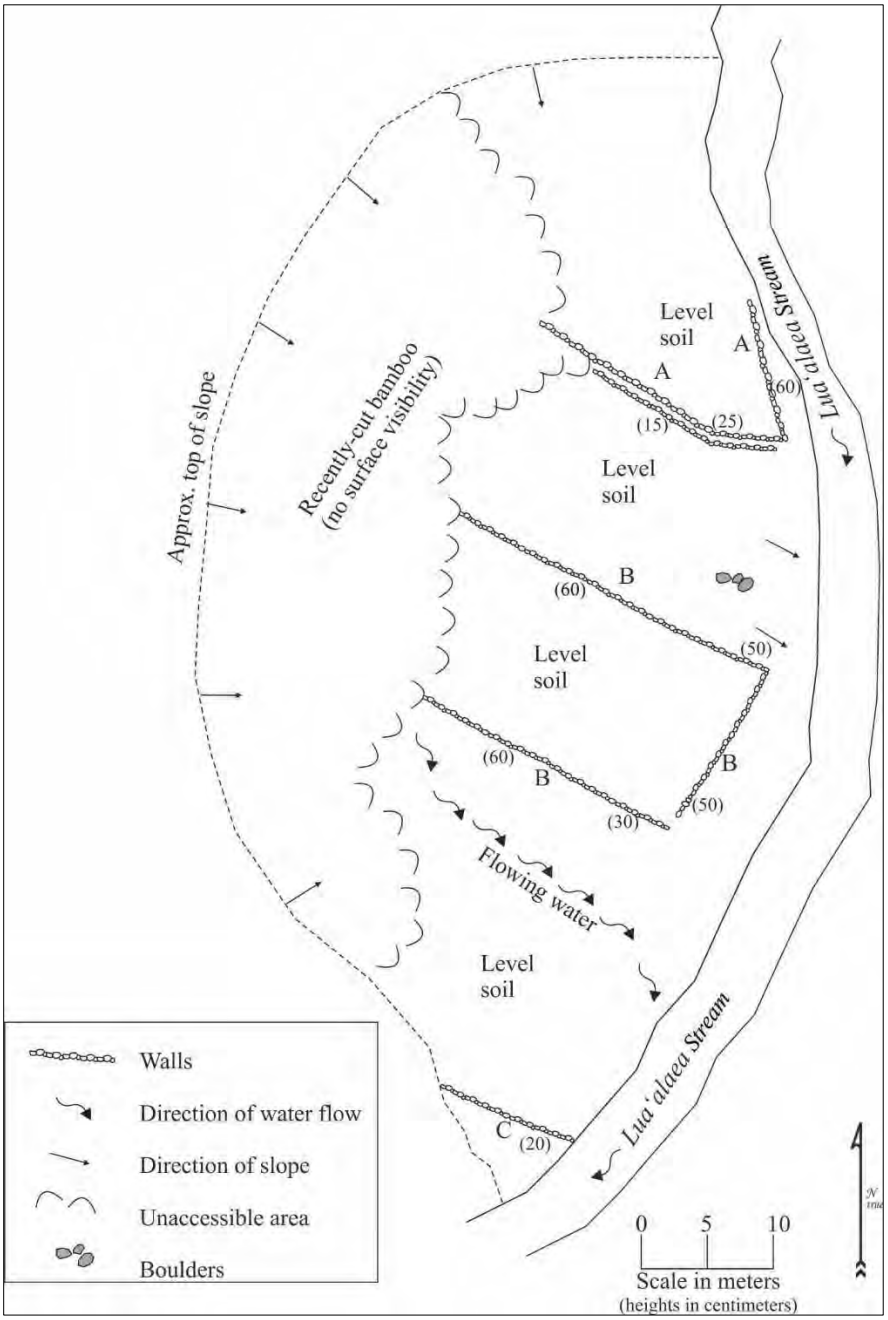


Figure 62. SIHP Site 8774 plan view.

Figure 63. SIHP Site 8774, flowing water entering the stream, view to the northwest.

Feature A is a V-shaped dry-stacked wall in the north portion of the site, forming the southwest and east edges of terrace; along with a third wall segment that extends parallel to the southwest wall segment (see Figure 62). The eastern wall segment measures 12 meters in length and is parallel to the stream course; it is constructed of medium to large-sized cobbles stacked one to three courses to a maximum height of 60 centimeters. The southwestern wall segment joins the south end of the eastern wall at an acute angle and extends northwest for at least 28 meters before becoming obscured by impenetrable vegetation. This wall segment reaches a maximum height of 25 centimeters. A third lower (15 centimeters height) wall segment extends parallel to the southwestern wall segment forming a potential water channel of pathway roughly 70 centimeters wide (Figure 64)

Figure 64. SIHP Site 8774, parallel walls along southern terrace edge, view to the east.

Feature B is a three-sided wall, similar in construction to Feature A, which defines rectangular terraced areas both within and outside of the walls (see Figure 62). The southwest and northeast wall segments extend for approximately 25 meters between the stream bank and the impenetrable bamboo growth (Figure 65). The eastern wall measures roughly 14 meters in length and has collapsed at its southern end leaving a 1 meter gap between it and the southern wall segment.

Figure 65. SIHP Site 8774 Feature B, view to the west.

Feature C is a discontinuous, 8-meter long cobble alignment located in the south end of the site (see Figure 62). The alignment is one course high and constructed of basalt cobbles (Figure 66), with a maximum height of 20 centimeters. Feature C extends west from the bank of the stream to the base of a slope that forms the southwestern site boundary.

Figure 66. SIHP Site 8774 Feature C cobble alignment, view to the southwest.

SIHP Site 50-80-14-08775

Site 8775 is the currently used vehicle access roadway (Haukulu Road) extending north from Wa‘aloa Way to the core of the study area, along with an abandoned roadway segment observed in the northern portion of the study area (see Figure 23). Together these appear to have once been a part of a continuous loop road that connected to Mānoa Road at the Mānoa Falls Trailhead to the northwest of the current study area, and was in use as early as 1916, where at least the upper portion of the roadway within the current project area is shown on a Land Court Application Map (LCApp. 0338 #1) prepared for a neighboring property, and labeled ‘Government Loop Road’ (Figure 67). A 1948 survey map (Figure 68), seems to indicate that by that time the road was no longer a continuous loop and was considered to be a private road. A road matching the location of Site 8775 also appears on the Tax Map Key (see Figure 2)

The portion of Site 8775 that is currently used as an access road extends from Wa‘aloa Way for a distance of roughly 200 meters along the boundary dividing TMK Parcel (1) 2-9-054:004 and 006 (see Figure 2), and terminates roughly 120 meters south of the northern study area boundary (see Figure 23). This termination point approximates that as shown on Figure 68. From Wa‘aloa Way to the termination point, the road surface is roughly 3.5 meters wide and has been asphalt paved (Figure 69).

The abandoned roadway segment in the northern portion of the study area is an earthen cut into a west-trending hillslope (Figure 70), which extends north along a contour beyond the northern study area boundary. The road cut is observable for a distance of 150 meters within the study area, and ranges between 3 and 4 meters in width. This portion of the site is heavily vegetated. A connection between this segment and the terminus of the currently used access roadway to the south was not discernible. Site 8775 has poor integrity with respect to its original design and use.

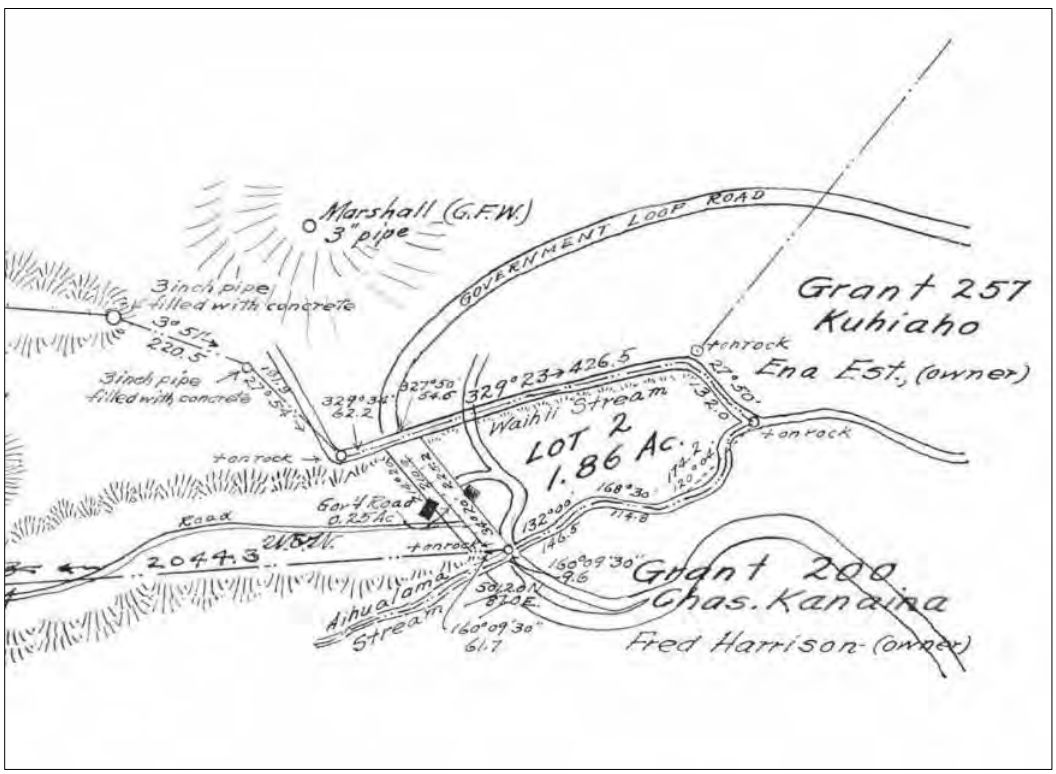


Figure 67. Portion of Land Court Application 0338 Map 0001 (dated 1916).

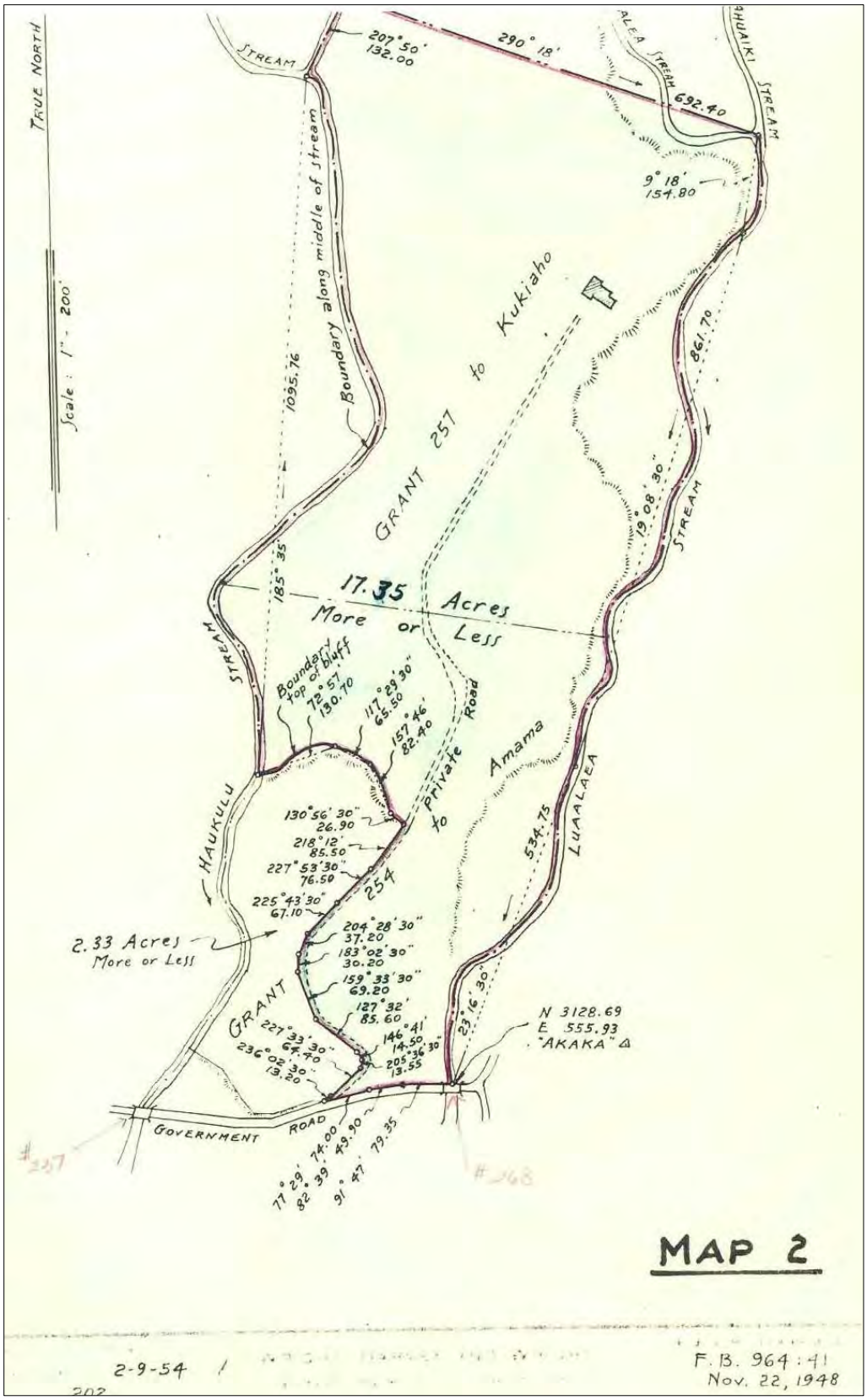


Figure 68. 1948 Survey map showing the current study area, and "Private Road".

Figure 69. SIHP Site 8775 currently used access roadway (Haukulu Road), view to the south.

Figure 70. SIHP Site 8775 abandoned roadway, view to the southeast.

SIHP Site 50-80-14-08776

Site 8776 is a Historic Period refuse dump containing several hundred glass bottles (Figure 71) and jars, ceramic and porcelain tableware, and metal fragments. The site is located along the eastern bank of Waihī Stream (Figure 72) near the southwest corner of Parcel 019, and extends southward outside of the current study area (see Figure 23). The site is approximately twelve meters in diameter, and many objects are deeply embedded into the ground surface in what appears to be a push pile, which may indicate prior mechanical impacts. Several of the objects are complete, and a cursory review of diagnostic maker's marks gives a date range of 1930s-1950s. One Owens-Illinois Glass Company bottle base (Figure 73) exhibits the 1929 to 1960 logo (Lockhart and Hoenig 2015) with codes indicating manufacture at the Oakland, CA plant in 1940. A Shu-Milk brand shoe polish bottle observed at the site (Figures 74 and 75), is similar to examples that were advertised in magazines in the early 1940s (Figure 76). Beverage, condiment, chemical, cosmetic, and medicinal bottles are all represented in the assemblage; as well as hand painted Japanese-made porcelain rice bowls, sake cups, and plates. Several of the latter items are marked as "MADE IN JAPAN" (Figures 77 and 78), indicating a 1922-1947 date of manufacture, or as "made in occupied Japan" (Figure 79), indicating a 1947-1952 date of production. Site 8776 appears to be a location for the disposal of domestic refuse.

Figure 71. SIHP Site 8776 showing heavy concentration of bottles.

Figure 72. SIHP Site 8776 location along the eastern bank of Waihī Stream, view to the north.

Figure 73. SIHP Site 8776 Owens-Illinois glass company bottle base (1931-1954).

Figure 74. SIHP Site 8776 Shu-Milk shoe polish bottle, circa early-1940s.

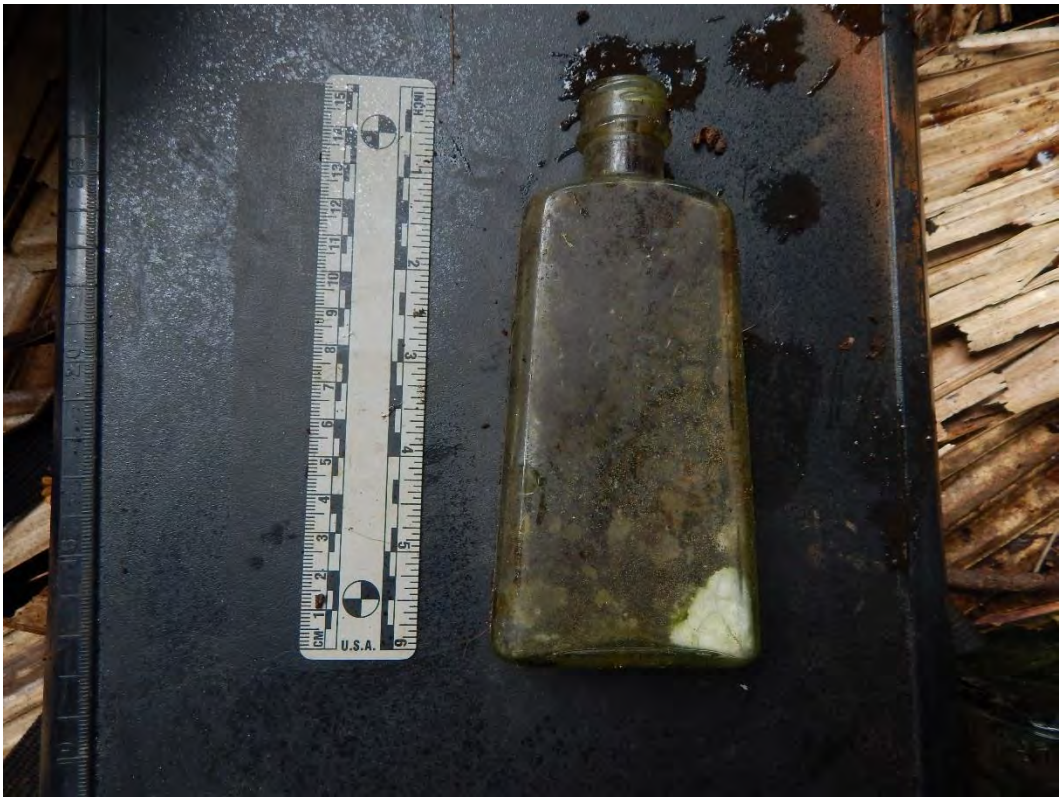


Figure 75. Shu-Milk shoe polish bottle, circa early-1940s.

Figure 76: Shu-Milk advertisement from LIFE Magazine (July 28, 1941).

Figure 77. SIHP Site 8776 porcelain bowl with "MADE IN JAPAN" on base.

Figure 78. SIHP Site 8776 porcelain bowl fragment with “MADE IN JAPAN” on base.

Figure 79. SIHP Site 8776 porcelain sake cup with “made in occupied Japan” on base.

DISCUSSION

Eight sites were recorded during the current inventory survey fieldwork. All of these appear to date from the Historic Period and six of the sites are likely associated with an agricultural function, match our temporal and functional expectations for the study area. The three *lo‘i kalo*, the dryland agricultural complex, the *‘auwai*, and cave shelter likely date from the Grant Period (post 1850) use of the property through the ownership of John Ena (until roughly 1900) and later his estate (until 1949). While it is possible that the agricultural planting features may have originated in Precontact times, there is no direct evidence for such temporal use. The early to middle twentieth-century refuse dump site also fits the expected pattern of residential land use of the upper Mānoa Valley during the late Historic Period.

While it is possible that activities associated with the 1895 Battle of Mānoa may have taken place within the current study area, no physical evidence of any such activities was observed. Any significance that the current study area may hold with respect to its association with John Ena and/or the Battle of Mānoa will be explored in a Cultural Impact Assessment study that is forthcoming.

5. SIGNIFICANCE EVALUATION AND TREATMENT RECOMMENDATIONS

The eight archaeological sites that were recorded during the current study are assessed for significance based on criteria contained in the Hawai‘i Administrative Rules 13§13-284-6. For a resource to be considered significant it must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following 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;

e Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional 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 significance and recommended treatments for the eight historic properties identified during the current study are presented in Table 2 and discussed below.

Table 2. Significance evaluation and treatment recommendations.

SIHP Site No.	*Type*	*Age*	*Significance*	*Treatment Recommendation*
8769	Agricultural complex	Historic	d	Preservation
8770	Agricultural complex	Historic	d	Preservation
8771	Agricultural complex	Historic	d	Preservation
8772	Earthen ditch	Historic	d	Preservation
8773	Man-made cave	Historic	d	Preservation
8774	Agricultural complex	Historic	d	Preservation
8775	Road segments	Historic	d	Preservation
8776	Refuse deposit	Historic	d	Preservation

While it was shown that all of the sites suffer varying degrees of reduced integrity as a result of impacts from invasive vegetation, all of the sites do retain sufficient aspects of location, design, setting, materials, workmanship, feeling, and association to be evaluated as being significant under Criterion d for the information that has been collected from the sites relative to middle nineteenth-century through middle twentieth-century land use practices. Given the nature of the proposed land use within the study area (the development of the Hālau Wai Mānoa), it is our recommendation that all of the sites be preserved; and that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the Hālau Wai Mānoa. With that said, it is not our intention that such preservation will make these site off-limits to appropriate use, or conversely that there is should be any obligation to proactively protect the sites against the ravages of vegetation growth. Preservation can be either or both passive or proactive and may include further archaeological study, restoration and reuse of the sites, as well as interpretation.

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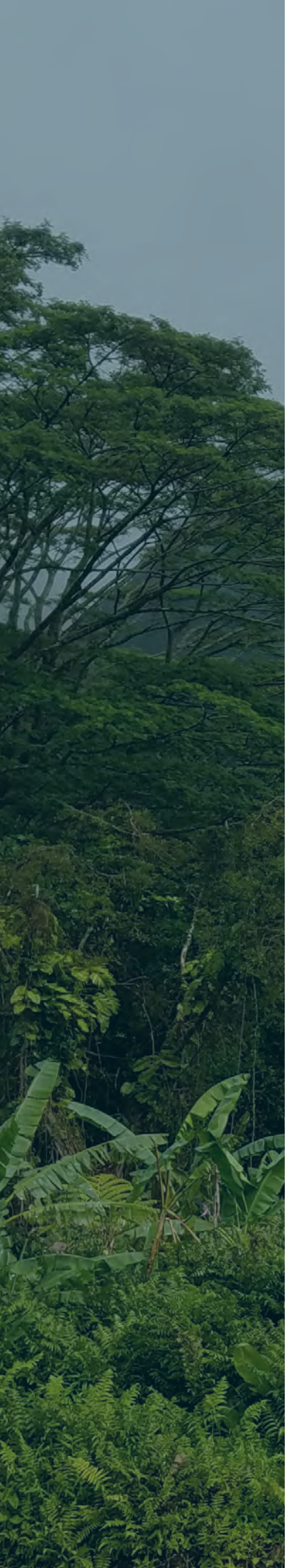

APPENDIX D
Cultural Impact Assessment

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A Cultural Impact Assessment for the Proposed Hālau Wai Mānoa in Upper Mānoa Valley

TMKs: (1) 2-9-054:019, 020 and 021; and portions of
TMKs: (1) 2-9-054: 004 and 029

Waikīkī Ahupuaʻa
Honolulu District
Island of Oʻahu

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A Cultural Impact Assessment for the Proposed Hālau Wai Mānoa in Upper Mānoa Valley

TMKs: (1) 2-9-054:019, 020, and 021; and portions of
TMKs: (1) 2-9-054:004 and 029

Waikīkī Ahupuaʻa
Honolulu District
Island of Oʻahu

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ABSTRACT

At the request of Mr. Vincent Shigekuni of PBR Hawaii & Associates, on behalf of the Honolulu Board of Water Supply (BWS), ASM Affiliates (ASM) has prepared this Cultural Impact Assessment (CIA) as part of supporting Environmental Assessment (EA), and Conservation District Use Application (CDUA) documentation for the proposed Hālau Wai Mānoa (HWM). The roughly 12.8-acre study area consists of three side-by-side parcels (TMKs: (1) 2-9-054:019, 020, and 021) that will form the area for the proposed HWM, and two roughly 0.25-acre potential access corridors that traverse portions adjacent parcels TMKs: (1) 2-9-054:004 and 029. The current report was prepared in compliance with Hawai‘i Revised Statutes (HRS) Chapter 343, and in accordance with the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impact*, adopted by the Environmental Council, State of Hawai‘i, on November 19, 1997. This study presents the results of background research and oral-history consultations. The OEQC guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources, associated with cultural practices and beliefs that are subject to assessment. Essentially these are nature features of the landscape and historic sites, including traditional cultural properties. Because the OEQC guidelines do not contain criteria for assessing the significance of traditional cultural properties, the current study utilized the state criteria for evaluating the significance of historic properties, of which traditional cultural properties are a subset. A further analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities resulted from the *Ka Pa‘akai O Ka‘āina* v. Land Use Commission court case. An AIS conducted by ASM Affiliates (Rechtman et al. 2018) of the current study area identified eight previously unidentified archaeological sites: four agricultural complexes (SIHP Sites 50-80-14-08769; 08770; 08771; and 08774), an *‘auwai* (SIHP Site 50-80-14-08772), a man-made cave shelter (SIHP Site 50-80-14-08773), roadway segments (SIHP Site 50-80-14-08775), and a middle twentieth-century refuse dump (SIHP Site 50-80-14-08776). These sites appear to date from the Historic Period and most are likely associated with an agricultural function. Rechtman et al. (2018) recommended preservation for all eight sites. We suggest that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the HWM. Based on the archival research and collected oral information it is understood that Mānoa Valley formerly supported a large population with scores of *lo‘i kalo* that were watered by the many freshwater streams, some of which flow through the study area. While no specific former traditional cultural practices were identified for the subject property, the study area is currently the site of active cultural practices. Since 2010, Kumuola Foundation has been providing cultural education to thousands of local students and visitors from abroad via plant-based learning activities that revolve around active *lo‘i kalo* and the propagation of native plant species. Regarding the ongoing cultural practices of Kumuola Foundation within the current study area, it is our recommendation that the spirit of what they have begun be perpetuated in the future HWM. It is clear that the subject property holds significance to those who have been actively engaged in the perpetuation of cultural practices therein; thus, we suggest that whatever entity is awarded the opportunity to develop the HWM, they should consult with Kumuola Foundation representative with respect to the cultural activities that have been occurring at the site. Additionally, given that the subject property likely figured in the Rebellion of 1895 and specifically the Battle of Mānoa, it is our opinion that future curricula of the HWM should include reference to this significant historical event. The interviewees made it clear that they revere the land that comprises the study area as life-giving and precious. Furthermore, it is their wish that the land and water be protected and that the study area does not become reduced to a tourist attraction. To that end, we further recommend that BWS collaborate with local community members, such as the members of Malama Mānoa and Mānoa Heritage Center, as well as cultural practitioners to determine the best approach to creating a culturally sensitive learning center that will respectfully include the beliefs and traditional customs of the Native Hawaiian community of Mānoa and greater Waikīkī Ahupua‘a. It is the conclusion of the current assessment that if the identified archaeological sites are treated subject to an SHPD-accepted preservation plan, the cultural history of the area (including a presentation of the Rebellion of 1895 and specifically the Battle of Mānoa) is incorporated into any future HWM curriculum, and the BWS fosters continued consultation with the various cultural stakeholders, then the development of the Hālau Wai Mānoa within the subject property will not negatively affect any valued cultural, historical, or natural resources nor will it impair any traditional and customary native Hawaiian rights; and thus will not have a negative cultural impact.

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1. INTRODUCTION

At the request of Mr. Vincent Shigekuni of PBR Hawaii & Associates, on behalf of the Honolulu Board of Water Supply (BWS), ASM Affiliates (ASM) has prepared this Cultural Impact Assessment (CIA) as part of supporting documentation for the proposed Hālau Wai Mānoa (HWM). The roughly 12.8-acre study area consists of three side-by-side parcels (TMKs: (1) 2-9-054:019, 020, and 021) that will form the area for the proposed HWM, and two roughly 0.25-acre potential access corridors that traverse portions adjacent parcels TMKs: (1) 2-9-054:004 and 029 (Figures 1 and 2). PBR, on behalf of BWS, is completing an Environmental Assessment (EA), and submitting a Conservation District Use Application (CDUA) for the proposed construction of trails and a facility on conservation lands in Mānoa Valley that will be used to educate the public about the importance of watersheds, water conservation, and sustainable agriculture. Potential plans for the HWM may include construction of an interpretive facility with demonstration gardens and walking trails, along with improvements to the existing access road.

The current report was prepared in compliance with Hawai‘i Revised Statutes (HRS) Chapter 343, and in accordance with the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impact*, adopted by the Environmental Council, State of Hawai‘i, on November 19, 1997. As stated in Act 50, which was proposed and passed as Hawai‘i State House of Representatives Bill No. 2895 and signed into law by the Governor on April 26, 2000, “environmental assessments . . . should identify and address effects on Hawaii’s culture, and traditional and customary rights . . . native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the ‘aloha spirit’ in Hawai‘i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on governmental agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.”

The historical land use of the study area as well as a discussion of the Precontact cultural context within Mānoa Valley and greater Waikīkī Ahupua‘a is presented in the pages that follow. The consultation process is then described, and the results of consultation are presented, which is followed by a discussion of potential cultural impacts and the appropriate actions and strategies necessary to mitigate any such impacts.

STUDY AREA DESCRIPTION

The study area comprises three adjacent parcels of conservation land currently owned by BWS, located in upper Mānoa Valley, approximately 7 kilometers inland from the coast (see Figure 1). The study area also includes an extant 700 feet-long access road (Haukulu Road) that extends northward (*mauka*) from the terminus of Wa‘aloa Way, and a 250 feet-long by 50 feet-wide alignment for a proposed pedestrian access between the westernmost portion of the study area and Mānoa Road near the Mānoa Falls trailhead. The study area is located below (to the south of) the confluence of Waihī and ‘Aihualama streams, which comprise the western boundary, and Nāniu‘apo and Lua‘alaea streams, which marks the study area’s eastern boundary (see Figure 2). Most of the study area is currently undeveloped (Figure 3), although some small-scale agriculture is taking place under an active lease.

Elevation within the study area ranges from approximately 280-400 feet above mean sea level. The climate of the Mānoa Valley is classified as Tropical Savanna, with annual temperatures ranging from 67˚ to 79˚ Fahrenheit (Western Regional Climate Center 2012). The upper valley where the study area is located receives on average 3861 millimeters (152 inches) of rainfall a year (Giambelluca et al. 2013). The study area is a lowland non-native wet forest with some native plant species present (Figure 4), the majority of which were recently planted. The most common plant species observed within the study area were albizia (*Falcataria moluccana*), pothos (*Epipremum pinnatum*), parasol leaf tree (*Macaranga tanarius*), black bamboo (*Phyllostachs nigra henionis*), California grass (*Urochloa mutica*), *hau* (*Hibiscus tiliaceus,* and honohono (*Commelina diffusa*). The central and southern portions of the study area have undergone vegetation clearing and grading associated with former and ongoing agricultural activities (Figure 5). Agricultural species currently being grown within the central portion of the study area (Parcel 020), include *kalo* (taro [*Colocasia esculenta*]; Figure 6), *‘ulu* (breadfruit [*Artocarpus altilus*]), avocado (*Percea americana*), *‘ōlena* (turmeric, [*Curcuma longa*]), *‘awa* (kava [*Piper methysticum*]), ‘*awapuhi* (ginger [*Zingiber* sp.]), *kī* (ti [Coryline terminalis], and gardenias (*Gardenia augusta*).

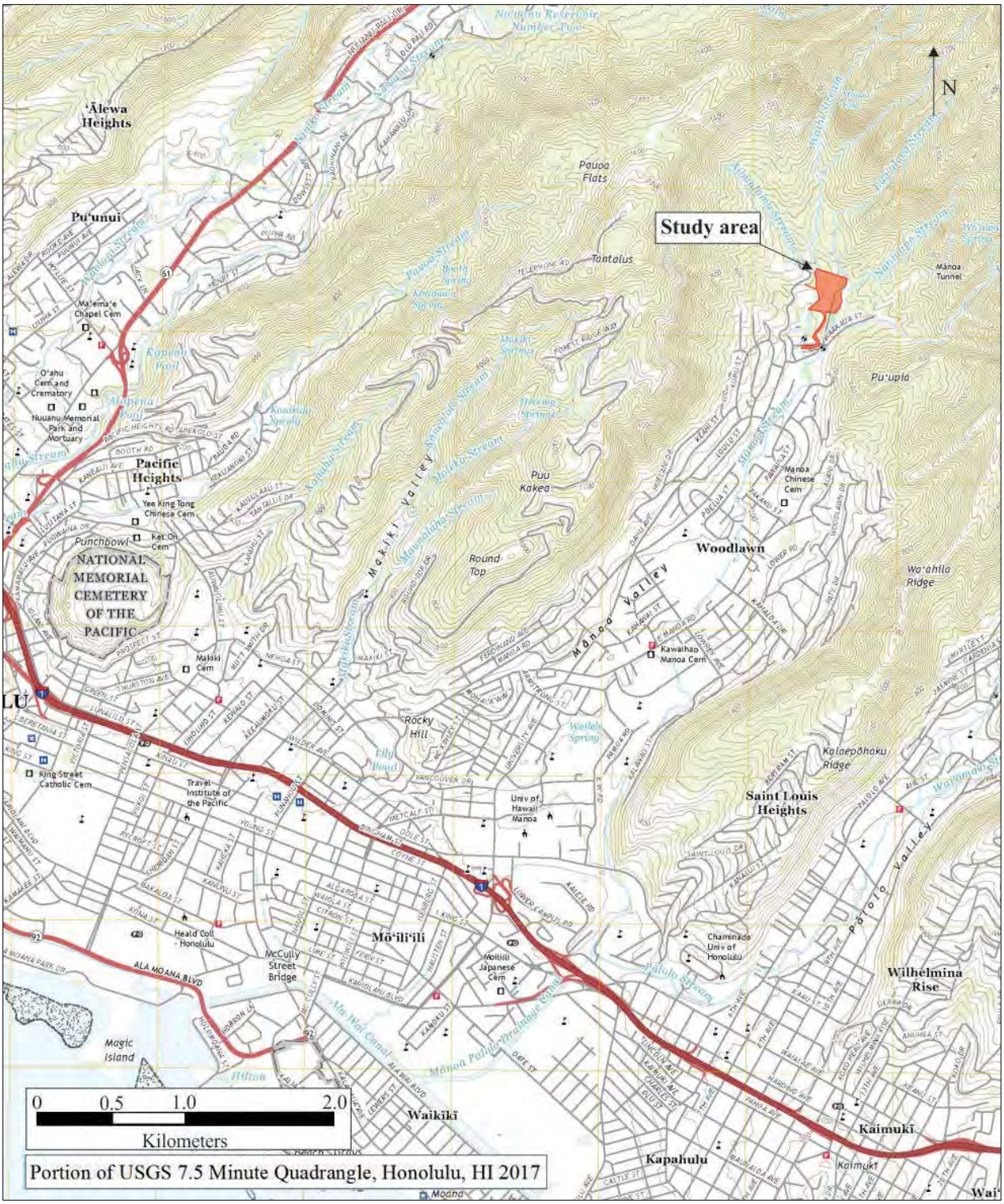


Figure 1. Study area location.

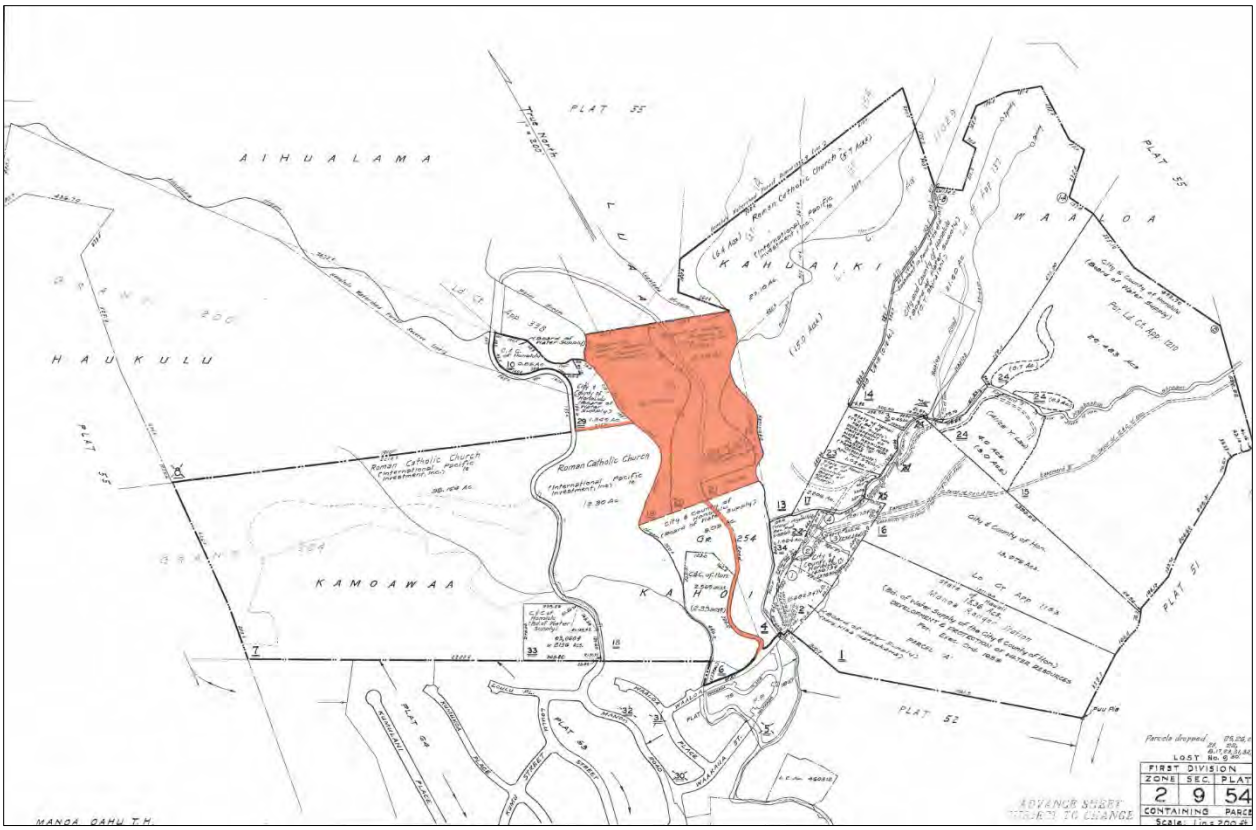


Figure 2. Portion of Tax Map Key (TMK) (1) 2-9-054 showing study area location shaded red.

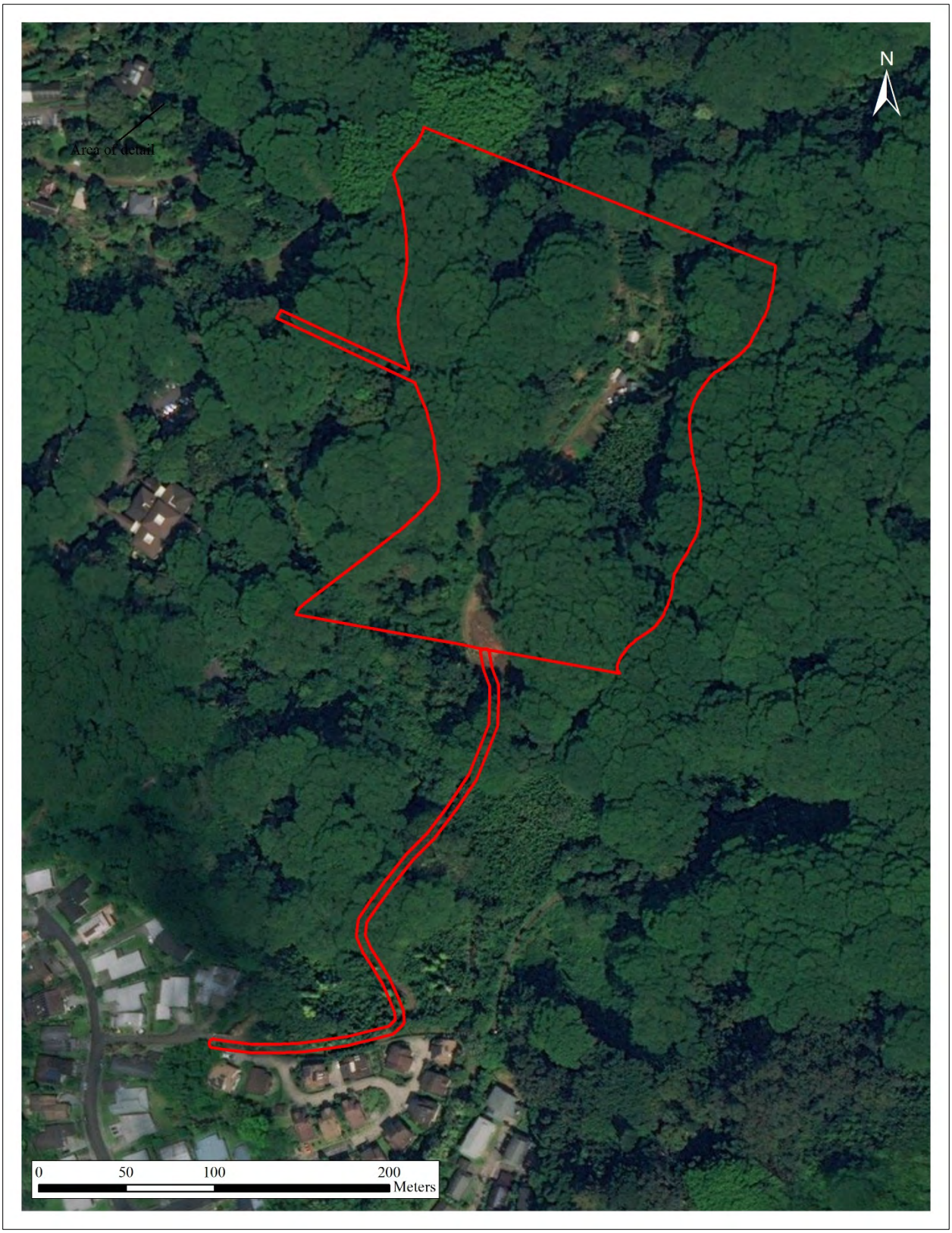


Figure 3. 2016 satellite image showing study area outlined in red.

Figure 4. Representative vegetation along the bank of Lua‘alaea Stream, view to the north.

Figure 5. Representative vegetation and terrain within the central portion of the study area, view to the east.

Figure 6. Active *lo‘i* near the terminus of Haukulu Road, view to the south.

2. CULTURE-HISTORICAL CONTEXT

As previously mentioned, the subject property is located within western Waikīkī Ahupuaʻa, the largest of roughly a dozen traditional land divisions found in the district of Kona. Kona was one of six traditional *moku* or *ʻokana* (districts), situated between the Koʻolau Mountains and the sea along the leeward (southeastern) coast of the island of Oʻahu (Figure 7). The present-day city of Honolulu falls within the district of Kona; thus, many people use the two names interchangeably when referring to the district. Several short valleys and narrow coastal plains make up the eastern portion of the Kona District, which extends westward from Kuliʻouʻou to Diamond Head and beyond to Moanalua; while the landscape to the west of Diamond Head comprises four long valleys cut by rivers, whose waters emptied out onto a wide coastal plain. The current study area is located within this western portion of Kona District, which Cordy describes at the time of European Contact as "the economic and demographic core of the district, with Waikiki *ahupuaʻa* (with Mānoa-Pālolo) the political center" (2002:5-7).

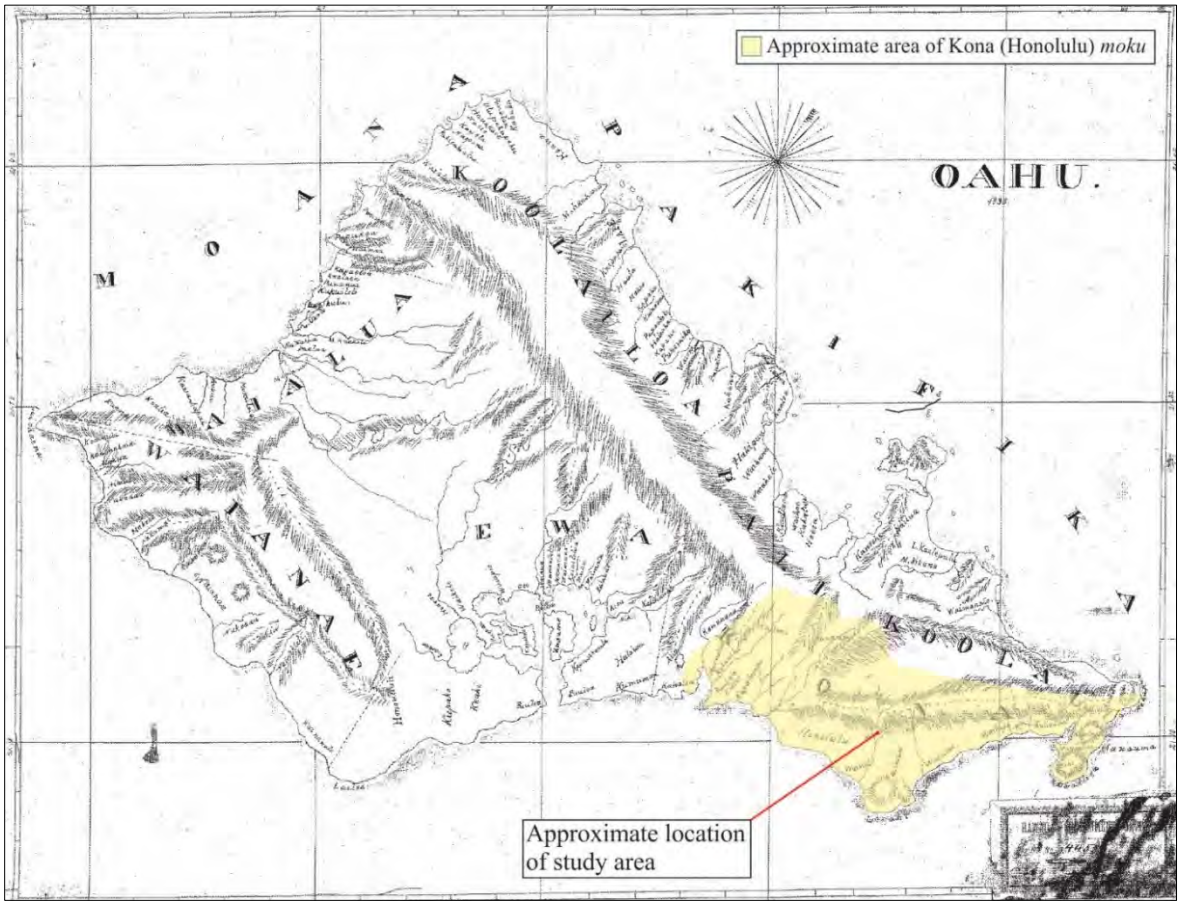


Figure 7. Hawaiʻi Register Map No. 455 showing traditional *moku* of Oʻahu ca. 1833.

In the book, *Native Planters in Old Hawaii*, written in the 1930s, Handy et al. describe Kona District in their discussion of areas of habitation as follows:

> There were abundant rain, ever flowing streams, springs, pools, verdant interior valleys, broad slopes and well-watered low-lands, fishpond areas, harbors, beaches, and lagoons. Altogether Kona was for Oahu, the area richest in natural resources and most pleasant for abundant and comfortable living. (1991:474)

The study area is situated deep within Mānoa Valley, between Makiki and Palolo Valley. The name "Mānoa" has been used on historical maps and in various sources to refer to the study area vicinity as both an *ahupuaʻa* and an *ʻili* (a land division smaller than an *ahupuaʻa*). The literal translation of Mānoa is "vast" (Pūkuʻi et al. 1974:146), which may refer to the broad valley floor and/or the abundance of resources that were found there. Mānoa was known as a major subsistence area, as Handy et al. relate in the following excerpt:

> Prehistorically and historically, the area of densest population in all the Hawaiian Islands was that flanking Waikiki on the island of Oahu. Here the chiefs had their residences near the now famous beach and the offshore waters where conditions were ideal for their prized sport of surfriding. This in early times idyllic area was flanked by the great wet-taro lands of Manoa, and the area between that valley and the sea which was one continuous spread of taro land and fishponds. . . (1991:270)
>
> In localities like Waipiʻo on Hawaii or Manoa on Oahu, where there was extensive and continuous cultivation of contiguous *loʻi*, houses were not far apart, land holdings were interlocking, and the systems of waterways were controlled and serviced collectively. (ibid.:290)

It is within this general context that the following discussion of the history of the study area is framed. The chronological summary presented below begins with a synthesis of Precontact settlement patterns and Historic land use that includes legendary and historical references to Mānoa and the greater Kona District. The discussion concludes with a review of the findings from prior investigations conducted in the study area vicinity. Combined, this information provides a means for understanding the study area within its culture-historical context.

EARLY HAWAIIAN SETTLEMENT PATTERNS

While the question of the timing of the first settlement of the islands of Hawaiʻi by Polynesians remains unanswered, several theories have been offered that derive from various sources of information (i.e., archaeological, genealogical, mythological, oral-historical, radiometric). While none of these theories is today universally accepted, recent advances in palynology and radiocarbon dating techniques (Athens et al. 2014; Kirch 2011; Wilmshurst et al. 2011) indicate that Polynesians may not have arrived in the Hawaiian Islands until sometime between A.D. 1000 and A.D. 1200 and expanded rapidly thereafter.

The initial settlement of Hawaiʻi is believed to have originated from the southern Marquesas Islands. In these early times, Hawaiʻi's inhabitants were primarily engaged in subsistence level agriculture and fishing (Handy et al. 1991). The Settlement Period was a time of great exploitation and environmental modification, when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978). Their ancient and ingrained philosophy of life tied them to their environment and kept order; which was further assured by the conical clan principle of genealogical seniority (Kirch 1984). According to Fornander (1969), the Hawaiians brought certain universal Polynesian customs and beliefs from their homeland, such as the major gods Kāne, Kū, and Lono; the *kapu* system of law and order; cities of refuge; the *ʻaumakua* concept; and the concept of *mana*.

Initial permanent settlements in the islands were established at sheltered bays with access to fresh water and deep sea fisheries. The near shore fisheries and coastal fishponds, which were enriched by nutrients carried in the fresh water, also offered opportunities for resource extraction and stewardship. Communities shared extended familial relations and there was an occupational focus on the collection of marine resources. Clusters of houses were found in these coastal areas where, over time, agricultural production first became established. Over a period of several centuries, the areas with the richest natural resources became populated and perhaps even crowded, and inland elevations began to be used for agriculture and some habitation. Meanwhile, an increasing separation of the chiefly class from the common people began to emerge. As the environment reached its maximum carrying capacity, the result was social stress, hostility, and war between neighboring groups (Kirch 1985). Soon, large areas of the Hawaiian Islands were controlled by a few powerful chiefs.

As time passed, a uniquely Hawaiian culture developed. The portable artifacts found in archaeological sites from the Developmental Period reflect not only an evolution of traditional tools, but some distinctly Hawaiian inventions. The adze (*koʻi*) evolved from the typical Polynesian variations of plano-convex, trapezoidal, and reverse-triangular cross-section to a very standard Hawaiian rectangular quadrangular tanged adze. The two-piece fishhook and the octopus-lure breadloaf sinker are Hawaiian inventions of this period, as are *ʻulu maika* stones and *lei niho palaoa*. The latter was a status item worn by those of high rank, which indicates a trend toward greater status differentiation (Kirch 1985).

As the population continued to expand so did social stratification. By this time, most of the ecologically favorable zones of the windward and coastal regions of the major islands were settled, and the more marginal leeward areas were being developed. The greatest population growth occurred during the Expansion Period. It was during the Expansion Period that a second major migration settled in Hawaiʻi, this time from Tahiti in the Society Islands. The Expansion Period was characterized by major socioeconomic changes, intensive land modification, and the

development of complex social hierarchies (Kirch 1985). Monumental architecture, such as *heiau* (religious temples), "played a key role as visual markers of chiefly dominance" (Kirch 1990:206).

The island of Oʻahu appears to have been divided into six traditional districts or *moku* during the Expansion Period; as previously mentioned, the current study area is located within the *moku* of Kona (Figure 7). The *moku* were further divided into distinct land units known as *ahupuaʻa*. According to Kirch (1985), the concept of the *ahupuaʻa* was established sometime during the A.D. 1400s, adding another component to a then well-stratified society. The implications of this include a shift in residential patterns from seasonal, temporary occupation, to permanent dispersed occupation of both coastal and upland areas. The *ahupuaʻa* land unit became the equivalent of a local community, with its own social, economic, and political significance. *Ahupuaʻa* were usually wedge or pie-shaped, incorporating all of the eco-zones from the mountains to the sea and for several hundred yards beyond the shore, assuring a diverse subsistence resource base (Hommon 1986). This form of district subdividing was integral to Hawaiian life and was the product of strictly adhered to resource management planning. In this system, the land provided fruits and vegetables and some meat for the diet, and the ocean provided a wealth of protein resources (Rechtman and Maly 2003). *Ahupuaʻa* were further divided into smaller sections such as *ʻili, moʻoʻāina, paukūʻāina, kīhāpai, kōʻele, hakuone*, and *kuakua* (Hommon 1986, Pogue 1978).

Ahupuaʻa were generally under the jurisdiction of an *aliʻi-ʻai-ahupuaʻa* (chief who controlled the *ahupuaʻa* resources), assisted by their appointed *konohiki*, (lesser chief). The *aliʻi-ʻai-ahupuaʻa* in turn answered to an *aliʻi-ʻai-moku* (chief who claimed the abundance of the entire district). Thus, *ahupuaʻa* resources supported not only the *makaʻāinana* (commoners) and *ʻohana* (families) who lived on the land, but also contributed support to the ruling class of higher chiefs and ultimately the crown. The *aliʻi* and the *makaʻāinana* were not confined to the boundaries of an *ahupuaʻa*; when there was a perceived need, they also shared with their neighbor *ahupuaʻa ʻohana* (Hono-ko-hau 1974).

TRADITIONAL AND LEGENDARY ACCOUNTS OF MĀNOA VALLEY

Traditional *moʻolelo* were passed down orally through the generations and many tales focus on *wahi pana* or legendary places. Many such tales are associated with the *wahi pana* of Mānoa, the locations of some of these are depicted in Figure 8, below. In *Legends of Old Honolulu,* Westervelt relates the story of Kāne and Kanaloa, two of the great gods from Kahiki known as "the water-finders" who opened "fountains and pools over all the islands" (1915:32). In one legend Kāne and Kanaloa, avid *ʻawa* (kava) drinkers, were seeking out water with which to mix their beverage. After indulging in a strong mix in nearby Kalihi, "they passed Nuuanu Valley and went into the most beautiful rainbow valley of the world, Manoa Valley, the home of the rainbow princess" (ibid.:35). The legend continues thusly:

> Well-wooded precipices guard the upper end of the valley and make difficult the path to the tops of the mountains rising thousands of feet above.
>
> Here the gods found most excellent awa and Kanaloa cried, "O my brother, this is awa surpassing any other we have found; but where shall I go to find water?" Ka-ne replied, "Here in this hillside is water." So he took his staff and struck it fiercely against the precipice by which they had found awa. Rapidly the rocks were broken off. The precipice crept back from the mighty strokes of the god and a large pool of clear, cool water nestled among the great stones which had fallen. There they mixed awa and water and drank again and again until the sleep of the drunkard came and they rested by the fountain they had made. This pool is still at the head of Manoa Valley, and to this day is called Ka-Wai-a-ke-Akua (The water provided by a god).
>
> The servants of hundreds of chiefs have borne water from this place to their thirsty masters.
>
> In the days of Kamehameha I, very often messengers came from this pool of water of the gods with calabashes full of water swinging from the ends of sticks laid over their shoulders. When they came near any individual or group of Hawaiians they had to call out loudly, giving warning so that all by whom they passed could fall prostrate before the gift of the gods to the great king. (ibid.:36-37)

In another account, Westervelt refers to Mānoa Valley as one of three "Celebrated owl localities" (1915:127) around Honolulu. Specifically, Westervelt recounts details about Puʻu Pueo (see Figure 8), the home of the owl god who saved Kahalaopuna's life in the legend above. He provides the following compelling description of the study area environs in "The Owls of Honolulu" from *Legends of Old Honolulu*:

> . . . The highest peaks of the island of Oahu are near the head of the valley. The winds which blow down the Pacific Ocean from the northeast strike these mountain-tops. Each cool breeze leaves its

burden of moisture in a fleecy cloud to fall down the mountain-side into the valley. So cloud follows cloud, descending the slopes of the foothills in gentle rain.

Almost all day long the valley is open to the sun, which looking on the luxuriant verdure and clinging mist, sends its abundant blessing of penetrating light, and rainbows upon rainbows are painted on the steep precipices at the head of the valley. There are arches and double arches of exquisite beauty, smashed fragments of scattered color, broad pillars of glorious fire blazing around green branches of ghost-like trees, great bands of opal hues lying in magnificent masses on the hillside, and lunar rainbows almost circular outlined in soft prismatic shades in the time of the full moon.

When showers creep down the valley one by one, rainbows also chase each other in matchless symmetry of quiet, graceful motion. Sometimes the mist in the doorway of the valley has become so ethereal that splendid arches hang in the apparently clear sky without cloud support.

It is no wonder that from time immemorial the Hawaiians have made the valley the home of royal chiefs, with the rainbow-maiden as their daughter. . . Ka-hala-o-Puna (The sweet-scented hala-flower of Puna). Woven into this legend is also the legend of the owl-god of the family to which this maiden belonged, for his home as well as hers was in Manoa Valley.

Almost in the middle of the valley is a hill on which many years ago a temple was built and dedicated as the home of the owl-god Pueo. The hill now bears the name. . . "Puu-pueo," or "The hill of the owl."

It was from this temple that the owl-god rescued the rainbow-maiden [Kahalaopuna] three times when she had been thrice killed and buried by her faithless suitor, a chief of Waikiki. . .

At the head of Manoa Valley are many waterfalls pouring down the precipices. The longer and most feathery of these falls are said to be the tears of Ka-hala as she suffered from the attacks of the faithless chief of Waikiki.

Pueo, the owl-god, was also Pueo-alii, or "king of owls." He had kahunas (priests) who consulted him by signs, and the aumakua, or ghost gods, sometimes oracles. . . (ibid.: 127-131)

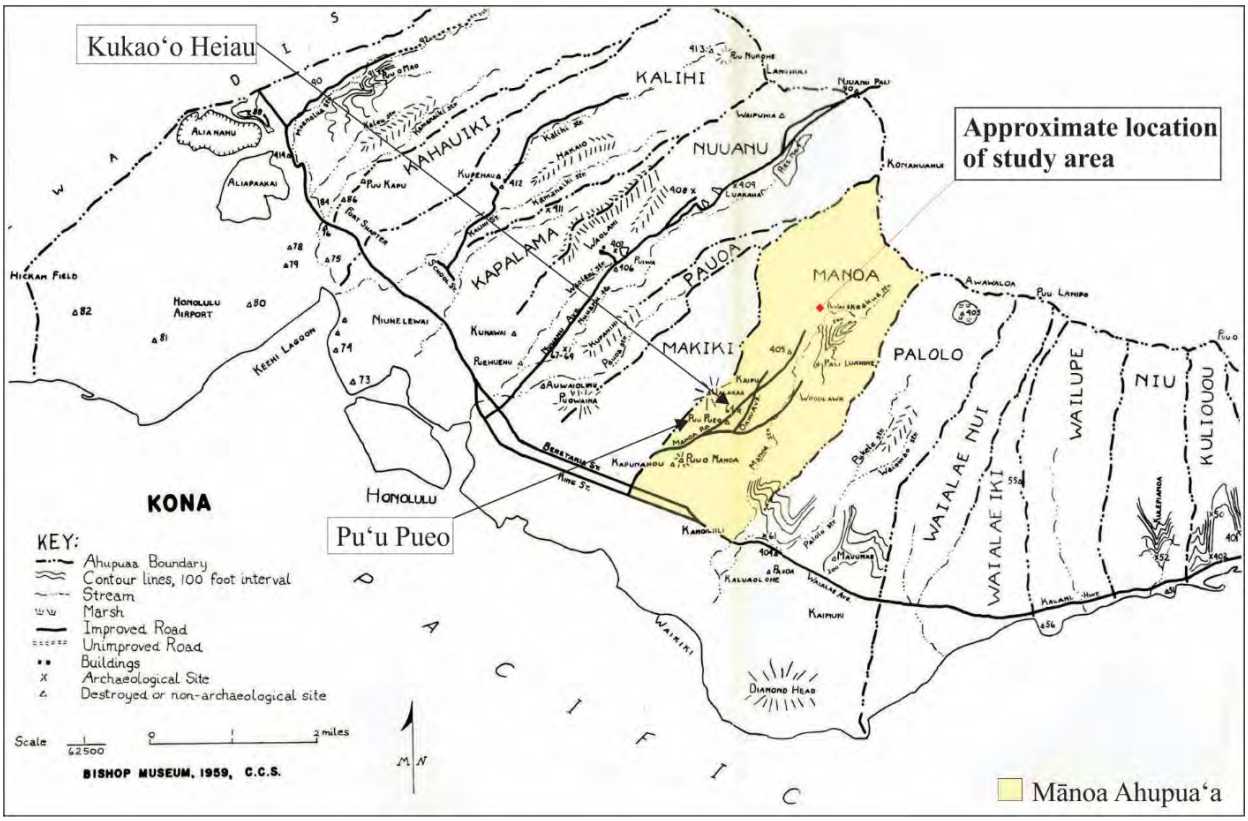


Figure 8. Annotated map showing *wahi pana* within Mānoa as discussed in text (Sterling and Summers 1978:336).

In addition, the owl god of Mānoa was wise and merciful and governed over the entire valley from his home on Pu‘u Pueo. When “one of the natives in the valley displeased him. He captured the man and at once ordered the death penalty” however, the man pleaded to be allowed the chance to prove his innocence (ibid.:131). As a result, “the owl-god established a law that a person must be proved guilty before he could be condemned and punished. This came to be a custom among the Hawaiians as the years passed by” (ibid.).

Nakuina recounts the Mānoa Valley legend of Kahalaopuna under the title “The Valley of Rainbows” as follows:

> Kahalaopuna was the daughter of the chief of the district that included the beautiful Manoa Valley within its boundaries. These boundaries were varied from time to time at the pleasure of the reigning monarchs or through the exigencies of war. She had been betrothed from childhood to the young chief Kauhimahu, commonly called Kauhi, son of the chief of Waimanalo, Kailua, Kaneohe, and Heeia. As the future bride of the son of such an important chief, the father-in-law prospective demanded that the child be brought up in the strictest seclusion, seeing the face of no man until she was married to his son. (1904:41)

And so it was that young Kahalaopuna grew to be so beautiful that the gods Kāne and Kanaloa became enamored with her and “sent the rainbow to play continuously around her home as a sign to all people that there dwelt one who was especially favored by the gods” (Nakuina 1904:42). In addition, the princess’s family and retainers composed *mele* (songs) celebrating her beauty. According to Nakuina, Kahalaopuna was the first of many beauties to emerge from Mānoa Valley, thus the valley became known as “the valley of beauties, ‘Ka ui o Manoa’” (ibid.). Two disfigured men who lived in the nearby mountains fell in love with Kahalaopuna sight unseen. They knew they would never win her love in real-life; thus, they spread rumors far and wide of their respective conquest of the fair maiden. Word reached her betrothed Kauhi, who believed their lies and felt that the only way to get over the betrayal was to kill her. He traveled from Kailua to Mānoa Valley and brought her back with him “on a trail across the mountains between Manoa and Nuuanu Valley that would eventually come out at Kaniakapupu above Luakaha” (ibid.:44). As part of their journey “they crossed over the Manoa streams, and went up the slopes of Aihualamaiki adjoining Kahaumakaawe. This slope was formerly covered by a grove of Koa and Lama trees” (ibid.).

It was upon this slope that Kauhi struck a death blow to the chiefess; striking her with a bundle of sacred *hala* nuts that had been given him by the high priest of Kaulaa with the intention of being made into a *lei* for his future bride. As a result, “tradition has it that the gods were so shocked at the murderous use to which their sacred hala had been put that they cursed the trees, and the splendid lovely grove of Hala, Kukui, and Wiliwili of Kaualaa and Mahinauli died in a single night.” (ibid.). However, Kahalaopuna had not breathed her last, for an owl god found her lifeless body and revived her. The young woman called to Kauhi with song, beseeching him to let her prove her fidelity. Kauhi tricked her into joining him on the mountain side so that he could kill her a second time. As a result, “and when the gods realized that their favored maiden had been murdered, they decreed that the rains should fall daily about the valley of beauty, their tears in memory of her graces” (ibid.:45). In another version of this legend also written by Nakuina and published by Thrum (1907:118-132) in a volume titled *Hawaiian Folk Tales*, Nakuina mentions the *wahi pana* of “Waiakekua, ‘the water of the gods’ (ibid:118),” “the sacred precinct of Luaalea (ibid.:120),” and “Aihualama,” which refer to both land divisions and streams near the study area

The concept of *ka u‘i o Mānoa*, which Nakuina interpreted as Mānoa, valley of beauties as mentioned above, is also mentioned by Westervelt (1915) in the legend titled “Pikoi the Rat-Killer” in *Legends of Old Honolulu*. However, rather than a means of describing the valley of Mānoa, Westervelt recounts uses ka u‘i o Mānoa to refer to a specific female character of legendary beauty. Per Westervelt, Mānoa was the home of “Ka-ui-o-Manoa” (The Beauty of Mānoa), the daughter of Kaua‘i chief Alala, who relocated to Mānoa Valley to marry the Mānoa chief Pawaa. They lived at Kahaloa in Mānoa Valley and had land at Kahoiwai in upper Mānoa Valley too (Westervelt 1915:158).

Due to the typically hot and dry environment of the Honolulu area, Hawaiian *ali‘i* were known to travel to Mānoa Valley to enjoy the cooler environment there (Kanahele 1995). Thus, it makes sense that a number of traditional accounts refer to Mānoa Valley’s numerous water sources and intrinsic beauty. In a story entitled, “The Punahou Spring: A Legend”, Emma Metcalf Nakuina (1892) tells the origin story of Punahou Spring, whose waters were used for the cultivation of *lo‘i* in Mānoa Valley. The legend revolves around Kauawaahila (Waahila rain) and his twin sister Kauakiowao (mountain mist) who were relentlessly persecuted by their stepmother and hid away from her in Mānoa Valley (Nakuina 1892). She found them there by following the rainbows to the head of the valley. They ran and hid again, this time “in a small cave on the side of the hill of Kukaoo whose top is crowned by the temple of the Menehunes” (ibid.:102). Once again, their stepmother found them and they sought refuge in caves behind Punahou,

in an area that was arid. Kauakiowao wanted to bathe, thus her brother consulted Kakea, the water god "who had charge of and controlled all the water sources of Manoa and Makiki valleys" to help him "open a water-course" to connect Kanawai Pond with their hiding place in Punahou (ibid.:103). Kakea helped the boy and diverted some of Wailele Spring into the endeavor, which resulted in the creation of Punahou Spring. Kauawaahila first built a swimming hole for his sister to bathe in and:

> . . .afterwards made some kalo patches, and people attracted by the water and consequent fertility of the place came and settled about. . . More and more kalo patches were excavated and the place became a thriving settlement. The spring became known as Ka Punahou (the new spring), and gave its name to the surrounding place" (ibid.:104).

Another legendary account explains the origin of Punahou Spring within the context of a drought and famine in Mānoa:

> They told of an aged couple who long ago dwelt near the present spring. At a time of drought and famine, the people were obliged to search the mountains for ti root and wild yams for food, and to trudge to Kamoiliili to fill their calabashes with drinking water. One night the old woman dreamed that a man appeared to her, to whom she complained bitterly about having to go so far for water, where-upon he said "He wai no" (there is water) and told her that beneath the trunk of an old hala tree nearby she would find it. She awoke her husband and told him the dream but he made light of it. The next night he had a similar dream. The apparition directed him to go to the sea and catch some red fish, to roast them in ti leaves, reserving a part as an offering to the family deities, and then to pull up the old hala tree by the roots. He awoke and lo! it was a dream. But the impression it made on him was so strong that in the morning he hastened to carry out the directions which he had received, when at last he pulled up the hala tree, water oozed out from beneath its roots. He dug out the place and thus formed a spring which was named Kapunahou. A pond was formed below the spring and by it were irrigated a dozen or more taro patches. (Alexander and Dodge Punahou School 1841-1941, pp 35-36 in Sterling and Summers 1978:284)

In their discussion about areas of habitation, Handy et al. make the following reference to Punahou spring in Manoa:

> There was a famous terraced area below what is now the Punahou School campus. The water for *lo'i* here came from Ka Punahou, "The new spring." This was one of the springs opened by Kane at the behest of his brother Kanaloa. "Kauawaahila afterwards made some *kalo* patches (there), and people attracted by the water and consequent fertility of the place came and settled about. . . . More and more *kalo* patches were excavated and the place became a thriving settlement. The spring became known as Ka Punahou, and gave its name to the surrounding place" (Nakuina, 1893, p.104). (1991:480)

Westervelt also tells the tale of Menehune who lived in the upper valley of Mānoa, where they constructed a *heiau* with a fort just above it, "a little further up the valley above Puu-Pueo, at a place called Kukaoo" (1915:131; see Figure 8). At the time of his writing (ca. 1915), Westervelt related that "even now a spreading hau tree shelters under its branches the remaining walls and scattered stones of the Kukaoo Temple," which he further qualifies as a "very ancient" and "very noted temple site" (ibid.). Additional lore associated with Kūkaō'ō and Mānoa Valley is illustrated in two versions of a legendary battle; the first fought between the owls and the Menehune, in which the Menehune were bested by the owls of O'ahu and their reinforcements from Kaua'i and ousted from the valley; the other version saw the Menehune battle against O'ahu chief Kuali'i's armies (ibid.). Kūka'ō'ō Heiau is further discussed in the forthcoming section regarding previous archaeological studies.

MĀNOA AFTER EUROPEAN CONTACT

The arrival of Western explorers in Hawai'i ca. 1778, signified the end of the Precontact Period, and the beginning of the Historic Period. With the arrival of foreigners such as British explorer Captain James Cook, in command of the ships *H.M.S. Resolution* and *H.M.S. Discovery*, the Hawaiian culture and economy underwent drastic changes. Demographic trends during the late Precontact and early Historic Periods indicate population reduction in some areas, due to war and disease, yet increase in others, with relatively little change in material culture. At first there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, the establishment of upland residential sites, and the enhancement of traditional oral history (Kirch 1985; Kent 1983). The Kū cult, *luakini heiau*, and the *kapu* system were at their peaks, although western influence was already altering

the cultural fabric of the Islands (Kirch 1985; Kent 1983). Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha I had conquered Oʻahu, Maui and Molokaʻi, in 1795, Hawaiʻi had seen the beginnings of a market system economy (Kent 1983). Some of the work of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early visitors. Introduced foods often grown for trade with Westerners included coffee, melons, Irish potatoes, Indian corn, beans, figs, oranges, guavas, and grapes (Wilkes 1849). Later, as the Historic Period progressed, Kamehameha I died, the *kapu* system was abolished, Christianity established a firm foothold in the islands, and introduced diseases and global economic forces began to have a devastating impact on traditional life-ways in the Hawaiian Islands. This marked the end of an era of uniquely Hawaiian culture.

Early Historic Accounts of Mānoa

Written accounts penned during the early Historic Period by foreign visitors, residents, and Native Hawaiian historians alike offer valuable glimpses into life in the Hawaiian Islands during the nineteenth century. Waikīkī and Mānoa are mentioned in some of these accounts. For instance, Hawaiian Historian Samuel Kamakau mentions in *Ruling Chiefs of Hawaii* that Kamehameha I "cultivated land at Waikiki, Honolulu, and Kapalama" (1992:190), prior to conquering Kauaʻi and uniting all the islands under his rule. Similarly, Hawaiian historian John Papa ʻĪʻī, reports in *Fragments of Hawaiian History* that Kamehameha personally farmed with members of his court throughout the Kona District, "especially in Nuuanu. . . He also farmed at Ualakaa in Manoa, [also known as Round Top, located to the southwest of the current study area; Figure 9] in Waikiki, and in Kapalama" (1959:68). ʻĪʻī, also relates that Kamehameha personally attended to his farms, and that he "participated in all the projects" (ibid.). Furthermore, ʻĪʻī mentions that "the places Kamehameha farmed and the houses he lived in at those farms were show places" (ibid.:69), although the king resided primarily in Waikīkī and Honolulu.

During a visit to the Hawaiian Islands in 1816, Russian explorer Otto von Kotzebue recorded the following observations of Oʻahu and Waikīkī:

> . . . Woahoom[Oʻahu] is acknowledged, both by Europeans and by the natives, to be the most fruitful of the whole group; it is called the garden of the Sandwich Islands, and it has a right to this name, on account of its extraordinary high state of cultivation, united with the greatest natural beauties. . . you have scarcely sailed round the Yellow Diamond Hill [Diamond Head], when you are surprised by the most beautiful landscape. Close to the shore you see verdant vallies [sic] adorned with palm and banana-trees, under which the habitations of the savages lie scattered; behind this, the land gradually rises, all the hills are covered with a smiling verdure, and bear the stamp of industry. (1821: 319-320)

Kotzebue also provides the following account of taro cultivation in greater detail:

> The artificial taro fields, which may justly be called taro lakes, excited my attention. Each of them forms a regular square of 160 feet, and is enclosed with stone all round like our basins. . . The fields are gradually lower, and the same water which is led from an elevated spring or rivulet, can water a large plantation. . . In the spaces between the fields, which are from three to six feet broad, there are very pleasant shady avenues, and on both sides bananas and sugar-canes are planted. The taro fields afford another advantage; for the fish which are caught in distant streams thrive admirably when put into them. . . I have seen whole mountains covered with such fields, through which the water gradually flowed; each sluice formed a small cascade, which ran through avenues of sugar-cane, or bananas, into the next pond, and afforded an extremely picturesque prospect. Sugar plantations and taro fields alternately varied our way, with scattered habitations. . . (ibid.:340-341)

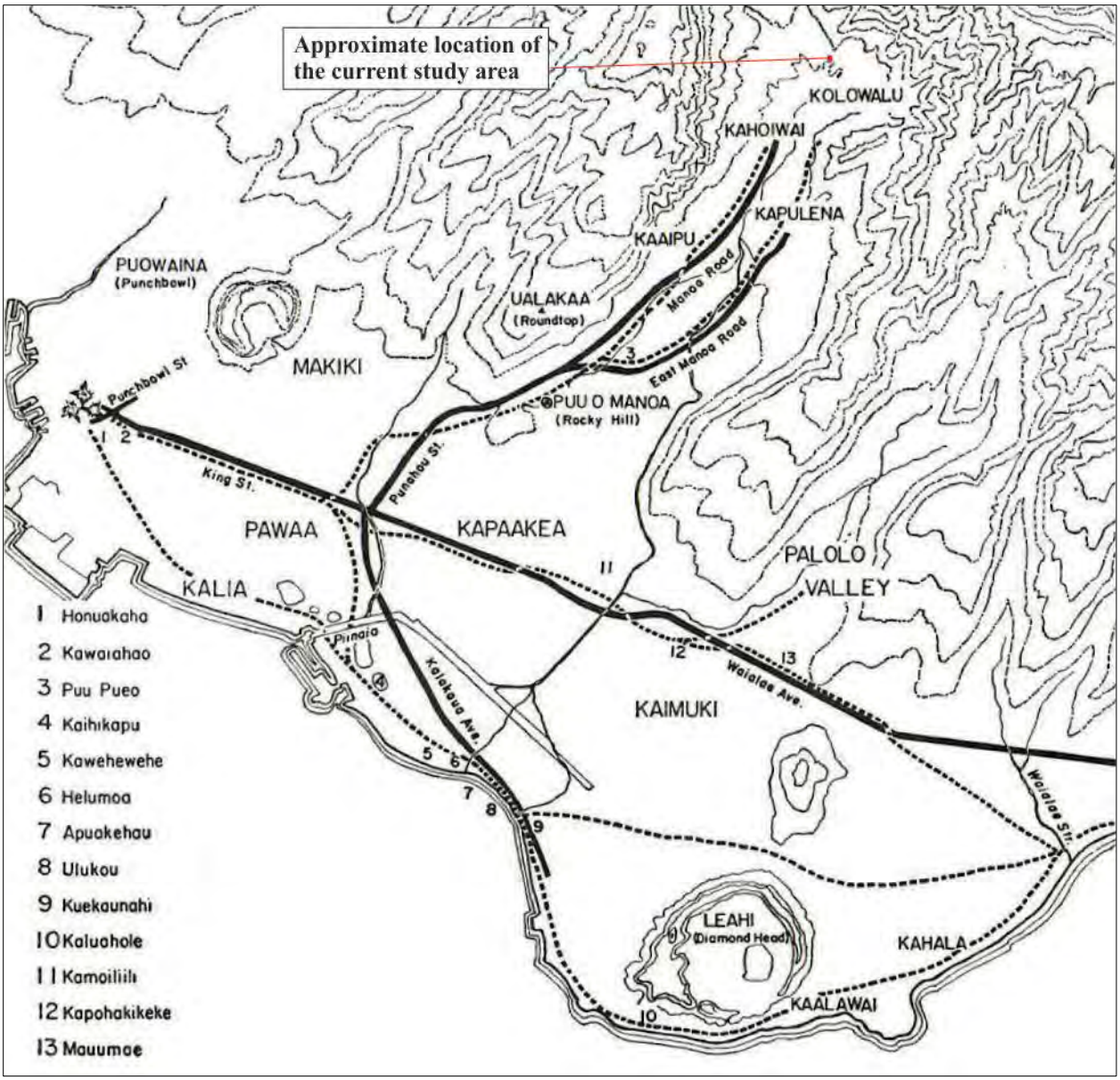


Figure 9. Map by Gerald Ober of trails as described by ʻĪʻī (1959:93).

Following the death of Kamehameha I in 1819, the Hawaiian religious and political systems began a radical transformation; Kaʻahumanu proclaimed herself "*Kuhina nui*" (Prime Minister); and within six months the ancient *kapu* system was overthrown and within a year, Protestant missionaries had arrived from America (Fornander 1969; ʻĪʻī 1959; Kamakau 1992). The work of the Christian missionaries was generally supported by the *aliʻi* in the 19th Century. In 1820, American missionary Hiram Bingham and other members of the American Board of Commissioners for Foreign Missions (ABCFM) toured the island of Oʻahu seeking out communities in which to establish church centers for the growing Calvinist mission. Bingham recorded his observations made during his twenty-one-year residence in the Hawaiian Islands in a journal (Bingham 1848), which offers a rare glimpse at the study area vicinity during the early 1800s. Bingham composed the following entry after he first sighted Oʻahu upon his arrival in 1820:

> Early in the morning of the 14th April, that island rose to our view, and, as we approached rapidly, presented successively its pointed mountains, covered with trees and shrubbery, its well-marked, extinguished craters near its shores, its grass covered hills, and more fertile valleys, its dingy thatched villages, its cocoanut groves, its fort and harbor, and its swarthy inhabitants in throngs. . . (1948:92)

Shortly after their arrival, Bingham and his companions scaled Punchbowl Hill (see Figure 9) and reported the following details about the view:

> From the highest part of the rim we had a beautiful view of the village and valley of Honolulu, the harbor and ocean, and of the principal mountains of the island. On the east were the plain and groves of Waikiki, with its amphitheatre of hills. . . Below us, on the south and west, spread the plain of Honolulu, having its fish-ponds and salt making pools along the sea-shore, the village and fort between us and the harbor, and the valley stretching a few miles north into the interior, which presented its scattered habitations and numerous beds of kalo (*arum esculentum*) in its various stages of growth, with its large green leaves, beautifully embossed on the silvery water, in which it flourishes. Through this valley, several streams descending from the mountains in the interior, wind their way, some six or seven miles, watering and overflowing by means of numerous artificial canals, the bottoms of kalo patches, and then, by one mouth, fall into the peaceful harbor. (1848:93)

The first governor of Oʻahu, Chief Boki, granted Bingham a piece of land near the mouth of Mānoa Valley called Kapunahou, which became the home of Oahu College, and later, Punahou School (De Leon 1978). Per DeLeon (1978), this was also the location of the first dairy farm in the valley, founded in 1844 by William H. Rice. Boki and Bingham were among the many high-profile individuals who called Mānoa home or chose to visit there, to partake of the cooler environment as an escape from the heat of coastal Waikīkī Ahupuaʻa. Other prominent visitors and inhabitants of Mānoa Valley include Haʻalilio, Princess Victoria, Kanaʻina, Lunalilo, Keʻelikōlani, Queen Liliʻuokulani, and Kaʻahumanu (De Leon 1978; Kanahele 1995; Thrum 1892).

Access to Mānoa Valley was facilitated by foot trails that later became carriage roads which allowed visitors access to the interior of the valley. ʻĪʻī describes the former trail that linked Waikīkī with upper Mānoa Valley (see Figure 9) and some of the *wahi pana* discussed in the previous section as follows:

> . . . At Kawaiahao a trail passed in front of the stone house of Kaina, late father of Kikaha. The trail went above Kalanipuu's place, along the stream running down from Poopoo to the sea, close by Kaaihee in Makiki, to Puu o Manoa, then below Puupueo, where a trail branched off to go to upper Kaaipu and Kahoiwai, and another to go below Kaahulue, to Kapulena and Kolowalu. (1959:92)

In 1829, Missionary Charles Stewart recorded the following portrait of Mānoa Valley, which includes a mention of Kaʻahumanu's country home in upper Mānoa Valley, known as Kahoiwai, located to the south (*makai*) of the current study area (see Figure 9).

> The valley Manoa, you recollect, was always a favorite resort of mine—this afternoon Mr. Bingham drove me in a wagon to it. There is now a good carriage road, in that direction, as far as the country house of Kaahamanu, nearly five miles from Honolulu. Her residence is beautifully situated; and the selection of the spot quite in taste. The house is an inferior building, but stands on the height of a gently swelling knoll, commanding, in front, an open and extensive view of all the rich plantations of the valley; of the mountain streams meandering through them, and the humble habitations of the farmer sprinkled around; of the district of Waititi; and of Diamond Hill, and a considerable part of the plain, with the ocean far beyond. On the right, the ground rises rapidly for a few rods, to a thicket of hibiscus and eugenia, at the foot of a magnificent mountain, exhibiting from the base to its summit—a perpendicular height of a thousand feet—as rich a variety of projecting cliff and wild recess, of dripping rocks and mantling foliage. . .
>
> Immediately behind the house and partially flanking it on either side, is a delightful grove of the dark leaved and crimson blossomed Ohia. . . The view of the head of the valley inland, from the clumps and single trees edging this copse, is very rich and beautiful; presenting a circuit of two or three miles, delightfully variegated by hill and dale, wood and lawn, and inclosed [*sic*] in a sweep of splendid mountains. . .
>
> In one edge of this grove. . . stands a little cottage built by Kaahamanu, for the accommodation of the missionaries who visit her when at this residence. It is scarce twelve feet square in the area, and not as many high. . . and is frequently occupied a day or two at a time. . . (1831:143-145)

Kahoiwai was so dear to Kaahumanu that she chose to go there when she fell ill and subsequently took her last breath there in 1832 (Bingham 1848; Thrum 1891).

The written accounts left by early visitors to the Island of Oʻahu, such as those reproduced above, offer valuable insight into what life may have been like for the earliest residents of Mānoa and greater Honolulu District. By the

1830s-1850s, just fifty years after the first European contact, the native population had already suffered a significant decline; meanwhile, the Western population kept increasing. Maly summarizes the reasons for the rapid decline of native populations:

> Overall, historic records document the significant effect that western settlement practices had on Hawaiians throughout the islands. Drawing people from isolated native communities into selected village parishes and Hawaiian ports-of-call, had a dramatic, and perhaps unforeseen impact on native residency patterns, health, and social and political affairs. In single epidemics hundreds, and even thousands of Hawaiians died in short periods of time. (1998:36)

The *Māhele ʻĀina* of 1848

The socioeconomic and demographic changes that took place in the years after the arrival of foreigners promoted the establishment of a Euro-American style of land ownership, and the *Māhele* of 1848 became the vehicle for determining ownership of native lands. As a result of the *Māhele*, land interests of the King (Kamehameha III), the high-ranking chiefs, and the *konohiki* were defined. The chiefs and *konohiki* were required to present their claims to the Land Commission to receive awards for lands provided to them by Kamehameha III. The lands were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission and speeded the transfers (Chinen 1961).

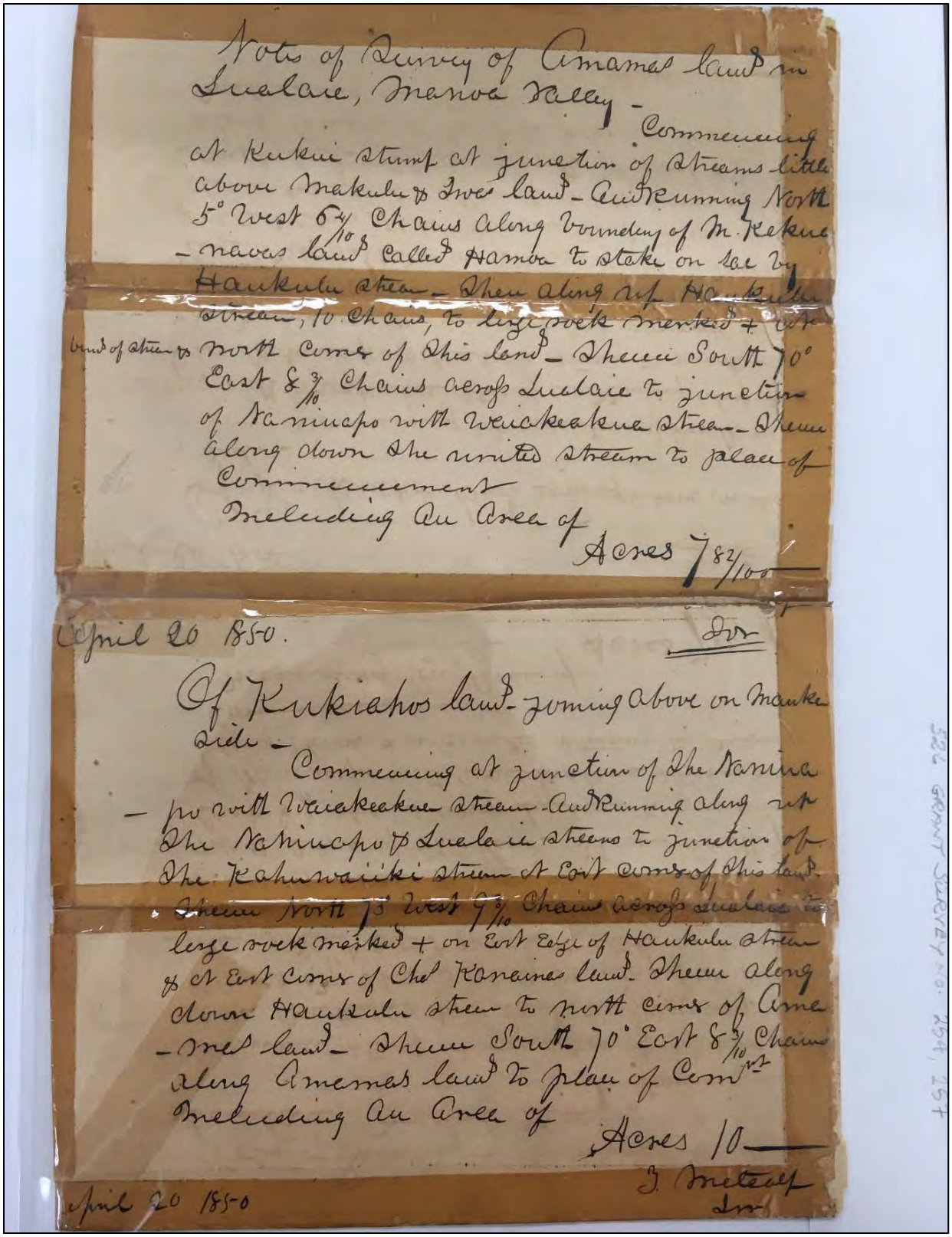
All lands awarded during the *Māhele* were subject to the rights of the native tenants therein; those individuals who lived on the land, worked it for their subsistence, and for the welfare of the chiefs. Native tenants could claim and acquire title to *kuleana* parcels that they actively lived on or farmed at the time of the *Māhele*. Not all lands that were claimed were awarded. The claims and resultant awards were issued Land Commission Award (LCAw.) numbers, which in conjunction with the volumes of documentation, remain in use today to identify the original owners and their use of the *kuleana* lands.

As a result of the *Māhele*, "Mānoa as an entity was not claimed by an individual chief" (Tomonari-Tuggle 1998:38). Rather, different aliʻi claimed smaller sections within Mānoa Valley; Victoria Kamāmalu claimed Kānewai, Charles Kanaʻina claimed Pāmoa (Tomonari-Tuggle 1998); while other portions of Mānoa Valley were designated Crown lands. Based on a review of *Māhele* documents and databases no *kuleana* were awarded within or in the immediate vicinity of the current study area.

The Study Area Vicinity After the *Māhele*

In conjunction with the *Māhele ʻĀina* of 1848, the King authorized the issuance of Royal Patent Grants (RP) to applicants for tracts of land, larger than those generally available through the Land Commission. The process for applications was clarified by the "Enabling Act," which was ratified on August 6, 1850. The Act resolved that portions of the Government Lands established during the *Māhele* should be set aside and sold as grants. The stated goal of this program was to enable native tenants, many of whom were not awarded *kuleana* parcels during the *Māhele*, to purchase lands of their own. Despite the stated goal of the grant program, many of the Government Lands were eventually sold or leased to foreigners. According to Tomonari-Tuggle, "as early as 1847, 30 parcels of these lands were sold as grants," which she qualifies as among the earliest such sales in the Hawaiian Islands (1998:38).

According to land survey notes recorded on April 20, 1850 and reproduced as Figure 10 below, the current study area lands were considered part of "Lualaie" (Luaʻalaea) a portion of which (7.82 acres) was granted to Amama as Grant 254. The lands immediately adjacent (*mauka*) to Amama's grant was sold as Grant 257 to Kukiaho and included 10 acres. Additional information about property boundaries can be gleaned from historical maps. The earliest map (Registered Map Number 1068 by E.D. Baldwin) that includes the study area vicinity was drawn in 1882. This early map depicts *land divisions* within upper Mānoa Valley, including "Aihualama, Haukulu, Waihii Iki, Luaalaea, Kahuaiki, Naniuapo, Waaloa, and Waiakeakua," as well as "Luaalaea Stream" and "Naniuapo Stream" to the north and west of the study area (Figure 11). In addition, what appears to be an unimproved extension of Mānoa Road enters the southwestern portion of Grant 254 to Amama and approaches the west-central portion of Grant 257 to Kuhiaho (see Figure 11). Although no *kuleana* were awarded within the current study area, Map 1068 shows several nearby. LCAw. 11029 to Stevenson, to the east of the study area; LCAw. 1923 to Kekua, to the southeast of the study area; and LCAw. 1951 to Nui and LCAw. 4605 to Hakau, which both comprise two *ʻāpana* (sections) are found to the south of the study area along the stream (see Figure 11).



Notes of Survey of Amanas land in Lualaie, Manoa Valley -

Commencing at Kukui stump at junction of streams little above Makuku & Ives land - And running North 5° West 6 4/10 Chains along boundary of M. Kekuanaoas land called Hamoa to stake on sea by Haukulu stream - Then along up Haukulu stream, 10 Chains, to large rock marked + on bund of stream & North corner of this land - Thence South 70° East 8 3/10 Chains across Lualaie to junction of Naniuapo with Waiakeakua stream - Thence along down the united stream to place of Commencement

Including an Area of

Acres 7 82/100

April 20 1850.

Dr

Of Kukiahos land - joining above on Manoa side -

Commencing at junction of the Naniuapo with Waiakeakua stream - And running along up the Naniuapo & Lualaie streams to junction of the Kahuwaiiki stream at East corner of this land. Thence North 5° West 9 1/10 Chains across Lualaie to large rock marked + on East Edge of Haukulu stream & at East corner of Chas Kanaimas land. Thence along down Haukulu stream to north corner of Amanas land - Thence South 70° East 8 3/10 Chains along Amanas land to place of Commt

Including an Area of

Acres 10

J. Metcalf

Dr

April 20 1850

526 GRANT SURVEY NO. 254, 257

Figure 10. Survey notes for Grants 254 and 257 dated 1850 (HSA 526-5 Land Grant Survey Notes).

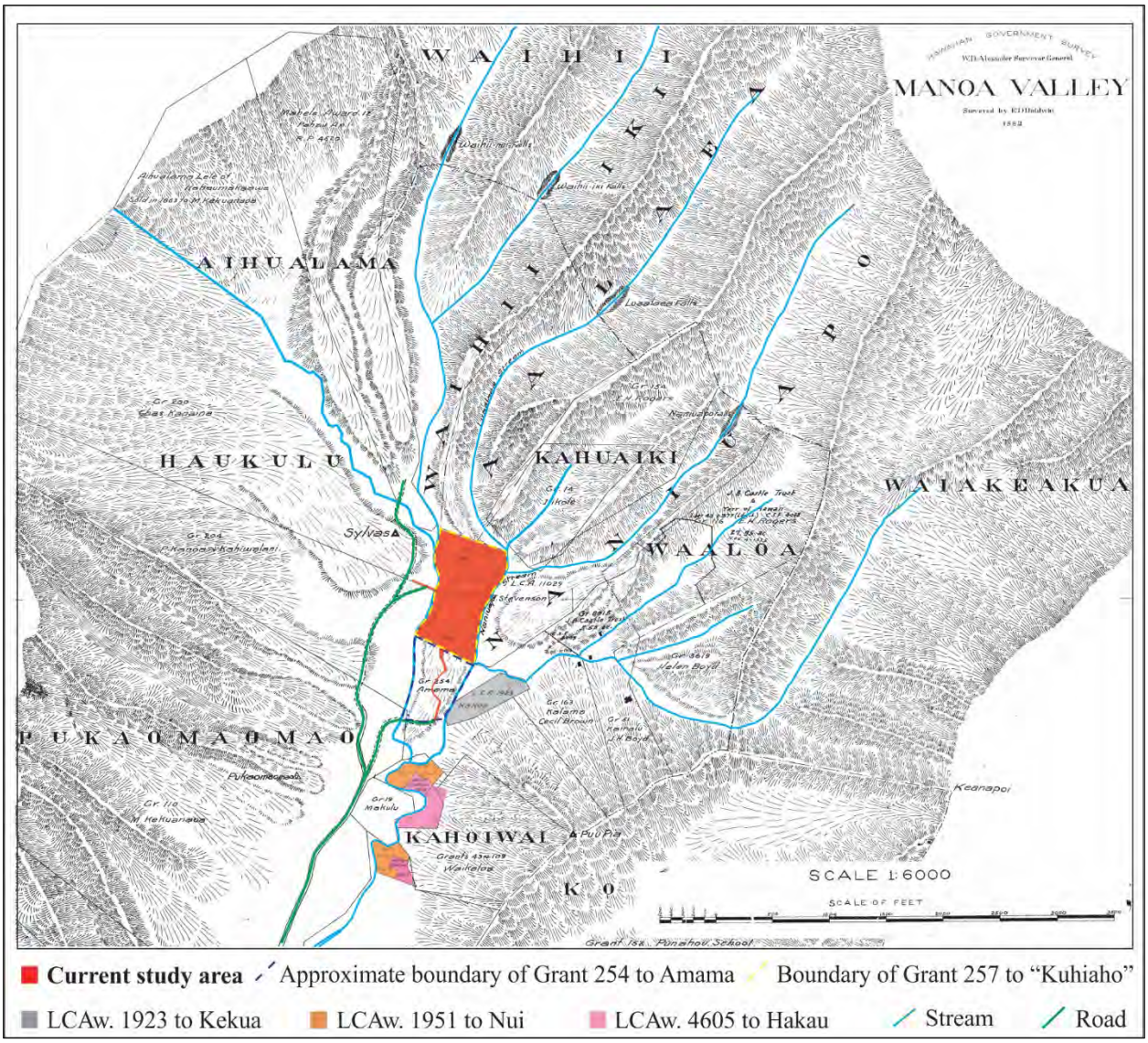


Figure 11. Portion of 1882 Hawai‘i Register Map No. 1068 of Mānoa Valley showing the current study area relative to grants, *kuleana,* and other landmarks discussed in the text.

Another historical map drawn after the 1882 map and labeled "Manoa Valley New Map of Grants" (Registered Map Number 948) depicts the current study area within Grant 257 and a portion of Grant 254 (Figure 12). Also included on this map are references to the *‘ili* "Luaalaea," located *mauka* of the study area and the streams that border the study area, although these appear unnamed.

During the latter half of the nineteenth century, native Hawaiians, along with Chinese immigrants, continued to grow taro on the floor of Mānoa Valley. In addition to cultivating approximately half of the taro lands in Mānoa Valley, Chinese farmers cultivated bananas, pineapple and other crops (Emery 1956). Rice cultivation in the valley had also been attempted in 1882, but ultimately the efforts proved unsuccessful due to the high winds and cold rains common in the area (De Leon 1978).

By the late nineteenth century, dairy farming had become an important industry in Mānoa Valley. The Woodlawn Dairy and Stock Company, established in Mānoa in 1879 with ten cows, became the largest dairy in the Hawaiian Kingdom with its herd of 700 head of cattle in 1890 (DeLeon 1978). However, by 1910 the dairy was closed, and the land developed into Woodlawn subdivision (Yardley 1981). Thus, the east side of the upper Mānoa region still retains the Woodlawn name, along with Woodlawn Drive, a main thoroughfare that leads up the east side of the valley.

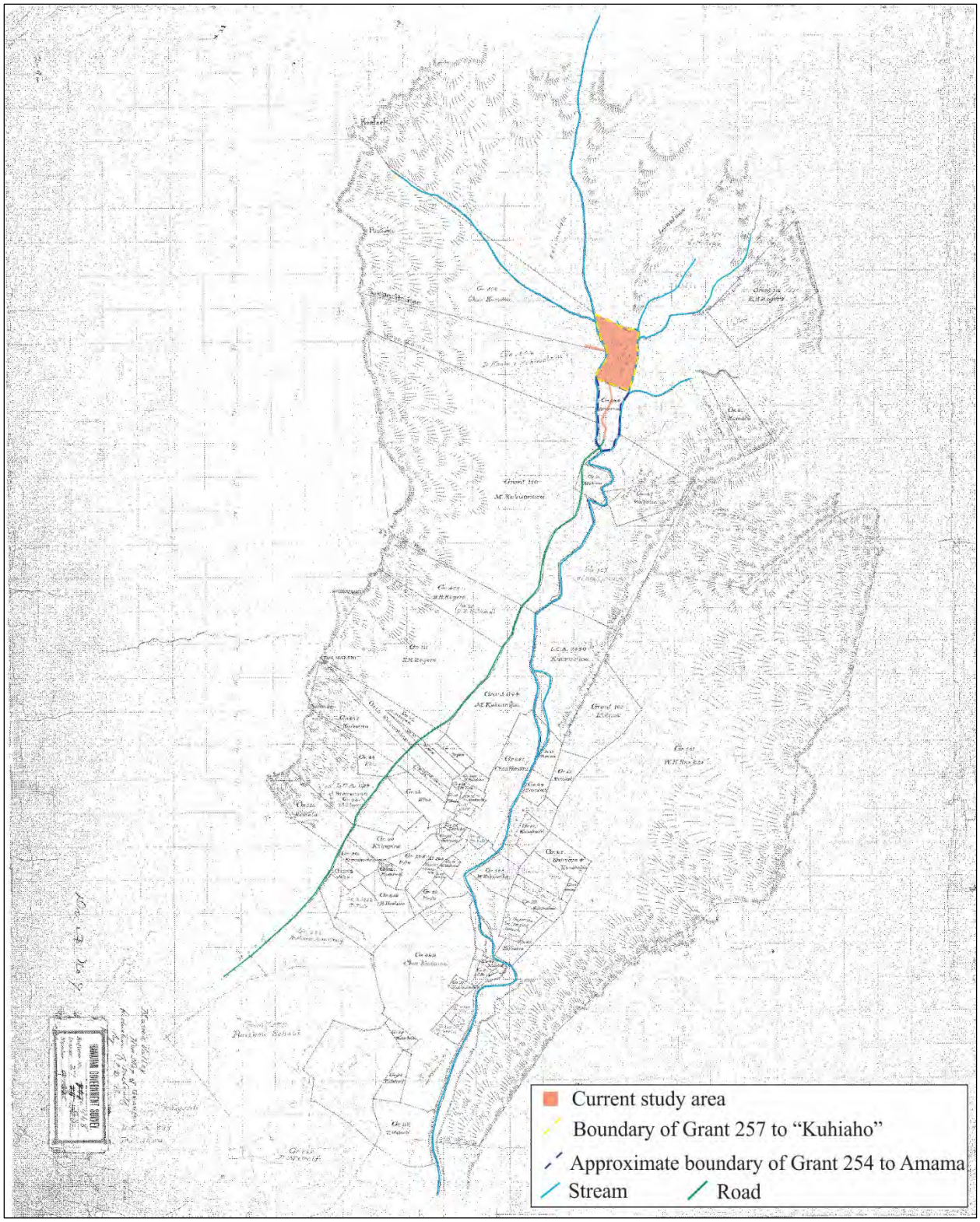


Figure 12. Hawai'i Registered Map No. 948 showing current study area relative to grants and other landmarks discussed in the text.

In 1891, Thrum composed an article titled *Manoa Valley. Descriptive, Historic and Legendary*, the following excerpt provides brilliant detail about the study area environs during the late nineteenth century:

> Comparatively few of Honolulu residents seem to have more than a vague idea of the charm and beauty to be found in the valley of Manoa, though it is situate [sic] but a short distance from the heat and dust of the city, and is reached by a good carriage road leading back of Punahou. Those who are familiar with the various valleys proximate to Honolulu are agreed upon the individuality of Manoa, both as to general formation and scenic effect. . .
>
> Manoa is both broad and low, with towering hills on both sides that join the forest clad mountain range at the head, whose summits are often hid in cloud land, gathering moisture there-from to feed the springs in the various recesses that in turn supply the streams winding through the valley, or watering the vast fields of growing taro, to which industry the valley is devoted. The higher portions and foot hills also give pasturage to the stock of more than one dairy enterprise.
>
> But the peculiar charm of Manoa is the complete surprise with which its beauty bursts upon the visitor on reaching the summit of the road at Puupueo (Owl's hill) on the left hand side, in entering the valley. For nearly a mile the road leads by or along pasture fields with no vistage [sic] of tree or shrub, other than the lantana pest and an occasional algarroba, and passes along Round top or Ualakaa, (rolling potato), so named from the early cultivation of this commodity on its slope at the subjugation of this island to Kamehameha [sic] sway.
>
> At this summit of the road the whole valley opens out to view, the extensive flat area set out in taro, looking like a huge checker-board, with its symmetrical emerald squares in the middle ground, surrounded by pasture fields on the slopes at the base of the guarding hills. Here and there 'mid sheltering trees, humble dwellings dot the scene around, while up the rugged slopes the almost endless shades of green, with black worn seams of rock oft times lightened up by "silvery thread of torrent," forms the background to one of the most charming pictures. . . (1891:110-111)

The Rebellion of 1895 and the Battle of Mānoa

In his 1895 publication titled *The Rebellion of 1895:A Complete and Concise Account of the Insurrection in the Republic of Hawaii,* Ed Towse speaks of the war of 1895, which features a battle that was fought in Mānoa Valley known as the Battle of Mānoa. Per Towse, plans for the revolution were laid in the fall of 1894—the year after the overthrow of Queen Liliuokalani and the resultant establishment of the Provisional Government under President Sanford Dole; he continues,

> The ex-queen is supposed to have been behind it all. Her agents were men who had figured in public life in monarchical days. With scarcely an exception that had unsavory records. . .
>
> The outcome of the fighting shows that the Republic has come to stay, It will continue to seek closer political union with the United States.
>
> The war of 1895 is the biggest thing of the sort the islands have seen since Kamehameha I started as a petty chief and conquered the group. (1895:preface)

The 1895 counterrevolution is also featured in historian Albertine Loomis' book titled *For Whom are the Stars*, which focuses on the 5-year period between the "bloodless revolution" (1976:3), which resulted in the overthrow of Queen Lili'iokalani in early 1893 and the annexation of Hawai'i in 1898. On January 17, 1893, a proclamation declared that the "Hawaiian Monarchical system of government" had ended and that a Provisional Government had been established "for the control and management of public peace. . . to exist until terms of union with the United States of America have been. . . agreed upon" (Loomis 1976:19). Although the overthrow was peaceful and the atmosphere in Honolulu under martial law was nonviolent, tensions and suspicions lay under the calm façade. For instance, some of the reformers/revolutionists in favor of annexation feared that the queen and her supporters (royalists) would join forces with the Japanese merchants and mount an uprising of plantation workers to restore her to the throne (Loomis 1976).

According to Loomis, the Hawaiian flag was taken down and the United States flag hung in its stead at the palace; and shortly afterwards, on February 1, 1893, United States marines and sailors were stationed in Honolulu as a United States protectorate was proclaimed over the Hawaiian Islands (1976:43). In addition, periodicals such as *Holomua* ("Progress"), which was funded by Lili'uokalani herself, espoused royalist rhetoric in English and Hawaiian to incite the population to resist the Provisional Government. Per Loomis, "the new government, Holomua reiterated, had no

right to exist; the men who were running it had stolen the country" and "any native who gave allegiance to this band of thieves was a traitor to his nation and to his race. A day of reckoning would come for all such people –when the Crown was restored" (ibid.:47).

Interestingly, a historical figure named John Kauluhinano Ena (1845-1906; Figure 13), who factors into the story regarding Lili‘uokalani's involvement with *Holomua*, had a close association with the current study area. Ena was a member of the Privy Council during the reign of Kalākaua and re-appointed to the Council by Lili‘uokalani. Per Loomis, ‘Ena in his role as a member of the Provisional Government advisory council threatened to terminate "her monthly allowance of $1,200 and dismiss her guard" unless "she withdrew her support from *Holomua*" (1976:47). Lili‘uokalani responded that she was completely retired and withdrawn from politics but ‘Ena and the rest of the council would not stand for such anti-government and pro-restoration sentiments and soon disbanded her sixteen-member guard (ibid.). The Ena Estate is listed as the owner of Grant 257 to Kukiaho on a Land Court Application Map as of 1916, which is discussed in further detail in a forthcoming section. Thus, it appears that prior to the early twentieth century, John ‘Ena was the owner of the majority of the current study area. In the February 15, 1895 edition of *The Pacific Commercial Advertiser*, under the heading "Republic of Hawaii-Official List of Members and Location of Bureaus," John Ena's name appears not once but three times in the following contexts: Advisory Council, Bureau of Agriculture and Forestry, and Board of Health (*The Pacific Commercial Advertiser* February 15, 1895:8).

Figure 13. John Ena (HSA Photo Collection PP-71-6-006).

In March of 1893, President Cleveland sent a commission to Hawai‘i to investigate the *coup* and assess the viability of annexation. In response, the Hawaiian populace split over the issue, and 10,000 Lili‘uokalani supporters organized themselves under the name *Hui Aloha ‘Āina* (those who love their country); and those in favor of annexation formed the Annexation League (Loomis 1976:51). Robert Wilcox, who Loomis described as "leader of the Liberal party" and a "self-styled 'professional revolutionist'" (1976:xvi), was one of six vice presidents of the Annexation League and touted that "annexation would mean 'liberty and independence and perhaps the salvation of the native race'" (ibid.:51). Loomis goes on to suggest that at that time, Wilcox likely saw "himself as the one really farsighted Hawaiian, who would wean his people from the defunct monarchy and nurture them in American democracy" (ibid.:52).

On April 1, 1893, President Cleveland's commissioner James Blount called an end to the American protectorate, restored the Hawaiian flag, and "left the Provisional Government entirely on its own" (Loomis 1976:53). Shortly after, Wilcox had a change of heart and withdrew from the Annexation League; "as he explained years later, he had seen 'that the United States meant to do what was right and just,' and accordingly he had 'decided to become a strong adherent to the queen'" (ibid.). For many months to follow, it seemed that the United States government would right the wrongs committed against the monarchy in January, for Blount opined "the queen could not have been overthrown without United States intervention and that the Provisional Government probably would collapse if American support were withdrawn" (ibid.:59).

In November of 1893, the United States minister Albert S. Willis met privately with Lili'uokalani in an attempt to secure the lives, property, and rights of the revolutionists who participated in the *coup* and served in the Provisional Government (Loomis 1976). Per Loomis, Lili'uokalani refused to grant them amnesty and went on to say "these people were the cause of the revolution of 1887. There will never be any peace while they are here. They must be sent out of the country and punished, and their property confiscated" (ibid.:72). Uncertainty reigned in Hawai'i as rumors swirled and tensions mounted, which resulted in the Provisional Government increasing their military presence and fortifying their government buildings against those who favored restoration during a period Loomis refers to as "Black Week" (ibid.:77). In December of 1893, Lili'uokalani and Willis reached a stalemate—President Cleveland had offered to restore the Monarchy to the status of January 14, 1893 and the constitution of 1887, on the condition that Lili'uokalani agree to amnesty for the revolutionaries; once again, she insisted they and their children be forced to leave the islands and their wealth and property seized. However, Lili'uokalani eventually agreed to Cleveland's terms and on December 19, 1893 Willis reported to Provisional Government President Dole that he would have to relinquish constitutional authority to Queen Lili'uokalani (ibid.:80).

However on December 23, 1893, Dole responded with "a dignified but categorical *no*" (Loomis 1976:80) and insisted that President Cleveland had no right to interfere in the domestic affairs of Hawai'i for the Provisional Government, "a recognized sovereign power, equal in authority with the United States Government and enjoying diplomatic relations with it cannot be destroyed by it for the sake of discharging its obligations to the ex-Queen" (ibid.:83). As a result of the concessions Lili'uokalani had made to President Cleveland, *Hui Aloha 'Āina* authored a strongly worded rebuke of their queen's actions, which included the following remarks:

> The restoration being not a favor, but an obligation of justice on the American Government. . . ought to be done without any restrictive conditions, and Your Majesty owes to the Hawaiian people, who have stood by you, to now stand by them and not sacrifice one iota of their rights. . . (ibid.:84)

The waiting continued, and Lili'uokalani and her loyal royalists remained hopeful that President Cleveland and the United States Senate would restore the queen; but her supporters realized that restoration would have to be initiated by them and not the United States. Thus, in the spring of 1894 royalists began plotting a rebellion. In May of 1894, Wilcox sent a warning to a Washington D.C. lobbyist that "a bloody revolution will follow if the Senate fails to do justice in Hawaii" (Loomis 1976:90). Wilcox continued, "Many plans are under consideration by our people. . . some of the hot-headed ones are talking of plans of the dark ages for the destruction of life. I do not believe in destroying life except in open war, but you cannot restrain these people forever" (ibid.).

Also, in May of 1894 the Provisional Government held an election, which required voters to pledge allegiance to the Provisional Government and opposition to the monarchy; many Hawaiians resisted and only roughly 4,000 people registered to vote in contrast to over 10,000 registered voters while the monarchy was still in power (Loomis 1976:97). On May 30, the elected officials assembled to develop a new constitution for a more permanent government. These officials included the former owner of most of the current study area, John 'Ena and five other "native Hawaiians, fourteen Hawaiians of foreign parentage (half of them missionary sons), nine Americans, three British, three Portuguese, and two Germans" (ibid.:98). As a result, the Provisional Government declared the Republic of Hawai'i on July 4, 1894 with Sanford Dole as its President. In August, to Lili'uokalani's chagrin, President Cleveland officially recognized the new regime and stated in a letter: "the attitude of the Congress concerning Hawaiian affairs of course leads to an absolute denial of the least present or future aid or encouragement on my part to an effort to restore any government heretofore existing in the Hawaiian Islands" (ibid.:104). Shortly thereafter, Lili'uokalani sent an envoy, Judge H.A. Widemann, to visit the rulers of England, France, and Germany who chose to support the Republic, rather than the Kingdom of Hawai'i as well.

Meanwhile, Lili‘uokalani had told her advisor Major Wodehouse “that she would not yield to the new Republican Govt. not-withstanding its having now been recognized by the United States” (Loomis 1976:105). This is when the seeds of the 1895 rebellion were planted; per Loomis, many loyal royalist “Hawaiian and *hapa haole* households in those days lived largely on the hope of restoration and the wealth they believed it would bring them” (ibid.:116). Subsequently, funds were secured to purchase arms, leaders of the royalist forces were chosen, and plans were laid. In early December, months after Widemann’s failed diplomatic mission to Europe, it appeared Lili‘uokalani was ready to take back the government by force, but the Republic found out and arrested three royalists for conspiracy on December 8, 1894 (ibid.:112). As a result of the arrests and associated raids and suspicions, the royalists delayed their overthrow of the Republic until the end of the month—the rebel leaders struggled to get the arms ashore and into the hands of their fighters unnoticed, for the eager royalist fighters drew too much attention when they gathered at the proposed landing sites. Such delays forced them to bury two cases containing eighty revolvers in the sands of Rabbit Island off the Waimānalo coast; and hide more than 280 Winchester rifles in the sands at Kāhala and in a gulch near Kūpikipiki‘ō just before the vessel carrying them (the W*aimanalo*) was boarded and inspected for illicit cargo (Musick 1897).

The next task at hand was to recover the hidden weapons and clean them before handing them over to their fighters. To that end, royalist leader Samuel Nowlein (former captain of the Queen’s Royal Guard and her trusted advisor) dispatched George Townsend, Charley Warren, and Lot Lane to recruit the boys and get started on the guns (Loomis 1976). Lot Lane, who was named after Lot Kamehameha, figured he would have better luck assembling an army if he could offer to pay their tram or horsecar (hack) fares to where the arms were buried. Per Loomis, Lot decided to lease his most valuable possession, his horse, to his sister Maria, who was married to the wealthy John ‘Ena. Maria ‘Ena gave Lot’s representatives thirty dollars for the horse, which was distributed amongst the fighters in ten cent increments (Loomis 1976:131). Thus, in an indirect way, pro-Republic John ‘Ena funded a portion of the rebellion of 1895.

Per Loomis, the *po‘e aloha ‘āina* (patriots) comprised men and boys from all walks of life; some reported to the front in bare feet while others wore their Sunday best:

> They were carpenters, house painters, blacksmiths, tram drivers, draymen, stevedores, and former band boys and clerks who had thrown up their jobs rather than sign the P.G. [Provisional Government] oath. Almost to a man they boasted Hawaiian blood; a few were part Portuguese or part haole. Some of them spoke and read and wrote two languages, having been educated in church schools; others knew only their native tongue. Many had children, whose future they meant to secure by restoring the monarchy. (ibid.:137)

On January 5, 1895 the rebel fighters began to gather at two headquarters: one of Lili‘uokalani’s beach houses in Kāhala and Antone Rosa’s house at Ka‘alawai, located to the east and west of Black Point, respectively (Loomis 1976). Then in the twilight of January 6, 1895, the first shots of the rebellion were fired at the home of Nowlein’s lieutenant Henry Bertelmann, located on the town side of Diamondhead. Based on a tip from a young Hawaiian spy embedded among the rebel forces, a group of eight police and government officials had gone to Bertelmann’s house to search for arms (Loomis 1976; *The Morning Call* [*The Call*] January 19, 1895:1). They were outnumbered by the native fighters and suffered casualties; by the end of the skirmish, the Government forces had organized and returned in numbers large enough to take over Bertelmann’s home, arrest Bertelmann and a handful of other rebels, and hold the post for themselves as the rebels made a hasty retreat (*The Call* 1895:1). Per Loomis, this firefight was the undoing of the rebel cause: “that crazy skirmish in the dusk gave away their [royalist] position, showed them undisciplined and ill led, and, when reported at Kāhala and Ka‘alāwai, so disheartened the whole royalist band that from that hour the cause was lost” (1976:145).

After the skirmish at Bertelmann’s, Wilcox decided to organize his forces at Diamondhead where they would protect the rebel camp at Ka‘alāwai (Loomis 1976). Although many refer to the uprising of 1895 as the Wilcox Rebellion and Wilcox declared himself a professional revolutionary, for he had “led the revolution against Kalakaua in 1889 for Liliuokalani” (Towse 1895:1); he was rather ambivalent about joining the fight until almost the last minute. Per Loomis (1976), it was not until January 3, 1895 that Wilcox joined the rebel forces; and when he first came upon his fighters camped at Ka‘alāwai he was angered by their lack of readiness and discipline, for many of them were under the influence of alcohol on the night the first skirmish broke out. Wilcox and his men gathered at lawyer Antone Rosa’s house near Diamondhead (Webb and Webb 1956). Nowlein had sent for Wilcox who detailed the following bad news:

> Honolulu was alerted. National Guard regulars, no doubt, would soon attack his men on the Diamond Head flank, and in town the Citizens' Guard would be flocking to their posts, the sharpshooters and artillery would be thrown into the field, and all approaches to the city defended against a rebel advance. The only hope he could see was to hold the position he had taken and force the P.G.s [Provisional Government forces] to offer terms—general amnesty, perhaps, for the insurrectionists. (Loomis 1976:154)

Despite these warnings, Nowlein chose to push on towards the city along a *mauka* route while Wilcox posted some men atop Diamondhead. According to Loomis, Nowlein with a force of only sixty men took their positions along the ridge called Mauʻumae, located opposite Kaimukī; meanwhile Wilcox ordered the release of the prisoners at the camp at Rosa's house and pledged to "hold the culvert makai of Diamond Head as long as he could" (1976:157). On Sunday, January 6, 1895 Wilcox and his men were posted along the rim of Diamondhead when the enemy – the fighters loyal to the Provisional Government referred to as P.G.s – began shelling their position (ibid.:158).

Meanwhile, Nowlein and his men, who had enjoyed the protection provided by their position earlier that morning, had become outgunned and outnumbered by mid-day Monday January 7; as a result, many of Nowlein's fighters deserted or surrendered, and Nowlein himself fled into the brush (Loomis 1976). This defeat is also referred to as the Battle of Mōʻiliʻili (Towse 1895). Per Loomis,

> the leaderless rebels who remained in the Mauʻumae fort, quickly making themselves truce flags out of handkerchiefs or poi wrappers, began to march out. Government men waded into the lantana to meet them and accept their surrender, Thirty-nine, in the end, were disarmed and sent off to town. The battle was over. (1976:161-162)

According to American Historian John R. Musick, "a large force of insurgents was in the hollow basin or crater of Diamond Head, and so strongly posted that it was impossible to dislodge them from the land" (1897:399). However, a howitzer aboard the Government tug *Eleu* sent shells from the sea, which were supplemented with canons on land (Webb and Webb 1956). The shelling and the advancing skirmish line of the P.G.s sent Wilcox and his fighters towards Pālolo Valley; thus, the rebel forces had suffered another defeat (Loomis 1976). Although Loomis' account does not mention the taking of Punchbowl Hill as part of the insurrection; other sources (Musick 1897; Webb and Webb 1956) mention it as a defeat of the rebels. A January 9, 1895 newspaper article titled "How Goes the War? Conclusion of Narrative of Yesterday's Events—Reported Changes in the Plans of the Rebels" (*The Daily Bulletin* January 9, 1895:5 [1895a]) provides an outline of the rebels' plans. According to this article, Nowlein intended to "work his contingent around the side of Mt. Tantalus" to avoid the Waimanalo pass and the ascent of the Pali, "probably in the face of a covered fire from the summit" (*Daily Bulletin* 1895a). Apparently, this theory was corroborated by John Dunn, who had infiltrated Wilcox's camp on behalf of the P.G.s. Dunn had reported that Wilcox planned "to capture Punchbowl and the powder magazines, and Nowlein was to join forces with him at Punchbowl" for "the city would fall an easy prey to them from that position" (ibid.). The article continues thusly, "In consequence of Dunn's report Companies E and B were ordered to occupy Punchbowl at midnight, which they did taking field pieces with them. This movement will probably foil the rebel commander's plan completely." (ibid.). According to another article titled published in *The Hawaiian Star* on the same day,

> The forces reported by Dunn did not materialize. If such a movement had been intended by the hostiles, it was abandoned. It would seem that the report of the day, to the effect that the enemy was running away in every direction, were correct. (*The Hawaiian Star* January 9, 1895:3 [1895a])

When the "armed insurrection against the government by Hawaiian citizens loyal to the Queen" began, "National guard companies, the Citizens Guard and sharpshooters were called to active duty to put down the rebellion" (Towse 1895:5). The soldiers representing the newly formed Republic of Hawaiʻi were primarily members of the National Guard of Hawaii (N.G.H.) which was established on January 23, 1893; and on January 27, 1893 Sanford Ballard Dole signed Act 7 of the Provisional Government, which officially "designated the National Guard as the organized militia of the Hawaiian Islands" (Hawaiʻi State Archives [HSA] Finding Aid for Hawaii Government Records-National Guard of Hawaii, 1893-1900:2-3). The N.G.H comprised four companies: one paid military force and three additional volunteer companies (ibid.:3). On August 18, 1893, Act 46 revised Act 7 and included the organization of independent Sharpshooter units; N.G.H. companies "consisted of one captain, one first lieutenant, one second lieutenant, one first sergeant, five sergeants, eight corporals, two musicians, one marker and approximately 35 privates" (ibid.:4). In late 1894, the national guard acquired "new uniforms, identical to those of the United States Army" (Loomis 1976:110-111)

The rebels' defeat at Mōʻiliʻili and Diamondhead were followed by the Battle of Manoa. Per Musick: "On Wednesday afternoon the patriot army came upon the enemy at Manoa, under the command of Robert W. Wilcox, who had received his military training in Italy" (1897:402). His account continues thusly, "Wilcox made a stubborn fight. His men were strongly posted behind stones and in lantana bushes, while the soldiers of the republic were in an open space. . ." (ibid.). Figures 14 and 15 show the N.G.H. in Mānoa Valley at their camp and on the skirmish line, respectively. While Figure 16 provides a better view of the canon used to against the rebel forces.

Figure 14. HSA Photo Collection PP-53-6-023.

Figure 15. HSA Photo Collection PP-53-4-011.

Figure 16. HSA Photo Collection PP-53-3-002.

According to Towse, the battle unfolded as follows:

BATTLE OF MANOA

> Tuesday [January 8] was given up to searching for the enemy and following up rumors. It was an active, nervous day for all. Troops went over the ground from Moiliili road to the foothills and from the road to Diamond Head. A few prisoners were taken and many guns were picked up. Twenty rifles that had never been fired were found in a little fort near Waialae.
>
> The battle of Manoa, Wednesday evening [January 9], shattered the rebellion completely. The forces were Co. A, N.G.H. [National Guard of Hawaii], under Capt. Paul Smith, a detail from Co. D, N.G.H., under Lieut. Jones, with Gunner Johnson and field piece, and the entire company of Sharpshooters under Capt. John Kidwell. Negative—Probably seventy-five rebels under Robt. Wilcox and Lot Lane. These were on the way to the high peaks, where they hoped to hold out and make terms with the government.
>
> Wilcox made quite a stand, first engaging Co. A. He wanted to best them and get their heavy rifles. The enemy was under cover. The loyal forces were in the open. Wilcox did not retire for some time after the Sharpshooters and artillery arrived. D's detail came around from Punchbowl in as quick time as ever made. The Sharpshooters marched from town at double quick. It became too warm for the rebel leader. He left ten men behind as a cover and went into Pauoa valley. Two natives came in under a white flag. One of these had an ear cut by a bullet. They led the way to where a third was dead with a bullet in his brain. During the engagement a long skirmish line was maintained. Firing did not cease until an hour after darkness had fallen. While firing was on bullets dropped around the loyal forces, but none were injured.
>
> At Manoa, as at Diamond Head and Moiliili, the insurgents had the advantage of position. They were above the Republic's force and well sheltered by timber, brush and rocks. The artillery company, at great peril, occupied a bald knob. To advance effectively it was necessary for Sharpshooters and Co. A men to be often in the open. The rebels were poor marksmen, and besides had very little desire to fight after Co. A, was reinforced. . . (1895:5-6)

Additional details about the Battle of Mānoa were published in another article published in *The Daily Bulletin* on the day of the battle, titled "Pitched Battle—Rebels Between Two Fires on Palolo Heights—Very Latest from the Front," which opens with the following statement: "The sound of musketry was heard in Manoa Valley this afternoon." (*The Daily Bulletin* January 9, 1895:5 [1895b]). This article goes on to state that a reporter had been sent to Mānoa on horseback with instructions to return by 4 o'clock but instead left a telephone message at the newspaper headquarters saying, "They're fighting like hell" (*The Daily Bulletin* 1895b). The article continues by reporting "the rebels are posted on the heights at the convergence of the Manoa and Palolo ranges" with Sharpshooters and Citizens' Guard closing in on them from both sides (ibid.). The reporter also made the following observations upon his return from Mānoa Valley about the two divisions of rebels located at the head of the valley in a place called "the pen":

> One division is in a gulch at the extreme end of the valley. It is supposed to be in command of Sam Nowlein. The latest courier to the first outpost says the estimate is that they number about 200 men. The courier could not see, however, how there could be more than 50 or 60 men.
>
> The other division is on the other side of the valley in the gulches, probably two miles distant from the first. It is commanded by Robt. Wilcox and, it is believed, two or three white men. There is no knowing its strength. This division has not been attacked yet.
>
> . . . Captain Smith with Co. A and Captain Kidwell with the Sharpshooters are located on a ridge to the left of the rebels, and are firing down directly in to the underbrush where the enemy are supposed to be hidden. (ibid.)
>
> Manoa valley ends in what is called "the pen." It has walls with a trail into Pauoa valley. Over this path the rebels fled. During this engagement Wilcox fired at some of his own men who started to surrender. In the hurry of his retreat Wilcox left the cloak of his Italian uniform. This is the suit he wore in the uprising of 1889. (Towse 1895:5-6)

Loomis further qualified "the pen" as follows: "Rocky, wooded ridges enclose it to right and left, and straight ahead is the black, sheer face of Kōnāhuanui" (1976:164). She goes on thusly,

> The rebels were approaching this cul-de-sac at its makai, or southern, angle, along the stream called ʻAihualama. The trail into Nuʻuanu opened at its upper left, or northwestern, angle. Here was a good path for a *kamaʻāina* going alone from valley to valley, though it was no place for a skirmish line. (ibid.).

According to DeLeon, Wilcox and his rebel compatriots "were camped in the rear of the [Mānoa] valley in an area described as belonging to John Ena" (1978:6), which appears to coincide with the current study area and is discussed in additional detail in the next section. Upon further investigation a newspaper article titled "Entrapped. Closing in on Garibaldi Wilcox and Party" published in the January 10, 1895 edition of *The Hawaiian Star* revealed the following information about the pen and ʻEna's property:

> The end of Manoa valley is what is called the "pen." From a distance it has the appearance of three great walls. While it is somewhat broken, escape from it is extremely difficult. . .
>
> Company A searched houses and interviewed stragglers until Montana's ranch was reached. Here information was received that there was a considerable party of hostiles in the pen, about a mile and a half ahead. . .
>
> . . . The Sharpshooters found Company A engaged with the enemy. The firing was quite sharp. In the meantime Company A had captured three rebels, and from them had learned that the enemy was scattered in the Pen. . .
>
> Just in the pen of Manoa is a place owned by John Ena. Here Capt. Smith established headquarters for his company of Sharpshooters. It was within firing distance of some of the rebels. The artillery was planted on a prominent knoll about a thousand yards beyond the Ena house and well to the left. The firing from the sides of the pen had been quite sharp until the field piece arrived. The rebels had acquired a holy horror of shelling, and did not invite any of it. Scouts of Company A and the Sharpshooters pressed on to the right and left of the valley, and on their reports Captain Smith directed the shelling. Johnson has become very skillful with this gun and can throw a shell into any clump of bushes pointed out.
>
> Wilcox seems more desperate and more inclined to fight than the rebels have been at any time yet. With a much smaller force he seemed about as anxious to do some killing as his men were to get away. (*The Hawaiian Star* January 10, 1895:3 [1859b])

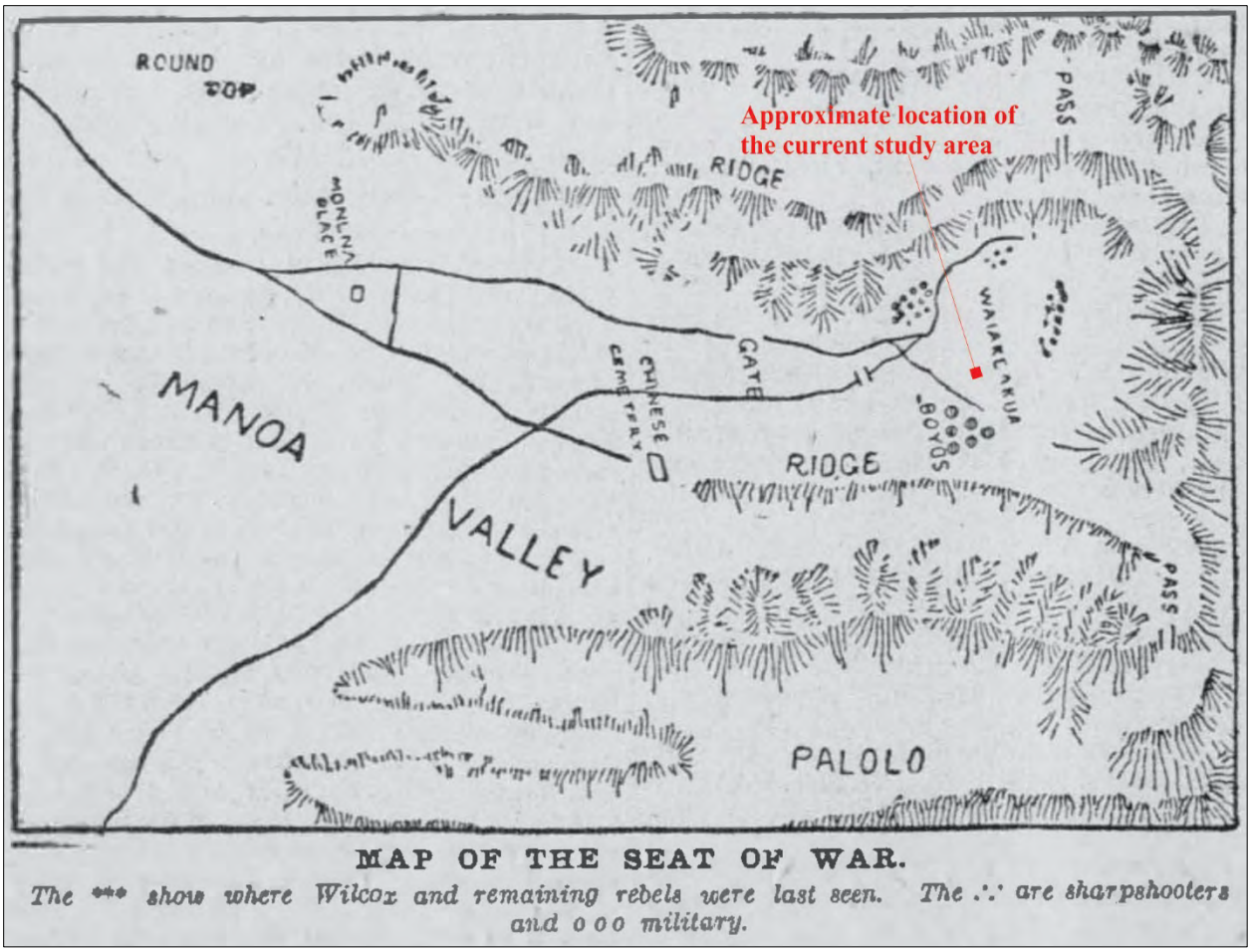


Figure 17. Sketch map of Mānoa Valley showing N.G.H. and royalists positions within the study area vicinity.

This same account stated that Wilcox had more than fifty rebels under him and that "the Wilcox party had camped Tuesday night behind a knoll on the right side of the Pen" (*The Hawaiian Star* 1895b). This was apparently the location of "two small summer residences owned respectively by Wilcox and Robert Boyd" (ibid.). The rebels were pitted against Captain Paul Smith's Company A that comprised about fifty men, and seventy sharpshooters under Captain Kidwell (ibid.). These men were "supported by a field piece" and associated artillery company with twenty men from Company D and a gunner under the command of Lieutenant Jones. Furthermore, when the location of the rebels became known at headquarters, Deputy Brown offered Colonel Fisher "the services of Captain Murray and thirty-five members of the Citizen's Guard who were in Palolo valley looking for Nowlein and his wing of the rebel army" (ibid.). The author goes on to sing the praises of the Government forces thusly,

> . . . Nearly every man [of Company A and the Sharpshooters] seemed determined to distinguish himself. They pushed ahead constantly firing wherever there was any sign of the enemy in the lantana and guava bushes. The ground in Manoa is much more favorable for action than the hot field of Moiliili. Some of the men scampered into the thicket, over ridges and up the slope like goats. Capt. Smith gives special praise to squads in charge of Lieut. Rowald and Sergeant Duschalsky, though he says that every man did his full duty. A good many of the fighters under Capt. Kidwell were well acquainted with the pen. They had heavy ammunition made especially for long shooting, and in this regard were better equipped than the militia. (*The Hawaiian Star* 1895b)

The account also speaks of the sheer volume of firing from the rebels as follows:

> The continuance of firing for two or three hours shows more than anything else the determination of the enemy. They sent probably three hundred bullets at the squads of the combined skirmish line. Company A and the Sharpshooters used about twenty rounds to the man. A few of Wilcox's braves had either Springfield or heavy Winchester guns. Some of their bullets came with a louder whiz and a greater force than others. (ibid.)

Additionally, this account states that when two rebels surrendered, they were fired upon, from behind; for allegedly, "Wilcox had ordered that when deserters were moving away they be shot if possible" (*The Hawaiian Star* 1895b). One of these men who surrendered spoke good English and communicated that Wilcox had between 50 and 60 men, including Lot Lane, and that they were trying to get to Pauoa Valley to "effect a surprise on a Government force" while, "the haoles were all with Nowlein" (ibid.). Later in the article, it is reported that the rebel prisoners claimed they had been forced into service at gunpoint or under the threat of violence if they did not agree to join the royalist fight. These same prisoners also spoke of Wilcox's plan to make an assault on Honolulu, "precipitate a general riot everywhere and use the dynamite bombs to secure possession of the Government buildings;" and his assurances that "there were plenty of the royalists in town who would rise up and help them at the proper time" (ibid.). Thus, after the rebels' defeat, the P.G.s focused their energy upon locating and capturing Wilcox, whom they suspected was either in Pauoa Valley or near Tantalus as of mid-day on Thursday January 10, at which time:

> Captain Zeigler with company F is still at the head of Manoa. They have the field piece there yet with gunner Johnson and a detail. If any of the rebels succeed in escaping from Pauoa or Tantalus, they will get a warm reception anywhere between the Pen and Montano's upper ranch, and if they try to get into town they will meet the Citizen's Guard. Zeigler himself and a number of men accustomed to scouting work, have traversed the three sides of the Pen since morning without scaring up a rebel. Zeigler is satisfied that the enemy has vacated Manoa entirely. (ibid.)

According to another informant who had been with Wilcox's men, who numbered about thirty in all, and left them on Wednesday night, "None of Wilcox's party, he said, had anything to eat since Monday morning, excepting guavas and the meat of one bullock that they had killed" in contrast, referring to the Provisional Government troops, "All the forces have had all they wanted to eat and drink today" (*The Daily Bulletin* January 10, 1895:3 [1895c]). As of January 10, 1895, per *The Daily Bulletin,* "It is the opinion of our correspondent at the front that the back of the rebellion is completely broken" (ibid.:1895c). Musick provides a succinct summary of the repercussions of the defeat at Mānoa as follows:

> Manoa decided the insurrection against the rebels. The remainder of the week was given up to manhunting. The rank and file, being natives, were coming in and surrendering, but the ringleaders were at large; many of them were never known, and have escaped punishment. (1897:402)

Regarding the aftermath of the Battle of Manoa, Towse continues his account in a chapter titled "Taking the Leaders" as follows:

> . . . When driven from Manoa on Wednesday the 9th [of January], Wilcox continued to travel with ten men. They crossed Pauoa and Nuuanu valleys and came into town down Kalihi valley. The ten followers scattered to their houses. Most of them were arrested afterwards. It had long been the boast of Wilcox and friends that the natives would flock to his support in any peril. The only friend he had was a half-caste woman.
>
> Wilcox reported that Lot Lane was in the hills with fifty men. (1895:8)

After their defeat at Mānoa, as mentioned above, Wilcox stationed himself with a few men in Pauoa Valley. Wilcox was subsequently captured as was Lot Lane, "a half-caste ranch-man" (Towse 1895:2); Towse continues,

> On the night of Wednesday the 17th, Lane called at the house of a relative in Manoa. He had been in that valley all the time. He wanted to surrender, being completely starved down and worn out. . . He said he saw it was no use to offer battle further against drilled troops and artillery. . . Said he: "I went into this thing with my eyes open and on principle. We are whipped and I only hope that none of my friends on either side are hurt." Lot Lane is said by many to be the finest specimen of physical manhood on the Islands. He is over six feet tall, beautifully proportioned, with fine features and great strength. Lane's father claims to be a descendant of the kings of Ireland and they declare that the mother has in her veins Kamehameha blood. (Towse 1895:8)

The Morning Call.

VOLUME LXXVII.—NO. 50. SAN FRANCISCO, SATURDAY MORNING, JANUARY 19, 1895. PRICE FIVE CENTS.

UPRISING OF ROYALISTS IN HAWAII.

Rather Forced to Show Their Hand.

ARMS HAD BEEN LANDED.

Which Fact Became Known to the Government.

ATTEMPT TO SEIZE THEM.

Resulted in Driving the Kanakas to Open Rebellion.

THE STORMING OF DIAMOND HEAD.

At Last Advices the Rebels Had Taken to the Hills to Escape the Government Troops.

HONOLULU, Jan. 11.—The expected outbreak of the royalists occurred last night. As a preparatory step to the restoration of the queen, arms had been secretly landed in the island throughout the week, in small parcels and concealed in various places in this island. The plan seemed to be, that no one knew the arrangements of the other, although it is believed the conspiracy has ramifications throughout the group. Whenever the other conspirators can be not yet been fully known, and the ringleader, Liliuokalani herself, has not even been connected officially with the affair. Details are hard to be found when it was ascertained that the rebellion was premature

Another interesting detail regarding the uprising and the Battle of Manoa in particular, was the presence of Joaquin Miller, known as the "Poet of the Sierras." He had come to the Hawaiian Islands just in time for the revolution to "prepare a history of the Hawaiian Islands for an Eastern publishing house" (*Los Angeles Herald* March 28, 1895). Per Webb and Webb, a member of the Citizen's Guard was tasked to arrest anyone he encountered in Manoa Valley who could not provide proper identification; the story continues thusly, "In a wild and remote spot the captain came upon a bizarre figure with flowing hair, a great sombrero, and leather leggings" (1956:146). For obvious reasons, this stranger could not show proper credentials and was taken to the police station where his identity was discovered. Webb and Webb go on to say he "had happened to select this special morning for a nature walk—quite ignorant of any political upheaval in progress" and that upon his return to California, "the celebrated visitor commented with stinging derision upon the Republic of Hawaii and its works" (ibid.:146).

According to a *Los Angeles Herald* article, Miller chose to leave Honolulu rather suddenly with "no other baggage than a copy of his poems" for fear of being arrested by government officials whom Miller found despicable (*Los Angeles Herald* 1895). Once back home in California, Miller spoke of the deplorable conditions that both Native Hawaiian and white political prisoners were subjected to and stated the following:

> there are hundreds of good men down there, kept in the vilest prisons by men who betrayed a woman and robbed her, and there is plenty of gold and a kingdom waiting for whoever will liberate those good men. The soldiers down there will not fight for Dole. They won't fight to keep those men in prison. It is not human. In fact they are all falling out. In fact I doubt if Dole has any friends at all who are not under pay as civil or military officers or in some way selfishly interested in the oligarchy. . . The yard of the penitentiary is crowded with poor native women waiting turns to see father, husband or son. . . (*Los Angeles Herald* March 28, 1895:2)

The same article quotes him regarding the ex-Queen thusly, "Of all those who participated in her arrest and trial and of all that was said and done, the only Christian was that poor, dusky old woman in the midst of hundreds of cruel men. The only Christian act or utterance came from her." (ibid.). Earlier in the same article, *The Los Angeles Herald* reports that Martial Law in Honolulu had been called off on March 18, 1895 and that 190 rebel prisoners had been brought before the military commission and were "working out their sentences in the quarries or on the road" (ibid.).

Mānoa and the Study Area Vicinity during the Twentieth Century

During the first decade of the 1900s, the grazing and agricultural lands at the mouth of Mānoa Valley began to be subdivided and developed for residential use (DeLeon 1978). By the time of his writing, ca. 1915, Westervelt remarked that Mānoa Valley "is one of the well-settled suburbs of Honolulu" (1915:36). The 'Ena family were among the residents of Mānoa Valley. Cartographically, the name 'Ena first appears associated with the subject property on a portion of a Land Court Application (LCApp. 0338) map (Map 1) dated 1916, which is reproduced as Figure 19 below. On this map, a portion of the study area is depicted as "Grant 257 Kuhiaho" and "Ena Est., (owner)." According to his obituary, John Ena's lands in Mānoa were referred to as a "farm" (*The Hawaiian Star* December 29, 1906:11). Additional information can also be gleaned from this map, such as a portion of a roadway labeled "Government Loop Road" enters the study area from the north after crossing Waihii and Aihualama Streams.

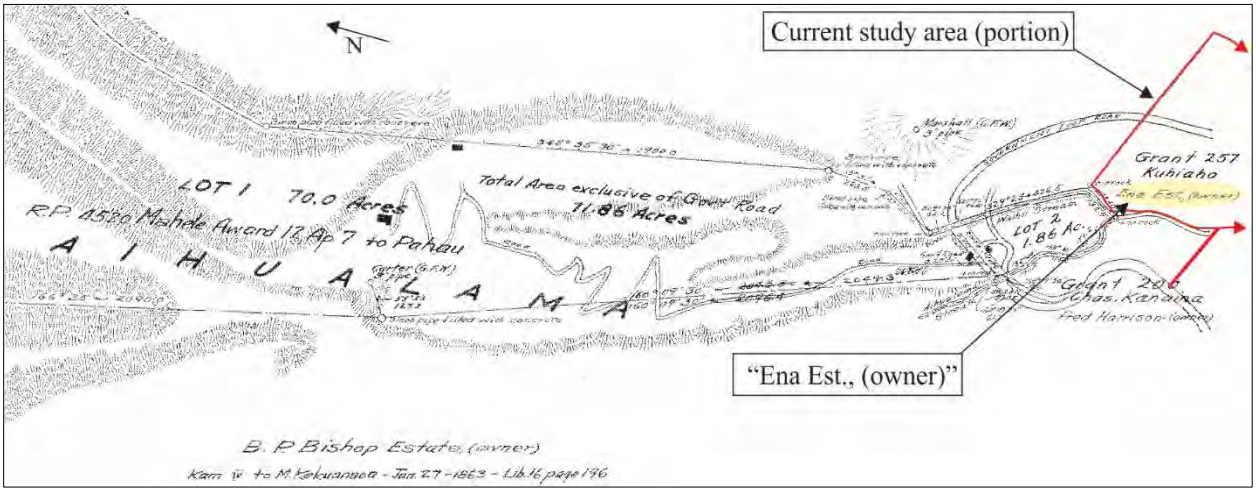


Figure 19. LCApp. 0338 Map 1 showing portion of the current study area ca. 1916. With "Ena Est." as the owner.

In 1919, the Hawaii Sugar Planters Association (HSPA) established a 124-acre experimental substation in upper Mānoa Valley, at the end of Mānoa Road just beyond and to the west of the current study area. HSPA cultivated sugar cane on the site from 1920 until the late-1940s (DeLeon 1978). Later, Dr. Harold Lyon, a plant pathologist with the HSPA, imported tree species from all over the Pacific region and established them at the substation in an effort to restore the Mānoa watershed, which by that time had been heavily damaged by agricultural activity and deforestation. The substation would eventually become the Lyon Arboretum, in association with University of Hawaii.

During the 1920s, the number of farms within Mānoa Valley continued to decrease because of falling profits, while the bottomlands of the valley were developed for residential use (Bouslog et al. 1994). As the local population of Chinese farmers decreased, Japanese farmers began moving into the upper valley to grow flowers, bananas, strawberries, dryland taro, Japanese burdock, radishes, sweet potatoes, lettuce, carrots, and soybeans to sell at the Honolulu markets and in some cases for shipment to California (DeLeon 1978). Thus, several Japanese-owned businesses thrived in Mānoa prior to World War II, including three general stores, a laundry, a barber shop, and two gasoline stations (DeLeon 1978). Handy et al. made the following observations of land use within Mānoa Valley ca. 1931 as compared to the past:

> Mānoa Valley had much well-watered level land which was better adapted to terracing than that of Nuʻuanu. In the upper valley all the bottom land was terraced. In 1931 much of this land was abandoned, covered with grass; now it is mostly in residences. In 1931, however, there were still about 100 terraces in which wet taro was planted, although these represented less than a tenth of the area that was once planted by Hawaiians. (1991:479-480)

Following the attack on Pearl Harbor in 1941, the 982-unit Mānoa War Homes housing project was constructed to house approximately 4,000 military and civilian defense contractors near the Woodlawn subdivision. After the war, the Mānoa War Homes were demolished and replaced by civilian residential and commercial development (Bouslog 1994:141-142). According to a study of land use and settlement conducted by Byron Emery, the population of Mānoa Valley "exploded" after World War II—from 5,000 souls in 1930 to 15,000 in 1955 (DeLeon 1978:14). Some of this post-war population growth can be attributed to the Mānoa War Homes development but the ongoing shift from agriculture to residential land use in response to the housing shortage felt across Oʻahu also contributed.

By the mid-twentieth century, the well-watered patchwork of *loʻi* that once carpeted the floor of Mānoa Valley, fell by the wayside as the price of taro continued to drop and much of the stream waters were diverted to support O'ahu's island-wide urbanization. In addition, several parcels in the vicinity of the study area were purchased by the City and County of Honolulu's BWS, following the passage of Gubernatorial Executive Order 1659 for the development and protection of water resources as in the upper watersheds, as illustrated within the subject and nearby parcels on the Tax Map Key map (see Figure 2).

Per a deed dated March 17, 1949 Father H. Valentin and Hawaiian Trust Company, Ltd., trustees of the estate of John Ena conveyed Grant 257 and a portion of Grant 254 to the City and County of Honolulu, Board of Water Supply; the map accompanying the deed is reproduced as Figure 20, below. This fact lends credence to DeLeon's earlier claim that rebel Wilcox and his compatriots fought the Battle of Mānoa within land belonging to John Ena. Although Ena's land holdings were located throughout Mānoa and beyond, DeLeon qualifies his claim with the following details about the former Ena property, which was by the time of his writing in the late 1970s "the lower part of the water conservation district where Paradise Park is located" (1978:6). Thus, it appears that the current study area did play a part in the Wilcox Rebellion, albeit more likely as a camp for the Hawaiʻi National Guard troops than a rebel stronghold as shown in the discussion of the Battle of Manoa presented above.

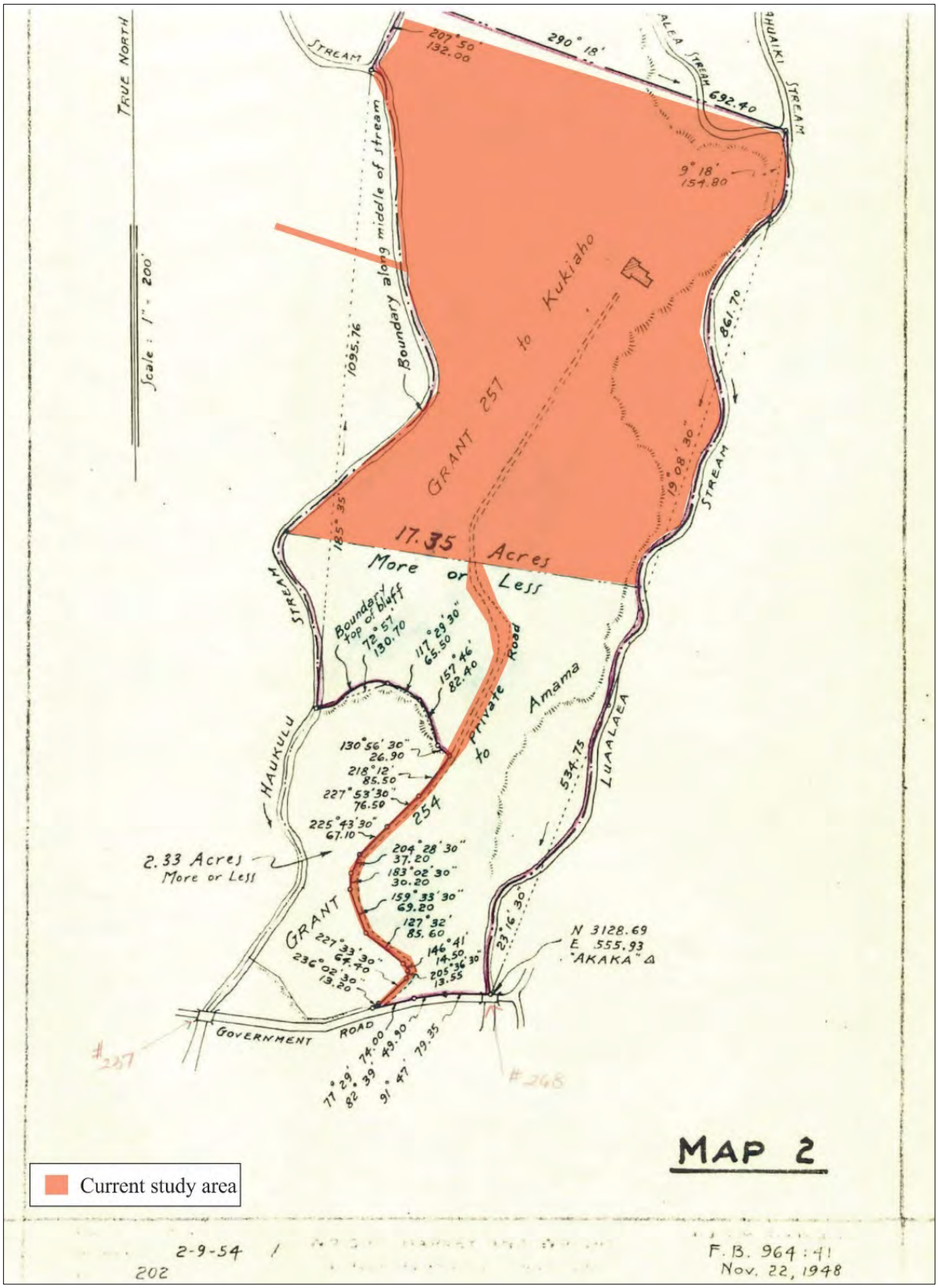


Figure 20. 1948 survey map accompanying deed between Ena Estate and BWS.

Paradise Park

As mentioned by DeLeon above, a portion of the study area (within Grant 257) located on TMK: (1) 2-9-054:029 contains a portion of the "Ethnic Garden" features of the former Paradise Park, a private zoological and botanical garden which operated from 1968-1994: "Located just five miles from Waikiki and downtown Honolulu, Paradise Park is fifteen acres of lush tropical rainforest with aviaries filled with exotic birds" (Donnelly 2011). James "Jimmy" Wong (1923-2017), a local businessman and real estate developer "was one of the earliest collaborators with the Bishop Estate, the largest private property owner in the islands, and the Roman Catholic Church in Hawaii in creating financial opportunities for their lands" (Donnelly 2011). On the late 1960s, Wong spent two million dollars to develop Paradise Park on 15 acres of private conservation land (Gomes 2017).

Attractions at the park included an aviary with exotic and native bird exhibitions and entertainment, a bamboo forest, flamingos, spider monkeys, trails through the park that highlighted native Hawaiian plants, and a Polynesian restaurant; attendance averaged around 300,000 visitors a year (Gomes 2017). A later addition to the park's exhibits comprised ethnic "gardens," which included reproductions of traditional Chinese, Japanese, Portuguese, and Filipino residences. The current study area corridor passes through a portion of Paradise Park near its northernmost border; where these recreated dwellings are located, along with associated trails, retaining walls, and a subterranean cistern. While the exact construction date of these deteriorating exhibits is unknown, they are assumed to date from the 1970s or later based on construction materials and associated promotional brochures, one of which is reproduced as Figures 21 and 22, below. Despite community opposition to Paradise Park for fear of increased traffic the park operated for twenty-six years before closing in January of 1994.

Figure 21. Undated Paradise Park brochure.

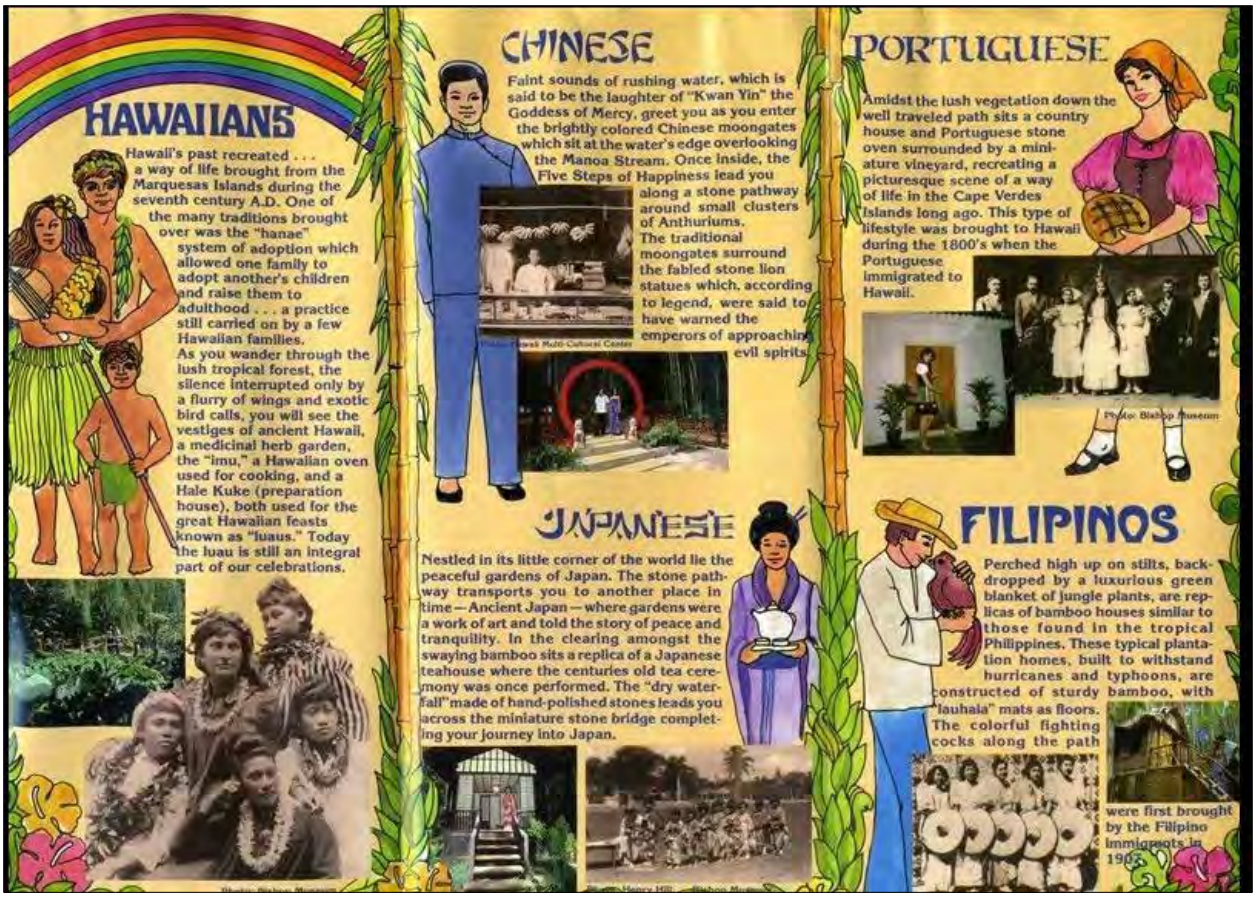


Figure 22. Undated Paradise Park brochure.

From 2004 until 2007, the former Paradise Park was the home of Halau Ku Mana, a public charter school (Gutierrez 2014). As of 2014, some Hawaiian cultural practitioners, such as *kumu hula* Michael Pili Pang, were hoping to start a Hawaiian cultural center in the former Paradise Park "2 floors of arts and crafts and studio spaces for halaus and other musicians to use. . . and eventually a museum to showcase Mānoa Valley, new gardens, and an amphitheater" (Gutierrez 2014). Community concerns over increased traffic, parking problems, and whether or not the roads could handle more vehicles were already surfacing despite the fact that over 100,000 people visit the area even though Paradise Park remains closed just to access the Mānoa Falls trailhead nearby (Gutierrez 2014). According to an October 24, 2014 television news broadcast, in order to address the concerns, if Paradise Park were to reopen as a cultural center they would be limited to 430,000 visitors a year (Gutierrez 2014).

Another television news broadcast published roughly two weeks later outlined the gradual, 3-phase rollout for the proposed cultural center (Tanaka 2014). James Wong was interviewed for this article and had been working on a plan to re-open Paradise Park for two years; he hoped the center would have an emphasis on hula and music and Queen Kaʻahumanu. To that end, he was planning a ten-million-dollar project: Phase 1 was to be renovations of the main building to create a museum and *hula halau* space by the end of 2015, Phase 2 consisted of the remodeling of the gardens, and Phase 3 the development of a *luʻau* house, with each phase opening in successive years. The project was to have been privately funded, Wong spoke of how he was born and raised in Hawaiʻi and that at 91-years old "what I am trying to do is preserve the Hawaiian culture since the state doesn't want to do it and OHA doesn't want to do it, somebody gotta do it" (Tanaka 2014). As of the writing of the article in early November of 2014, Wong had secured permits for Phases 1 and 2.

Many residents of Mānoa were concerned about the redevelopment of the Hawaiian Cultural Center because it would operate from 8 a.m. to 10 p.m. and serve alcohol and was expected to bring in over 400,000 visitors (Remadna 2015). One Honolulu City Council member spoke of how the property was preservation land and that "the people of Mānoa have always protected our preservation areas" and that the long-lasting effects would be negative; she also suggested closing it earlier to reduce the impact.

In order to renovate, Wong requested an extension of the original Conservation District Use Permit (CDUP), which was issued in 1966 (Serota 2016). Paradise Park received an approval in 2014 for a revision to the existing CDUP but because they did not act upon it within the designated time period, they were required to resubmit another extension request application. The additional extension request was denied, but the original CDUP remains. However, Paradise Park cannot proceed with any new redevelopment plans unless they complete either an Environmental Assessment or an Environmental Impact Statement, whichever is deemed appropriate.

Despite these delays, at the time of his death in late November 2017, Jimmy Wong was still actively pursuing his dream for the Hawaiian Cultural Center. His son Darryl has since taken over the permitting process (Gomes 2017). According to his obituary, once Jimmy learned of his maternal Hawaiian bloodline:

> He felt it was his kuleana to use his knowledge and abilities to help return the culture of Hawaii to its rightful owners and restore his lands in Manoa so his children, grandchildren and generations of displaced kanaka maoli could have a home where aloha could live and thrive. He never relinquished that dream of renewal and hope. obituary

Kumuola Foundation Cultural Learning Center

Since 2010, the Kumuola Foundation has operated a cultural learning center and working farm in the central-eastern portion of the study area, within Parcel 020. Kumuola is dedicated to sharing and teaching traditional Hawaiian arts and cultural practices with the local and greater world communities. The Kumuola Foundation operates several programs on the BWS-owned site, including: workshops and classes with traditional artists and practitioners, cultivation of traditional crops and medicinal plant species, and restoring and reviving the indigenous landscape with the assistance of students and community volunteers through the Kokua Program. The Kumuola Foundation partners with several educational, charitable, and cultural institutions such as Kamehameha Schools, Kapiʻolani Community College, Kuaʻana Native Hawaiian Student Development Services, and the Living Life Source Foundation, among others. The remaining acreage that comprises the study area is currently not in use and largely undeveloped.

PRIOR STUDIES

The earliest archaeological investigation in the vicinity of the current study area appears to be that of Thomas G. Thrum, who created a list of the *heiau* of ancient Hawaiʻi in the early 1900s. Thrum published his list of *heiau* in a series of articles in the *Hawaiian Almanac and Annual,* beginning with the 1907 edition. Of his investigations, Thrum noted the following in a preliminary paper titled "Tales from the Temples" published in the 1907 annual:

> This much is being realized, and expressions of regret have been freely made, that we are at least fifty years too late in entering upon these investigations for a complete knowledge of the matter, for there are no natives now living that have more than hear-say information on the subject, not a little of which proves conflicting if not contradictory . . . While these difficulties may delay the result of our study of the subject, there is nevertheless much material of deep interest attending the search and listing of the temples of these islands that warrants a record thereof for reference and preservation. (1906:49-50)

Thrum and his associates compiled information on ninety-six *heiau* located throughout Oʻahu (Thrum 1906:42). One must take into consideration that Thrum listed *heiau* that had already been destroyed prior to his data collection efforts in the early 1900s. Of the *heiau* in Honolulu and its vicinity specifically, Thrum stated the following:

> . . . it is to be said that the patient delver finds a liberal reward, but of all the temples that have come down to us in name by historian none now remain, and but one is left of those famed in tradition. S.M. Kamakau left the names of several heiaus and the locations of others that have kept us busy identifying in this Nuuanu, Wakea first built heiaus for the gods, viz.: Kupuanuu, Kupualani, Pakaalana-lalo, and luna, in the valley of Waolani, on the ridge joining Kapalama overlooking the valley of Keanaakamano, and some overlooking Nuuanu. These heiaus are said to have been the places of the eepa people and the many wizards residing at Waiolani. (1906:56)

Thrum mentions three specific *heiau* or *heiau* sites within the study area vicinity—Kawapopo, Mauoki and Kukaoʻo. The first only appears as a brief entry in Thrum's "List of Heiaus" as follows: "Kawapopo Heiau—Upper Manoa, on premises formerly of Haalilio; a small heiau, said to have been torn down prior to 1850" (1906:45). While he provides some more detail for the other two *heiau* thusly:

> Mauoki is said to have been of traditional Menehune construction with stones brought one by one from Kawiwi, Waianae. It was a heiau of good size, walled on three sides and open to the west that stood at the foot of the slope dividing the Manoa and Palolo valleys, Kamoiliili. It was torn down by J.E. Bush, as Minister of the Interior, in 1883, and its stones used for street work. (ibid.56-57)
>
> Of the Pauoa and Manoa heiaus little information is gathered, and that of a conflicting nature. The only one still in evidence is the small one of Kukaoo, of traditional Menehune construction, in Manoa valley, said to have been wrested from them in battle and rebuilt by Kualii [around 1700 {ibid.45}]. (ibid.:60)

More than ten years prior to the publication of the information provided above, Thrum reported the following details about Kukaoʻo Heiau in his 1892 article on Mānoa Valley:

> . . . On a vast rock pile, still stands a walled enclosure known as the heiau of Kukaoo, now overgrown with lantana and night blooming cereus. This old heathen temple dates back many hundred years. Its erection is credited to the Menehune's—or class of pigmies—but was rebuilt during the reign of Kualii, who wrested it from them after a hard fought battle. The Menehune's fort was on the rock hill, Ulumalu, on the opposite side of the road, just above Kukaoo. Previous to the battle, they had control of all upper Mānoa. After Kualii obtained possession he made it the principal temple fort of a system of heiaus. . . (Thrum 1891:112)

Over the century that passed since these first reports were made, Kukaʻoʻo Heiau has been recorded in detail and reconstructed as part of modern archaeological studies by Kennedy (1991), Cleghorn and Anderson (1992), and Tomonari-Tuggle (1998), which are discussed in finer detail below. In addition, Kukaoʻo Heiau was included in the first formal archaeological survey of Oʻahu conducted by J. Gilbert McAllister on behalf of the Bishop Museum during nine months in 1930. McAllister's purpose was "to collect information regarding the archaeology of Oahu" (McAllister 1933:3) and he made it clear that his investigation was a beginning rather than a complete account of all the cultural resources on Oʻahu. McAllister also made the following statement regarding the state of cultural resources on Oahu at the time, in his introduction:

> As the archaeological remains are those of the people found in Hawaii by the early voyagers, contact with Hawaiians was an indispensable part of the work. Not only are the sites being destroyed by the changes wrought by European culture, but with the introduction of exotic vegetation many sites have been completely hidden. Such remains would be as good as lost, were it not for the knowledge of them still treasured by old residents (*kamaaina*) of Oahu. With the passing of these old people most of this information will disappear. (ibid.)

McAllister cites Thrum's data, presented above, but adds to the description of nearby Kukaʻoʻo Heiau, which he designated Site 64. Kukaoʻo is located approximately 1.5 miles southwest of the current study area (see Figure 8). He describes it as "a small heiau measuring 50 by 40 feet" located "on the premises of C.M. Cooke, Jr." in Mānoa Valley (McAllister 1933:79); and he provides two plan maps that are reproduced as Figure 23 below.

Regarding Kawapopo Heiau, McAllister was unable to locate the site although Thrum stated that Kawapōpō Heiau was located on land awarded to Haʻalilio. However, in 1975, "the remains of a platform that could be this *heiau* were archaeologically identified" (Tomonari-Tuggle 1998:30) by Luscomb (1975) at 2626 Ānuenue Street, approximately 200 meters southeast of Kukaʻoʻo Heiau. Tomonari-Tuggle reports that "new residents of the home at this address exposed a platform from which taro plants shortly thereafter appeared to spontaneously emerge, suggesting that corms may have been dormant in the structure for years" (1998:30). Luscomb recorded the roughly 7-meter square, raised platform that had a smaller (3-meter square) platform in its northwest corner with coral atop it. As reported by Thrum the property was part of R.P. 638 granted to Hana Haʻalilio.

With the advent of Cultural Resource Management (CRM) in the 1970s, and as a response to stricter historic preservation laws and increased modern development, archaeologists began recording more discrete sites and performing test excavations throughout the state. While there have been numerous studies conducted within Mānoa and the coastal portion of Waikīkī Ahupuaʻa, relatively few archaeological studies have been conducted within the immediate vicinity of the current study area. However, since the 2000s, a handful of studies have been conducted near the current study area, the results of which are summarized below and the locations of those nearest the study area are depicted in Figure 24.

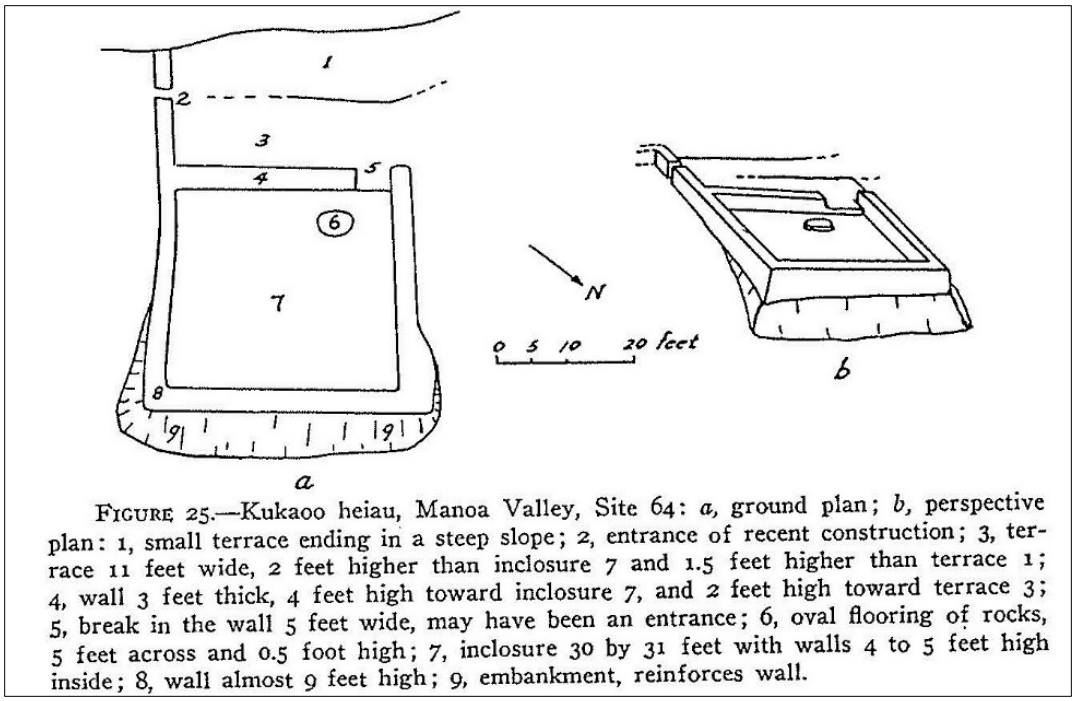


Figure 23. Site map of Kukaoʻo Heiau by McAllister (1933:79).

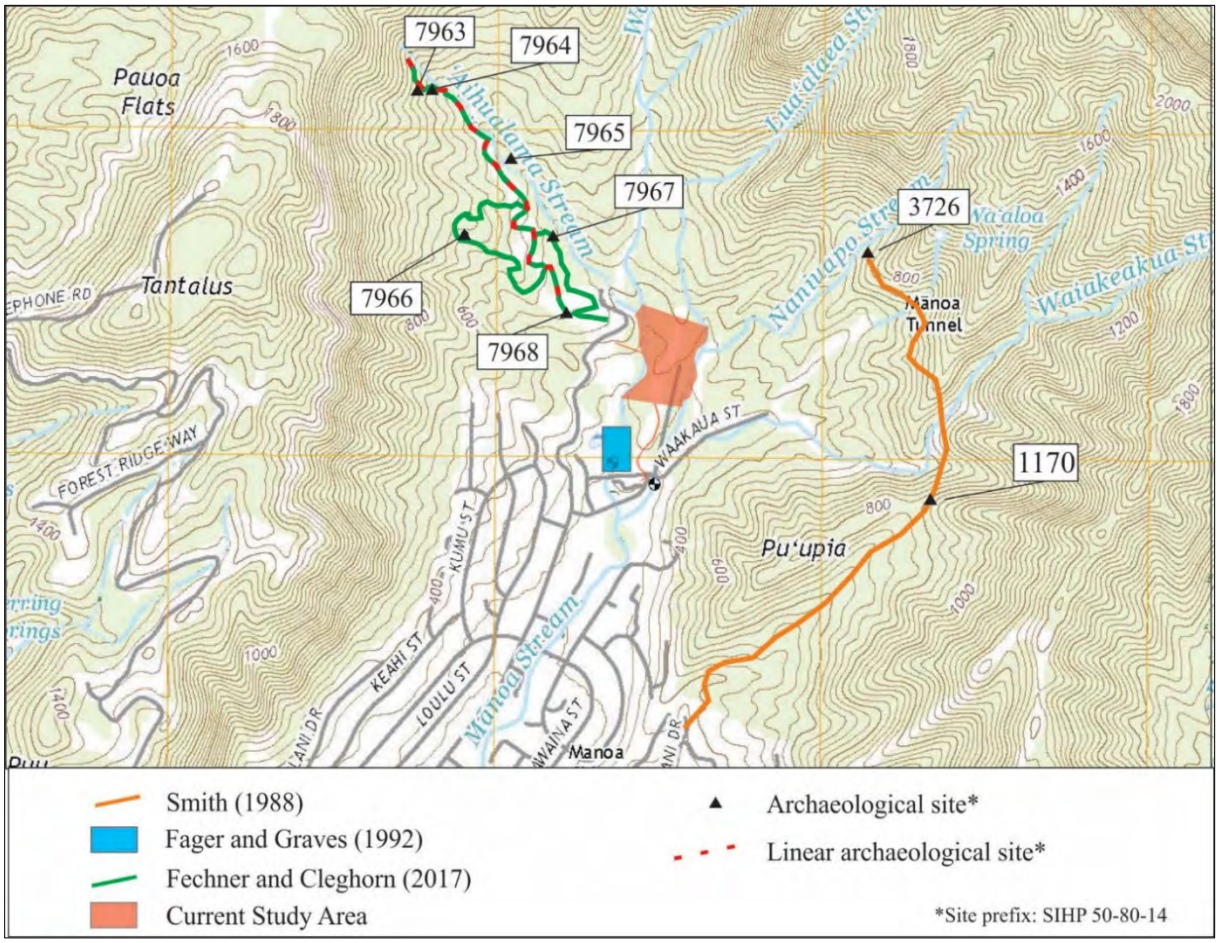


Figure 24. Locations of previously-identified archaeological sites and studies conducted near the current study area.

In 1988, an archaeological survey was conducted by Marc Smith of the State Historic Preservation Division in support of the construction of the Puʻu Pia hiking trail, located approximately 0.5-mile east of the current study area (see Figure 24). During the survey, one new site was recorded, the Puʻu Pia Trail Site (SIHP Site 50-80-14-3726), consisting of a rectangular platform and a stone mound. Smith concluded that the site may be related to the development of a nearby *ti* plantation. During the survey, Smith also revisited a previously-identified site, the Mānoa Mounds Complex (50-80-14-1170), which consisted of two spatially-distinct components containing a stone wall, mounds, and modified outcrops. The author made no speculation as to the function or date of 50-80-14-1170 (Smith 1988).

During the 1990s, Archaeological Consultants of Hawaiʻi conducted an archaeological examination of Kukaoʻo Heiau (Kennedy 1991). A search of reports filed at the SHPD library failed to produce a copy of this letter report. However, Tomonari-Tuggle states that Kennedy "remapped the *heiau* and surveyed an adjoining area, both belonging to the Wrenn family at the time" (1998:46).

In 1992, Pacific Legacy conducted an archaeological inventory survey (Cleghorn and Anderson 1992) of a 2.7-acre parcel, located 1.5 miles south of the current study area. As part of the study, the Kūkaʻoʻo Heiau (SIHP Site 50-80-14-64) was revisited and documented in detail, and the authors provided recommendations for long-term preservation and interpretation at the site. In 1998, a historical research study (Tomonari-Tuggle 1998) of Site 64 was completed by International Archaeological Research Institute, Inc. as part of an Interpretive Master Plan for the Mānoa Valley Cultural Heritage Foundation that provided further recommendations for the continued preservation and interpretation of the *heiau*.

In 1992, PHRI completed an archaeological inventory survey to support the construction of a proposed well (Fager and Graves 1992) on a 0.34-acre parcel located approximately 0.1-miles southwest of the current study area (see Figure 24). No archaeological resources were identified as a result of the survey, and the authors recommended no further work at the project location.

In 2017, Pacific Legacy completed an archaeological inventory survey (Fechner and Cleghorn 2017) of the interpretive trail system at the Lyon Arboretum. The linear survey encompassed approximately two miles of existing trails, comprising an area of 0.67 acres, located within 0.75 miles northwest of the current study area (see Figure 24). Six newly-identified archaeological sites (SIHP Sites 50-80-14-7963, 7964, 7965, 7966, 7967, and 7968), comprising fifty-one individual features were recorded during the study. Sites 7963 through 7967 were interpreted as agricultural features; Site 7968 was identified as the ʻAihualama Falls Trail, which functions as the main access trail for the arboretum. The study concluded that all six sites likely dated to the mid to late twentieth century and were constructed in connection with the development of the arboretum. All six sites were determined significant under Criterion (d) and recommended for preservation, with the exception of Features A-C at 50-80-14-7968. On-call archaeological monitoring was recommended for construction related work on the project.

In August of 2018, ASM conducted an AIS (Rechtman et al. 2018), which coincides with the current study area. As a result, eight newly-identified archaeological sites totaling thirty-one individual features were recorded (Figure 25). All the sites were assigned State Inventory of Historic Places (SIHP) numbers and appear to date from the Historic Period. The sites include four agricultural complexes (Sites 50-80-14-08769; 08770; 08771; and 08774), an *ʻauwai* (Site 50-80-14-08772), a man-made cave shelter (Site 50-80-14-08773), roadway segments (Site 50-80-14-08775), and a middle twentieth-century refuse dump (Site 50-80-14-08776). Additionally, several modern structures, including historical recreations, in various states of disrepair were observed within the western corridor portion of the study area between Waihī Stream and the Lyon Arboretum Access Road. These structures were associated with Hawaii Paradise Park, a former cultural, botanical, and zoological attraction and theme park which operated from 1968 to 1994. Although activities associated with the 1895 Battle of Mānoa likely took place within the current study area, no physical evidence of any such activities was observed.

Rechtman et al. (2018) concluded that while it was shown that all eight sites suffer varying degrees of reduced integrity as a result of impacts from invasive vegetation, all of the sites do retain sufficient aspects of location, design, setting, materials, workmanship, feeling, and association to be evaluated as being significant under Criterion d for the information that has been collected from the sites relative to middle nineteenth-century through middle twentieth-century land use practices. Given the nature of the proposed land use within the study area (the development of the Hālau Wai Mānoa), ASM recommended preservation for all the sites, which could be either or both passive or proactive and may include further archaeological study, restoration and reuse of the sites, as well as interpretation.

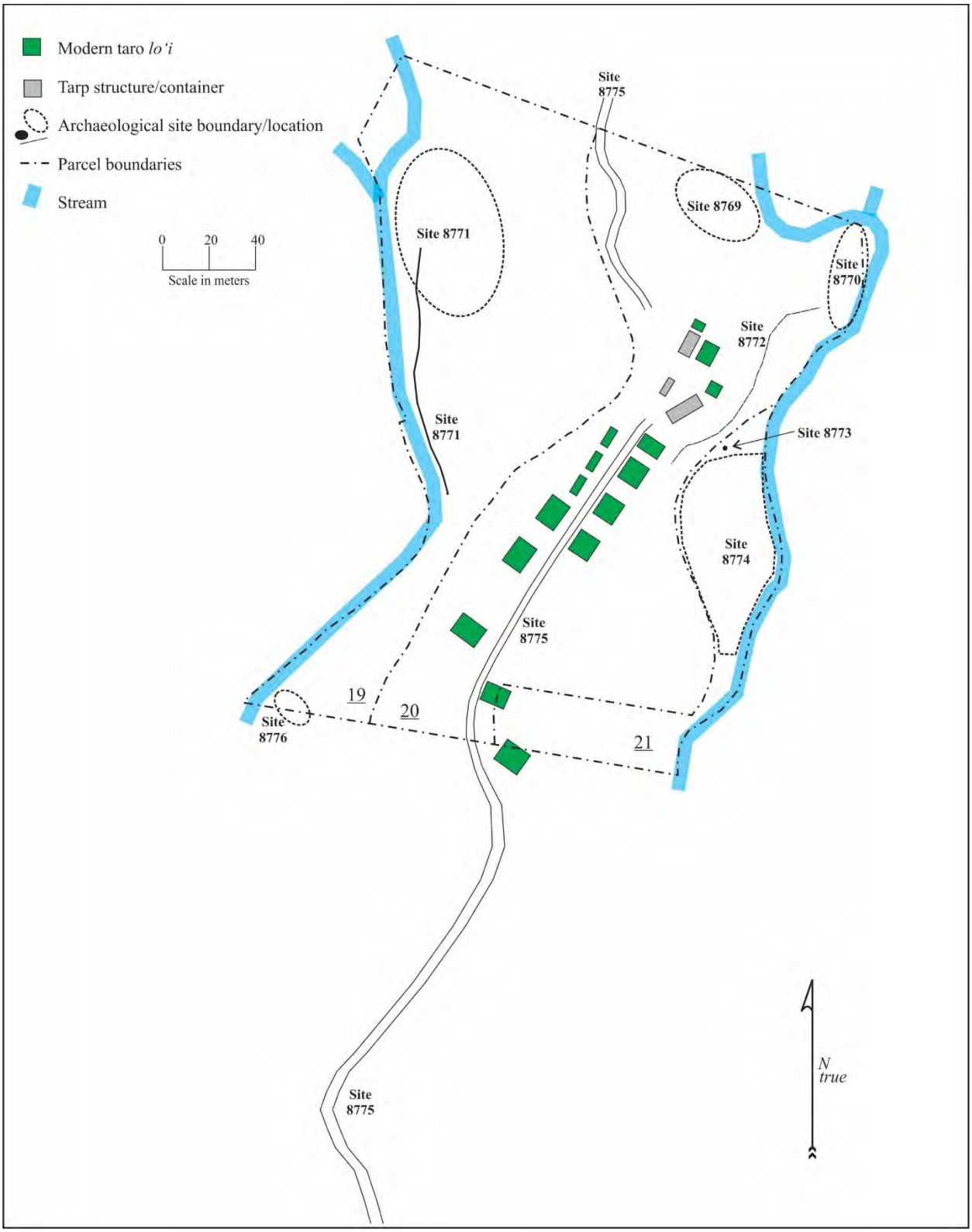


Figure 25. Locations of sites recorded within the current study area (Rechtman et al. 2018:33)

3. CONSULTATION

Gathering input from community members with genealogical ties and long-standing residency or relationships to the study area is vital to the process of assessing potential cultural impacts to resources, practices, and beliefs; for these individuals ascribe meaning and value to traditional resources and practices. Community members often possess traditional knowledge and a level of understanding that is unavailable elsewhere in the historical or cultural record of a place. As stated in the OEQC Guidelines for Assessing Cultural Impacts, the goal of the oral interview process is to identify potential cultural resources, practices, and beliefs associated with the affected study area. It is the present authors' further contention that the oral interviews should also be used to augment the process of assessing the significance of any identified traditional cultural properties. Thus, it is the researcher's responsibility to use the gathered information to identify and describe potential cultural impacts and propose appropriate mitigation.

ASM in consultation with BWS and PBR came up with the following list of potential interviewees for the current study: Clarence Olivera, Darryl Wong, Kuki and Nick Navales of Kumuola Foundation, Aunty Pat Bacon, Malama Mānoa, Mary Cooke of Mānoa Heritage Center, Kamana Beamer and Noelani Puniwai of Hawai'inuiākea School of Hawaiian Knowledge, Bruce Keaulani of Living Life Source Foundation, Duane Preble, and Deane Neubauer. To that end, the primary author composed a request for information regarding traditional cultural practices within the current study area, which was sent via email and followed up via telephone when possible. Despite seeming interested at initial contact, Clarence Olivera, Darryl Wong, and Bruce Keaulani did not make arrangements with the primary author to contribute to the current study after multiple attempts. Malama Mānoa, Mānoa Heritage Center, Noelani Puniwai, and Deane Neubauer responded to the request for information in the negative—stating they had no knowledge to contribute; and no response was received from Kamana Beamer.

Jenny Leung of Mānoa Heritage Center suggested that the primary author contact Stuart Ching, provincial archivist for Sacred Heard of Jesus and Mary, but he responded that he was unfamiliar with the property. Similarly, Darryl Wong suggested the primary author contact his brother Warren and his sister-in-law Napua, which was also done, but no response was received after multiple attempts.

Thus, out of the original list of individuals and organizations contacted only Kuki and Nick Navales of Kumuola Foundation accepted the interview request. One other interviewee, Damon Kakalia who is also a member of Kumuola Foundation agreed to share his *mana'o*. The primary author conducted informal talk-story interviews in person and on-site at the study area. As part of the interview process and with the consent of the interviewees, the interviews were audio recorded for note taking purposes only (audio files not available). Summaries of their interviews are presented below. Two additional people Mary Bacon and Sarah Preble chose to briefly contribute when the primary author attempted, over the telephone, to contact their family member or spouse, respectively—although not full-fledged interviews, their contributions are also presented below.

MARY BACON

When the primary author tried to contact Aunty Pat Bacon, her daughter Mary Bacon spoke over the telephone instead, for Pat is not in good health and tires too easily these days. Mary said her (*hānai*) grandmother (Mary Kawena Pūku'i) and her mom were not farmers and that they were more into traditional stories and Hawaiian newspapers etc. However, Mary insisted that her mother and grandmother would say that any kind of education is good and should never be considered a bad thing – so they would support the proposed HWM project. Mary also drew parallels between the proposed HWM and another project already carried out by BWS in Halawa called the Xeriscape Garden. Upon further investigation, the Xeriscape Garden focuses on xeric, drought-tolerant plants and teaches water conservation through educational tours, workshops, and plant sales.

SARAH PREBLE

When the primary author contacted Duane Preble, his wife Sarah took over the telephone and spoke briefly about the proposed project. She stated that when Paradise Park was being considered in the 1960s, there had been commentary from local people who were practitioners or knew practitioners who had concerns about the area. She mentioned that she and Duane spent a lot of time working against the development of Paradise Park. Per Sarah, the Mānoa Valley community thought it was a safety hazard and Duane brought all the people together including Napua Wong, as well as representatives of Noelani School. She said that Mānoa community members feel they got taken advantage of by the Paradise Park thing because they were opposed to it but it went through anyway. Per Sarah, Wong was able to secure the purchase of the land from the Catholic Church in the early 1960s only because the state-wide planning meeting took place miles away from the Mānoa community on Kaua'i.

PAULINE "KUKI" NAVALES

Kuki was born in 1981 and is a *Kumu Hula* and teacher in the Hawaiian Studies program at Nuʻuanu Elementary, she is a founding member of Kumuola Foundation. When Kuki and her husband Nick started Kumuola Foundation in 2009, Kuki had already been a cultural teacher in the Department of Education Hawaiian Studies program for about a decade. Their original space in Waikīkī *makai* at International Marketplace comprised a 4,000 square foot upstairs/downstairs space that they transformed with flooring for *hula*, and a recording studio. They brought in cultural programs such as *hula* from Japan, they pounded *kalo* every week, and had *hula* shows at the food court, as well as chant practice and *hula* workshops, some concerts, and Lei Day celebrations. However, the renovation of International Marketplace forced them out, which brought them to Parcel 020 of the current study area.

When asked if BWS was planning on making the property a learning center back in 2010 when they secured the lease, Kuki responded, "it was just a space" and that BWS wanted someone "to do their job." She further qualified that statement by explaining that Kumuola are "the stewards of the whole space not just the water, not just the land—everything goes hand in hand." She recalled that when Kumuola first came to the property in April 2010, the whole area was covered in jungle, "there was just one road one *puka* to go in and out—this was not open" before they started clearing the trees. She said that when they came up there they found "plenty rubbish" from the prior tenants, including tractors in the field and household rubbish.

Regarding how they went about clearing and planting in the space, Kuki said they have work groups throughout the year that range from grade school students thru college, as well as community groups that come from around the world. She said that every group that comes is different and that they customize their visits to serve the purpose for each group. Kuki also said that the main thing is for visitors to touch the land and to give back in a respectful way to Hawaiʻi whether you live here or are just visiting, "do something to *aloha ʻāina*," which has been going on since day one. After the initial clearing work-days, Kumuola started growing and harvesting *pohole* fern because fiddleheads had become popular in the restaurant scene and they were able to sell them, which helped provide enough income to pay for things they needed for the farm, such as tents and a weedwhacker. Kuki also talked about how they "jumped right into taking care of the gardenias the first year" because they were already there. However, she said they had to learn not just how to tend to them but also how to prepare them for sale and how to market them.

Kuki and Nick recounted that the *imu* went in during their second year on-site. When asked about the purpose of the *imu*, Kuki responded that it was more for Kumuola fundraising purposes and they used it a lot in the beginning of their time on-site to pay for rent. She said it was always just a small tight group that processed the food and that they had to be knowledgeable about the practice and skills involved in the *imu*, so they had specific people for the *imu* house activities. Kuki also talked about how their shipping container had been broken into multiple times during the early years and that thousands of dollars-worth of equipment was stolen. However, they went on television and people donated things to replace what was stolen.

When asked if during their vegetation clearing they found any indications that the current *loʻi* had been *loʻi* prior to their arrival, she responded in the negative and stated that they created the *loʻi* themselves. She further explained that the *loʻi* they created are small compared to those at Hāʻena, Kauaʻi but that they are ideal for what is needed at this point in time. She talked about knowing that this percolation of the water is feeding the aquifer system underneath and that in twenty-five years, somebody will be drinking it, which ensures our "quality of *wai ola*—waters of life." She insisted that although it is BWS's job to *malama* the *wai*, they are doing it because she feels it is their *kuleana* and that Kumuola is perpetuating what her people have been doing across history. She spoke of Mānoa Valley's history of being full of water and "thus plentiful *loʻi kalo*—that's why we continue to do *loʻi kalo*." She emphasized that if they were on the dry side of the island they would be growing something else, but because they are in a wet area the "waters are important to *malama* because they need to be here forever more, for our children, our generations." She summed it up by saying, "our passion is that we have life for our kids' kids' kids' kids—generations yet to come, and this how we teach: our little seeds being planted in every group that comes – or even us going into the Department of Education system which is happening recently."

When asked how she learned about *kalo* farming, Kuki recalled how growing up on Maui she and the other kids had *kuleana*, just like the adults; when it was time to get ready for a party or *lūʻau*, her dad would say "c'mon you guys we gotta *huki* [pull up taro/harvest]" and they did. She spoke of how her father was an organic farmer most of his life, and she grew up "cleaning yard" with him. Additionally, her Papa is from Hana, Maui and he does *lāʻau* or traditional healing with plants and that some of the plants on-site had come from his home. She also shared that her family are *kalo* farmers from Kipahulu, Maui and that is where a lot of their first *loʻi kalo* came from; primarily Lehua,

‘Elepaio, and Haokea varieties. After their son was born, Kuki and Nick decided that it was important to provide a space where their kids could learn to grow up in a healthy lifestyle beyond the urban city life, similar to the way she was raised. They had a choice to either move back home to Hana or create the space and bring Hana to O‘ahu.

In regards to developing the cultural learning center, Kuki stated that the *lo‘i* are their focus because of the abundant water and that “the purpose of this space is to give life.” She went on to say that it is their hope that BWS understands their *kuleana*, to *malama* the water and the *‘āina* and ensure everything is healthy, which is what Kumuola teaches the children. She added that she and Nick teach by using the practices of their *kupuna*; for instance, they do not use poison (weed killer/insecticide) because their *kūpuna* did not; rather, they plant according to the stories of their *kūpuna* and the moon cycles. They travel to visit *kūpuna* on Maui and bring the *kūpuna* to the site to learn directly from them and ask for their blessings. Kuki stated, they made the *lo‘i* because they had the resources they could tap to do so and they hope the *lo‘i* “will be here forever more because that’s what our *kūpuna* did to ensure that our children will have food and life.” Thus, in her opinion, “it’s a cultural stand—us making these *lo‘i kalo*.” Furthermore, Kuki stated, “we would not like to see that these *lo‘i kalo* ever be moved, filled, [or] changed.”

Kumuola Foundation has a Hui ‘Ohana program that consists of workshops that feature a master artist and practitioner. For instance, they had the *kapa* practitioner Kaiulani DaSilva hold a workshop and she brought her *kapa* tools and taught her craft to about thirty people from the community and abroad. Attendees visit for the whole day and have lunch on site. The students are encouraged to participate—these workshops are hands on learning experiences not a lecture series, best summed up in the following phrase: *ma ka hana ka ‘ike* (in the doing is where there is knowledge). Kuki insists that is how children and everybody learn here in Hawai‘i.

Regarding their curriculum, Kuki stated that the plants are a teacher and when the students visit, they customize the activities based on what the students can handle. For instance, kindergartners simply deal with non-living versus living, they touch everything, and they feed the pig; other grade levels go deeper and make the dye from the plant, and dye the material, and eventually use what they make. When asked what plants they grow for dying purposes, Kuki listed the following: *‘ōlena*, *‘uki‘uki*, albizia, *kūkui*, *kalo*, *hau*, and *‘alaea*, which is a mineral substance rather than a plant.

Kuki said they also teach the cultural significance of the plants and their uses, so it is a wide range in education. She also spoke of the recently developed community outreach type programs through the Department of Education referred to as “extended learning gardens.” Kuki explained the program as where Kumuola extends from the farm into the public and private schools and provide hands-on learning and cultural education revolving around the *lo‘i* on-site. She said that she herself goes into the schools to invite the students to their farm as an extended learning garden. Kuki also talked about how the learning center has certain periods that are busier than others, particularly in spring and the winter, because all the schools are on the same curriculum, so everybody wants to visit at the same time.

Kuki spoke of how some of the groups that utilize the learning center do not have the funds to contribute to Kumuola Foundation. However, Kuki talked about finding other ways to cover the students’ admission or bus fees, which for a bus of 60 kids costs $400.00. For instance, they tell the schools to “just pay for your bus and you guys come for free.” She said that they do not really worry about it because they want the kids to come—that’s the purpose and that there is an established give and take with a lot of the groups that come. Some schools or groups have no money while other schools can help pay for things like axes, wheelbarrows, or gloves for the children. A lot of the groups that visit the learning center have been coming for years and continue to come and they continue to spread the word. As a result, Kuki does not have to do much promotion for the learning center anymore.

In addition to the hands-on learning activities for students of all ages and grade levels; high school and college students often visit the space to do fieldwork for research projects. For example, a medical student researched traditional Hawaiian medicinal plants by starting a garden and presented Kumuola with her findings. While another group of marine biology majors studied water turbine systems.

Hula students and practitioners also visit the property to gather materials and learn to use plants such as *ti* leaf, *palapalai*, *kiele* (gardenias), *‘awapuhi* (gingers), and *kūkui* to make *lei* and different kinds of performing accessories. Kuki spoke of the significance of *hula* and how it connects her and others to nature and should be respected because “*hula* is the storytelling of nature.” She went on to say that through *hula* she has developed an understanding that has influenced what Kumuola does, the *‘āina* feeds them and gives them everything they need for their cultural practices and they take care of the *‘aina* and the *wai* because it is going to provide them what they need.

Kuki also spoke about how their plan has not changed much since day one, which was to *malama* the native Hawaiian forests by repopulating them, and to create a space where she and others can come to practice and be who

they are. She referred to her experience on the property over the last decade as "lifegiving" and invoked the concept of Kumuola or the tree of life and remarked that "so many branches can come off of the tree of life." She went on to explain that statement by saying that there are so many life lessons that can be learned in one day on the property by visitors at every level—from 1-year old to 100 years old, "everybody has a place here." To that end, Kuki has developed relationships with various educational programs and fifty community groups including Mānoa Heritage Center and Malama Mānoa. Kuki also stated that just under 2,000 kids come every year because the different schools she works with closely like what's happening and keep coming back year after year. Thus, she was able to say that if they have to walk away from the cultural learning center on the property "the legacy we left behind is amazing, this was created by Kumuola *'ohana* and this was laid here forever more to feed thousands of kids."

When asked about the overall cultural impacts of the proposed HWM, Kuki responded that the impacts would be positive. She stated, "it's always an open door—come inside, come in the gate, do your thing, be happy, give back." When asked about the potential direct impacts to the Historic Period cultural properties recorded in the study area, such as walls or mounds and whether she would prefer to have such features preserved and incorporated into the HWM with interpretive signage or simply preserved and avoided, she responded that it would depend on what the purpose of the feature is. She spoke about an *ahu* that Kumuola created from rocks they collected from the area, "it's a place we respect, [where] we put our first fruit" as an offering; so, she knows the purpose of that stacked feature. However, the purpose of some of the other features on the property are unknown to her and she said there are other people who do understand their significance and purpose.

She also mentioned that the Hawaiian culture is closely tied to the spirit world; she then gave the example of an *ahu* that is activated when it is touched, and certain incantations are made. She stated that even though she and Kumuola have been on site for ten years, they don't know the features' exact potential purpose and that somebody would be needed to *malama* that *kuleana.* Thus, according to Kuki, when you know what the feature is, then you know what the protocol should be to *malama* the feature and the practice associated with it. To that end, she agreed any such features should be accessible only to traditional practitioners and those who are knowledgeable. She went on to say, "I think it could be shared with people who know what's happening there... then let the practice happen. This is the space of our people and this is what we do today—we continue the practices of the culture because this is who we are." However, she insisted that traditional cultural properties should not be treated like an attraction at a theme park, "oh tourists this is what this is—this was a sacred object, but today it's just a story" because "that degrades the object."

Kuki went on to discuss how all too often she sees that developers are not culturally sensitive. She talked about the importance of understanding that the people of Hawaii are spiritual people and that things happen beyond what our eyes can see. She stated, "It's not just the physical world, it's beyond. We erect and activate a space, which is part of our purpose here—to be a beacon of light and share the light of *aloha*." She also mentioned that if you don't know how to take care of things in the proper way bad things can happen and people could get hurt; and said, that's why people go to places and bless them. Per Kuki, the bottom line is that you have to know exactly what the cultural property is to be able to know if it is *kapu* or if one is free to visit it and take care of the spot.

When prompted with the following statement, "For you the experience you are offering folks who come visit here is what you guys are doing as opposed to those cultural properties" Kuki responded yes and that is just the safest bet for us. She then spoke about how the red dirt her people use for healing is called Lua'alaea and is present on-site. However, she does not use it for healing because she hasn't yet had the teaching from the "master practitioner of healing *lā'au* medicine who says, 'this is its purpose; this is how you use it – go!'" Kuki agreed when prompted that even though you may not understand something, and you are not interacting with it that it should still be protected. She again emphasized the importance of cultural sensitivity and safety both physical and spiritual, "especially when we are dealing with children."

The primary author mentioned that the features recorded on the property appear to date from the Historic Period rather than Precontact and were likely agricultural in purpose. When the primary author mentioned the complex of walls located near the stream that might have been *lo'i,* Kuki suggested that those features could be more the focus because of their association with the *wai*, which is the proposed focus of the HWM. She also suggested that "perhaps the [proposed] learning center should focus on what is known, what is established, what is safe, and what is successful" referring to what she and Kumuola Foundation have built in addition to the ongoing *malama* of all the Historic Period features on the property.

Regarding the possibility of losing their lease to someone else who will develop the HWM, Kuki stated that she understood and accepted that BWS and the state have protocols and policies. However, she expressed that Kumuola

has already established a learning center that is active and successful. She did opine that it would be amazing if BWS could put in a facility that could support Kumuola, which she considers the next step to an ideal learning center that they have already established there. If BWS are willing to provide additional funding for improvements, she emphasized how she and Nick have been on-site nearly every day for the last ten years and have thus learned through experience what type of structures and building materials would be appropriate for the wet conditions on site. She stated that Kumuola has many ideas for expansion.

When asked if the best approach would be to integrate what BWS wants to impart on the community with the traditional Hawaiian farming and cultural practices that they are perpetuating on the property she responded that it is one and the same; that conservation and what Kumuola is doing go hand in hand. She continued by saying that she wants to support the HWM because it is "for our *keiki*, for the future" and reiterated that is why she and Kumuola Foundation take care of the *ʻāina* and the *wai*. She also said that Kumuola Foundation and BWS working together would be ideal. Although Kumuola already take students to the stream to teach them about watershed management, the impact of invasive species on native plants and animals, etc. Kuki mentioned that Kumuola would be happy to speak on behalf of BWS and promote their curriculum (distribute handouts, host a BWS representative).

In regard to the future of the space as the HWM, Kuki expressed her concern that they do not want the property to become just a tourist attraction because she considers the space a treasure and she wants to protect it. Kuki said that all she can ask is that the BWS and the next stewards be *mahiʻai* (farmers) who love and care for the land in the right way—follow the model of our king: "*Ua mau ke ea o ka ʻāina i ka pono*" (the life of the land is perpetuated in righteousness). She also emphasized the importance of place-based knowledge; stating that whoever takes over HWM needs to be knowledgeable about Mānoa Valley and well-versed in the associated place names; including the various names of the winds, the rains, the mountains, and the streams so that the knowledge can be perpetuated. She mentioned how most of the street names in Mānoa valley are named after different varieties of *loʻi kalo*, which is a testament to how the valley was full of *loʻi* up until 1923, when big rains flooded the whole valley and many people abandoned their *loʻi.* It is her opinion that through the application of this place-based knowledge, the culture is kept alive—part of a process she refers to as cultural activation.

Kuki further defined cultural activation with the following example. She spoke of a child who comes up to the learning center and listens to Nick who has been taking care of the land and who knows it deeply. Because of his intimate knowledge of the subject matter, it becomes alive and real for the students and the participants. She went on to say, "when the caretaker/storyteller/group leader/guide knows and lives what they are teaching and is able to share that *manaʻo* [thoughts and opinions] that *ʻike* [understanding] because its REAL! This is culture." In her opinion, this type of learning experience stands in stark contrast when compared to being taught by someone who has only studied the plants and the landscape in books and is coming straight out of school to teach.

When asked what her concerns and priorities are as one of the current stewards of the property if they have to pass their *kuleana* on to someone else, Kuki responded as follows: daily water checks and maintenance of the *ʻauwai* system to make sure it is running well; keeping the invasive species like California grass and *maile pilau* vine under control; maintaining the *loʻi*; and protecting and preserving the older cultural properties. She also mentioned that when they first came to the property they had wanted to restore the *loʻi* near the stream, which she said is "still a part of the vision" for the property. She also said that she hopes and prays that whoever takes over has respect and love for the property, because she considers it like walking into a home, "into our home at this point, and you ask for permission" rather than act as though you own it. She insisted, "we never did own this *ʻāina* we don't take advantage of it" and that she and Kumuola respect the land because "that's how our culture teaches us." She then mentioned the spiritual things and cultural practices that she and Kumuola do that other people may not, such as pray and talk to the trees, the land, the water, and the heavens, as well as their *kūpuna*. "We talk to the caretakers who were here before us and they talk to us in our ways that we hear, and this is how we have been moving in the last ten years, so our plan to give to somebody else-it might evolve in ten years because it's not our plan it's the land's plan, it's god's plan, and that's how we've been blessed."

Regarding the legacy of their work on the property, Kuki spoke of the younger people who asking questions such as: "How did you folks start this?" "This is something I would like to do. How do you start a nonprofit?" Then she said that she had done roughly 30 interviews with interested young folks, "so yeah, it is a seed for others." Kuki lovingly summarized her connection to the property, which she referred to as a blessing multiple times, as follows:

> We have really connected to the *ʻāina,* this place, we feel it's embraced us and we have high respect for this area, because we know the history of this space and how it was meant for the heavenly ones.

> The chiefs, and the kings, and the queens roamed in this area—not just anybody. And so, we know these stories and so we trod respectfully, and we ask—it's not only on one humanly level—we talk to these trees; they are Kumuola our teachers of life. We talk to the *ʻāina* we talk to the *wai* and we pay attention to it—all of everything, this whole celestial universe and that's how we have been moving accordingly for the last nine years.

NICK NAVALES

Nick was born in 1981 and is a *Kumu Hula* and teacher at Kumuola Cultural Learning Center and Farm, he is a founding member of Kumuola Foundation, and performs as a musician. According to his wife Kuki and colleague D, Nick is also whatever he needs to be: messenger, the great narrator, the water man, the taro farmer, etc. Nick grew up on Oʻahu and remembers a couple of elementary school experiences at Paradise Park, in particular he remembered the bird riding the unicycle and the animatronic dinosaurs.

Nick recounted the origin of Kumuola Foundation, which began in 2009 when they were offered a space in the international marketplace in Waikīkī to have a classroom. Per Nick, "all we had to do was invest our family money" and soon they transformed a bar into a classroom space. Prior to that, Nick and Kuki were in *hula*, training to be *Kumu Hula*, and were also cultural teachers at Moanalua Elementary in the *mākua kupuna* program. Thus, with the opportunity at International Marketplace Nick and Kuki got a crash course in business and set up Kumuola Foundation as a non-profit. Nick recalls making and producing music in his recording studio at the original Kumuola Foundation space, in addition to hosting a farmers' market. About a year later (in 2010), Queen Emma land company decided to tear down and renovate International Marketplace, but Nick says that they were already looking for a space to go *mauka-makai* because their programs were in the whole *ahupuaʻa* of Waikīkī.

They found out about the space within Parcel 020 of the current study area and put a bid in for cultural space and they continued the work of Kumuola Foundation. He went on to say that they had the resources and just needed the classroom. To that end, they tailored the property into a classroom and a sacred space where Nick says, there are a million things happening and he feels honored that he can expose students and visitors to it. He went on to say that Kumuola gives the visitors culture tied into Hawaiʻi and imparts their *kuleana* of how to give back to Hawaiʻi, and that with this knowledge they can return to wherever they are from and give back to Hawaiʻi.

When asked if BWS was planning on making the property a learning center back in 2010 when they secured the lease, Nick responded "no way—it was a flower farm." He went on to explain that the previous tenants were a Japanese family, the Kogas, and that the "old man" had two or three houses on the property in addition to a 20-acre flower farm since roughly the 1920s. However, after he passed away his daughter was unable to handle the entire operation and BWS put the land up for lease. Nick recalls that when they first came onto the property there was a bamboo forest all the way up to where the Kumuola tents are today, which was the only cleared area covered in grass. When showed a historical map of the property with the former location of a structure, Nick agreed that the grassy area likely coincided with the former structure (see Figure 20). He then spoke of a couple of work days in April of 2010 during which they dedicated a hundred people to cleaning up the rubbish they had found when they first arrived.

Nick said that the first thing they did after clearing overgrowth and rubbish from the property was propagate *pohole* fern, which they had found in the valley. They brought in 60 guys from UH and made a big line and they all *laulima* (worked together). Today, *pohole* harvests continue to help provide for the farm. Nick's knowledge of plants emerged from his involvement with *hula* since the age of 13. Per Nick, when *hula* entered his life, plants came into his life because as a *hula* student you learn how to take care of plants in a needs-based way. For instance, through gathering materials for his *hula* practice, he learned that *palapalai* needs shade and that if you go to the forest and cut down the trees the *palapalai* will suffer.

Regarding using the *imu* to fundraise during the early years on-site, Nick added that it was also a cultural activity because it was community building.

When asked how he learned to be a *kalo* farmer, Nick replied he did not grow up around it. Unlike Kuki, Nick learned as an adult. In 2009, he and Kuki began visiting their friend's land in Waiheʻe (Maui), where they practiced caring for and harvesting his *loʻi kalo*. In 2010, after a year or two of practice, Nick and some helpers hand-dug the first three (northernmost) *loʻi* that are still active on the land (Figure 26).

Figure 26. Annotated plot layout of Kumuola Cultural Learning Center drawn by Nick Navales.

Nick talked about how the purpose of the Kumuola Cultural Learning Center and Farm is to enrich the people who visit and that it's all about "what has come before and why we lost all of Hawai'i" he went on to say "we're just turning the tables, it's just a new time for us."

When asked if he would want the HWM to perpetuate what he started, he responded "definitely" and went on to say "we put our hearts and bled for this place" and that for BWS to open it up to the public or to a bigger company or somebody with more money is hurtful for them, but he understands the situation of agriculture in Hawai'i. He also said that the idea of the proposed HWM is "weird for us because we are already doing it, this is Kumuola Cultural Learning Center and Farm." He further stated that the proposed curriculum for the HWM with its focus on water conservation and watershed management is already integrated into Kumuola's curriculum.

When the idea of preserving the historic sites and perhaps including some interpretive signage was proposed to Nick he was in favor of it as a learning opportunity. However, Nick agreed with Kuki that access to traditional cultural properties should be limited to traditional practitioners and those who are knowledgeable of their significance. When asked about his understanding of cultural practices in the parcel before Kumuola and Koga, Nick responded that he was still trying to find it. He went on to say "you don't know who you [are] walking on top; who came before us" so, he always walks with cautious respect. Nick also stated that "all we do here is culture, as far as sharing" the kids from all the different schools keep coming up because of all the years of building bridges with the community, "thousands of people have come up to volunteer and learn these philosophies that have been given to us thru *hula*, through our parents, our grandfathers…"

When asked what impact the proposed HWM would have on the cultural properties within the study area not just his active *lo'i*, Nick provided the following response about the impact of the learning center on Hawaiian culture. He stated that the property, to him "is like one lighthouse, like one sanctuary like a *pu'uhonua* a place to practice and that's how it always has been for us. and highly tailored – we can do *hula* here, we can do music here, we can do farming, we can do whatever, and that's the beauty of it. It covers a lot of life."

When asked what his concerns and priorities are as one of the current stewards of the property if they have to pass their *kuleana* on to someone else, Nick echoed Kuki's response: daily water checks and maintenance of the *'auwai* system to make sure it is running well; keeping the invasive species like California grass and *maile pilau (pilao)* vine under control; maintaining the *lo'i*; and protecting and preserving the older cultural properties. He also added the following priority: the propagation of native plants for *hula*, medicine, and food. He also emphasized the importance of strategic planting in certain areas especially because they do not use weed killers. He suggested *pohole* as a suitable cover crop to use after an area has been cleared.

Regarding the legacy of what he and Kumuola Foundation have started on the subject property he said that it was a "big time launching pad" for young people to embark on similar pursuits. He also remarked, "there's not too much around like this when you look at the whole picture." He went on to say that he and Kumuola have been guided by "all of the past" that those who came before them whisper in his ears and into his heart, "I'm sure anyone who is affiliated with us is on that same page too." Nick referred to these whispers of knowledge as *welo* [inherited], which he defined as ancestral knowledge.

DAMON "D" KAKALIA

Born in 1963 Damon has been with Kumuola Foundation since the beginning in Waikīkī *makai*. To that end, he does whatever they need and does not need anything in return "whatever they need I give them." In the early days, he said that Nick and Kuki came to him with their vision and he added his input. He mentioned that they all came together and created Kumuola with other contributors who remain affiliated but have since developed their own projects elsewhere. Kuki described Damon as part of the *'ohana* who picks up on the spirit world and said he does what he does in his space to lift Kumuola in addition to physically being there. When asked what his occupation is when he is not at Kumuola, Damon responded that he has all kinds of practices *makai* and *mauka* living out his *kuleana*, which still exists from the past. He went on to say that he perpetuates what his ancestors did and that there are "not much guys today like me, so I can say that."

When Kuki and Nick mentioned how the "ocean people" such as members of Hōkūle'a often come to the property to get materials they need, Damon explained that is typical of the Hawaiian cultural practice, because everybody helps each other out. He went on to say that is how everything on the *'āina* comes back. He emphasized the spirit of community among cultural practitioners and spoke of how when Kumuola was burglarized he donated all his shovels and rakes to the foundation, "somebody always picks up the slack."

Damon echoed Kuki's response when he was asked about the overall cultural impacts of the proposed HWM, he responded that the impacts would be positive and that "it's all part of who we are." When asked what impact the proposed HWM would have on the cultural properties within the study area, Damon echoed Nick's response about the subject property as developed by Kumuola. He spoke about the tree of life that was created - the Kumuola, which is not just for individuals, it is for everybody. When prompted as to whether the cultural properties in the study area should be preserved, Damon said "we have always been about that—the practice has always been about preserving the *ʻāina*

When asked what his concerns and priorities are as one of the current stewards of the property if they have to pass their *kuleana* on to someone else, Damon echoed Nick's response and added that the proposed HWM is already created there. He went on to say that BWS proposes to have someone else create something that already exists and opined that maybe BWS will try to make it bigger because they can afford to fund it. He emphasized the possibility that money is driving the proposed HWM project and drew a contrast with what he and Kumuola have been doing for over a decade. Damon spoke about how Hawaiians are simple and have always been that way, "we live off the land, get everything off the land, create for what sustains us off the land, [so] that we survive." He also stated that "the way we are practicing out here is the way we was taught for generations." However, "we get the state with the federal backing come in and [they] build whatever they like."

When discussing the potential impacts of the proposed HWM and the types of development that the project might bring, such as buildings and other infrastructure, Damon spoke of how in the past Hawaiians did not have such constructions and questioned why they would want to create something like that. He also talked about how Kumuola is able to provide water for the *loʻi* naturally rather than using a pump and that similar systems were put in place by the *kanakas* [Hawaiian people] well before the BWS came to be. Damon went on to say that a water conservation system was already in place that sustained the communities and that should be the intention—to work together to "keep this place happy like it is" and that way everybody is safe and happy, "no need change nothing."

When prompted with the following statement, "you all are the real thing—you did not try it and give up once it got hard, you have stuck here for almost a decade," Damon responded that he and others established Kumuola for *ola* [health and wellness]. He added that when they started in *makai* Waikīkī, "whatever we did, whatever we built, we shared it with thousands of foreigners." He continued by saying that the same practices that happened down there are still happening at the subject property and that they will continue to happen no matter what obstacles come their way. Damon said this was because he and Kumuola are always up for suggestions and collaboration with others, "there's always ideas going around that can help each other out whether its BWS [or] the state" and that "you can work together for understanding."

Regarding the legacy of Kumuola Foundation, Damon said that what they do is not going to stop because it is not supposed to. He added that it will keep going until it all comes around full circle and that he and Kumuola area always happy about what they did and what they are doing, whether they are on the subject property or elsewhere. He went on to say, "we always believe—that's what we was taught. We never give up. We just keep going." and "we still exist as one people." He emphasized the importance of educating the Hawaiian people "so that they got something to hold onto" he also said "teaching is part of the practice, so you need educate." When the primary author mentioned all the people walking around on other islands and in other countries who have been influenced by their experiences at Kumuola Cultural Learning Center and Farm as part of their legacy, Damon responded by saying, "I think it's from us being *kanakas* and living like *kanakas* from our teachings" from the past and which continue to the *keiki*; a type of transmission of knowledge that Damon said has "always been that way" and will never change.

Lastly, Damon made the following statement, which sums up his *manaʻo* regarding his cultural practice, "We share because we care. That's a good thing about it too. Whatever is created, we share, and we care about it—whether it's the *ʻāina* or sustaining the land because we care about everything and that's really important."

4. IDENTIFICATION AND MITIGATION OF POTENTIAL CULTURAL IMPACTS

The OEQC guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources, associated with cultural practices and beliefs that are subject to assessment. Essentially these are nature features of the landscape and historic sites, including traditional cultural properties. A working definition of Traditional cultural property is provided below:

> "Traditional cultural property" means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community's history and contribute to maintaining the ethnic community's cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both.

The origin of the concept of "traditional cultural property" is found in National Register Bulletin 38 published by the U.S. Department of Interior-National Park Service. "Traditional" as it is used, implies a time depth of at least 50 years, and a generalized mode of transmission of information from one generation to the next, either orally or by act. "Cultural" refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term "property" defines this category of resource as an identifiable place. Traditional cultural properties are not intangible, they must have boundaries and are thus subject to the same kind of evaluation as any other historic resource, with one very important exception. The significance of traditional cultural properties should be determined by the community that values them. However, in the Hawaiian Islands the identification and significance evaluation of "traditional cultural properties" as defined above presents an inherent challenge, for the concept of boundaries runs counter to the traditional Hawaiian belief system. The sacredness of a feature is often cosmologically tied to the rest of the landscape as well as other features within it. Thus, to limit a traditional cultural property to a specifically defined area may separate the location from what makes it significant in the first place.

Although inadequate and offensive to some, the concept of boundaries remains the regulatory benchmark for defining and assessing traditional cultural properties. Because the OEQC guidelines do not contain criteria for assessing the significance of traditional cultural properties, the current study utilized the state criteria for evaluating the significance of historic properties, of which traditional cultural properties are a subset. To be significant, the potential historic property or traditional cultural property must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following 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;

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.

While it is the practice of the DLNR-SHPD to consider most historic properties significant under Criterion d at a minimum, traditional cultural properties, by definition, would also be significant under Criterion e. A further analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities resulted from the *Ka Paʻakai O Kaʻāina* v. Land Use Commission court case. The court decision established a three-step process for the evaluation of such potential impacts. The first step is to identify any valued cultural, historical, or natural resources that may be present, and the extent to which any traditional and customary native Hawaiian rights are exercised. The second step is to identify the extent to which those resources and rights will be affected or impaired. And the third step is to specify any mitigation actions to be taken to reasonably protect native Hawaiian rights if they are found to exist.

An AIS conducted by ASM Affiliates (Rechtman et al. 2018) of the current study area identified eight previously unidentified archaeological sites: four agricultural complexes (SIHP Sites 50-80-14-08769; 08770; 08771; and 08774), an *ʻauwai* (SIHP Site 50-80-14-08772), a man-made cave shelter (SIHP Site 50-80-14-08773), roadway segments (SIHP Site 50-80-14-08775), and a middle twentieth-century refuse dump (SIHP Site 50-80-14-08776). These sites appear to date from the Historic Period and most are likely associated with an agricultural function, which matches our temporal and functional expectations for the study area based on the land us history. The three *loʻi kalo* (Sites 8769, 8770, and 8774), the dryland agricultural complex (Site 8771), the *ʻauwai* (Site 8772), and cave shelter (Site 8773) likely date from the Grant Period (post 1850) use of the property through the ownership of John Ena (until roughly 1900) and later his estate (until 1949).While it is possible that the agricultural planting features may have originated in Precontact times, there is no direct evidence for such temporal use. The early to middle twentieth-century refuse dump site also fits the expected pattern of residential land use of the upper Mānoa Valley during the late Historic Period. These agricultural and residential features may also be related to the former flower farm, which was active on the property for several decades (ca. 1920s-1990s).

As a result of the Rechtman et al. (2018) study, it was concluded that although the sites recorded within the study area suffer varying degrees of reduced integrity as a result of impacts from invasive vegetation, all of the sites do retain sufficient aspects of location, design, setting, materials, workmanship, feeling, and association to be evaluated as being significant under Criterion d for the information that has been collected from the sites relative to middle nineteenth-century through middle twentieth-century land use practices. Given the nature of the proposed the development of the HWM within the study area, Rechtman et al. (2018) recommended preservation for all eight sites. We suggest that the preservation treatments for the sites be developed in conjunction with the entity that ultimately is awarded the opportunity to establish the HWM. With that said, it is not our intention that such preservation will make these sites off-limits to appropriate use, or conversely that there should be any obligation to proactively protect the sites against the ravages of vegetation growth. Preservation can be either or both passive or proactive and may include further archaeological study, restoration and reuse of the sites, as well as interpretation.

Based on the archival research and collected oral information it is understood that Mānoa Valley formerly supported a large population with scores of *loʻi kalo* that were watered by the many freshwater streams, some of which flow through the study area. Additionally, the upper reaches of the valley often shrouded in mist are the home of many legendary characters and were often visited by Hawaiian *aliʻi* and royalty; thus, the *ʻāina* and the *wai* of Upper Mānoa Valley is considered sacred to Native Hawaiians. While no specific former traditional cultural practices were identified for the subject property, the study area is currently the site of active cultural practices. Since 2010, Kumuola Foundation has been providing cultural education to thousands of local students and visitors from abroad via plant-based learning activities that revolve around active *loʻi kalo* and the propagation of native plant species. In addition to teaching visitors about the cultural significance and traditional uses of various plants and minerals, Kumuola Foundation also teaches the importance of watershed management through reforestation and the eradication of invasive species as well as water conservation; which is in line with what the BWS proposes to promulgate with the development of the Hālau Wai Mānoa.

Regarding the ongoing cultural practices of Kumuola Foundation within the current study area, it is our recommendation that the spirit of what they have begun be perpetuated in the future HWM. It is clear that the subject property holds significance to those who have been actively engaged in the perpetuation of cultural practices therein; thus, we suggest that whatever entity is awarded the opportunity to develop the HWM, they should consult with Kumuola Foundation representatives with respect to the cultural activities that have been occurring at the site.

Additionally, given that the subject property likely figured in the Rebellion of 1895 and specifically the Battle of Mānoa, it is our opinion that future curricula of the HWM should include reference to this significant historical event. Although no physical evidence of the Battle of Mānoa was observed in the study area and those interviewed for the current study did not share any knowledge of such events, the subject property's proximity to "the pen" where the rebels were trapped during the Battle of Mānoa, and its ownership by John Ena, cannot be denied. Thus, we suggest that whoever takes on the development of the HWM incorporate the history of the 1895 rebellion and the Battle of Mānoa in their curriculum.

The interviewees made it clear that they revere the land that comprises the study area as life-giving and precious. Furthermore, it is their wish that the land and water be protected and that the study area does not become reduced to a tourist attraction. To that end, we further recommend that BWS collaborate with local community members, such as the members of Malama Mānoa and Mānoa Heritage Center, as well as cultural practitioners to determine the best

approach to creating a culturally sensitive learning center that will respectfully include the beliefs and traditional customs of the Native Hawaiian community of Mānoa and greater Waikīkī Ahupuaʻa in addition to the vital concepts of watershed management and water conservation.

It is the conclusion of the current assessment that if the identified archaeological sites are treated subject to an SHPD-accepted preservation plan, the cultural history of the area (including a presentation of the Rebellion of 1895 and specifically the Battle of Mānoa) is incorporated into any future HWM curriculum, and the BWS fosters continued consultation with the various cultural stakeholders, then the development of the Hālau Wai Mānoa within the subject property will not negatively affect any valued cultural, historical, or natural resources nor will it impair any traditional and customary native Hawaiian rights; and thus will not have a negative cultural impact.

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INTERVIEW CONSENT FORMS

PAULINE "KUKI" NAVALES

ASM affiliates
Hilo Office: (808) 969-6066 Fax: (808) 443-0065
507-A E. Lanikaula Street, Hilo, HI 96720

Honolulu Office: (808) 439-8089 Fax: (808) 439-8087
820 Mililani Street, Suite 700, Honolulu, HI 96813

On behalf of ASM Affiliates, we thank you for your time and contribution to improving our understanding of culturally significant practices and places. Your participation in this study is entirely voluntary and if you wish to change your responses, you may do so at any time by contacting the interviewer or a staff member at our office at the phone numbers listed above.

Informal "Talk Story" Interview Consent Form

I agree to take part in this interview for the purposes of the historical/anthropological study of ASM Affiliates. The purpose and nature of the interview has been explained to me. I consent to the use of the information gathered in this interview by ASM Affiliates for the purposes explained to me.

- [x] I agree that my name may be used for the purposes of this investigation and cited in subsequent professional reports.
- [ ] I do not wish that my name may be used or cited, and prefer to remain anonymous in this investigation and in subsequent professional reports.

Print name of interviewee: Pauline Navales

Signature of interviewee: [signature]

Date: 2/11/19

I have explained the purpose of the current investigation and the implications of being interviewed to the interviewee and I believe that the consent is informed and that he/she understands the implications of participating in this study.

Print name of interviewer: TERESA GOTAY

Signature of interviewer: [signature]

Date: 2/11/2019

NICK NAVALES

ASM affiliates
Hilo Office: (808) 969-6066 Fax: (808) 443-0065
507-A E. Lanikaula Street, Hilo, HI 96720

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- [ ] I do not wish that my name may be used or cited, and prefer to remain anonymous in this investigation and in subsequent professional reports.

Print name of interviewee: Nick Navales

Signature of interviewee: [signature]

Date: 2/11/2019

I have explained the purpose of the current investigation and the implications of being interviewed to the interviewee and I believe that the consent is informed and that he/she understands the implications of participating in this study.

Print name of interviewer: TERESA GOTAY

Signature of interviewer: [signature]

Date: 2/11/2019

DAMON KAKALIA

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- [ ] I do not wish that my name may be used or cited, and prefer to remain anonymous in this investigation and in subsequent professional reports.

Print name of interviewee: DAMON Kakalia

Signature of interviewee: [signature]

Date: _____

I have explained the purpose of the current investigation and the implications of being interviewed to the interviewee and I believe that the consent is informed and that he/she understands the implications of participating in this study.

Print name of interviewer: TERESA GOTAY

Signature of interviewer: [signature]

Date: 2/11/2019

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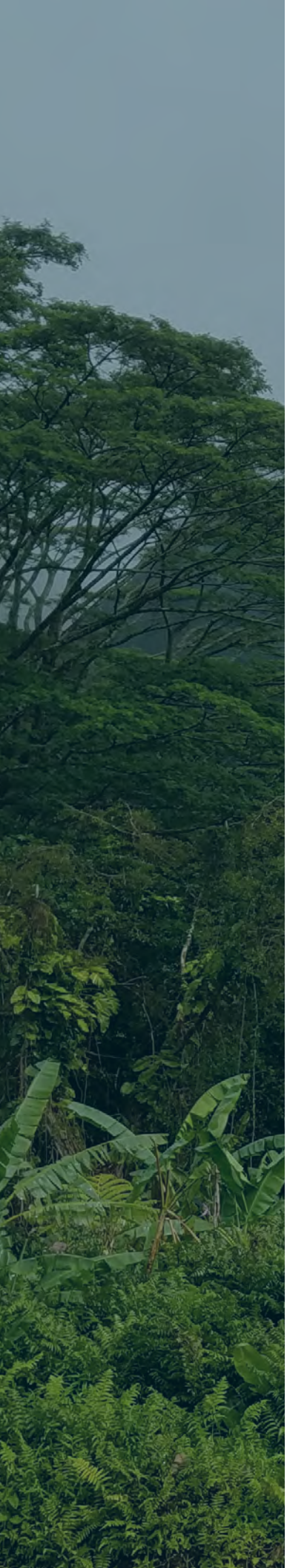

APPENDIX E
Traffic Management Plan

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BWS HĀLAU WAI MĀNOA

Traffic Management Plan

July 2019

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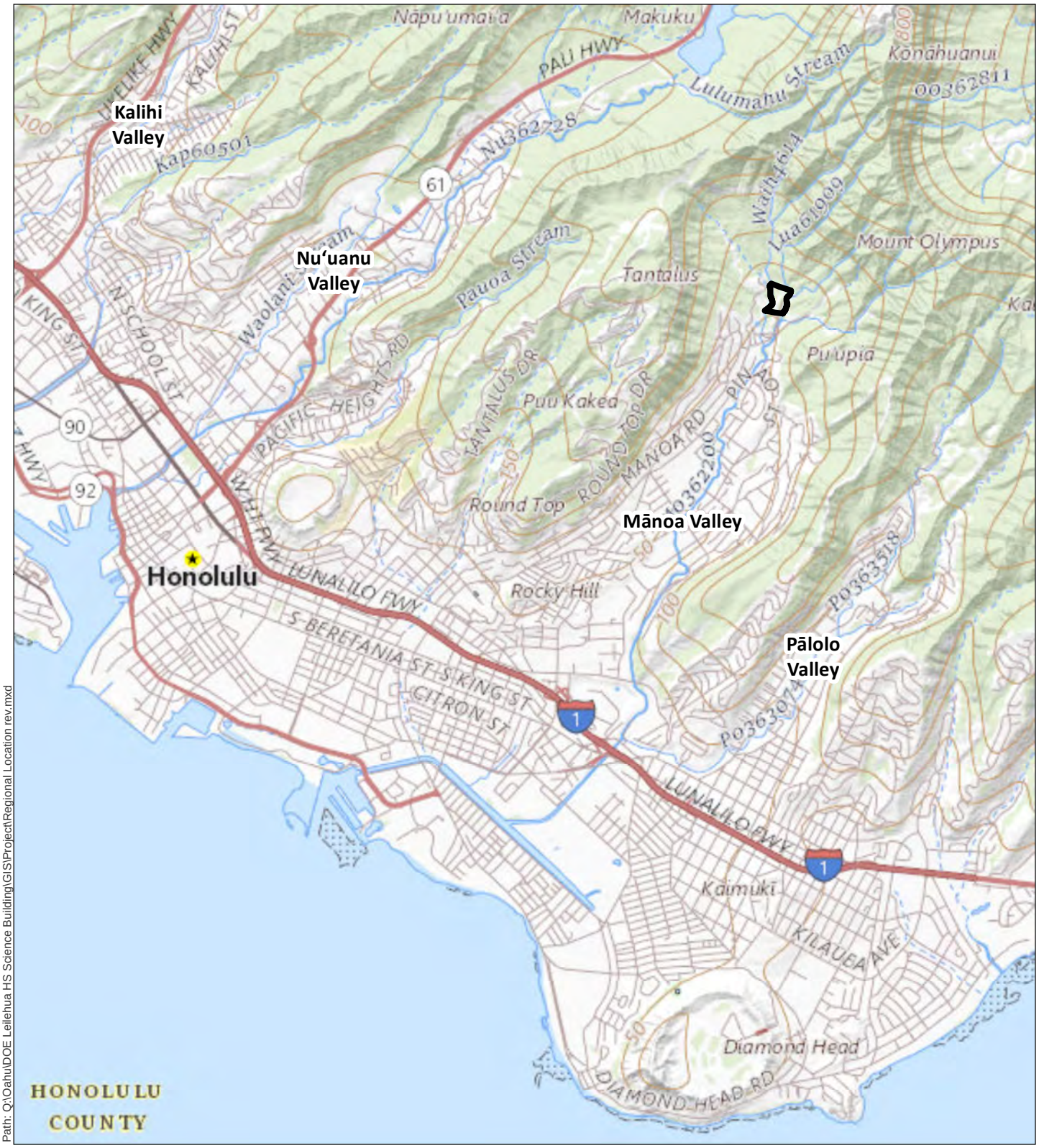
BWS Hālau Wai Mānoa Traffic Management Plan

Central to the Honolulu Board of Water Supply's (BWS's) responsibility as a conscientious and considerate neighbor and community member is the execution of safe and efficient traffic and parking management procedures, a sustained effort to minimize the impact of cars in the vicinity of the proposed Hālau Wai Mānoa ("Project") (Figure 1 – Regional Location).

1. Existing Conditions

The Project Site is situated at the mauka end of Haukulu Road, which is an unpaved road accessed via a locked gate at the end of Wa'aloa Way, after a small bridge that spans over Waihī Stream. Owned and managed by BWS, Haukulu Road is restricted to BWS-authorized vehicles. Wa'aloa Way is a short dead-end street that is reached via Wa'aloa Place and Wa'akaua Street from Mānoa Road. Located within a residential neighborhood of primarily single-family homes, these four roadways are owned and maintained by the City (Figure 2 – Roadway Jurisdictions). Wa'aloa Way, Wa'aloa Place, and Wa'akaua Street, in particular, typically see very light vehicular traffic (especially given the limited number of homes served, and the dead-end nature of these roads).

Regional access to the Project Site is provided by Mānoa Road, a primarily two-lane City road, with on-street parking permitted on both sides on major stretches mauka of Lowrey Avenue. Mānoa Road is one of two major collector roads in Mānoa Valley providing access to principal east-west arterials such as the H-1 Freeway, Beretania Street, King Street and Ala Moana Boulevard/Nimitz Highway (State of Hawai'i Department of Transportation, 2012). The gated entrance to Haukulu Road is located approximately 0.2 mile northeast of the intersection of Mānoa Road and Wa'akaua Street. Typically, during the morning peak hour traffic, residents of Mānoa are commuting to schools or employment located in the makai side (or out) of Mānoa Valley. Most mauka-bound traffic during the morning peak hour would be for destinations such as Lyon Arboretum or Mānoa Falls Trail and would represent significantly less traffic than the makai-bound morning peak hour traffic. During the afternoon peak hour traffic, traffic patterns are reversed.



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DATE: 7/8/2019

LEGEND

Project Site

Figure 1
Regional Location

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply — Island of O'ahu

North

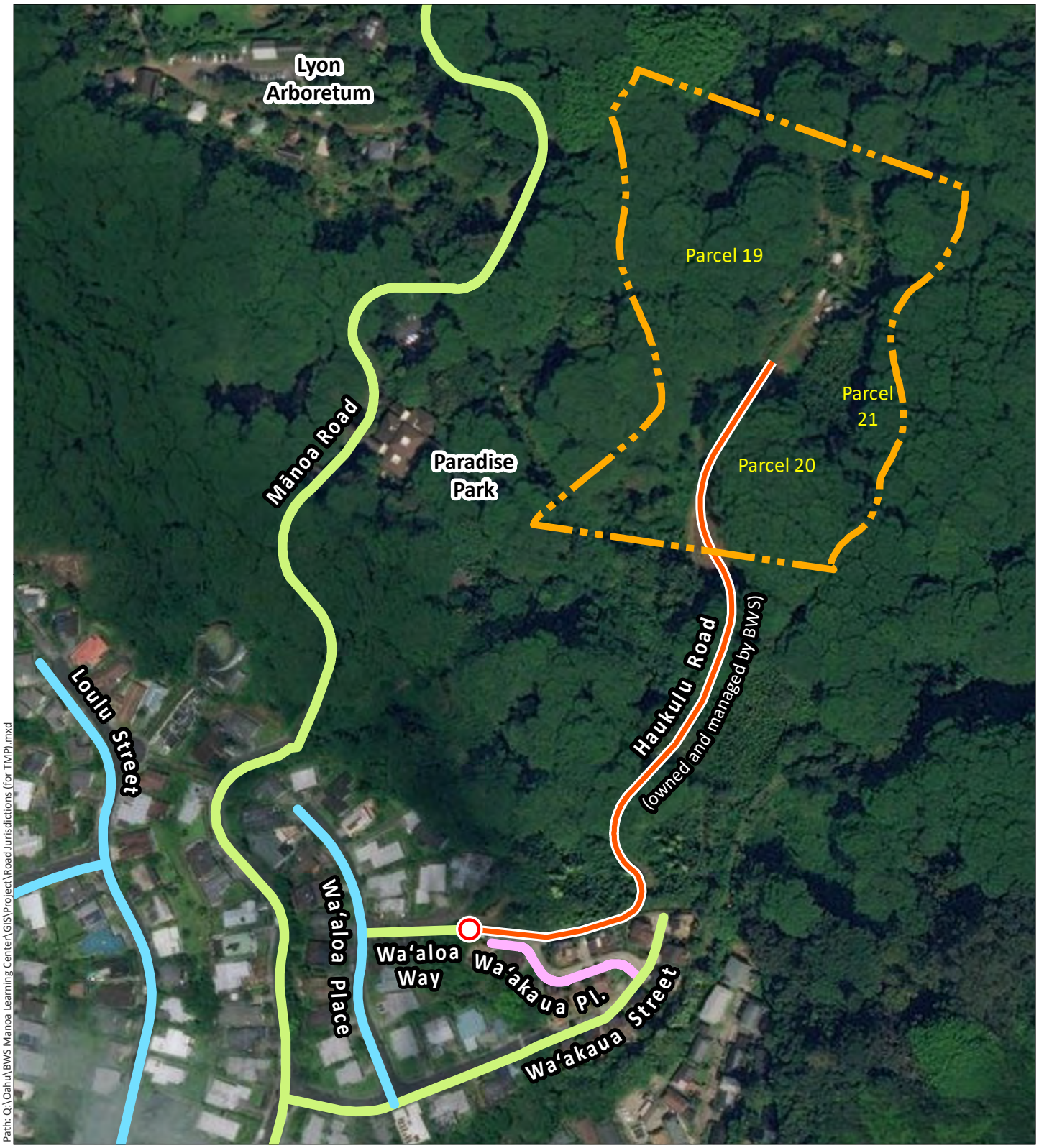
Linear Scale (feet)

0 1,250 2,500 5,000

PBR HAWAII & ASSOCIATES, INC.

Source: USGS The National Topo Base Map

Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.



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DATE: 7/10/2019

LEGEND

- Project Site
- Existing Access Gate
- Existing Access Road (Unpaved)

Roadway
Owned by - Maintained by

- City - City
- Private - City
- Various - City

Figure 2
Roadway Jurisdictions

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply
Island of O'ahu

North

Linear Scale (feet)
0 75 150 300

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2017, 2018); ESRI Online Basemaps.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

According to a feature in Google Maps, typical traffic conditions (four levels of traffic flow from "Fast" to "Slow") can be checked from 6:00 A.M. to 10:00 P.M. daily. According to Google Maps, on a typical Monday morning at 7:35 A.M., the flow of traffic is rated as "Fast" along the majority of Mānoa Road, except the makai-bound lane near the three-way intersection with Lowrey Avenue and Oʻahu Avenue, and the stretch of road makai of Aleo Place down to the intersection of Nehoa Street (where Mānoa Road becomes Punahou Street). These two stretches of Mānoa Road are rated "2" (on a scale of 1 to 4, with 1 representing "Fast" and 4 representing "Slow").

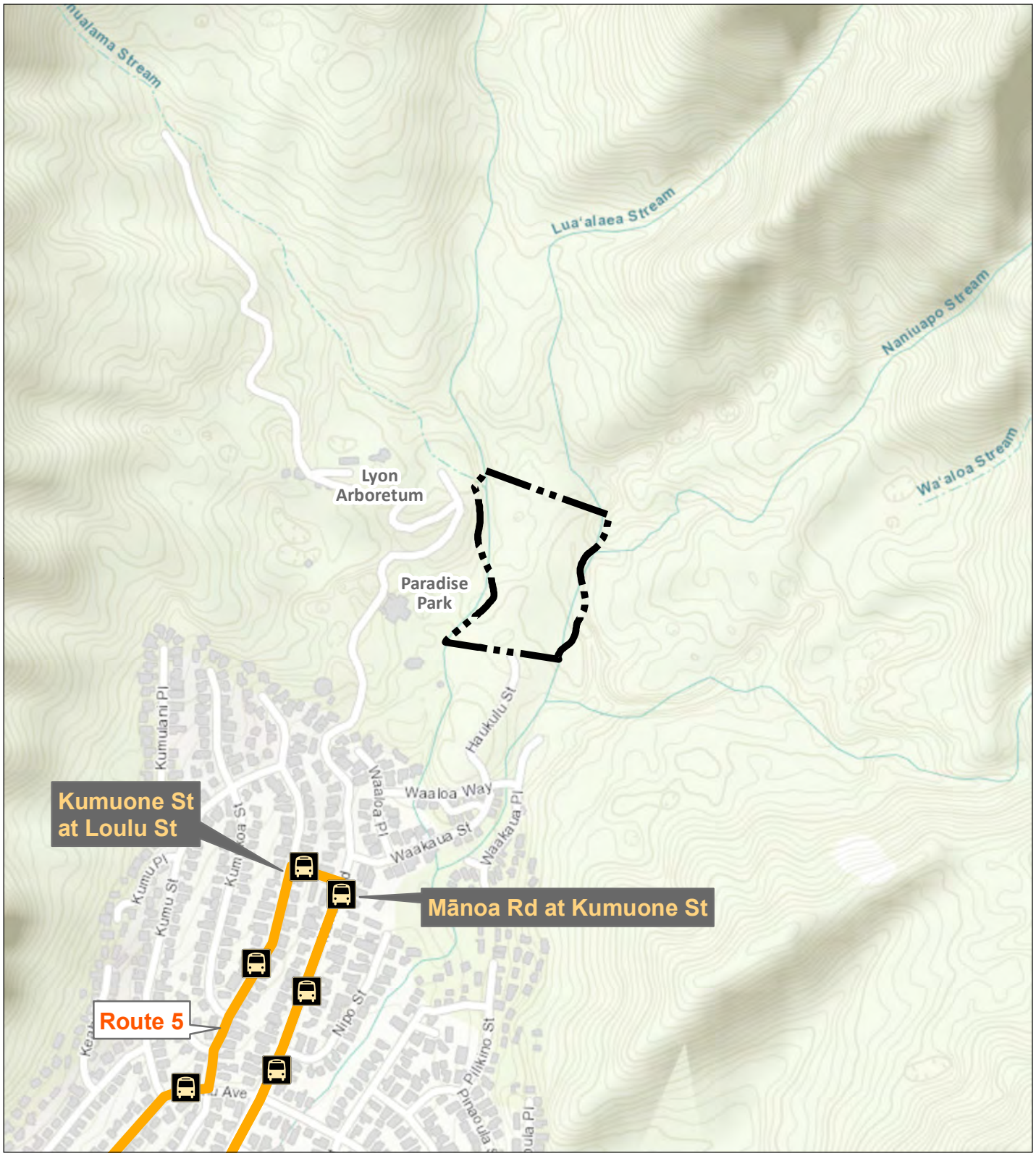
Similarly, on a typical Monday afternoon at 4:00 P.M., the flow of traffic is rated as "Fast" along the entire length of Mānoa Road (between Nehoa Street and Waʻakaua Street) except the mauka-bound lane near the three-way intersection with Lowrey Avenue and Oʻahu Avenue, and portions of the stretch between Nehoa Street and Judd Hillside Road. No stretches or intersections of Mānoa Road are rated "Slow". In both the A.M. and P.M. scenarios, the mauka end of Mānoa Road near Waʻakaua Street is rated "Fast."

Sidewalks are provided on both sides of Mānoa Road, makai of the intersection with Waʻakaua Street. Mauka of this intersection, Mānoa Road narrows to one lane, and a sidewalk is provided only along the western edge of the street. At the boundary with the Paradise Park property, Mānoa Road then narrows even further, and no sidewalk is provided on either side for the remainder of the road, which ultimately ends at Lyon Arboretum.

Sidewalks are also provided on both sides of Waʻakaua Street and Waʻaloa Place. The sidewalks along Waʻaloa Place end at the intersection with Waʻaloa Way. There are no sidewalks on Waʻaloa Way, which is a short and narrow single-lane road that sees very light traffic and is flanked on both sides by trees and grassy yards. Street parking is prohibited on Waʻaloa Way.

School groups visiting the Site are currently brought in by school buses and are dropped off at the existing city bus stop nearby on Mānoa Road; they then access the Project Site on foot via the gate at the end of Waʻaloa Way. On the second Saturday of each month, Kumuola Foundation (KF, the current tenant) hosts a community work day, for which volunteers typically carpool and park on the nearby streets or arrive by public transportation, then access the site on foot via the Waʻaloa Way gate.

Although there are no existing bikeways leading to the Project Site, the stretch of Mānoa Road makai of Waʻakaua Street is wide enough to accommodate bicyclists along with vehicular traffic.



DATE: 7/10/2019

LEGEND

Project Site

Bus Route

Bus Stop

Figure 3
Public Transportation

BWS Hālau Wai Mānoa

City and County of Honolulu Board of Water Supply

Island of O'ahu

North

Linear Scale (feet)

0 200 400 800

PBR HAWAII & ASSOCIATES, INC.

Source: City and County of Honolulu (2017, 2018); ESRI Online Basemap.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

2. Bus Service

TheBus, which is the public transportation service provided by the City and County of Honolulu, provides bus routes to and from the vicinity of the Project. The nearest bus routes that service the general vicinity are Routes No. 5 (connecting Ala Moana Center to Mānoa Road) and No. 6 (connecting Pauoa Valley to Woodlawn Drive). The closest bus stop to the site is located on Mānoa Road opposite Kumuone Street, which is approximately 0.2 miles from the gate at the end of Wa'aloa Way. This bus stop is serviced by Route No. 5 (Figure 3 – Public Transportation).

In the unlikely event that any Project activities would have the potential to affect public transit routes, schedules, or other activities, O'ahu Transit Services (TheBus, TheHandi-Van) will be informed in order to mitigate potential impacts to the City's transit services.

3. Carpooling

Carpooling, vanpooling, and ridesharing will be encouraged for staff, volunteers, and visitors to Hālau Wai Mānoa, in order to minimize vehicular traffic in the vicinity of the Site.

4. Parking and Access

There is currently a small unpaved and unstriped parking area at the Project Site for the current tenant, volunteers and visitors, as well as for loading/unloading of cargo and deliveries. Currently restricted to BWS-approved vehicles, access to this on-site parking area is via a locked gate at the end of Wa'aloa Way.

Access via the Wa'aloa Way gate, as well as parking at the existing unpaved on-site parking area, will be restricted to (approximately a dozen) Hālau Wai Mānoa employees/workers. Loading and unloading needs for deliveries will also be handled on-site.

To minimize impacts to the natural environment and to the residential areas near the existing Wa'aloa Way access point – and to keep vehicular traffic on Wa'aloa Way to a minimum – there will be separate access for visitors and work day volunteers, potentially via Mānoa Road and Paradise Park. Parking for visitors and volunteers (including bus parking) and bus loading/unloading are proposed to be provided off-site – but not on

City roadways – potentially at the existing parking facilities at Paradise Park (which will need to be discussed and coordinated with the landowner). Hālau Wai Mānoa visitor/volunteer parking could be limited to a proportion of the parking capacity at Paradise Park, accounting for Mānoa Falls Trail hikers who also use their parking facilities. Visitors/volunteers would then access the Project Site on foot, via a proposed unpaved trail from the Paradise Park parking facilities to Hālau Wai Mānoa. In the future, the disused "Old Government Road" could potentially be cleared and restored to provide an alternative pedestrian trail from the proposed parking area to the Project Site.

If a permanent building is constructed, fire department access requirements will be coordinated with the HFD, and para-transit vehicle and ADA access requirements will be coordinated with DTS and DCAB, including any modifications to the access road (Haukulu Road) leading from the Wa'aloa Way gate. However, no permanent structures are currently planned for the Project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; the Project may include a small traditional meeting hale, pavilion, or similar open-air structure.

BWS does not anticipate increased visitation to the site resulting from the Project over current conditions. However, should an increase in the number of visitations occur, BWS desires to be a "good neighbor" and is sensitive to potential neighbors' concerns about increased traffic and parking from the Project.

5. Morning Congestion / Staggered Start Times

The Project will employ measures to ensure the safety of its staff, volunteers, and visitors and reduce congestion on neighborhood streets in the immediate vicinity (particularly Mānoa Road, Wa'akaua Street, Wa'aloa Place, and Wa'aloa Way) during morning peak traffic hours. Strategies may include:

- Scheduling visitor/school groups during non-peak traffic hours (8:30 A.M. to 3:30 P.M.);
- Limiting the number of vehicles allowed per visitor/school group (e.g., parking passes for use at the Paradise Park parking lot); and
- Restricting vehicular access at the Wa'aloa Way gate to staff and a limited number of volunteers.

6. Construction-Related Traffic

As currently envisioned, construction is limited to a traditional hale (or similar open-air structure), consisting of natural materials, some of which may be harvested on-site. Vans or pick-up trucks will likely haul traditional hale building materials to the Project Site. There is a very low likelihood that construction at the Project would temporarily disrupt vehicular traffic in the surrounding neighborhood. The area Neighborhood Board will be kept apprised of the details of any construction project, and the impacts, if any, that project may have on the adjoining local street area network. However, no work is presently proposed on surrounding streets.

While not currently anticipated, if warranted, traffic cones and other directional devices should be placed in affected roadways to safely guide vehicles around work areas. Contractors will be required to implement measures to provide access past work sites and to minimize the inconvenience to the community. These measures may include the following:

- Posting flagmen for traffic control around work sites;
- Backfilling/covering all trenches at the end of the work day;
- Posting safety devices and signs for the duration of construction;
- Maintaining any existing pedestrian, bicycle, and vehicle access/crossing (including residential access) with the highest safety measures during construction;
- Scheduling the transferal of construction materials and equipment during non-peak traffic hours (8:30 A.M. to 3:30 P.M.), but not during school dismissal periods, to minimize any possible disruption to traffic on the local streets; and
- Scheduling construction activities requiring lane closures to occur during times that avoid the beginning and ending of work day and school day rush hours (8:30 A.M. to 3:30 P.M.).

While not currently anticipated, should construction activities require the temporary closure of any City street, traffic lane, or sidewalk, a Street Usage Permit will be obtained from the City and County of Honolulu Department of Transportation Services (DTS). Similarly, although not currently anticipated, should there be a need to transport any oversized equipment/overweight loads on State highway facilities, a State of Hawai'i Department of Transportation (DOT) Highways Division permit will be prepared.

7. O‘ahu Pedestrian Plan

The O‘ahu Pedestrian Plan is expected to be a long-term action plan to create vibrant, safe, and accessible streetscapes that serve as a model for the nation. The Plan will begin with an island-wide inventory of existing roadway pedestrian facilities to document their conditions and functionality for all pedestrians. The inventory will be followed by technical recommendations for pedestrian improvement projects and programs that are consistent with the City and County of Honolulu’s Complete Streets Ordinance. Community engagement is important to ensure that the City has the best possible understanding of the issues roadway users face and to develop recommendations that reflect community needs and character. Opportunities for community input and review will be provided and regularly updated on the Complete Streets website’s O‘ahu Pedestrian Plan page.

8. O‘ahu Bike Plan

The O‘ahu Bike Plan guides the Department of Transportation Service’s (DTS’s) bikeway planning for the entire island of O‘ahu and includes provisions to ensure that the proposed high capacity rail transit stations are integrated into the regional bikeway network. The Plan builds on DTS’s 1999 Honolulu Bicycle Master Plan (that focused on the Kāhala to Pearl City Corridor). The O‘ahu Bike Plan (Appendix A) was prepared with broad public input via workshops, website questionnaires and draft reviews. It is a comprehensive plan addressing the five “E’s” of transportation planning (i.e., encouragement, engineering, education, enforcement and evaluation), considered vital to achieve the end state of a truly bicycle-friendly island.

In Appendix A, the table and map from the O‘ahu Bike Plan show a “Priority 2 Project” (Code 2-125) for the Mānoa Loop bike route from O‘ahu Avenue to Paradise Park near the Project site.

To encourage bicycling, the Project may consider providing bike racks on-site.

9. Mānoa Neighborhood Board

The BWS has a representative who attends every Mānoa Neighborhood Board meeting. In the event that a concern (on matters such as Project-related traffic or parking) is raised by a nearby resident, BWS will analyze the concern and provide an appropriate and timely response.

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Appendix A:
O‘ahu Bike Plan

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Table 6: Priority 2 Projects (continued)

Code	Name	Description	Type	Owner	Length (miles)	Cost** (1000s)	DP Area
2-117	Kapālama Canal (Kōhou Street Side--North Section)	Hālona Street to Houghtailing Street	P	C	0.33	$324	PUC
2-118	Kapālama Canal (Kōhou Street Side--South Section)	Nimitz Highway to Olomea Street	P	C	0.77	$754	PUC
2-119	Kapālama Canal (Kōkea Street Side)	Nimitz Highway to Olomea Street	P	C	0.76	$745	PUC
2-120	Kapiʻolani Park	Monsarrat Avenue to Diamond Head Road along Pākī and Kalākaua Avenues	P	C	1.37	$1,053	PUC
2-121	Keʻeaumoku Street	Kapiʻolani Boulevard to Nehoa Street	R	C	1.19	$59	PUC
2-122	King Street (Middle Section)	River Street to South Street	L	C	0.96	$110	PUC
2-123	King Street (Northern Section)	Middle Street to River Street	L	C	1.97	$227	PUC
2-124	Lagoon Drive	Nimitz Hwy to End	L	C	2.26	$260	PUC
2-125	Mānoa Loop	Oʻahu Avenue to Paradise Park	R	C	4.84	$194	PUC
2-126	Mānoa-Pālolo Stream Path	Dole Street to Kapiʻolani Boulevard	P	C	0.68	$664	PUC
2-127	McCully Street Bridge	Bridge over H-1	L	S	0.02	--	PUC
2-128*	Metcalf Street	McCully Bridge to Wilder Avenue	L	C	0.18	$21	PUC
2-129	Middle St. (Southern Section)	North King Street to Kamehameha Highway	L	C	0.46	$52	PUC
2-130	Nuʻuanu Stream Path	H-1 Freeway to Kuakini Street	P	C	0.33	$323	PUC
2-131	Nuʻuanu Stream Path (Extension)	Nimitz Highway to Existing Nuʻuanu Stream Path	P	C	0.07	$57	PUC
2-132	Pearl Harbor Bike Path (Rainbow Bay)	Kamehameha Highway to Arizona Memorial	P	S	0.75	--	PUC
2-133	PHBP Connector - Pearl Ridge Transit Station	Kamehameha Highway to Pearl Harbor Bike Path	L	C	0.09	$10	PUC
2-134	Queen's Beach Trail (North Section)	Kalākaua/Monsarrat Intersection to Natatorium	P	C	0.38	$12	PUC
2-135	Radford Drive	Bougainville Drive to Kamehameha Highway	L	C	0.24	$27	PUC
2-136	River Street	Nimitz Highway to Beretania Street	R	C	0.22	$9	PUC
2-137	Salt Lake Boulevard	Kamehameha Highway to Ala Lilikoʻi Street	L	C	2.54	$356	PUC
2-138	South Street	Ala Moana Boulevard to Beretania Street	L	C	0.78	$71	PUC
2-139	Tantalus Loop	Makiki Street - Makiki Heights Dr. - Tantalus - Round Top	R	C	9.57	$383	PUC
2-140	Waimano Home Road	Kamehameha Highway to Komo Mai Drive	L	C	1.25	$144	PUC
2-141	Ward Avenue	Ala Moana Boulevard to Prospect Street	R	C	1.16	$58	PUC
2-142	Waterfront Park	UH Medical School to Ala Moana Shared Use Path	P	S	0.71	--	PUC
2-143	Wilder Avenue	Dole Street to Spencer Street	L	C	1.20	$138	PUC
2-144	Mākaha Valley Loop	Mākaha Valley - Huipū Drive - Kili Drive	R	C	3.19	$339	Wai
		Priority 2 Totals (rounded):	**260 miles**			**$29.8 million**	

Key

L	Lane	C	City	CO	Central Oʻahu	NS	North Shore
R	Route	S	State	EH	East Honolulu	PUC	Primary Urban Center
P	Path	F	Federal	KL	Koʻolau Loa	Wai	Waiʻanae
XW	signalized crosswalk	Pv	Private	KP	Koʻolau Poko	UC	under design or construction

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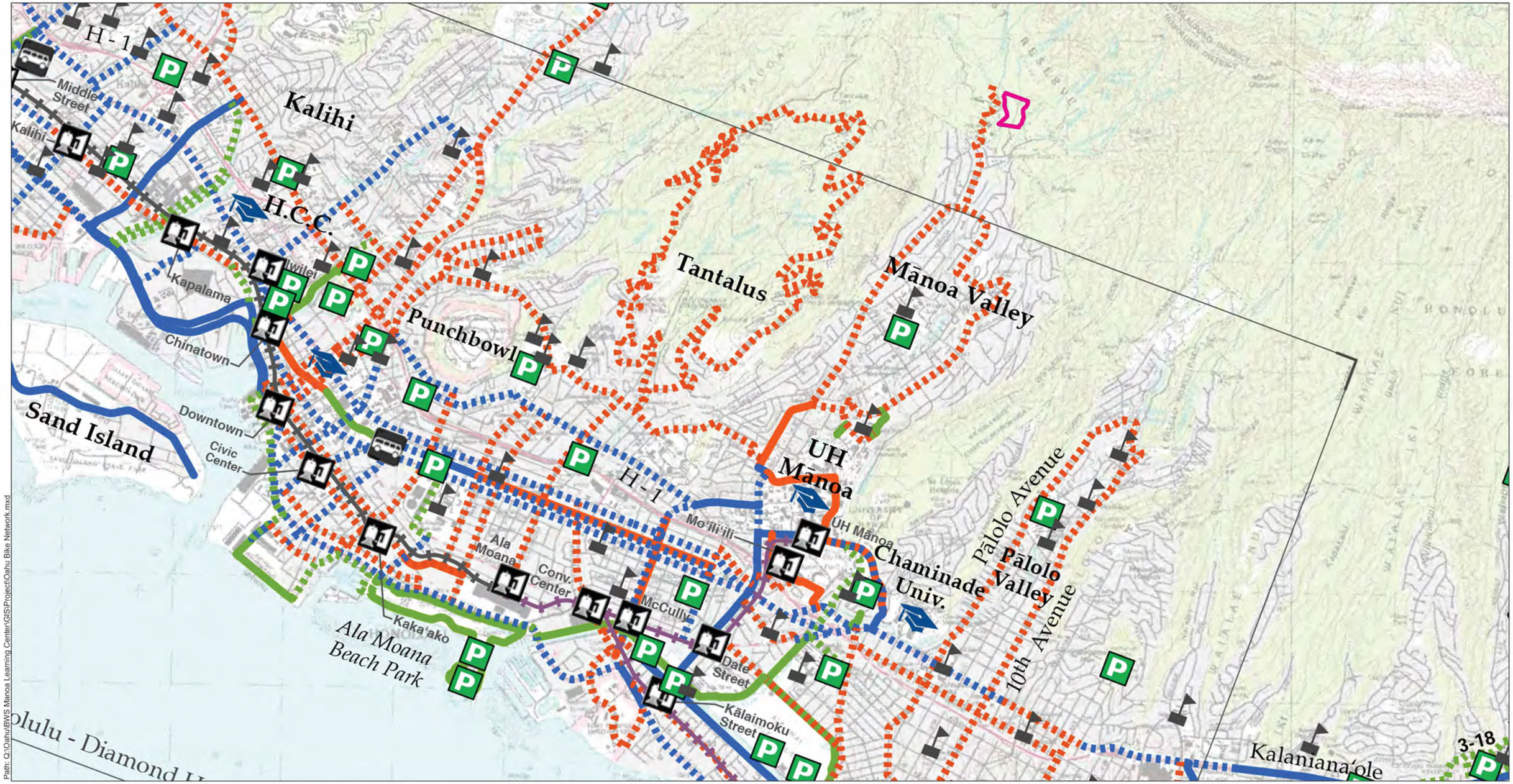

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LEGEND

Project Site

PROPOSED BIKEWAYS
- Lane
- Path
- Route

EXISTING BIKEWAYS
- Existing Lane
- Existing Path
- Existing Route

- TheBus - Transit Center/Park & Ride
- Rail Station
- Fixed Guideway
- Planned Extension
- College
- School
- Park
- 3-55* Facility Number (* Indicates Short Range Project)

Source:City and County of Honolulu Oahu Bike Plan, 2012.
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial ana

O'ahu Bikeway Network

BWS Halau Wai Mānoa

and County of Honolulu Board of Water Supply — Island of O'ahu

North

Linear Scale (feet): 0 750 1,500 3,000

PBR HAWAII

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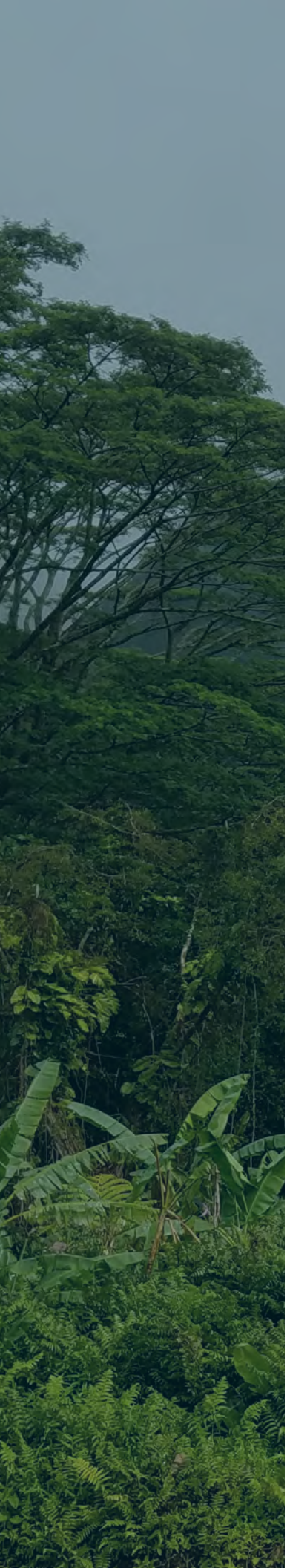

APPENDIX F

Mānoa Neighborhood Board No. 7
Meeting Minutes

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MĀNOA NEIGHBORHOOD BOARD NO. 7

c/o NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET http://www.honolulu.gov/nco

DRAFT INITIAL CONVENING MEETING MINUTES
WEDNESDAY, AUGUST 7, 2019 7:00 p.m.
NOELANI ELEMENTARY SCHOOL CAFETORIUM
2655 WOODLAWN DRIVE

OATH OF OFFICE – The Neighborhood Assistant administered the "Oath of Office" to Board Members, who did not attend the Installation Ceremony on Saturday, June 29, 2019. They were – Gloria Borland, Rick Budar, Patti (Hoe) Kawano, Nathaniel Kinney, Joan Koff, and Ellen Watson.

CALL TO ORDER – Vice Chair Pro Tem Ellen Watson called the Mānoa Neighborhood Board No. 7 meeting to order at 7:10 p.m. **A quorum was established with 15 members present.** Note – This 17-member Board requires nine (9) members to establish a quorum and to take official Board action.

Board Members Present – Dylan Armstrong, Gloria Borland, Rick Budar, Mike Carroll, Rodney Chun, Elton Fukumoto, Aimee Grace, Tanya Harrison, Patti (Hoe) Kawano, Nathaniel Kinney, Joan Koff, Brent Lewis, Jonathan Valdez, Ellen Watson, and Robert Zane.

Board Members Absent – Ben Rotter.

Vacancy – There was one (1) vacancy in Subdistrict 3 (Middle Mānoa).

Guests – Tom Heinrich (Senator Brian Taniguchi's Office), Representative Dale Kobayashi and Jolyn Rosa (Representative Dale Kobayashi's Office), Firmo Dayao (Mayor Kirk Caldwell's Representative, Mayor's Office of Economic Development); Councilmember Ann Kobayashi and James Larson (Councilmember Ann Kobayashi's Office); Fire Fighter Ross Takata (Honolulu Fire Department), Lieutenant Taro Nakamura and Sergeant Nathaniel Peipman (Honolulu Police Department), Dominic Dias and Amy Tsuneyoshi (Board of Water Supply), Tae Kim, Hector Venegas (Mānoa Valley Neighborhood Security Watch [MVNSW]), Bob Kern, Gordon Aoyagi, Bea Oates, Vanessa Distajo (Mānoa - The Outdoor Circle), Wes Oda (Be Ready Mānoa), Stanton Lum, Shawn Kyono (University of Hawaii – SHS), Pono Suganuma, Lori Lum (Watanabe, Ing LLC); Greg Nakai (PBR HAWAII & Associates, Inc.); Patrick Ching, Lorna Park, Dave Watase, Dawn Kobayashi, M. Levin, Mary Dizon, Shar Chun-Lum and Bruce Lum (Save Ala Moana Beach Park Hui [SAMBPH]), Burke H., Ellen Sofio, Two (2) Videographers (Integrated Multimedia Consultants), and K. Russell Ho (Neighborhood Commission Office).

INTRODUCTIONS – Vice Chair Pro Tem Ellen Watson asked the newly-elected Board members to introduce themselves followed by the returning Board members.
Jonathan Valdez was from Subdistrict 4 (Lower Mānoa), recently got married, and works at the Bishop Museum as an Events Coordinator.
Robert Zane was from Subdistrict 2 (Upper Mānoa) and looks forward to working with others on issues on the community's behalf.
Nathaniel Kinney has two (2) kids, a wife, and a job, and still finds time to support the community. He appreciates being back on the Board and seeing new people.
Aimee Grace has a nine (9)-month old baby, who is the fifth (5th) generation on her same street in Subdistrict 4 (Lower Mānoa). A Pediatrician by background, Grace has taken a different path into Health Policy and is in Health Initiatives and Internal Affairs for the University of Hawaii (UH).
Brent Lewis and his wife moved to Mānoa three (3) years ago from California and he has worked in government for 14 years. They are expecting a boy in November 2019.
Mike Carroll grew up in Hawai'i and went to high school and college in Mānoa. He looks forward to serving the people of Mānoa.
Everyone welcomed the newly-elected Board members.

The returning Board members introduced themselves.
Joan Koff is the Secretary for the Board for a few years. She appreciates the open forum of the Neighborhood Board system.

Patti Kawano has been a resident homeowner in Subdistrict 4 (Lower Mānoa) for 15 years. She has been on the Board for four (4) or five (5) years and is the Treasurer. She is a CPA, working in corporate finance. She wants to share with the government what is important to the community.
Dr. Rodney Chun is a retired Chiropractor and Naturopathy and now runs his family business. He has been on the Board for 10 years.
Rick Budar was born and lived in Mānoa Valley for 50 years. He went to school here and now runs one of the largest law firms.
Ellen Watson has served on the Board for 10 years and as Vice Chair for the last few years. She recently retired, runs her dogs, and does Neighborhood Board business.
Elton Fukumoto was appointed to the Board 10 months ago and elected to the Board in the recent elections. He has drafted one (1) resolution and three (3) letters for the Board and is the Chair of the Permitted Interaction Group (PIG) on the Ala Wai Flood Mitigation Project (AWFMP). During the Legislative Session, he worked for House Speaker Emeritus Calvin Say.
Gloria Borland grew up in Honolulu and went to college in Washington, D.C., worked for U.S. Senator Daniel K. Inouye for four (4) years, and became a media entrepreneur, who launched travel magazines, launched a cable TV channel, and founded a TV series that aired nation-wide on PBS. Wanting to raise her daughter in Hawai‘i, Borland returned home five (5) years ago and had been on the Board about three (3) years. She plans to launch a start-up media here.
Dylan Armstrong is a "recovering biologist," an urban planner, and a Federal disaster grants manager. He served as Vice Chair and may be the third (3rd) longest-serving member of the Board. He wants to preserve the land for his future children.
Tanya Harrison is a grad student at University of Hawaii at Mānoa, has served in Subdistrict 2 (Upper Mānoa) and now, lives in Subdistrict 4 (Lower Mānoa). Working part-time with the U.S. Department of Agriculture, she will be working full-time upon graduation.

ELECTION OF OFFICERS TO SERVE FROM MONDAY, JULY 1, 2019 to JUNE 30, 2020 [NP §2-14-120(b)]. The officers to be elected are the Chair, Vice Chair, a Secretary, a Treasurer, and any other officer(s) determined to be needed to conduct the Board's business. Also, there will be an appointment of a time keeper. Vice Chair Pro Tem Watson explained the process. Nomination(s) can be self-nomination(s). No second is required. Each candidate has one (1) minute to give a brief background and why he/she wants to run. Board members and the public will be allowed to ask questions of the candidate(s).

Chair – Vice Chair Pro Tem Ellen Watson nominated herself to be the Chair. Watson passed the gavel on to Secretary Pro Tem Joan Koff to preside over the election of Chair. Harrison nominated Dylan Armstrong and Borland seconded. There were no further nominations. Each candidate gave a brief background and stated why he/she wanted to be Chair. Both candidates had leadership experience and both wanted to serve the Mānoa community by having short and efficient meetings. Kinney had two (2) questions. First, Kinney asked if the candidates had any political aspirations and will use the Chair of the Mānoa Neighborhood Board No. 7 as a "stepping stone" to higher office. Both candidates responded that they just wanted to serve the Mānoa community and had no further ambition. The second question was how did each candidate proposed to have shorter meetings. Both noted to limit to the agenda to issues that were important to the Mānoa community and not so much to "other issues." Armstrong noted the use of Parliamentary procedure and the commitment to the Department of Education (DOE) to stop at 9:00 p.m. Watson thought that meetings should take one (1) hour. Borland asked for an end time, like 8:30 p.m. Armstrong wanted to limit the monthly reports. Resident Ellen Sofio wanted to know how the candidates would handle a "big issue" meeting that would take more than one (1) hour. There are ways to use the agenda to focus on that one (1) topic or to have "Special meetings." There were no further questions.

The Neighborhood Assistant explained the voting procedure. A roll call vote will be taken and Board members will vote for Ellen or Dylan and a quorum vote of nine (9) is needed to win. If no one gets a quorum vote, then a re-vote will be taken for Board members to reconsider their votes. After the second vote, if no one gets a quorum vote, then it will be deferred to the next meeting.

The first vote was: Ellen Watson: six (6) – Budar, Chun, Kawano, Koff, Kinney, and Watson. Dylan Armstrong: seven (7) – Armstrong, Borland, Carroll, Grace, Harrison, Lewis, and Valdez. Abstain: Fukumoto and Zane.

At 7:37 p.m. as no one received a quorum vote of (9) votes, Secretary Pro Tem Koff called a recess so that the two (2) candidates could speak outside. Secretary Pro Tem Koff invited the City Officials to give their reports.

Honolulu Fire Department (HFD) – Fire Fighter Ross Takata reported the following:

- July Fire Statistics – There were 18 medical emergencies and 6 mountain rescues.
  - Fire Safety Tip: Children and Fire – Children between the ages of two (2) and ten are naturally curious about fire and ask questions about fire, play with fire trucks, or pretend to cook. Use these opportunities to teach them about fire safety. Follow these tips to keep your family safe:
  - Keep matches and lighters in a locked cabinet and out of children's reach.
  - Closely supervise children, and ensure they are kept away from other fire sources, including bonfires, lit candles, cigarettes, and stoves.
  - Teach children never to touch matches or lighters. They should always tell an adult when they find matches or lighters.
  - Talk with children about what their friends or other children are doing with fire. Talk about what they see in video games, on television, in movies, and on social media. Teach them specific ways to resist peer pressure to misuse fire.

Honolulu Police Department (HPD) – Lieutenant Taro Nakamura reported the following:

- July 2019/June 2019 Crime Statistics – There were 1/4 motor vehicle thefts, 8/4 burglaries, 11/9 thefts, and 12/8 unauthorized entries into a motor vehicle (UEMV). There were 5,881 total calls for service. Statistical information can be found on the HPD public website at – www.honolulupd.org.
- Back-to-School Safety Tips – Here are a few bicycle safety tips:
  - Wear a helmet.
  - Wear comfortable, brightly colored clothing or a reflective vest.
  - Use lights and reflectors from dusk until dawn.
- Children Pedestrian Safety Tips:
  - Children are small/short in stature. Drivers cannot see them and children have no sense of that. As they get taller the risk drops.
  - Children are impulsive and may act without realizing the dangers around them, such as running across the street to see a friend, chase after a ball, etc.
- Meet the Major – HPD, District 7 invited everyone to "Meet the Major" on Wednesday, August 21, 2019 at 6:00 p.m. at the ʻĀina Haina Elementary School Cafeteria. Meet Acting Major, Gordon Lum Kee, for a discussion on community partnership and crime trends.
- Attempted Kidnapping of a Young Girl – Lieutenant Nakamura added that there was a recent incident on the 3100-block of Mānoa Road. HPD is looking for a bald-headed Caucasian male in his twenties with a scar on his face, wearing a black hoodie. He went south on Mānoa Road. Any information will be welcomed.

Comments followed:

1. Attempted Car Jacking – The news reported an attempted car-jacking in Mānoa tonight. Lieutenant Nakamura had no new information.
2. Violent Crimes – Kawano noticed that the statistics only reported non-violent crimes. Lieutenant Nakamura mentioned that these statistics are given to him by the Community Policing Team (CPT). Other Neighborhood Boards have tried to change the reporting statistics, but this is the format agreed upon by the Neighborhood Commission Office (NCO) and the HPD. Violent crimes are shown on the website at – hpd.org.
3. More Details about the Attempted Kidnapping – Lieutenant Nakamura noted that the girl was exercising with an athletic team and was grabbed from behind. No one noticed a car nearby. The girl is okay, but the suspect has not been identified and the case has been referred to detectives for further investigation.

Board of Water Supply (BWS) – Dominic Dias reported the following:

- Water Main Breaks – There were three (3) water main breaks in July 2019. Dias will forward the areas to the Neighborhood Assistant. (3228 Oʻahu Avenue, 3219 Paty Drive, and 3644 Kumuone Street
- Summer Water Conservation/Weather-Based Irrigation Controller – With the hot summer months upon us, the BWS is reminding all residents to be vigilant and avoid wasting water. One (1) way to save money by getting a $100 rebate and to stop over-watering is to purchase an Environmental Protection Agency (EPA)-labeled Weather-Based Irrigation Controller. This smart controller adjusts your watering schedule based on the weather conditions in your local area. A Weather-Based Irrigation Controller automatically adjusts your sprinklers to irrigate when needed allowing you to conserve up to 7,600 gallons of water per year. This device will not only conserve water, but it will save you money and time. It is easy to install and can be purchased online, or at Home Depot, Lowes, and the Pacific Pipe Company.

- Provided tonight is a handout containing general information about the Weather-Based Irrigation Controller and how you can apply for a $100 rebate by purchasing this water conservation device. Find out more at – www.boardofwatersupply.com/rebates.
- Water Emergency Preparedness – September is National Preparedness Month, which serves as an important reminder to have an emergency preparedness kit available for your household. One (1) crucial component of your preparedness kit is a safe drinking water supply. Residents should store at least one (1) gallon of water per person per day for at least fourteen days. Also, in the event of an emergency, it is very important to stay tuned to media reports to receive water information bulletins and take any appropriate actions announced by the BWS or other emergency response agencies.
  More information about water emergency preparedness, including a how-to video demonstrating how best to store drinking water in your home, is available online at – www.boardofwatersupply.com/emergencypreparedness. To receive emergency alerts via email or text message, consider subscribing to the BWS at – HNL.info.

Final Question for HPD – Harrison heard that HPD was under-funded, yet sent officers to help with the Thirty-Meter Telescope (TMT) protests on the Big Island of Hawai'i. She wanted to know if there was any negative impact on services to Mānoa. She will ask next month.

At 7:45 p.m. Secretary Pro Tem Koff called the meeting back to order.

The second roll call vote was: Watson: five (5) Budar, Chun, Koff, Kinney, and Watson. Armstrong: seven (7) – Armstrong, Borland, Carroll, Grace, Harrison, Lewis, and Valdez. Abstain – Fukumoto, Kawano, and Zane.
As no one received quorum vote, this item was deferred to the next meeting.

At 7:48 p.m. Secretary Pro Tem Koff returned the gavel to Vice Chair Pro Tem Watson.

Vice Chair – **Dylan Armstrong nominated himself for Vice Chair. Nathaniel Kinney nominated himself for Vice Chair. Elton Fukumoto nominated himself for Vice Chair.** Armstrong and Kinney rescinded (withdrew) their self-nominations and supported Fukumoto. Fukumoto has done a lot of writing for the Board and will become the Presiding Officer for the rest of the meeting. **As there were no other candidates and no objections, the Mānoa Neighborhood Board No. 7 elected Elton Fukumoto Vice Chair, by UNANIMOUS CONSENT, 15-0-0** (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

Vice Chair Fukumoto asked for nominations for Secretary.

Secretary – **Kawano nominated Joan Koff to be the Secretary. As there were no other nominations and no objections, the Mānoa Neighborhood Board No. 7 elected Joan Koff Secretary, by UNANIMOUS CONSENT, 15-0-0** (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

Vice Chair Fukumoto asked for nominations for Treasurer.

Treasurer – **Koff nominated Patti Kawano to be the Treasurer. As there were no other nominations and no objections, the Mānoa Neighborhood Board No. 7 elected Patti Kawano Treasurer, by UNANIMOUS CONSENT, 15-0-0** (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

Appointment of a Time Keeper – **As there were no objections, Vice Chair Fukumoto appointed Patti Kawano as the Time Keeper.**

CITY MONTHLY REPORTS

Honolulu Fire Department (HFD) – This item was previously reported.

Honolulu Police Department (HPD) – This item was previously reported.

Board of Water Supply (BWS) – This item was previously reported.

RECOGNITION

Certificates of Recognition for Retiring Board Members – As Gary Andersen, Kahōkū Lindsey-Asing, Muhammad Anwar Quadri, and Mark Tom were not present, the Certificates of Recognition will be mailed to them.

FILLING OF ONE (1) VACANCY IN SUBDISTRICT 3 (Middle Mānoa) – As there were no volunteers, Vice Chair Fukumoto deferred this item to the next meeting.

MEETING DETERMINATION – DATE/TIME (to end by 9:00 p.m.)/LOCATION (AUGUST 2019 to JUNE 2020) – Watson did some research on moving to Mānoa Elementary School. The cost would be slightly cheaper with the flexibility of closing at 10:00 p.m. instead of at 9:00 p.m. The video would cost the same. Watson added that there may be construction vehicles at Noelani. Board members Budar and Koff favored ending at 9:00 p.m. The parking situation can be discussed when the time comes. Vice Chair Fukumoto added that moving to Mānoa Elementary School from time to time would show support for that area. Watson mentioned that since Department of Budget and Fiscal Services (BFS) pays the bill, a one (1) year contract is better. Harrison noted that it is easier to walk home from Noelani. Kinney asked about air-conditioning. There was none at both schools.

Vice Chair Fukumoto noted that there appears to be no support for the Board to move to Mānoa Elementary School. As there were no objections, the Mānoa Neighborhood Board will stay at the Noelani Elementary School, by UNANIMOUS CONSENT, 15-0-0 (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

AGREEMENT OF FACILITY RENTAL FEE -- **As there were no objections, the Mānoa Neighborhood Board No. 7 agreed to the $122.00 a month cost, by UNANIMOUS CONSENT, 15-0-0** (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

DETERMINATION OF BOARD RECESS SCHEDULE (January 2020 and July 2020) – Usually, the Mānoa Neighborhood Board No. 7 takes a recess on the first Wednesday in January for the New Year and in July for the Independence Day holiday. **As there were no objections, the Mānoa Neighborhood Board No. 7 voted to recess in January 2020 and July 2020, by UNANIMOUS CONSENT, 15-0-0** (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

AGREEMENT FOR VIDEO TAPING OF MONTHLY MEETING AND FEES APPROVED -- **As there were no objections, the Mānoa Neighborhood Board No. 7 voted to continue the videotaping of the regular monthly meetings for broadcast on ʻŌlelo, by UNANIMOUS CONSENT, 15-0-0** (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

ADOPTION OF ORAL TESTIMONY RULES (See box at the top of the agenda) – "Rules of Speaking: Anyone wishing to speak is asked to raise his or her hand, and when recognized by the Chair, to address comments to the Chair. Speakers are encouraged to keep their comments under three (3) minutes, and those giving reports are urged to keep their reports under three (3) minutes. Please silence all electronic devices."

As there were no objections, the Mānoa Neighborhood Board No. 7 voted to accept the Rules of Speaking, by UNANIMOUS CONSENT, 15-0-0 (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Valdez, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

FORMATION OF COMMITTEES (§2-14-124 Committees – (a) The Board may establish committees from among its membership and the public without regard to place of residence. The Committee Chair shall be a member of the Board. The committee members shall be appointed by the Board. The Board Chair shall be a non-voting ex-officio member of all committees, unless otherwise directed by the Board.) Vice Chair Fukumoto deferred this agenda item to the September 2019 meeting.

DELEGATES – Neighborhood Plan Section 2-14-125 Appointment of delegates: "(a) The Board may appoint delegates from among its membership and the public to represent the Board as necessary and appropriate to perform its duties. (b) The Board shall define the scope of representation granted and duties assigned to the delegate. Delegate responsibilities may include, but not be limited to, information gathering, attendance at meetings

relevant to Board business, evaluation of matters presented to the Board and initiation of proposals to the Board. (c) No delegate may exceed the scope of representation granted by the Board. (d) Delegates shall report to the Board at Board meetings the delegates' activities, findings, proposals, and the means by which any proposal was determined. [Eff 10/20/08] (Auth: RCH §14-103(a)) (Imp: RCH §14-104)." Vice Chair Fukumoto deferred this agenda item to the September 2019 meeting.

BOARD HOUSE-KEEPING

Reminder for all Board Members to file the self-certification "Sunshine Law Training" form and Board Member Contact sheet with the Neighborhood Assistant.

Discussion and Action on the Summary Update of Special Meeting of the Board, held on Monday, June 24, 2019 – Ellen Watson reported that the Mānoa Neighborhood Board No. 7 had a Special Meeting on Monday, June 24, 2019 to discuss and approve two (2) letters to Mayor Kirk Caldwell and Governor David Ige about the Ala Wai Flood Mitigation Project (AWFMP). Eleven Board members attended and adopted the two (2) amended final letters by unanimous consent. The meeting was adjourned after 20 minutes.

Board Member Dylan Armstrong's Memo (Discussion/Action) – As the next item was of a sensitive nature, Watson wanted Board members to speak freely and proposed to move to Executive Session. Armstrong was the topic of discussion and he had the option to waive his right to privacy and have an open meeting. Watson, after consultation with the Neighborhood Commission Office (NCO), made the motion to hold an Executive Session.

Watson moved and Koff seconded that the Mānoa Neighborhood Board No. 7 go into Executive Session. Armstrong asked for a point of order and asked why he was targeted to be placed on the agenda for public shaming. He did not recognize the authority of the Board to discipline him for something he was allowed to do. This action could be taken before the Neighborhood Commission. Armstrong made a motion to dismiss. Borland disputed that she co-wrote the two (2) letters. Watson noted that there was a time limitation on discussing this matter. Vice Chair Fukumoto explained that he as Acting Chair could call for a Special Meeting at a later date to give him time to research the various legal questions raised. Armstrong again disputed listing him on the agenda. He noted no one has studied the Neighborhood Plan (NP) and that the Board cannot limit citizen participation by limiting his free speech. Vanessa Distajo agreed and was concerned about violating the First Amendment of the U.S. Constitution. New Board members did not receive the two (2) letters and other background information, questioned the need for an Executive Session, and wanted to defer action on this matter. A public member questioned if the Board was representing the community's interest on the Ala Wai Flood Mitigation Project (AWFMP). Another public member was concerned about disciplining someone with a minority position. Watson wanted clarification on Armstrong's actions.

Koff motioned to table this matter until more clarification is given. Vice Chair Fukumoto wanted to consult with the NCO. Kinney wanted this matter to be discussed in the open, as he was not on the Board in June 2019. Borland again wanted to remove her name from the letters' authorship. Armstrong added that four people's names were added to the agenda without their permission and requested that permission be asked first. Vice Chair Fukumoto decided to move on.

COMMENTS

Noelani Elementary School IDEA Center Building Project – Ellen Sofio had 436 signatures on an online petition to protest the 11 trees to be destroyed or removed. She has a strong concern for the children's health and global warming. Sofio submitted a copy of the 436 signatures and stated that the Attorney General supported another Environmental Assessment (EA) with an additional 30-day comment period. Harrison asked for the percentage of the petitioners, which were Mānoa residents. Sofio invited Harrison to review the petition. Borland noted that Sofio was at the April 2019 meeting, but not at the June 2019 meeting, when the students and school staff attended. Borland requested that both sides attend the same meeting. Sofio requested that a letter of support for her position to be sent by the Mānoa Neighborhood Board No. 7, which was not sent previously. She will draft a letter for a Board vote next month.

As there were no objections, Vice Chair Fukumoto moved an agenda item out of order.

RESIDENTS'/ COMMUNITY CONCERNS

After-The-Fact Permit Application for Stream Channel Alterations – Ellen Watson reported on an application for a permit for work already performed in Mānoa Stream at Hayama residence. (To view the work that has been done, look upstream from the Kahaloa Bridge just as one enters the Mānoa District Park on Kahaloa Street, off East Mānoa Road. Comments to the Clean Water Commission are due by Saturday, August 10, 2019, for their September 2019 Agenda at – rebecca.r.alakaihawaii.gov, http://dlnr.hawaii.dov/cwrm/ SCAP.5136.3: Hayama Residence After-The-Fact Application for a Stream Channel Alteration Permit, Mānoa Stream, Mānoa, Hawaii, Tax Map Key: (1) 3-9-037:085

Comments followed:

1. Links – A person was not able to access the web links.
2. Talked with the Homeowner – Dave Watase reported on the project and that he had talked to the homeowner. Watase thought that if the homeowner gets all the permits, then his plans are okay. Watase would wait indefinitely and see if the permits will be issued and then take action. Vice Chair Fukumoto will take this up at a future meeting. Watase offered to talk with the homeowner and distribute the information.
3. The Mānoa Outdoor Circle – Vanessa Distajo from the Mānoa Outdoor Circle added that six (6) weeks ago a resident complained to the TOC, which forwarded the complaint to the Department of Planning and Permitting (DPP) for the after-the- fact permits, which would set a precedence.

Ala Wai Flood Mitigation Project (AWFMP) – In the interest of time, Vice Chair Fukumoto asked Dave Watase for an update on the AWFMP. Nothing was pressing at this time, but if Watase could get all the new Board members' contact information, then he could send all the background information, so that they can make an informed decision.

Vice Chair Fukumoto wanted to defer the rest of the agenda to the next meeting.

University of Hawaii at Mānoa (UHM) – Shawn Kyono from Student Housing at UHM reported the following: Wednesday, August 21, 2019 will be "Move-In Day" and on Monday, August 26, 2019 there will be increased traffic from 8:00 a.m. to 4:30 p.m. There will be extra staffing and signage from 6:00 a.m.

Board of Water Supply (BWS) Halau Wai Manoa – Greg Nakai, Planner, from PBR HAWAII & Associates, Inc. announced that a draft Environmental Assessment (EA) will be published tomorrow, on Thursday, August 8, 2019, and there is a 30-day comment period.

Vanessa Distajo was waiting for a public apology from Vice Chair Pro Tem Ellen Watson.

ANNOUNCEMENTS

- Next Regular Board Meeting – The next Manoa Neighborhood Board No. 7 meeting is scheduled for Wednesday, September 4, 2019 at the Noelani Elementary School, 2655 Woodlawn Drive at 7:00 p.m.
- ‘Ōlelo Broadcasts – Watch the Manoa Neighborhood Board No. 7 regular meetings on 'Olelo Channel 49 on the 3rd Tuesday of the month at 4:00 p.m. and on the 2nd and 4th Saturdays of the month at 3:00 p.m. The 'Olelo program schedule is at – http://www.olelo.org/programming/default.html.

ADJOURNMENT: **At 8:59 p.m., due to time limits, Vice Chair Fukumoto adjourned the meeting.**

Submitted by: K. Russell Ho, Neighborhood Assistant
Reviewed by: Harry Cho, Public Relations Specialist
Reviewed by: Joan Koff, Secretary

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MĀNOA NEIGHBORHOOD BOARD NO. 7

c/o NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BLVD, STE 160 • HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET http://www.honolulu.gov/nco

DRAFT REGULAR MEETING MINUTES
WEDNESDAY, SEPTEMBER 4, 2019 7:00 p.m.
NOELANI ELEMENTARY SCHOOL CAFETORIUM
2655 WOODLAWN DRIVE

CALL TO ORDER – Vice Chair Elton Fukumoto called the Mānoa Neighborhood Board No. 7 meeting to order at 7:00 p.m. **A quorum was established with 12 members present.** Note – This 17-member Board requires nine (9) members to establish a quorum and to take official Board action.

Board Members Present – Dylan Armstrong, Gloria Borland, Rick Budar, Mike Carroll, Rodney Chun, Elton Fukumoto, Aimee Grace, Patti Kawano (arrived at 7:10 p.m.), Joan Koff, Brent Lewis, Ben Rotter, Ellen Watson, and Robert Zane.

Board Members Absent – Tanya Harrison, Nathaniel Kinney, Jonathan Valdez (resigned).

Vacancy – There was one (1) vacancy in Subdistrict 3 (Middle Mānoa).

Guests – Asami Kobayashi (U.S. Congressman Ed Case's Representative), Representative Dale Kobayashi and Jolyn Okimoto Rosa (Representative Dale Kobayashi's Office), Ed Hawkins (Mayor Kirk Caldwell's Representative, Mayor's Office of Economic Development); James Larson (Councilmember Ann Kobayashi's Office); Lieutenant Taro Nakamura and Sergeant William Malina (Honolulu Police Department), Dominic Dias, A.A., and Amy Tsuneyoshi (Board of Water Supply), Bob Kern, Hakui Chock (University of Hawaii), Vanessa Distajo (Mānoa - The Outdoor Circle), Robert Fox (Mānoa resident), Erin Bishop (Oahu Invasive Species Committee), Greg Nakai (PBR HAWAII), Stanton Lum, Ellen Sofio, Lori Lum (Watanabe, Ing LLC), Napualani Wong (Paradise Park), Dave Watase, June Rae Hee, Glenn Otaguro (Nextdoor.com), a videographer (Integrated Multimedia Consultants), and K. Russell Ho (Neighborhood Commission Office).

Before going to the first item on the agenda, ELECTION OF CHAIR, Vice Chair Fukumoto mentioned §2-14-112 of the Neighborhood Plan 2008 (Revised) Priority of business. (a) After the call to order of a regular meeting, the board shall give priority to representatives of the Honolulu Fire Department and the Honolulu Police Department to present their reports to the board and community, and respond to inquiries…(c) All questions relating to the priority of business to be acted upon by the board shall be decided without debate. [Eff. 10/20/08]

Rotter moved and Budar seconded to move Honolulu Fire Department (HFD) and Honolulu Police Department (HPD) to the top of the agenda. By a show of hands, the Mānoa Neighborhood Board No. 7 ADOPTED the motion, 11-0-0 (**AYE**: Armstrong, Budar, Carroll, Chun, Fukumoto, Grace, Koff, Lewis, Rotter, Watson, and Zane; **NAY**: None; **ABSTAIN**: None)**.**

CITY MONTHLY REPORTS

Honolulu Fire Department (HFD) – There was no representative present at this time and no report was available.

Honolulu Police Department (HPD) – Lieutenant Taro Nakamura reported the following:

- August 2019/July 2019 Crime Statistics – There were 1/4 motor vehicle thefts, 8/4 burglaries, 11/9 thefts, and 12/8 unauthorized entries into a motor vehicle (UEMV). There were 5,881 total calls for service. Statistical information can be found on the HPD public website at – www.honolulupd.org.
- Safety Tips – Home Security Tips (Environmental Design):
  - Always lock all exterior doors and windows before leaving the house, even if it is for a short trip.
  - Always close and lock the garage doors and sheds.
  - Plant shrubbery in front of low windows.
  - Consider installing a burglar alarm or surveillance system.
  - Consider a bank safety deposit box for money, securities, and valuables
- If The Home Is Broken Into: If a person comes home to find an unexplained open/broken window or door:
  - Do not enter. The perpetrator may still be inside.

- Use a cell phone or the neighbor's phone to call police.
- Do not touch anything or clean up until the police have inspected for evidence and fingerprints.

Comments followed:

1. Burglaries – Grace asked about arrests for burglaries. Lieutenant Nakamura noted that in three (3) of the five (5) cases, arrests were made. It depends on the cooperation of the complainant. In one (1) case, the burglary suspect was caught "in the act." Some arrests were for other crimes, not for burglary.
2. Accident – Koff asked about an accident up on Tantalus. Lieutenant Nakamura was off duty and noted that Tantalus was in another district. Glenn Otaguro added that a van swerved to avoid hitting two (2) mopeds and went off the road and down the mountain side. A tow truck pulled the van back onto the road. No one was seriously injured.
3. Last Month – Lieutenant Nakamura reported that for the car-jacking off Lowrey Avenue last month, the suspects were arrested in another district.

Vice Chair Fukumoto noted that the Board of Water Supply (BWS) report will be later on the agenda.

At 7:10 p.m. Patti Kawano arrived at the meeting; 13 members present.

ELECTION OF CHAIR (to serve from Monday, July 1, 2019 to Tuesday, June 30, 2020)

Before the election of Chair, Vice Chair Fukumoto gave some ground rules:

1. The Neighborhood Assistant requested that Board members turn in their contact information sheets.
2. Vice Chair Fukumoto reminded the speakers to speak into the microphones, so that the ʻŌlelo audience can hear what was said.
3. He apologized for the way the last meeting was conducted, as he was underprepared.
4. Vice Chair Fukumoto gave the voting procedure and appointed Koff to be the timekeeper.

Vice Chair Fukumoto asked for nominations. Ellen Watson self-nominated herself for Chair. Dylan Armstrong self-nominated himself for Chair. No second was required.

Watson has served on the Board for many years, wanted to study and follow the Neighborhood Plan (NP) and the Office of Information Practices (OIP) guidelines, and now that she is retired, she has the time to work for the Mānoa community. Watson does not belong to any political party and has no ambitions for political office.

Armstrong noted that the last meeting was heated at times, filled with compassion, and he apologized for his part in the conduct of the last meeting. He wanted all points of view to be heard without fear of censure and he did not want the agenda to be used to publicly humiliate dissenting members. Moving forward, Armstrong wanted everyone to contribute to the discussion.

Public Comments

1. Robert Fox is a Mānoa resident and also has a house in California. Fox is the Executive Director of the Council of Neighborhood Organizations for the City of Long Beach, California and wanted to talk about the First Amendment of the Bill of Rights to the U.S. Constitution, which guarantees the freedom of expression (and dissent), freedom of association, and the free exercise of religion. He hoped that the Mānoa Neighborhood Board No. 7 would move forward with regards to the First Amendment to the Bill of Rights.
2. Former Chair Ben Rotter thanked the Board for the opportunity to Chair the Board, but felt at times that his personal opinion was over-ridden by the Board's point of view. Armstrong suggested that when the Board takes an action, then the Chair must speak for the Board. Disclosure is only for conflicts of interest, but it does not disqualify a person from participation. The Committees could also represent his view. Watson also felt that all opinions are allowed to be discussed and suggested that the Chair may turn over the gavel to the Vice Chair to give his personal comments.
3. Resident Stanton Lum was also concerned about the Chair pursuing his personal projects, while still maintaining a neutral, objective position. Also, Lum noted that many individuals are allowed to do a good job and may advance to higher offices.

Vice Chair Fukumoto called for a roll call vote. **There were three (3) votes for Ellen Watson – Chun, Koff, and Watson and nine (9) votes for Dylan Armstrong – Armstrong, Borland, Budar, Carroll, Grace, Kawano,**

Lewis, Rotter, and Zane, and one (1) Abstain – Fukumoto. Armstrong received the quorum votes to win. Chair Armstrong moved to the center of the head table.

Board of Water Supply (BWS) – Dominic Dias reported the following press release:

- Main Break Report – There were two (2) breaks in August 2019 – one (1) on Monday, August 12, 2019 at 3267 Pinao Street, an (eight (8)-inch Cast Iron pipe; installed 1962); and one (1) on Monday, August 19, 2019 at 3591 Waakaua Place, a (six (6)-inch Cast Iron pipe; installation - unknown). Both were repaired and are back in service.
  Manoa Estates Project Status – Contractor for the Manoa Estates project is still working to transfer services on Kumu Street and a separate crew is still working at Manoa Estates to install new main.
- 2019-2020 Halawa Xeriscape Garden Workshop Schedule – The BWS and Friends of Halawa Xeriscape Garden continue to offer workshops that highlight the concept of xeriscaping – an innovative means of conserving water through efficient landscaping. The new 2019-2020 xeriscape workshop schedule features dozens of new and popular workshops that offer useful tips on how to maintain a beautiful and water-efficient garden. The garden offers workshops on select Wednesdays and Saturdays throughout the year.
  Upcoming workshops include:
  - Saturday, September 21, 2019: Backyard Composting: Nature's Recycling.
  - Saturday, September 28, 2019: Fancy Funnels
  - Saturday, October 5, 2019: Economical Aquaponics
  - Saturday, October 12, 2019: Paint in the Garden: Bamboo

  Workshops begin at 10:30 a.m. and advanced registration is required. Call 748-5315 or email – workshops@hbws.org to reserve your space at one (1) of our workshops. Visit our website – www.boardofwatersupply.com to check out the full list of classes being offered. Provided this evening is a flyer containing information about the current workshop schedule at the Halawa Xeriscape Garden.
- Water Emergency Preparedness – Natural disasters, power outages, or other unexpected events can affect the Board of Water Supply's (BWS) ability to provide water service to the community. September marks the observance of National Preparedness Month and serves as an important reminder to have an emergency preparedness kit available for your household.
  A crucial component of your preparedness kit is a safe drinking water supply. Residents should store at least one (1) gallon of water per person per day for at least five (5) to seven (7) days. Also, in the event of an emergency, it is very important to stay tuned to media reports to receive water information bulletins and take any appropriate actions announced by the BWS or other emergency response agencies.
  More information about water emergency preparedness, including a video demonstrating how best to store drinking water in your home, is available online at – www.boardofwatersupply.com. To receive emergency alerts via email or text message, consider subscribing to the BWS at – hnl.info.

Comments followed: Fire Hydrants – Zane reported that a tool to open the water at the fire hydrant was left on the hydrant by possibly a contractor and after he reported it, the BWS responded quickly. Zane's concern was that this type of incident has happened before and he fears that the water bills may increase for residents. Dias asked the location of the incident, which was on Alani Drive. Dias will follow up.

Chair Armstrong called for a recess.

Chair Armstrong called the meeting back to order.

FILLING OF ONE (1) VACANCY IN SUBDISTRICT 3 (Middle Mānoa) – (Proof of Residency Required; Oath of Office as Required). As there were no volunteers, Chair Armstrong deferred this item to the next meeting.

OTHER MONTHLY REPORTS

O'ahu Invasive Species Committee (OISC) of Hawaii – Erin Bishop reported the following:

One (1) of the species of fungus causing Rapid ʻŌhiʻa Death (ROD) was recently detected for the first time on Oʻahu in July 2019. A team of natural resource managers from the OISC and the Koʻolau Mountain Watershed Partnership (KMWP) recently sampled a dead ʻōhiʻa tree on private land in a remote area in the Ko'olau Mountains above Pearl City.

The sample was analyzed by the U.S. Department of Agriculture (USDA) Agriculture Research Service lab in Hilo. It confirmed the presence of Ceratocystis huliohia. Although this is the less aggressive of the two (2) Ceratocystis species associated with ROD, it still has the ability to kill ʻōhiʻa trees.

A partnership of state, federal, university, and non-government organizations have been conducting systematic helicopter and ground surveys to look for ROD since 2016. On Oʻahu, 150 dead or unhealthy ʻōhiʻa trees have been sampled for the disease in the past three (3) years, and all have been negative until now. The location of the infected tree is extremely remote and it is considered highly unlikely to have been spread by people. Researchers are still trying to understand the source of the two (2) Ceratocystis pathogens and are looking at any possible patterns of dispersal.

This first detection on Oʻahu has initiated a rapid response, which includes additional surveys to determine how widespread the disease is. A combination of helicopter, UAS (drone) and ground surveys are planned with OISC, Department of Land and Natural Resources (DLNR), and KMWP playing lead roles. The landowner, Kamehameha Schools, is working closely with the response agencies to coordinate access to the property, so agencies are able to test for the fungus and prevent it from spreading.

Rapid ʻŌhiʻa Death threatens Hawaii's most important tree species. ʻŌhiʻa grows throughout the Koʻolau and Waiʻanae mountain ranges across approximately 50,000 acres. ʻŌhiʻa serves as a keystone species providing important watershed cover for recharging the island's aquifer, habitat for endangered species, and cultural uses such as hula performances.

Residents and visitors can help protect our remaining ʻōhiʻa forests with the following actions:
Avoid injuring ʻōhiʻa. Open wounds on ʻōhiʻa are an entry point for disease spores. The disease can also spread from tree to tree on machetes or other tools.

- Do not transport ʻōhiʻa inter-island.
- Do not move ʻōhiʻa wood or vegetation, especially from areas known to have ROD.
- Clean your hiking boots/gear/tools. Scrub off all dirt and spray boot soles and tools with 70% rubbing alcohol, and wash your clothes in hot water and use a dryer to ensure the disease is not spread on boots and clothing.
- Wash your vehicle if driving near ʻōhiʻa forests. The disease can remain alive and infectious in soil, so wash all dirt off vehicles.

Rapid ʻŌhiʻa Death has now been detected on Hawaiʻi Island, Maui, Kauaʻi and Oʻahu since the fungal disease was first discovered in 2014. To date, the more aggressive form of the disease has not been found on Maui or Oʻahu, and is extremely limited on Kauaʻi. The aggressive species of ROD is the one responsible for 95% of the mortality on Big Island. So, it is important that we continue to be vigilant to prevent it from arriving on Oʻahu. For more information about ROD, visit – www.rapidohiadeath.org.

Please report dead or dying ʻōhiʻa, with brown leaves attached to OISC at 266-7994 or email oisc@hawaii.edu . *As* always, please feel free to contact us with questions or reports of suspect invasive species.

Comments followed: Little Fire Ants (LFA) – Watson asked if there were LFA in Makiki. Bishop had not seen the latest press release on LFA, but noted that the last location she saw reported was Lanikai.

Be Ready Mānoa (BRM) – Helen Nakano and Glenn Otaguro reported the following:

- Monthly Classes – The next class will be on Thursday, September 26, 2019 at the Mānoa Innovation Center (MIC) at 6:00 p.m. The guest speaker will be from the Climate Change, Sustainability, and Resilience Office. Last month on Thursday, August 22, 2019, Ernie Lau, head of the BWS, spoke on the plans they have for Mānoa, which included opening three (3) fire hydrants with four (4) spigots each for water and sharing water from the gravity-flow and pressurized water systems. Lau attended a HAM radio presentation and invited the BRM to speak to the BWS. They will also deployed trained HAM operators in an emergency.
- Urban Survival Fair – On Saturday, October 19, 2019 from 9:00 a.m. to 1:00 p.m., there will be the Urban Survival Fair at the Mānoa Marketplace. 40 community groups and agencies will attend. Zane will talk to Nakano afterwards about networking to get University of Hawaii (UH) students.

University of Hawaii at Mānoa – Elmer Kaʻai was not present and no report was available.

Paradise Park Update – Napualani Wong reported the following:

- Monthly Reports – A couple of months ago, Wong had requested to be removed from the monthly reports list, but she will attend to answer questions. When she has something to report, then she will ask to be placed on the agenda.

Chair Armstrong explained the difference between a regular monthly report and Board Business and how an agenda item can be placed on the agenda for Board action by a Board member requesting 10 days before the meeting in writing to the Chair. Community members may contact Board members.

Ala Wai Flood Mitigation Project Update – Dave Watase reported the following:

- Resolution 19-182 – The City Council passed Resolution 19-182, which allowed the Mayor to sign the Public Partnership Agreement (PPA). Opponents' concerns included that the vote would lock the City to the design elements and not to look at alternatives. A better resolution was passed on Wednesday, July 3, 2019 to look at alternatives. Watase felt that the vote was rushed for fear of losing the federal money. Although the deadline of the end of August 2019 has passed, the PPA still has not been signed. On the community side, they still oppose the project and favor the alternatives. The City Council formed a Permitted Interaction Group (PIG), set aside money, and consulted with Oceanet, which is doing community engagement. Watase urged all sides to participate. It is hoped that with everyone's input, Mayor Caldwell will make a good decision.

Comments followed:

1. Deadlines – Vice Chair Fukumoto noted that at the June 24, 2019 Special Meeting, the Board passed two (2) letters to Mayor Caldwell and Governor David Ige, as the deadline was the end of June 2019, then the end of July 2019, and the end of August 2019. To date, the PPA has not been signed. Watase added that Mayor Caldwell may be waiting for the State funding and that the Pālolo Neighborhood Board No. 6 passed the same letters. If the Mayor signs the agreement, there is still the letter to Governor Ige and the State Office of Environmental Quality Control (OEQC).
2. OEQC – Chair Armstrong added that the OEQC has all of the Environmental Impact Statement (EIS) online.
3. More Information – Watase said he was getting information from other sources in the USACE and will share it with the City Council.
4. Federal Funding – Borland asked about the federal funding. Watase mentioned that the federal funding was secured, but tied to the existing plan of detention basins and the wall around the Ala Wai Canal. Borland was concerned that President Donald Trump could divert the funds to build his wall at the Mexican border. Watase said the funds were passed by Congress for already-approved projects and this project is a line item. President Trump cannot divert the funds. Stanton Lum watched the testimonies at the City Council and was baffled by the vote. Watase thought that the City Council was afraid of losing the funding, but he hoped that the funds could be used to support the community's alternatives. Dr. Irwin Koff noted that the 2004 Mānoa Flood was caused by human error, where the debris was not cleared under the Mānoa Bridge, causing flooding at the University of Hawaii at Mānoa. He felt that money should not determine actions taken by the people.

ELECTED OFFICIALS

Mayor Kirk Caldwell's Representative – Executive Director Ed Hawkins, Mayor's Office of Economic Development, reported the following:

- Removal of four (4) Trees on East Mānoa Road – Who did it and was there any public notice? Department of Parks and Recreation (DPR)/ Division of Urban Forestry (DUF) responded that the four (4) City trees were removed as part of a project of the Department of Design and Construction (DDC). Per discussions with DPR, DPR will perform the replacement tree plantings. Executive Director Hawkins will follow up on the public notice.
- Transient Vacation Rentals (TVR) – Short-term vrs. Long-term leases. How will this affect the tourism industry? Mayor's Office of Economic Development (OED) inquired with the Hawai'i Tourism Authority (HTA) on whether they keep data/statistics on this issue. The response was that they are interested in this trend and will respond when data/statistics are compiled.
- Pool Users Complaints about Public Notice and Pool Management – Complainant noted lack of notification about cancellation of classes and rudeness by management. DPR responded that our Mānoa pool staff was reminded to inform our class instructors of any park or pool situations that will impact scheduled pool classes, as well as to notify the general public of any schedule changes by posting appropriate signage by the entryway to the pool. When possible, we will also post updates on our DPR website and/or on our DPR social media. The Pool Manager was also reminded to be respectful and courteous to all pool users.

Comments followed:

1. New Illegal Short–term Rentals Enforcement – Robert Fox supported Mayor Caldwell for enforcing the illegal short-term rentals laws, as they take away from the affordable housing inventory.
2. Delay in Getting Permits – Rotter asked why it takes "up to year and a half" to receive new Transient Vacation Rental permits. Why this long delay? Executive Director Hawkins will follow up with Department of Planning and Permitting (DPP).

City Councilmember Ann Kobayashi – James Larson distributed Councilmember Kobayashi's newsletter and mentioned that she was still attending a full-Council meeting. He was available to take any concerns back to the office.

Governor David Ige's Representative – Director Bruce Anderson, State Department of Health, was not present and no report was available.

Representative Dale Kobayashi – Representative Kobayashi distributed his newsletter and reported the following:

- Ala Wai Flood Mitigation Project (AWFMP) – The City Council passed a resolution, but the State funding was denied by the House, as it did not support the will of the House and the people. Governor Ige tried to bypass the Legislature with Certificates of Participation. Representative Kobayashi wrote a letter to Governor Ige asking him to reconsider his plan to fund this project and to follow the will of the House of Representatives.

U.S. Congressman Ed Case's Representative – Asami Kobayashi distributed U.S. Congressman Case's newsletter and gave her quarterly report:

- ʻŌlelo Broadcasts – Broadcasts are on the third Sunday of the month at 6:00 p.m. on Channel 49 and every Tuesday at 10:00 a.m. There are new shows every month and they are also on YouTube.
- Federal Funding Bills to Benefit Hawaiʻi – These are listed in the newsletter and on the website.
- First Bill – U.S. Congressman Case introduced a bill to support the National Oceanic and Atmospheric Administration (NOAA), which is the smallest of the uniformed services. The Hurricane Hunters fly into storms and gather information and data.
- Filipino Veterans Family Reunification Act – U.S. Congressman Case introduced this act is to expedite World War II veterans reunification with their families.
- Pacific Islands Caucus – U.S. Congressman Case formed the caucus to highlight Pacific Islands concerns.
- Tour Helicopters – U.S. Congressman Case has introduced legislation to regulate tour helicopters, which may not be a problem in Manoa, but it is in other communities. Eight (8) Neighborhood Boards have already passed resolutions for more regulation. More details are on the "Dear Colleague" letter, which was also distributed.
- Six (6) Talk Stories – There will be a mailout, announcing the six (6) Talk Stories, one (1) will be a tele-video Talk Story from Wednesday, October 2, 2019 to Monday, October 7, 2019.

Comments followed:

1. Bills – Borland asked about the bills introduced and how likely will the Senate be picking them up. A. Kobayashi noted it depends on the Senate leadership.
2. Impeachment of President Trump – Borland asked for U.S. Congressman Case's stance on impeachment. A. Kobayashi responded that U.S. Congressman Case does not think there is enough evidence to move forward, as do many of his Democratic colleagues, but he is concerned about Russian influence into the elections.
3. President Trump's Call to End the Filipino Veterans Family Reunification Act – Zane asked what U.S. Congressman Case's reaction to President Trump's statement was. U.S. Congressman Case was opposed to President Trump's statement, as he introduced the legislation. U.S. Congressman Case responded to the media, but A. Kobayashi will follow up. Zane said it was not necessary and he thanked the Hawaiʻi District and Washington, D.C. staffs for working for the Congressman.

At 8:19 p.m. Chair Armstrong passed the gavel to Vice Chair Fukumoto.

4. Next Door.com – Chair Armstrong acknowledged that on Next Door.com, a social media website by Glenn Otaguro, there were comments about tour helicopters.
5. Transportation Needs – As a planner, Chair Armstrong wanted to commend U.S. Congressman Case for his work in getting federal transportation funding.

At 8:21 p.m. Vice Chair Fukumoto returned the gavel to Chair Armstrong.

UNFINISHED BUSINESS

Noelani Elementary School IDEA Center Building Project – Dr. Ellen Sofio presented a letter for the Board to vote on to send to Department of Education (DOE) Superintendent Kishimoto. She asked how many Board members have seen copies of the letter, which were distributed by the Neighborhood Assistant and Vice Chair Fukumoto.

She has 450 signatures on an online petition who support her efforts to save the eleven trees, scheduled for removal. A Board member had asked where the trees were. Dr. Sofio wanted the Board to view the area in the morning to appreciate the trees and birds. There was discussion whether to postpone the vote until Board members could view the area and/or read the letter or vote tonight.

Comments followed:

1. Summary from Last Month – Watson's understanding was that last month when Dr. Sofio testified, no Board member offered to write the letter or to help her write the letter. Dr. Sofio had mentioned that the Attorney General was calling for a third Environmental Assessment (EA), but the letter does not mention it. Also, it appeared that the Board wrote the letter. Watson thought Dr. Sofio would be asking the Board to support her position. Apparently, Vice Chair Fukumoto helped write the letter. Dr. Sofio clarified that the Office of Environmental Quality Control (OEQC) said that the Superintendent would need to request a second 30-day comment period. Chair Armstrong inherited this agenda item from the previous presiding officer. He pointed out that this item has been discussed three (3) times already and there was a time limit. Vice Chair Fukumoto added that Dr. Sofio had written the letter with his suggestions "in the Board's voice." Borland had suggested that Dr. Sofio write the letter and thanked Dr. Sofio for writing the letter. At the first meeting Dr. Sofio testified and at the second meeting the Noelani teachers and students testified, but Dr. Sofio was not present. Borland wanted to vote on the letter. Zane could not verify that the 450 signatures were residents of Mānoa or that they would be affected by Noelani School construction. He was also concerned with the tone of the letter and was willing to work on revising the tone. Carroll had two (2) concerns – has a decision been made already and does the planting of 11 native tree satisfy her concerns. Dr. Sofio responded that a recent article in Civil Beat discusses the native trees argument and no final decision has been made.
2. Chair Armstrong Asked for a Motion – **Rotter moved and Kawano seconded that the Mānoa Neighborhood Board No. 7 support the letter, written by Dr. Sofio.** Discussion followed. Watson stated that a second Environmental Assessment (EA) was needed to address the tree. From the Wednesday, May 1, 2019 regular meeting minutes, former Chair Rotter was to write a letter concerning the replacement of the trees. Rotter wrote that there was concern over replacing the trees. Vice Chair Fukumoto asked if the voting on this letter delay the construction of the project. Dr. Sofio said that this letter would give both sides an opportunity for further discussions. Dr. Sofio added that the closure of St. Francis School may lead to a broader environmental impact for the area. Chair Armstrong's reading of the letter is that it was asking for a 30-day extension of the comment period. **The reverse roll call vote was 5-8-0** (**AYE**: Armstrong, Borland, Chun, Koff, and Rotter; **NAY**: Budar, Carroll, Fukumoto, Grace, Kawano, Lewis, Watson, and Zane)**. The motion was NOT ADOPTED.**

Missing Warning Siren from Chinese Cemetery – Ellen Watson noted that seniors could not hear the monthly emergency siren in the back of Mānoa Valley. The Governor Ige's Representative, Director of the State Department of Health (DOH) Bruce Anderson had reported that the siren was taken down as the pole was broken and would not be fixed until funds became available in 2020. Watson thought this was not acceptable to Mānoa residents. Vice Chair Fukumoto suggested that the Mānoa legislators pressure the State Administration. As there was no motion to consider, Chair Armstrong moved on the agenda.

Primary Urban Center Watershed Management Plan (PUC WMP) Meeting of City Development Plan, Impacts on Mānoa – Watson had attended a "pop-up" at the Mānoa Market Place. Her perception was that the City was asking what kind of development do the neighborhoods want, as sea-level rise will force coastal areas (like Waikīkī) to move inward. Mānoa should be aware of the plans for development, like condos and high rises. Chair Armstrong is a planner and was concerned about the need for more planning. Mayor Kirk Caldwell's Representative Executive Director Ed Hawkins asked who was presenting this plan – Office of Climate Change, Sustainability & Resiliency or Department of Planning and Permitting (DPP). Watson said it was the DPP. Executive Director Hawkins asked what he should take back. Watson replied that the City should not do it. She wants no condos in Mānoa. Executive Director Hawkins will follow up and get someone to continue the discussion with her. Chair Armstrong also wanted the Neighborhood Board to get more involved with policy–making. As there was no motion to act on, he will continue this discussion in the future.

Chair Armstrong received a request for the Census 2020 to be added to the agenda, which he had inherited. Even though there were 12 Board members to add this item to the agenda, he apologized that there was no time to present it completely. Chair Armstrong will put this item on the next agenda, which was acceptable to the presenters.

Mānoa Learning Center; Halau Wai Mānoa Project – Greg Nakai (PBR HAWAII), consultant for the BWS, presented the project which will be located in the back of Mānoa Valley on 12.8 acres of BWS property near Paradise Park and Lyon Arboretum. The fact sheet explained that the farm will demonstrate watershed management, water conservation, and sustainable agriculture. There also concepts to building a meeting place, but no other permanent structures. There will be "hands on" learning opportunities with agriculture and removal of invasive species, like Albizia trees. The BWS will hire a non-profit to operate the facility. The draft Environmental Assessment (EA) was issued on Thursday, August 8, 2019 with comment period ending on Monday, September 9, 2019. Watson questioned who the non-profit would be. Kawano was concerned that the project would raise water rates. The Board took no action at this time.

Chair Armstrong announced that six (6) items will be carried over to the next meeting. They were:

1. Installation of an Antenna at the Mānoa 405 Reservoir – Representative from the Board of Water Supply (BWS).
2. Review And Approval Of A Proposal To Host The Annual Homeward Bound 5K (Five Kilometer) Race In Mānoa on Thanksgiving Day, November 28, 2019 – The Institute for Human Services.
3. Approval of the Minutes – Wednesday, April 3, 2019 regular meeting minutes, the Wednesday, May 1, 2019 regular meeting minutes, the Wednesday, June 5, 2019 Memorandum for the Record, the Monday, June 24, 2019 Special Meeting Minutes, and the Wednesday, August 7, 2019 regular meeting minutes.
4. Oahu Metropolitan Planning Organization (OahuMPO) Citizens Advisory Committee (CAC) – Delegate to be decided.
5. Vote On Delegates For Ongoing Discussions, Regarding The Ala Wai Flood Mitigation Project.
6. Vote On the Permitted Interaction Group (PIG) Or Delegates For Ongoing Discussions Of Thirty Meter Telescope (TMT) Conflict – which is dividing the University of Hawaii community, and what the Mānoa Neighborhood Board might play in bringing the parties together.

ANNOUNCEMENTS

- Next Regular Board Meeting – The next Mānoa Neighborhood Board No. 7 meeting is scheduled for Wednesday, October 2, 2019 at the Noelani Elementary School, 2655 Woodlawn Drive at 7:00 p.m.
- ‘Ōlelo Broadcasts – Watch the Mānoa Neighborhood Board No. 7 regular meetings on ‘Ōlelo Channel 49 on the 3rd Tuesday of the month at 4:00 p.m. and on the 2nd and 4th Saturdays of the month at 3:00 p.m. The ‘Ōlelo program schedule is at – http://www.olelo.org/programming/default.html.

ADJOURNMENT: **Due to time limits, Chair Armstrong adjourned the meeting at 8:59 p.m.**

Submitted by: K. Russell Ho, Neighborhood Assistant
Reviewed by: Harry Cho, Public Relations Specialist
Reviewed by: Joan Koff, Board Secretary

MĀNOA NEIGHBORHOOD BOARD NO. 7

c/o NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET http://www.honolulu.gov/nco

DRAFT REGULAR MEETING MINUTES
WEDNESDAY, OCTOBER 2, 2019 7:00 P.M.
NOELANI ELEMENTARY SCHOOL CAFETORIUM
2655 WOODLAWN DRIVE

CALL TO ORDER – Chair Dylan Armstrong called the Mānoa Neighborhood Board No. 7 meeting to order at 7:02 p.m. **A quorum was established with 13 members present.** Note – This 17-member Board requires nine (9) members to establish a quorum and to take official Board action.

Board Members Present – Dylan Armstrong, Gloria Borland, Rick Budar, Mike Carroll, Rodney Chun, Elton Fukumoto, Aimee Grace, Tanya Harrison, Patti Kawano (arrived at 7:15 p.m.), Nathaniel Kinney, Joan Koff (arrived at 7:04 p.m.), Brent Lewis, Ben Rotter, Ellen Watson, and Robert Zane.

Board Members Absent – None.

Vacancy – There was one (1) vacancy in Subdistrict 3 (Middle Mānoa) and one (1) vacancy in Subdistrict 4 (Lower Mānoa).

Guests – Director Bruce Anderson (Governor David Ige's Representative, State Department of Health); Senator Brian Taniguchi and Tom Heinrich (Senator Brian Taniguchi's Office), Representative Dale Kobayashi and Jolyn Rosa (Representative Dale Kobayashi's Office), Elmer Ka‘ai (University of Hawaii at Mānoa); Ed Hawkins (Mayor Kirk Caldwell's Representative, Mayor's Office of Economic Development); Councilmember Ann Kobayashi and James Larson (Councilmember Ann Kobayashi's Office); Captain Beje Mahoe (Honolulu Fire Department), Lieutenant Michael Nakada and Sergeant William Malina (Honolulu Police Department), Dominic Dias and Amy Tsuneyoshi (Board of Water Supply), Brad Frye, Dave Watase, Hector H. Venegas (Neighborhood Security Watch Rainbow Drive), Helen Nakano and Raleigh Verdun (Be Ready Mānoa), Benton Kobashigawa, Vanessa Distajo (Mānoa - The Outdoor Circle), Gordon Aoyagi, Napua Wong (Paradise Park), Lori Lum (Watanabe, Ing LLC), Greg Nakai (PBR HAWAII), Gene and Audrey Lu (Mālama Mānoa), Bob Kern, Linda Legrande, Pat Ching, Daniel Dinell (Trees for Honolulu's Future), Skyla Sale, two (2) videographers (Integrated Multimedia Consultants), and K. Russell Ho (Neighborhood Commission Office).

CITY MONTHLY REPORTS

Honolulu Fire Department (HFD) – Captain Beje Mahoe reported the following:

- September 2019 Statistics – There was 1 activated alarm (no fire), 22 medical emergencies, 1 motor vehicle collision with pedestrian, 2 mountain rescues, and 1 hazardous materials incident.
- Fire Safety Tips – Halloween Safety:
  - When selecting a costume, stay away from long, trailing fabric, as it can be a trip hazard or attach to an object and cause a fall. If you create your own costume, select materials that would not easily ignite if it comes into contact with heat or flame. If your child is wearing a mask, ensure the eye holes are large enough so they can see out.
  - Provide children with flashlights or glow sticks as part of their costume.
  - It is safest to use a flashlight or a battery-operated candle in a jack-o-lantern. The Honolulu Fire Department discourages the use of candles.

Questions, comments, and concerns followed – Helicopter Rescues: Watson asked for monthly reports on helicopter rescues at Paradise Park.

At 7:04 p.m. Koff arrived at the meeting. 14 members present.

Honolulu Police Department (HPD) – Lieutenant Michael Nakada and Sergeant William Malina reported the following:

- September 2019 Statistics – There was 1 motor vehicle theft, 4 burglaries, 13 thefts, 3 unauthorized entries into a motor vehicle (UEMV), and 5,630 total calls for service.

- Safety Tips – Safety tips were provided on Halloween safety.
  - Plan costumes that are bright and reflective or by adding reflective tape or striping.
  - Think twice before using simulated knives, guns or swords, as they may scare children. They should be soft and flexible to prevent injury.
  - Everyone should have a flashlight and even a back-up one to see and be seen.
  - Stay on the planned "safe" route and only visit familiar homes in your neighborhood.
  - Do not eat treats until they are thoroughly checked by an adult at home.

Questions, comments, and concerns followed – Police Patrol – Lewis asked if there will be any changes to thepolice patrol on Halloween night. Lieutenant Nakada responded that as Waikīkī will have more crowds of people, police may be assigned there and that Mānoa patrols will be as usual. **Chair Armstrong announced that due to the full agenda in November 2019, HPD and HFD will not be listed on the agenda, but they are welcome to submit written reports.**

COMMUNITY REPORTS

Be Ready Mānoa – Helen Nakano reported that the Urban Survival Fair will take place on Saturday, October 19, 2019 from 9:00 a.m. to 1:00 p.m. at the Mānoa Marketplace. Raleigh Verdun has been do the HAM training and Board of Water Supply (BWS) head Ernie Lau took the training and wants the training to go to his personnel for emergency preparedness.

Ala Wai Flood Mitigation Project (AWFMP) – Dave Watase provided an update that the Protect Our Ala Wai Watersheds filed a lawsuit to prevent the City and State from funding the project by the floating of bonds. Watase was wary of the U.S. Army Corps of Engineers (USACE)'s intentions. He reported that a forum for alternatives to the AWFMP will be held on Tuesday, October 29, 2019 from 6:30 p.m. to 8:30 p.m. at the Ala Wai Golf Course Clubhouse.

At 7:15 p.m. Kawano arrived at the meeting. 15 members present.

Questions, comments, and concerns followed:

1. Disclosures – Vice Chair Fukumoto disclosed that he is a member of Protect Our Ala Wai Watersheds. The Neighborhood Assistant noted that after disclosure, he is allowed to participate in the discussion and vote, Tom Heinrich disclosed that he has served on the Board since 2000 and is the Vice President. He thanked the Neighborhood Assistant for all of the update notices. There was a Permitted Interaction Group (PIG) presentation last night.
2. Agenda Item – A community member suggested that the Board keep this item as a permanent agenda item.
3. November 2019 Meeting – Gordon Aoyagi suggested inviting Jeffrey Herzog (USACE) to give a presentation and asked if there will be alternative options brought up at the November 2019 meeting and would a new Environmental Impact Statement be conducted.

COMMUNITY ANNOUNCEMENTS

Mānoa Stream Cleanup – The Cleanup is set for Saturday, October 26, 2019 from 10:00 a.m. to 12:00 p.m. at Mānoa Marketplace on Woodlawn Drive, organized by Mālama Mānoa.

Kāmanele Park Cleanup – It will be on Saturday, November 16, 2019 from 8:30 a.m. to 11:00 a.m. Meet at the park located at 2237 University Avenue, Honolulu, HI 96822, organized by the Mānoa Branch of the Outdoor Circle. Bring water and any garden tools you have.

Annual Homeward Bound 5K Race – It is scheduled for Thursday, November 28, 2019 (Thanksgiving Day) in Mānoa, held by the Institute for Human Services. Questions may be directed to Jill Wright at – 808-447-2814.

RESIDENTS' QUESTIONS AND INPUT

- Meeting Minutes – Hector H. Venegas requested that the minutes to be produced in a timelier manner.
- Holiday (Christmas) Parade – James Larson stated that the event will take place on Saturday, December 14, 2019 from Noelani Elementary School, starting at 5:00 p.m.

- Thirty Meter Telescope (TMT) – A community member raised concerns that the discussion, regarding TMT is not appropriate at the Neighborhood Board meeting and requested that it be removed from the agenda.
- Ala Moana Beach Park – A community member raised concerns with some of the proposed changes to the park. A community member stated that the Outdoor Circle is working with various groups on a letter that will be presented to the Board at the next meeting. Another community member also voiced her opposition to some of the proposed changes.

NEW BUSINESS

Discussion of Board Priorities for the Term ending June 30, 2020 – Armstrong asked what priorities the Board would like to focus on for this term.

Questions, comments, and concerns followed – Discussion: Budar noted that this is an unnecessary discussion for the Board to have. Watson and Koff suggested providing the answers to the question during next month's meeting. Harrison requested to allow Board members to respond to the question. A community member noted that topics that affect other areas of the island may be considered for discussion as well.

UNFINISHED BOARD BUSINESS

Filling of Vacancy – There was one (1) vacancy in Subdistrict 3 (Middle Mānoa) and one (1) vacancy in Subdistrict 4 (Lower Mānoa). As there were no volunteers, Chair Armstrong deferred this item to the next meeting.

Selection of a Delegate for the Citizens Advisory Committee (CAC) of the O'ahu Metropolitan Planning Organization (OahuMPO) – This item will be discussed at the next meeting.

Formation of Permitted Interaction Groups (PIG)

Armstrong moved and a Board member seconded to amend the agenda to note that the Thirty Meter Telescope PIG was proposed by Fukumoto, not Watson. The motion was adopted by UNANIMOUS CONSENT, 15-0-0. (**AYE**: Armstrong, Borland, Budar, Carroll, Chun, Fukumoto, Grace, Harrison, Kawano, Kinney, Koff, Lewis, Rotter, Watson, Zane; **NAY**: None; **ABSTAIN**: None)**.**

Fukumoto moved and Watson seconded the motion to form a Permitted Interaction Group (PIG), regarding the Thirty Meter Telescope. The motion was NOT ADOPTED, 5-10-0. (**AYE**: Armstrong, Fukumoto, Grace, Harrison, Watson; **NAY**: Borland, Budar, Carroll, Chun, Kawano, Kinney, Koff, Lewis, Rotter, and Zane; **ABSTAIN**: None)**.**

DEVELOPMENT PROJECTS

Board of Water Supply (BWS) – A representative from the BWS provided a handout regarding the Halau Wai Manoa and antenna installation, and in the interest of time was available for questions.

Questions, comments, and concerns followed:

1. Public Comment Period – Watson asked if the comment period is closed. The representative confirmed that the public comment period closed on Monday, September 9, 2019. A community member asked if the comment period will be extended. The representative responded that the comment period is closed and will not be extended. However, there will be a conservation district use permit application with the Department of Land and Natural Resources and there will be a public comment period.
2. Antenna – Armstrong noted that the BWS will be installing one (1) new antenna at the Manoa 405 Reservoir. This is a minor improvement to the existing infrastructure. Construction will be from October 2019 to December 2019. Watson raised concerns with potential radiation from the antennas.

Noelani Elementary School Idea Center – Zane withdrew his discussion, regarding this topic.

Questions, comments, and concerns followed:

1. Conflict of Interest – A community member noted that Watson may have a conflict of interest, regarding this topic and should be excluded from the vote.
2. Support – A community member voiced his support for the Idea Center.
3. Public Input – A community member raised concerns that the community was not notified of the project.

4. Mānoa Outdoor Circle – A community member spoke on behalf of the Manoa Outdoor Circle and stated that if trees will be removed, then they will be replanted.
5. History of Project – Borland provided a brief history, regarding the project for the newly-appointed members.

Watson moved and Rotter seconded the motion to adopt the resolution regarding support for the Noelani Elementary School Idea Center. The motion was NOT ADOPTED, 5-10-0. (**AYE**: Carroll, Kawano, Kinney, Lewis, Watson; **NAY**: Armstrong, Borland, Budar, Chun, Fukumoto, Grace, Harrison, Koff, Rotter, and Zane; **ABSTAIN**: None)**.**

REPORTS FROM ELECTED OFFICIALS

Mayor Kirk Caldwell – Executive Director Ed Hawkins reported the following:

- Follow Up on Concerns:
  - Removal of Trees: Department of Parks and Recreation (DPR) stated that the Division of Urban Forestry, DPR, is in the process of hiring a private landscape contractor for the planting of replacement trees fronting 3380, 3368, 3366, and 3342 East Manoa Road in Manoa. As noted in our previous response, Department of Design and Construction (DDC), not DPR performed the removal of the trees. Therefore, DPR is not responding to that question. However, in your June 2019 response notes to the left, DDC stated that "A public notice at the start of the project was issued."

Questions, comments, and concerns followed – Recreation Center – Venegas noted that at the Mānoa Valley District Park (MVDP), the recreation center roof and the chairs at the auditorium needs to be repaired.

Chair Armstrong deferred the rest of the agenda to the next meeting. The approval of the meeting minutes will be listed at the top of the next agenda.

ANNOUNCEMENTS

- Next Regular Board Meeting – The next Mānoa Neighborhood Board No. 7 meeting is scheduled for Wednesday, November 6, 2019 at the Noelani Elementary School, 2655 Woodlawn Drive at 7:00 p.m.
- Televised ʻŌlelo Broadcasts – Watch the Mānoa Neighborhood Board No. 7 regular meetings on ʻŌlelo Channel 49 on the 3rd Tuesday of the month at 4:00 p.m. and on the 2nd and 4th Saturdays of the month at 3:00 p.m. The ʻŌlelo program schedule is at – http://www.olelo.org/programming/default.html.

ADJOURNMENT – **Chair Armstrong adjourned the meeting at 9:01 p.m.**

Submitted by: Harry Cho, Community Relations Specialist
Reviewed by: Lindon Valenciano, Neighborhood Assistant
Reviewed by: K. Russell Ho, Neighborhood Assistant
Reviewed by: Joan Koff, Secretary

MĀNOA NEIGHBORHOOD BOARD NO. 7

c/o NEIGHBORHOOD COMMISSION 925 DILLINGHAM BLVD, STE 160 HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 FAX (808) 768-3711 INTERNET http://www.honolulu.gov/nco

REGULAR MEETING AGENDA
WEDNESDAY, JUNE 3, 2020 at 7:00 p.m.
Mānoa Gymnasium, Community Meeting Room
Mānoa Valley District Park

Rules of Speaking: Anyone wishing to speak is asked to raise his or her hand, and when recognized by the Chair, to address comments to the Chair. Speakers are urged to keep their comments under three (3) minutes. This includes those giving reports to the Board. Please silence all electronic devices.

Note: The Board may take action on any agenda item. As required by the State Sunshine Law (HRS 92), specific issues not noted on this agenda cannot be voted on unless added to the agenda. A two-thirds (2/3) vote (12) of this 17-member Board is needed to add an item to the agenda. Items may **not** be added if they are of major importance and will affect a significant number of people.

MEMBERS/OFFICERS

Chair
DYLAN P. ARMSTRONG

Vice Chair
ELTON FUKUMOTO

Secretary
JOAN KOFF

Treasurer
PATTI KAWANO

Subdistrict 1:
Upper East Valley
BEN ROTTER
ELLEN WATSON
ROBERT ZANE

Subdistrict 2:
Upper West Valley
MICHAEL CARROLL
RODNEY CHUN
ELTON FUKUMOTO

Subdistrict 3:
Middle Mānoa
GLORIA BORLAND
NATHANIEL KINNEY
BRENT LEWIS
LEILA MORINAGA

Subdistrict 4:
Lower Mānoa
DYLAN P. ARMSTRONG
RICK BUDAR
TREVOR FUNK
AIMEE M. GRACE
PATTI KAWANO

I. CALL TO ORDER – Chair Dylan P. Armstrong at 7:00 p.m.

II. BOARD BUSINESS

A. EMERGENCY RESPONDERS REPORTS
   A. Honolulu Fire Department (HFD)
   B. Honolulu Police Department HPD)

B. APPROVAL OF MEETING MINUTES
   A. Wednesday, August 7, 2019 Regular Meeting – Reconsideration
   B. Wednesday, December 4, 2019 Regular Meeting
   C. Wednesday, March 5, 2020 Regular Meeting

C. NOVEL CORONAVIRUS 2019 (COVID-19) PANDEMIC
   A. State of Hawai‘i Operations
   B. City and County of Honolulu Operations

D. NEW BUSINESS INTENDED FOR BOARD CONSIDERATION
   A. Hālau Wai Mānoa: Environmental Assessment Update.
      Presenter: Barry Usagawa, Board of Water Supply (BWS).
   B. University Of Hawai‘i at Mānoa Transportation Center (New Parking Structure): *Upper Campus, Approximately 1000 Stalls.*
   C. Three (3) Absence Letter: Ben Rotter
      (Required by the 2008 Neighborhood Plan: §2-14-106)
   D. Proposal For A 2020 Electoral Candidates Forum, Formation of a Permitted Interaction Group (PIG)
   E. Convening the Initial Convening Meeting on Wednesday, July 1, 2020 for a Neighborhood Board Meeting
   F. Construction/ Maintenance/ Repair at Mānoa Falls

E. CONTINUING BUSINESS
   A. Reports From Board Members
   B. Treasurer’s Report – Patti Kawano
   C. Oahu Metropolitan Planning Organization (OahuMPO) Citizen Advisory Committee (CAC) – Delegate Ben Rotter
   D. Neighborhood Survey With Mānoa Valley Church
   E. Priorities For The Board Term, Ending June 30, 2021

M. ANWAR QUADRI **III. OPEN COMMUNITY INPUT AND REQUESTS**

IV. LEGISLATORS' REPORTS – Strictly Matters of Significance to Report

V. ANNOUNCEMENTS – Vice Chair Elton Fukumoto

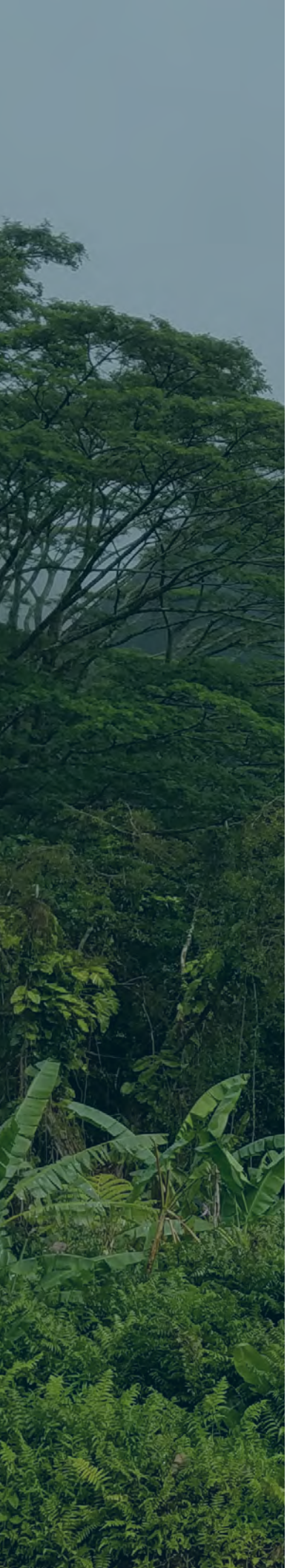
A. RECESS – In the past, the Mānoa Neighborhood Board No. 7 usually takes a Recess in July to celebrate Independence Day. Subject to change.

B. NEXT REGULAR BOARD MEETING
The Mānoa Neighborhood Board No. 7 will next meet on Wednesday, August 5, 2020 at Noelani Elementary School, 2655 Woodlawn Drive, at 7:00 p.m. (Subject to Governor David Ige's and Department of Education (DOE) regulations,)

C. TELEVISED 'ŌLELO BROADCASTS
Watch the Mānoa Neighborhood Board No. 7 regular meetings on 'Ōlelo Channel 49 on the 3rd Tuesday of the month at 4:00 p.m., or the 2nd and 4th Saturdays of the month at 3:00 p.m. 'Ōlelo's program schedule -- http://www.olelo.org/programming/default.html.

VI. ADJOURNMENT – By 9:00 p.m.

>>>



APPENDIX G
Draft EA Comments and Responses

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DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)19.181

AUG 28 2019

Ms. Amy Tsuneyoshi, Watershed Resource Specialist
Honolulu Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Ms. Tsuneyoshi:

Subject: Board of Water Halau Wai Manoa Draft Environmental Assessment — Mānoa, Oahu; Honolulu District
Tax Map Key: Portions of (1) 2-9-054:019, 20, & 21, and
Portions of (1) 2-9-054:004,006, & 029 (for access corridors)

Thank you for the opportunity to provide comments for the subject project. The proposed project does not impact any of the Department of Accounting and General Services' existing facilities in the area, and we have no comments to offer at this time.

If you have any questions or require further information, please call Mr. Dennis Chen of the Public Works Division at 586-0491.

Sincerely,

Audrey Hidano

for CURT T. OTAGURO
Comptroller

c: Mr. Greg Nakai, PBR Hawaii & Assoc., Inc.

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

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KIMI MIKAMI YUEN, LEED® AP BD+C
Principal

W. FRANK BRANDT, FASLA
Chairman Emeritus

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

RAYMOND T. HIGA, ASLA
Senior Associate

CATIE CULLISON, AICP
Senior Associate

MARC SHIMATSU, ASLA
Senior Associate

DACHENG DONG, LEED® AP
Senior Associate

MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

BLAINE ONISHI, ASLA
Associate

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

June 24, 2020

Mr. Curt Otaguro
Comptroller
State of Hawai‘i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai‘i 96810-0119

Attn: Mr. Dennis Chen, Public Works Division

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Otaguro:

Thank you for your agency’s letter dated August 28, 2019 (your reference number (P)19.181), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comment that the subject project does not impact any of the Department of Accounting and General Services' existing facilities in this area, and that you have no comments to offer at this time.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

DAVID Y. IGE
GOVERNOR

PANKAJ BHANOT
DIRECTOR

CATHY BETTS
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment and Support Services Division
1010 Richards Street, Suite 512
Honolulu, Hawai'i 96813

August 29, 2019

Re: 19-0373

PBR Hawaii & Associates, INC.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813
Attn: Greg Nakai

Dear Mr. Nakai:

SUBJECT: Draft Environmental Assessment (DEA) – Board of Water Supply (BWS) – Halau Wai Manoa TMKs (1) 2-9-054: 019, 020, & 021; (1) 2-9-054: 004, 006, & 029

This is in response to your letter dated August 6, 2019 requesting the Department of Human Services (DHS) review and comment on the above-named project.

The DHS has no additional comments to our previous comment which were noted in the 2019-08-08-OA-DEA-BWS-Halau-Wai-Manoa.

If you should have any question regarding this matter, please contact Ms. Lisa Galino, Child Care Program Specialist at (808) 586-5712.

Sincerely,

Scott Nakasone
Assistant Division Administrator

c: Pankaj Bhanot, Director
Amy Tsuneyoshi, Watershed Resource Specialist

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
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Executive Vice-President / Principal

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KIMI MIKAMI YUEN, LEED® AP BD+C
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ANN MIKIKO BOUSLOG, PhD
Project Director

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Cultural Sustainability Planner

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Senior Associate

MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

BLAINE ONISHI, ASLA
Associate

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

June 24, 2020

Mr. Scott Nakasone
Assistant Division Administrator
State of Hawai‘i
Department of Human Services
Benefit, Employment, and Support Services Division
1010 Richards Street, Suite 512
Honolulu, Hawai‘i 96813

Attn: Ms. Lisa Galino, Child Care Program Specialist

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Nakasone:

Thank you for your letter dated August 29, 2019 (your reference number 19-0373), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge that your department has no additional comments to your previous comment which was noted in the Draft Environmental Assessment (EA).

We value your participation in the environmental review process. Your letter will be included in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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

September 06, 2019

Ref: 12OD-084
LD 1491.99

Honolulu Board of Water Supply
Water Resources Division
ATTN: Amy Tsuneyoshi
630 Beretania Street
Honolulu, HI 96843

Via website: http://bws.halauwaimanoa.commentinput.com

PBR HAWAII & Associates, Inc.
ATTN: Greg Nakai, Planner
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Via email: sysadmin@pbrhawaii.com

Dear Sirs:

SUBJECT: **Draft Environmental Assessment (DEA) for the Board of Water Supply Hālau Wai Mānoa,** Mānoa, Honolulu, Island of Oahu; TMK: Portions of (1) 2-9-054:019, 020, 021; and Portions of (1) 2-9-054:004, 006, 029 for access corridors

Thank you for the opportunity to review and comment on the above subject matter. Information on the DEA for the subject project was distributed to selected divisions of the department for their review and comment.

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

Sincerely,

for Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

LD 1459

C079177

PBR HAWAII & ASSOCIATES, INC.

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2019 AUG -8 AM 10: 37

DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

2019 AUG -9

DEPT. OF L. NATURAL RES STATE OF H.

THOMAS S. WITTEN, FASLA
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President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

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GRANT T. MURAKAMI, AICP, LEED® AP BD+C
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TOM SCHNELL, AICP
Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Principal

W. FRANK BRANDT, FASLA
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MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

August 6, 2019

Dear Participant:

A Draft Environmental Assessment (DEA) for the Board of Water Supply (BWS) Hālau Wai Mānoa has been prepared pursuant to the State of Hawai'i EIS law (Hawai'i Revised Statutes, Chapter 343) and the State of Hawai'i EIS rules (Hawai'i Administrative Rules, Title 11, Chapter 200).

A digital version of the DEA will be available online for your review in the August 8, 2019, issue of *The Environmental Notice*, on the Office of Environmental Quality Control's website at: http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2019-08-08-TEN.pdf

The DEA may also be accessed directly at:
http://oeqc2.doh.hawaii.gov/EA_EIS_Library/2019-08-08-OA-DEA-BWS-Halau-Wai-Manoa.pdf
Please note that the link may not be active until the date of publication, August 8, 2019. If you receive an error message when trying to access the link, please check back again on the date of publication.

Your written comments must be received or postmarked by <u>September 9, 2019, and must be accompanied with a full name and mailing address</u>.

Name of Project: Board of Water Supply Hālau Wai Mānoa

Location: Mānoa **Island**: O'ahu **District**: Honolulu

Tax Map Key: Portions of (1) 2-9-054: 019, 020, & 021
Portions of (1) 2-9-054: 004, 006, & 029 (for access corridors)

Agency Action: X **Applicant Action**: _____

Proposing/Determining Agency: Honolulu Board of Water Supply
Water Resources Division
ATTN: Amy Tsuneyoshi, Watershed Resource Specialist
630 South Beretania Street
Honolulu, Hawai'i 96843
Phone: (808) 748-5936

Consultant: PBR HAWAII & Associates, Inc.
ATTN: Greg Nakai, Planner
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813
Phone: (808) 521-5631

Please send comments to the Consultant and the Proposing/Determining Agency. Comments may also be submitted online at: http://bws.halauwaimanoa.commentinput.com

Thank you for participating in the environmental review process.

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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LD 1533

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

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LAND DIVISION
2019 AUG 22 AM 11:2
DEPT. OF LAND & NATURAL RESOURCES STATE OF HAWAII

LD 1459

August 13, 2019

'19 AUG 14 PM 01:34 ENGINEERING

MEMORANDUM

FROM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

TO

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: **Draft Environmental Assessment (DEA) for the Board of Water Supply Hālau Wai Mānoa**
LOCATION: Mānoa, Honolulu, Island of Oahu; TMK: Portions of (1) 2-9-054:019, 020, 021; and Portions of (1) 2-9-054:004, 006, 029 for access corridors
APPLICANT: PBR HAWAII & Associates, Inc. on behalf of the Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. The DEA was published in OEQC's official publication, The Environmental Notice (TEN), on August 8, 2019. This issue of the TEN and a link to the DEA can be found at:
http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2019-08-08-TEN.pdf

Please submit any comments by **September 05, 2019.** If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

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

Signed: _____
Print Name: Carty S. Chang, Chief Engineer
Date: 8/22/19

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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COMMISSION ON WATER
RESOURCE MANAGEMENT
2019 AUG 14 AM 11: 36

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

LD 1459

August 13, 2019

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
__Div. of State Parks
X Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

RECEIVED
LAND DIVISION
2019 SEP -5 PM 4:43
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: **Draft Environmental Assessment (DEA) for the Board of Water Supply Hālau Wai Mānoa**
LOCATION: Mānoa, Honolulu, Island of Oahu; TMK: Portions of (1) 2-9-054:019, 020, 021; and Portions of (1) 2-9-054:004, 006, 029 for access corridors
APPLICANT: PBR HAWAII & Associates, Inc. on behalf of the Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. The DEA was published in OEQC's official publication, The Environmental Notice (TEN), on August 8, 2019. This issue of the TEN and a link to the DEA can be found at:
http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2019-08-08-TEN.pdf

Please submit any comments by **September 05, 2019.** If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

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

Signed: /s/ M. Kaleo Manuel
Print Name: Deputy Director
Date: September 4, 2019

Attachments
cc: Central Files

FILE ID: RFD.52093
DOC ID: 21769.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON

BRUCE S. ANDERSON, PH.D.
KAMANA BEAMER, PH.D.
MICHAEL G. BUCK
NEIL J. HANNAHS
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

September 4, 2019

REF: RFD.5209.3

TO: Mr. Russell Tsuji, Administrator
Land Division

FROM: M. Kaleo Manuel, Deputy Director
Commission on Water Resource Management

SUBJECT: Draft Environmental Assessment (DEA) for the Board of Water Supply Halau Wai Manoa

FILE NO.: RFD.5209.3
TMK NO.: (1) 2-9-054:019, 020, 021; and Portions of (1) 2-9-054:004, 006, 029 for access corridors

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

- [ ] 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- [ ] 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- [ ] 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- [X] 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.
- [X] 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/
- [X] 6. We recommend the use of alternative water sources, wherever practicable.
- [ ] 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/green-business-program.
- [X] 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

- [X] 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- [ ] 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- [ ] 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
- [ ] 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- [ ] 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- [ ] 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- [ ] 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
- [ ] 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- [ ] 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- [ ] 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

- [X] OTHER: The report identifies existing registered stream diversions as the supply source for irrigation needs and an old, inactive water meter that may be used for potable water service. However, no estimates for potable and non-potable needs are provided. As stated in our earlier comments during the pre-assessment consultation process, the DEA should discuss the projected water demands for the project, both potable and non-potable, and provide the calculations used to estimate demands.

If you have any questions, please contact Lenore Ohye of the Planning Branch at 587-0216 or Dean Uyeno of the Stream Protection and Management Branch at 587-0234.

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

LD 1459

August 13, 2019

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
___Div. of State Parks
X Commission on Water Resource Management
___Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: for Russell Y. Tsuji, Land Administrator KE
SUBJECT: **Draft Environmental Assessment (DEA) for the Board of Water Supply Hālau Wai Mānoa**
LOCATION: Mānoa, Honolulu, Island of Oahu; TMK: Portions of (1) 2-9-054:019, 020, 021; and Portions of (1) 2-9-054:004, 006, 029 for access corridors
APPLICANT: PBR HAWAII & Associates, Inc. on behalf of the Honolulu Board of Water Supply

Transmitted for your review and comment is information on the above-referenced project. The DEA was published in OEQC's official publication, The Environmental Notice (TEN), on August 8, 2019. This issue of the TEN and a link to the DEA can be found at:
http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2019-08-08-TEN.pdf

Please submit any comments by **September 05, 2019.** If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Barbara Lee at 587-0453 or by email at barbara.j.lee@hawaii.gov. Thank you.

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

Signed: Darlene Bryant-Takamatsu
Print Name: Darlene Bryant-Takamatsu
Date: 8/14/19

Attachments
cc: Central Files

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Principal

W. FRANK BRANDT, FASLA
Chairman Emeritus

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

RAYMOND T. HIGA, ASLA
Senior Associate

CATIE CULLISON, AICP
Senior Associate

MARC SHIMATSU, ASLA
Senior Associate

DACHENG DONG, LEED® AP
Senior Associate

MICAH McMILLEN, ASLA, LEED® AP
Associate

NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

BLAINE ONISHI, ASLA
Associate

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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June 24, 2020

Russell Y. Tsuji, Land Administrator
Land Division
State of Hawai‘i, Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai‘i 96809

ATTN: Barbara Lee; Carty S. Chang, Engineering Division; Darlene Bryant-Takamatsu, Land Division – O‘ahu District; and M. Kaleo Manuel, Lenore Ohye, and Dean Uyeno, Commission on Water Resource Management (CWRM).

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Tsuji:

Thank you for your letter dated September 6, 2019 (your reference number 12OD-084 LD 1491.99), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we provide the following responses to the comments from the Department of Land and Natural Resources (DLNR) Divisions listed below:

a) **Engineering Division.** We acknowledge the Engineering Division has no additional comments.

b) **Commission on Water Resource Management (CWRM).** We acknowledge CWRM's recommendations regarding: 1) installation of water efficient fixtures and implementation of water efficient practices; 2) use of best management practices (BMPs) and low impact development (LID) for stormwater management; 3) use of alternative water sources, wherever practicable; 4) adoption of landscape irrigation conservation BMPs; and 5) State of Hawai‘i Department of Health review and approvals relating to water quality. The Final Environmental Assessment (EA) will incorporate these recommendations.

   The water use will be limited to the water provided by the existing Lua‘alaea Stream diversion #861, which has three pipes with the following flows: 5g/11.83s = 0.423g/s; 5g/9.17s = 0.545g/s; and 5g/7.94s = 0.630g/s. Based on gallon/second conversions, the estimated flow rate of this diversion is 138,000 gallons per day. No potable water demands have been identified at this time.

c) **Land Division – O‘ahu District.** We acknowledge that the Land Division – O‘ahu District has no comments.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
DIRECTOR

Deputy Directors
LYNN A.S. ARAKI-REGAN
DEREK J. CHOW
ROSS M. HIGASHI
EDWIN H. SNIFFEN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
DIR 0844
STP 8.2740

September 3, 2019

Mr. Greg Nakai
Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

Subject: Board of Water Supply (BWS) Hālau Wai Mānoa
Draft Environmental Assessment (DEA)
Honolulu, Oahu, Hawaii
TMK: (1) 2-9-054: 004, 006, 019, 020, 021 and 029

The Department of Transportation (DOT) has reviewed the subject DEA for the BWS Hālau Wai Mānoa project in Mānoa Valley. DOT understands that the project will consist of continued agricultural uses, educational opportunities, and watershed management on an approximately 12.8-acre area.

In reviewing the DEA, DOT has determined that our position in letter STP 8.2547 dated October 25, 2018 remains the same. Based on the proposed project type and its location in upper Mānoa Valley, it appears the project will have no significant impact to State transportation facilities and therefore, we have no comments to provide.

If there are any questions, please contact Mr. Blayne Nikaido of the DOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

JADE T. BUTAY
Director of Transportation

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

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June 24, 2020

Mr. Jade Butay
Director
State of Hawai‘i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai‘i 96813-5097

Attn: Mr. Blayne Nikaido, DOT Statewide Transportation Planning Office

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Butay:

Thank you for your letter dated September 3, 2019 (your reference number DIR 0844, STP 8.2740), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your determination that: 1) the Department of Transportation's (DOT's) position in letter STP 8.2547 dated October 25, 2018, remains the same; 2) the project will have no significant impact to State transportation facilities; and 3) you have no comments to provide.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

U.S. Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA. 94607-4052

FEMA

August 26, 2019

Greg Nakai, Planner
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

This is in response to your request for comments regarding a Draft Environmental Assessment (DEA) for the Board of Water Supply (BSW) Halau Wai Manoa that has been prepared pursuant to the State of Hawaii EIS law (Hawaii Revised Statutes, Chapter 343) and the State of Hawaii EIS rules (Hawaii Administrative Rules, Title 11, Chapter 200).

Please review the current effective Flood Insurance Rate Maps (FIRMs) for the City and County of Honolulu (Community Number 150001), Maps revised November 5, 2014. Please note that the County of Hawaii, Hawaii is a participant in the National Flood Insurance Program (NFIP). The minimum, basic NFIP floodplain management building requirements are described in Vol. 44 Code of Federal Regulations (44 CFR), Sections 59 through 65.

A summary of these NFIP floodplain management building requirements are as follows:

- All buildings constructed within a riverine floodplain, (i.e., Flood Zones A, AO, AH, AE, and A1 through A30 as delineated on the FIRM), must be elevated so that the lowest floor is at or above the Base Flood Elevation level in accordance with the effective Flood Insurance Rate Map.

- If the area of construction is located within a Regulatory Floodway as delineated on the FIRM, any ***development*** must not increase base flood elevation levels. **The term *development* means any man-made change to improved or unimproved real estate, including but not limited to buildings, other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, and storage of equipment or materials.** A hydrologic and hydraulic analysis must be performed *prior* to the start of development, and must demonstrate that the development would not cause any rise in base flood levels. No rise is permitted within regulatory floodways.

- All buildings constructed within a coastal high hazard area, (any of the "V" Flood Zones as delineated on the FIRM), must be elevated on pilings and columns, so that the lowest horizontal structural member, (excluding the pilings and columns), is elevated to or above the base flood elevation level. In addition, the posts and pilings foundation and the structure attached thereto, is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

- Upon completion of any development that changes existing Special Flood Hazard Areas, the NFIP directs all participating communities to submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision. In accordance with 44 CFR, Section 65.3, as soon as practicable, but not later than six months after such data becomes available, a community shall notify FEMA of the changes by submitting technical data for a flood map revision. To obtain copies of FEMA's Flood Map Revision Application Packages, please refer to the FEMA website at http://www.fema.gov/business/nfip/forms.shtm.

Please Note:

Many NFIP participating communities have adopted floodplain management building requirements which are more restrictive than the minimum federal standards described in 44 CFR. Please contact the local community's floodplain manager for more information on local floodplain management building requirements. The City and County of Honolulu floodplain manager can be reached by calling Mario Sui-Li, NFIP Coordinator, at (808) 768-8098.

If you have any questions or concerns, please do not hesitate to call Michael Hornick of the Mitigation staff at (510) 627-7260.

Sincerely,

Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch

cc:
Mario Sui-Li, NFIP Coordinator, City and County of Honolulu
Carol Tyau-Beam, State NFIP Coordinator, Hawaii Department of Land and National Resources
Michael Hornick, NFIP Planner, DHS/FEMA Region IX
Alessandro Amaglio, Environmental Officer, DHS/FEMA Region IX

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& ASSOCIATES, INC.

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June 24, 2020

Mr. Gregor Blackburn, CFM, Branch Chief
Floodplain Management and Insurance Branch
United States Department of Homeland Security
FEMA Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

Attn: Mr. Michael Hornick, Mitigation Staff

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Blackburn:

Thank you for your letter dated August 26, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and thank you once again for the information relating to the National Flood Insurance Protection (NFIP) floodplain management building requirements. This information, as well as a figure indicating that the project site is located within Zone X (outside the 0.2 percent chance flood area), was included in the Draft Environmental Assessment (EA) and will also be included in the Final EA.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

In Reply Refer To:
01EPIF00-2019-TA-0450

September 3, 2019

Ms. Amy Tsuneyoshi
Honolulu Board of Water Supply
Water Resources Division
630 South Beretania Street
Honolulu, Hawai‘i 96843

Subject: Response to your Request for Technical Assistance Regarding the Draft Environmental Assessment for the Propose Hālau Wai Mānoa

Dear Ms. Tsuneyoshi,

Thank you for your recent correspondence requesting technical assistance on species biology, habitat, or life requisite requirements. The Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) appreciates your efforts to avoid or minimize effects to protected species associated with your proposed actions. We provide the following information for your consideration under the authorities of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq*.), as amended.

Due to significant workload constraints, PIFWO is currently unable to specifically address your information request. The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area, in the ‘**Occurs In or Near Project Area’** column. Please note this list is not comprehensive and should only be used for general guidance. We have added to the PIFWO website, located at https://www.fws.gov/pacificislands/promo.cfm?id=177175840 recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality.

If you are representing a federal action agency, please use the official species list on our web-site for your section 7 consultation. You can find out if your project occurs in or near designated critical habitat here: https://ecos.fws.gov/ipac/.

Under section 7 of the ESA, it is the Federal agency’s (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project “may affect” federally listed species or designated critical habitat. A “may affect, not likely to adversely affect” determination is appropriate when effects to federally listed species are expected to be

discountable (*i.e.*, unlikely to occur), insignificant (minimal in size), or completely beneficial. This conclusion requires written concurrence from the Service. If a "may affect, likely to adversely affect" determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have "no effect" on federally listed species and/or critical habitat do not require additional coordination or consultation.

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a "may affect, not likely to adversely affect" determination for your project. If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats, and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve endangered species. We regret that we cannot provide you with more specific protected species information for your project site. If you have questions that are not answered by the information on our website, you can contact PIFWO at (808) 792-9400 and ask to speak to the lead biologist for the island where your project is located.

Sincerely,

Aaron Nadig

Digitally signed by Aaron Nadig
Date: 2019.09.03 08:37:31 -10'00'

Island Team Manager
Pacific Islands Fish and Wildlife Office

cc: Greg Nakai, PBR HAWAII & Associates, Inc.

The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. For your guidance, we've marked species that may occur in the vicinity of your project, this list is not comprehensive and should only be used for general guidance.

Scientific Name	**Common Name / Hawaiian Name**	**Federal Status**	**May Occur In Project Area**
Mammals			
Lasiurus cinereus semotus	Hawaiian hoary bat/ ʻōpeʻapeʻa	E	☒
Reptiles			
Chelonia mydas	Green sea turtle/honu - Central North Pacific DPS	T	☐
Erectmochelys imbricata	Hawksbill sea turtle/ Honu ʻea	E	☐
Birds			
Anas wyvilliana	Hawaiian duck/ koloa	E	☐
Branta sandvicensis	Hawaiian goose/ nēnē	E	☐
Fulica alai	Hawaiian coot/ ʻalae kea	E	☐
Gallinula galeata sandvicensis	Hawaiian gallinule/ ʻalae ʻula	E	☐
Himantopus mexicanus knudseni	Hawaiian stilt/ Aeʻo	E	☐
Oceanodroma castro	Band-rumped storm-petrel/ ʻakēʻakē	E	☒
Pterodroma sandwichensis	Hawaiian petrel/ ʻuaʻu	E	☒
Puffinus auricularis newelli	Newell's shearwater/ ʻaʻo	T	☒
Ardenna pacificus	Wedge-tailed Shearwater/ ʻuaʻu kani	MBTA	☐
Gygis alba	White Tern/ manu-o-kū	MBTA	☐
Buteo solitarius	Hawaiian hawk/ ʻio	E	☐
Insects			
Manduca blackburni	Blackburn's sphinx moth	E	☐
Megalagrion pacificum	Pacific Hawaiian Damselfly	E	☐
M. xanthomelas	Orangeblack Hawaiian Damselfly	E	☒
M. nigrohamatum nigrolineatum	Blackline Hawaiian Damselfly	E	☐

Plants				
Scientific Name	**Common Name or Hawaiian Name**	**Federal Status**	**Locations**	**May Occur In Project Area**
Abutilon menziesii	Koʻoloaʻula	E	O, L, M, H	☐
Achyranthes splendens var. *rotundata*	ʻEwa hinahina	E	O	☐
Bonamia menziesii	No common name	E	K, O, L, M, H	☐
Canavalia pubescens	ʻĀwikiwiki	E	Ni, K, L, M	☐
Colubrina oppositifolia	Kauila	E	O, M, H	☐
Cyperus trachysanthos	Puʻukaʻa	E	K, O	☐
Gouania hillebrandii	No common name	E	Mo, M	☐
Hibiscus brackenridgei	Maʻo hau hele	E	O, Mo, L, M, H	☐
Ischaemum byrone	Hilo ischaemum	E	K, O, Mo, M, H	☐
Isodendrion pyrifolium	Wahine noho kula	E	O, H	☐
Marsilea villosa	ʻIhiʻihi	E	Ni, O, Mo	☐
Mezoneuron kavaiense	Uhiuhi	E	O, H	☐
Nothocestrum breviflorum	ʻAiea	E	H	☐
Panicum fauriei var. *carteri*	Carter's panicgrass	E	Molokini Islet (O), Mo	☐
Panicum niihauense	Lauʻehu	E	K	☐
Peucedanum sandwicense	Makou	E	K, O, Mo, M	☐
Pleomele (Chrysodracon) hawaiiensis	Halapepe	E	H	☐
Portulaca sclerocarpa	ʻIhi	E	L, H	☐
Portulaca villosa	ʻIhi	E	Le, Ka, Ni, O, Mo, M, L, H, Nihoa	☐
Pritchardia affinis (maideniana)	Loulu	E	H	☐
Pseudognaphalium sandwicensium var. *molokaiense*	ʻEnaʻena	E	Mo, M	☐
Scaevola coriacea	Dwarf naupaka	E	Mo, M	☐
Schenkia (*Centaurium*) *sebaeoides*	ʻĀwiwi	E	K, O, Mo, L, M	☐
Sesbania tomentosa	ʻŌhai	E	Ni, Ka, K, O, Mo, M, L, H, Necker, Nihoa	☐
Tetramolopium rockii	No common name	T	Mo	☐
Vigna o-wahuensis	No common name	E	Mo, M, L, H, Ka	☐

Location key: O=Oʻahu, K=Kauaʻi, M=Maui, H=Hawaiʻi Island, L=Lānaʻi, Mo=Molokaʻi, Ka=Kahoʻolawe, Ni=Niʻihau, Le=Lehua

PBR HAWAII
& ASSOCIATES, INC.

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Chairman / Principal

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President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
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Principal

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June 24, 2020

Mr. Aaron Nadig, Island Team Manager
United States Department of the Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Nadig:

Thank you for your letter dated September 3, 2019 (your reference number 01EPIF00-2019-TA-0450), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comments and provide the following response.

Thank you for your guidance that the following species may occur within the vicinity of the project area:

1. Hawaiian hoary bat (‘ōpe‘ape‘a)
2. Band-rumped storm-petrel (‘akē‘akē)
3. Hawaiian petrel (‘ua‘u)
4. Newell’s shearwater (‘a‘o)
5. Orangeblack Hawaiian damselfly

The Draft Environmental Assessment (EA) discussed the Pacific Islands Fish and Wildlife Office’s (PIFWO’s) recommended conservation measures intended to avoid or minimize adverse effects to the federally protected species noted in PIFWO’s pre-assessment consultation comment letter dated November 2, 2018 (your reference number 01EPIF00-2019-TA-0035); these species and measures will also be included in the Final EA, along with the additional species noted above. In addition, the Draft EA noted the best management practices to minimize and avoid sedimentation and erosion impacts to water quality as listed on the PIFWO website; these best management practices will also be included in the Final EA.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

August 21, 2019

Honolulu Board of Water Supply
ATTN: Amy Tsuneyoshi, Watershed Resource Specialist
630 South Beretania Street
Honolulu, Hawaii 96813

Dear Mr. Tsuneyoshi,

Subject: Draft Environmental Assessment for the Board of Water Supply
Halau Wai Manoa TMK: Portions of (1) 2-9-054:019,020,021
TMK: (1) 2-9-054:004,006,029 (for access corridors)

Thank you for the opportunity to review and comment. The Department of Design and Construction does not have any comments at this time.

Should you have any further questions, please contact me at 768-8480.

Sincerely,

Robert J. Kroning, P.E.
Director

RJK:ms(782386)

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
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R. STAN DUNCAN, ASLA
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printed on recycled paper

June 24, 2020

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

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Kroning:

Thank you for your letter dated August 21, 2019 (your reference RJK:ms (782386)), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comment that the Department of Design and Construction (DDC) has no comments at this time.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR

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

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 19-479

August 28, 2019

Mr. Greg Nakai
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Draft Environmental Assessment for
Board of Water Supply Halau Wai Manoa
TMKs: (1) 2-9-054:019, 020 & 021, (1) 2-9-054:004, 006 & 029
(for access corridors)

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

We have no comments at this time, as we do not have any facilities or easements on the subject property.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

Ross S. Sasamura, P.E.
Director and Chief Engineer

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
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RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
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ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

RAYMOND T. HIGA, ASLA
Senior Associate

CATIE CULLISON, AICP
Senior Associate

MARC SHIMATSU, ASLA
Senior Associate

DACHENG DONG, LEED® AP
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MICAH McMILLEN, ASLA, LEED® AP
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NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
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BLAINE ONISHI, ASLA
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June 24, 2020

Mr. Ross S. Sasamura, P.E.
Director and Chief Engineer
Department of Facility Maintenance
City and County of Honolulu
1000 Ulu‘ohia Street, Suite 215
Kapolei, Hawai‘i 96707

Attn: Mr. Kyle Oyasato, Division of Road Maintenance

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Sasamura:

Thank you for your letter dated August 28, 2019 (your reference number DRM 19-479), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comment that the Department of Facility Maintenance (DFM) has no comments at this time, and that DFM does not have any facilities or easements on the subject property.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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

KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

EUGENE H. TAKAHASHI
DEPUTY DIRECTOR

2019/ELOG-1570 (lm)

September 6, 2019

PBR HAWAII & Associates, Inc.
Attn: Greg Nakai
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

SUBJECT: Draft Environmental Assessment for Hālau Wai Mānoa
TMKs 1-2-054: 019, 020, and 021 (Por.)

Thank you for providing the Department of Planning and Permitting an opportunity to comment on the Hālau Wai Mānoa Draft Environmental Assessment (DEA). We have reviewed the following information and provide the following comment:

The subject site is in the State Land Use Conservation District and zoned P-1 Restricted Preservation District, which is not regulated by Chapter 21 of the Revised Ordinances of Honolulu, Land Use Ordinance. All uses, structures and development standards within the P-1 Preservation District and State Land Use Conservation District shall be governed by the appropriate State agencies.

Should you have any questions regarding these comments, please contact Laura Mo, of our staff, at 768-8045.

Very truly yours,

Dina L.T. Wong
Acting Chief
Planning Division

DLTW:lw

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& ASSOCIATES, INC.

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BLAINE ONISHI, ASLA
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June 24, 2020

Ms. Dina L. T. Wong
Acting Division Chief
Planning Division
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

Attn: Ms. Laura Mo

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Wong:

Thank you for your letter dated September 6, 2019 (your reference number 2019/ELOG-1570(lm)), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comments that: 1) the subject site is located in the State Land Use Conservation District and zoned P-1 Restricted Preservation District, which is not regulated by Chapter 21 of the Revised Ordinances of Honolulu, Land Use Ordinance; and 2) all uses, structures and development standards within the P-1 Preservation District and State Land Use Conservation District shall be governed by the appropriate State agencies. Your comments will be noted in the Final Environmental Assessment (EA).

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR

MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

August 20, 2019

Mr. Greg Nakai, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Nakai:

Subject: Draft Environmental Assessment
Board of Water Supply (BWS) Halau Wai Manoa
Honolulu, Hawaii 96822
Tax Map Keys: 2-9-054: 004, 006, 019, 020, 021, and 029 (PORTIONS)

In response to your letter dated August 6, 2019, regarding the abovementioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (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; 2012 Edition, Section 18.2.3.2.2.)

   A fire department access road shall extend to within 50 feet (15 meters) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; 2012 Edition, Section 18.2.3.2.1.)

2. A water supply approved by the county, capable of supplying the required fire flow for fire protection, shall be provided to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed, or moved into or within the county. When any portion of the facility or building is in excess of 150 feet (45,720 millimeters) from a water supply

on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; 2012 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1; 2012 Edition, Sections 18.2.3.4.1.1 and 18.2.3.1.1.2, as amended)

4. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or email at wmasuda@honolulu.gov.

Sincerely,

SOCRATES D. BRATAKOS
Assistant Chief

SDB/TC:gl

cc: Amy Tsuneyoshi,
BWS

PBR HAWAII
& ASSOCIATES, INC.

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June 24, 2020

Mr. Socrates D. Bratakos
Assistant Chief
Honolulu Fire Department
City and County of Honolulu
636 South Street
Honolulu, Hawai'i 96813-5007

Attn: Battalion Chief Wayne Masuda, Fire Prevention Bureau

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Bratakos:

Thank you for your letter dated August 20, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comments regarding: 1) fire department access roads; 2) water supply for the required fire flow for fire protection, if necessary; and 3) the provision of civil drawings to the Honolulu Fire Department (HFD) for review and approval.

As was discussed in Section 4.8.2 of the Draft Environmental Assessment (EA), if a permanent building is constructed as part of the proposed Project, fire department access and on-site fire protection requirements will be coordinated with the HFD Fire Prevention Bureau. However, no permanent structures are currently planned for the Project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; a small traditional meeting hale, pavilion, or similar open-air structure may also be planned for the Project Site.

Should the traditional meeting hale be built according to the guidelines and requirements specified in Chapter 16, Article 12 of the Revised Ordinances of Honolulu (ROH) pertaining to Indigenous Hawaiian Architecture, then it is our understanding that no fire protection would be required for the structure if it is located at least 100 feet from any existing structure or property line (pursuant to ROH Sec. 16-12.8). However, if needed, BWS will extend the existing water line to the Project Site for fire flow/hydrant.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR

SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
JONATHON GREMS
DEPUTY CHIEFS

OUR REFERENCE GLK-DK

August 27, 2019

Mr. Greg Nakai, Planner
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

This is in response to your letter of August 6, 2019, requesting input on the Draft Environmental Assessment for the Board of Water Supply (BWS) Halau Wai Manoa project.

The Honolulu Police Department (HPD) anticipates short-term impacts to pedestrian and vehicular traffic during the construction phase of the project. The HPD recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor to facilitate the flow of traffic during the construction phase of the project. In spite of mitigation measures, construction-related dust, noise, traffic, and odors would likely cause an increase in calls for police service to the area. However, once completed, there should be no impact on the facilities or operations of the HPD.

If there are any questions, please call Acting Major Gordon Lum Kee of District 7 (East Honolulu) at 723-3369.

Thank you for the opportunity to review this project.

Sincerely,

ALLAN T. NAGATA
Assistant Chief
Support Services Bureau

cc: Ms. Amy Tsuneyoshi, BWS

PBR HAWAII
& ASSOCIATES, INC.

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Associate

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June 24, 2020

Mr. Allan T. Nagata, Assistant Chief
Support Services Bureau
Honolulu Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawai'i 96813

Attn: Acting Major Gordon Lum Kee, District 7 (East Honolulu)

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Nagata:

Thank you for your letter dated August 27, 2019 (your reference GLK-DK), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge the Honolulu Police Department's (HPD's) comments and provide the following response.

The Final Environmental Assessment (EA) will note your agency's comments that:

1. HPD anticipates short-term impacts to pedestrian and vehicular traffic during the construction phase of the project;
2. HPD recommends that all necessary signs, lights, barricades, and other safety equipment be installed and maintained by the contractor to facilitate the flow of traffic during the construction phase of the project;
3. In spite of mitigation measures, construction-related dust, noise, traffic, and odors would likely cause an increase in calls for police service to the area; and
4. Once completed, there should be no impact on the facilities or operations of the HPD.

As discussed in the Draft EA, no permanent structures are currently planned to be constructed for the project. The proposed Hālau Wai Mānoa will be a farm with small accessory structures in support of the agricultural activities; the project may include a small traditional meeting hale, pavilion, or similar open-air structure. As such, construction-related impacts are anticipated to be minimal.

We value your participation in the environmental review process. Your letter will be included in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

Hawaiian Electric Company

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed BWS Halau Wai Manoa project comes to fruition, please continue to keep us informed.

Should there be any questions, please contact me at 543-7245.

Thank you,
Rouen Liu
Permit Engineer

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
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President / Principal

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June 24, 2020

Rouen Liu
Permit Engineer
Hawaiian Electric Company
P.O. Box 2570
Honolulu, Hawai'i 96821

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Rouen Liu:

Thank you for your comment received electronically September 3, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge that Hawaiian Electric Company (HECO) has no objection to the project. We also acknowledge your comment that, should HECO have existing easements and facilities on the subject property, HECO will need continued access for maintenance of its facilities. As requested, HECO will continue to be kept informed as the proposed project comes to fruition. Your comments will be included in the Final Environmental Assessment (EA).

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

Charter
COMMUNICATIONS

August 15, 2019

PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Attention: Greg Nakai

Subject: Board of Water Supply Halau Wai Manoa Project

Greg Nakai

Thank you for the opportunity to review and comment on the proposed Board of Water Supply Halau Wai Manoa Project.

According to our drawings, we should not be affected by this project. However, we are not responsible for any home owners that may have constructed underground conduits for our services. Contractors will be responsible to contact One call center to identify any underground facilities.

Please contact me at 292-9817 or Keokeokahawai.Alo@charter.com with any questions.

Mahalo,

Ke'o Alo
Spectrum Engineering
Construction Coordinator

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

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Executive Vice-President / Principal

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Project Director

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June 24, 2020

Ke‘o Alo
Construction Coordinator
Spectrum Engineering
200 Akamainui Street
Mililani, Hawai‘i 96789

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ke‘o Alo:

Thank you for your letter dated August 15, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge your comments that: 1) according to your drawings, Spectrum should not be affected by this project; 2) Spectrum is not responsible for any home owners that may have constructed underground conduits for your services; and 3) contractors will be responsible to contact One call center to identify any underground facilities. Your comments will be included in the Final Environmental Assessment (EA).

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

From:	noreply@smartcomment.com
To:	shelley.gustafson@hawaii.edu
Subject:	BWS Hālau Wai Mānoa comment
Date:	Monday, September 9, 2019 11:43:08 AM

Thank you for your comments on the BWS Halau Wai Manoa. Your comments have been received.

Name: Shelley Gustafson
Address: 3190 Maile Way
City: KANEOHE
State: Hawaii
ZIP: 96822
Email: shelley.gustafson@hawaii.edu
Submitted By: Hawaii Association of Watershed Partnerships

BWS Halau Wai Manoa

The Hawaii Association of Watershed Partnerships is in support of the Honolulu Board of Water Supply's proposal to develop Halau Wai Manoa, facilitating forward movement in the areas of sustainable agriculture and watershed restoration. The project will offer a unique opportunity for the surrounding community and others more broadly to participate in place-based education through their proposed learning center. Moreover, Halau Wai Manoa will provide a strategic location from which to launch critical invasive species control and other restoration activities within the surrounding watershed areas of the upper Manoa Valley.

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
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President / Principal

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TOM SCHNELL, AICP
Principal

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printed on recycled paper

June 24, 2020

Shelley Gustafson
Outreach and Education Specialist
Hawai‘i Association of Watershed Partnerships
Pacific Cooperative Studies Unit
University of Hawai‘i at Mānoa
St. John Hall, Room #417A
3190 Maile Way
Honolulu, Hawai‘i 96822

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Gustafson:

Thank you for your comment submitted online on September 9, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we appreciate your comment that the Hawai‘i Association of Watershed Partnerships (HAWP) is in support of the proposed project, facilitating forward movement in the areas of sustainable agriculture and watershed restoration. We acknowledge your comments that the project will offer a unique opportunity for the community to participate in place-based education, and that the project will provide a strategic location from which to launch critical invasive species control and other restoration activities within the surrounding watershed areas of the upper Mānoa Valley.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

PARADISE PARK, INC.
3737 Manoa Road ▪ Honolulu, Hawaii 96822 ▪ Phone: (808) 946-2966 ▪ Facsimile: (808) 943-3140

September 8, 2019

VIA U.S. MAIL AND EMAIL
gnakai@pbrhawaii.com

VIA FACSIMILE
(808) 523-1402

PBR Hawaii & Associates, Inc.
Attention: Mr. Greg Nakai, Planner
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813

VIA U.S. MAIL AND EMAIL
atsuneyoshi@hbws.org

Honolulu Board of Water Supply
Water Resources Division
Attn: Amy Tsuneyoshi
Watershed Resource Specialist
630 South Beretania Street
Honolulu, Hawaii 96843

Subject: **Draft Environmental Assessment (DEA) for the Board of Water Supply Hālau Wai Mānoa**

Dear Mr. Nakai and Ms. Tsuneyoshi:

Paradise Park is deeply appreciative of the opportunity to comment on the Board of Water Supply's proposal to establish Hālau Wai Mānoa. Located on portions of TMK 2-9-54:019, 020, and 021, your property is bordered on two sides by properties owned by our family. You anticipate continuing the current use of the property developed and nurtured by Kumuola Foundation as a sustainable agricultural farm with emphasis on watershed protection, water conservation, native forest restoration, and invasive species removal. It is anticipated that you will embrace the deeply spiritual sense of place your property breathes and promote cultural activities such as those that are currently practiced on that special land.

We are especially pleased that your mission coincides very closely with ours at Paradise Park ("the Park") as we endeavor to redevelop our grounds as a cultural learning center that aspires to bridge the mission of the Harold L. Lyon Arboretum's focus on tropical plant biodiversity through research, and yours of a hands-on facility that tells the story of Mānoa's important wetlands through native Hawaiian traditions. Our family is open to discussing the feasibility of working closely with you to facilitate access, parking, and possible use of our facilities to engender a climate of sharing resources to restore the *ea* (life) of Mānoa *mauka*.

We have had limited opportunity to review the DEA for Hālau Wai Mānoa and request more time to provide additional comments to those listed below:

1. Please correct any reference to our name from Hawaiian Paradise Park to Paradise Park. Hawaiian Paradise Park is a census-designated place in the district of Puna on Hawai'i Island.

2. You have indicated that portions of the Park were constructed on Board of Water Supply land. When the Park was built in 1966, design and construction was planned according to coordinates based on the Government Survey Triangulation Station "Akaka." In 1989, Control Point Surveying and Engineering, Inc. were contracted by the Park to accurately outline the borders of TMK 2-9-54: 007. Indeed, some Park features did encroach upon the neighboring TMK at our northernmost border. The DEA incorrectly identifies this as the "southernmost portion of Paradise Park" (Appendix C: Archaeological Inventory Survey, page 26). We would greatly appreciate comparing your surveyor's maps with ours so we can clearly understand our boundaries and mark them accordingly. We did not see any reference to any survey maps prepared specifically for this project in the DEA.

3. We note that the Department of Land and Natural Resources (DLNR) has required you to apply for a Conservation District Use Permit (CDUP) before you can proceed with your project. DLNR is mandated to "enhance, protect, conserve and manage Hawai'i's unique and limited natural, cultural and historic resources held in public trust for current and future generation of the people of Hawaii *nei*, and its visitors, in partnership with others from the public and private sectors." According to their Hawai'i Administrative Rules (Chapter 13-5), "no land use(s) shall be conducted in the conservation district unless a permit or approval is first obtained from the department or board." It would appear that directive would apply to the existing cultural learning center on your premises as well as your proposed Hālau Wai Mānoa but we sincerely hope that approval can be received so the current and future operations are in full compliance.

   Paradise Park received its CDUP OA-30A from DLNR in 1966. On page 36 (Appendix C: Archaeological Inventory Survey) the report states, "In order to renovate, (James) Wong was requesting an extension of the original conservation use permit" but after community opposition, it was denied. We wish to clarity this. We had received an approval in 2014 for a revision to our existing CDUP but because we did not act upon it within the designated time period, we were required to resubmit our application, requesting an extension. That request was denied but we still hold the existing CDUP. However, we cannot proceed with any new redevelopment plans unless we complete an EA at a minimum. If that document does not find for "no significant impact," then a full EIS will be required.

   Of special concern to us is invasive tree removal (especially nitrogen-fixing albizia) and disposal of the debris appropriately away from the stream banks. DLNR's rules state that removal of trees that pose a public safety hazard can be removed, "however, that the landowner shall be required to provide documentation for the need to remove the trees."

In addition, each tree is to be replaced on a one-to-one-basis with trees that are appropriate to the site location with preference to trees that are endemic or indigenous to Hawai'i. We have been through this process using an arborist but the time and expense was worth the resulting transparency of the urgent need for invasive tree removal.

Recent grading of the grounds across the stream from the Park has produced some runoff and on the opposite side of your property (parcel 20), the re-entry of the *'auwai* into Lua'alaea Stream has resulted in unanticipated erosion to our banks (TMK 2-9-54:013) in periods of heavy rainfall. We are hopeful that the existing stream diversion can be reviewed, modified if necessary, and approved by DLNR to mitigate negative impacts on storm water runoff, sedimentation, erosion and water quality.

4. The EA emphasizes the primary use of the property as agricultural, which we strongly support. Can you clarity what kind(s) of produce you anticipate growing in addition to *kalo*? We are aware of the cut flower preparation on site, but will you be processing your produce there as well? Will the sale of the produce be sufficient to sustain the farm or is there the potential of charging an admission fee or request for donation on entrance? An overview or basic business plan of the proposed farm and its potential for providing food for public consumption would help us better understand our shared risks for flood damage, trespassing, theft, vandalism and impacts of vagrants and squatters.

5. You frequently mention that the proposed project will not significantly increase the number of visitors to the site. We would appreciate knowing how many visitors you currently average per day, week, month, or year so we can better gauge your parking needs when we have the opportunity to discuss some possible arrangements. Potential paths from our parking lots, through the Park grounds, and over Haukulu (Mānoa) Stream can be considered at that time as well.

6. Our greatest concern at this time is the proposed construction of two very large water detention basins in the *mauka* streams by the United States Army Corps of Engineers (USACE). The Waihī basin will be constructed over Waihī Stream just after it joins with the 'Aihualama Stream, with its footprint in your northwest corner of Parcel 19. This is designated as Archaeological Site No. 8771 on your inventory survey fieldwork and is recommended for preservation. The L-shaped design of the 35-foot tall earthen structure with spillway will likely alter the natural flow of the existing stream and create unanticipated flooding in the immediate area.

   The other detention basin is located just below the meeting of Waiakeakua Stream and Lua'alaea Stream. This will create near constant flooding of the areas above it, including our farm property and yours. Please consider the impacts of these detention basins in your plans, especially with regard to public safety and welfare.

7. It was with great excitement we read that an *'alae'ula* was seen in your *lo'i*! At one time, they may have been more plentiful but as the trees have overgrown the visible water habitats, they became scarce. Since these birds are endangered and federally protected, your *lo'i* may be a vital new habitat in Mānoa. If there is any alteration or modification to the hydrology to the area (USACE detention basins or redirected *'auwai*, for example), they may again disappear. We hope not. We're so encouraged that at least this one bird found a way back to Mānoa.

8. We are somewhat uncomfortable as to the purpose of developing an educational cultural farm without a management plan in place. The EA was prepared around a concept without specifics or details of a proposed operation so it's difficult for us to critically analyze what potential impact it may have on our two properties you are sandwiched between. We understand you will be putting out a Request for Proposals to find an appropriate non-profit foundation to manage the property. But we would have been more comfortable knowing who would be managing the land and what the proposed design would be so we could provide a more constructive review of the overall concept.

9. We are thankful for your outreach at the last two Mānoa Neighborhood Board meetings, prepared to give an overview of the project and answer questions. Time constraints prevented you from doing so and we have requested that Hālau Wai Mānoa be placed again on the agenda or given its own meeting time to make a better presentation. The Mānoa community is very protective of its beloved valley and we hope you have been able to have meaningful discussions with some of the groups that are specifically engaged in the community such as the Mānoa Outdoor Circle, Save Mānoa Valley, Mālama Mānoa, the Ala Wai Watershed Association and others, including the Mānoa Neighborhood Board. We think our neighbors will be very supportive of your project because of your shared missions but may have some further insight for your consideration.

In summary, we are very excited and pleased with the project as you have envisioned it. It's a very fitting use for the Mānoa watershed. The Kumuola Foundation, as a non-profit Hawaiian culture-based farm has obviously set an excellent framework for growth. Nick and Kuki Navales should be congratulated for creating the model upon with the Board of Water Supply seeks to grow its brand. We are certain we can develop a strong partnership with all the stakeholders of Mānoa *mauka* to restore, replenish, preserve and conserve these most precious lands in the Ko'olau watershed.

Mahalo for this opportunity and privilege to comment on this most worthy and timely proposal and respectfully request an additional 30 days for additional comments after discussing this project with other members of our family.

Sincerely,

PARADISE PARK, INC.

Darryl P. Wong
President

DPW:nw

xc: C. Lau
G. Sugita
J. Wong
K. Wong
N. Wong
W. Wong

PBR HAWAII
& ASSOCIATES, INC.

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Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
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KIMI MIKAMI YUEN, LEED® AP BD+C
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Chairman Emeritus

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Project Director

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June 24, 2020

Darryl P. Wong
President
Paradise Park, Inc.
3737 Mānoa Road
Honolulu, Hawai‘i 96822

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Wong:

Thank you for your letter dated September 8, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we appreciate your comments and provide the following responses.

We acknowledge your request for more time to provide additional comments. While the 30-day comment period is now closed, please note that: 1) a representative from BWS attends every Neighborhood Board meeting (to take note of your comments); and 2) there will be an additional opportunity for public comment during the Conservation District Use Application review period.

1. References to your name have been changed from “Hawaiian Paradise Park” to “Paradise Park” throughout the Archaeological Inventory Survey (AIS). This revised AIS will be included as an appendix to the Final Environmental Assessment (EA).

2. The reference to the location of Paradise Park (“Park”) features at the “southernmost portion of Paradise Park” on page 26 of the AIS has been revised to indicate their location “near its northernmost border”. An exterior boundary survey and topographic survey of significant features of BWS parcels (TMK 2-9-054: 004, 006, 010, 019, 020, 021, and 029, and TMK 2-9-055: 009) was completed in June 2018. The BWS would be more than happy to work with you to compare this survey map with yours in order to clearly understand the shared boundaries and mark them accordingly.

3. Thank you for your clarification regarding the Park’s CDUP OA-30A. The paragraph on page 36 of the Cultural Impact Assessment (CIA) has been revised to more accurately describe the Park’s existing CDUP and denial of an extension of the revised CDUP in 2016.

   The Request for Proposals (RFP) for the operator of the Hālau Wai Mānoa will include a requirement that a certified arborist be engaged in the removal of albizia trees. As a member of the Ko‘olau Mountain Watershed Partnership (KMWP), the BWS intends to consult with KMWP and follow their albizia removal plan.

   We understand the need for carbon sequestration in Mānoa’s forests and that the removal of invasive species should be paired with a reforestation plan toward conversion to a native forest.

   The existing Lua‘alaea Stream diversion #861 will be reviewed to address your concerns regarding unanticipated erosion to your banks (TMK 2-9-054: 013) and to mitigate any negative impacts on storm water runoff, sedimentation, erosion, and water quality.

4. As mentioned above, BWS will be issuing a request for proposals to select an appropriate non-profit organization for this project. As a requirement of the RFP, the organization will be required to develop a management plan, which should address the questions in your comment letter.

5. At this time, we do not have an estimate on the numbers of people who are expected to visit the Hālau Wai Mānoa, but the controlling factors are parking availability and traffic impacts. The current tenant, Kumuola Foundation, currently welcomes approximately 1,000-1,200 visitors per year.

6. We understand the Environmental Impact Statement (EIS) for the U.S. Army Corps of Engineers (USACE) Ala Wai Canal Flood Risk Management Study does not show the proposed Waihī and Waiakeakua detention basins to impact the BWS Hālau Wai Mānoa project; as such, it is not anticipated to impact Archaeological Site No. 8771. USACE is still changing their designs/plans and BWS is monitoring the USACE project closely. We thank you for your suggestion to consider the impacts of these detention basins in our plans, especially with regard to public safety and welfare.

7. No alterations to the hydrology of the area are anticipated to result from the Hālau Wai Mānoa. It is anticipated that the retention of water features such as the loʻi will continue to provide habitat for the ʻalaeʻula and perhaps other protected waterbirds.

8. The RFP will require a management plan for the agricultural uses as well as the educational programming. This management plan will include a more detailed site plan; a description of best management practices to be used during project construction/implementation and over the life of the project; a description of conservation methods and applications; an activity schedule; and operational details. We expect that this management plan will also be a condition of the CDUP.

9. We greatly appreciate your acknowledgment of our outreach to the Mānoa Neighborhood Board at its August and September 2019 meetings. We have subsequently made additional appearances at its October 2019 and June 2020 meetings. We have contacted many of the organizations you have mentioned, and they and other community groups have helped guide our land use plan for the property. We have attempted to reach out to Save Mānoa Valley, but have not received a response.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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September 7, 2019

PBR Hawai'i & Associates Inc.
Attn: Greg Nakai, Planner
1001 Bishop Street Suite#650
Honolulu, HI 96813

Dear Mr. Nakai:

The Outdoor Circle is an environmental nonprofit organization that was founded in 1912, to keep Hawai'i clean, green and beautiful. We accomplish our mission through volunteerism, education and advocacy. Although we did not receive a pre-assessment letter, as the DEA for the Board of Water Supply's Hālau Wai Mānoa claims on page 115, we would like to provide feedback as a part of the EA process. Thankfully, we learned of the completion on the DEA at the Mānoa Neighborhood Board meeting on September 4, 2019. Having the comment period end on September 9th is not an adequate amount of time for the public to read through the 414 pages, considering that the MNB meeting does not even air on the 'ōlelo TV channel for a couple of weeks. Community engagement is essential for the success of projects, so it would be prudent to extend the comment period by a minimum of 30 days.

We have a myriad of concerns about the BWS Hālau Wai Mānoa plans since the location of the project site is on conservation land in the upper part of the watershed.

1.Trees are an integral part of our ecosystem and beautify Mānoa Valley. The cutting and removal of invasive trees should be supervised by a certified arborist. A scientific approach to managing the trees as a valuable resource is paramount. Thoughtful choices may be critical because the mature trees that reside there are sorely needed for carbon sequestration to combat global warming. Furthermore, invasive trees that have been cut down along the stream must be removed from the area and disposed of in an environmentally friendly way so that debris does not impede the flow of the water and result in flooding.

2. The way nature carves out for water to flow over centuries should be respected. The diversion of water from Lua'alaea Stream was never permitted. For the safety of all life in the watershed, this should be corrected.

3. There is no specification of the numbers of people who are expected to visit the Hālau Wai Mānoa. How much traffic and noise will be brought into the neighborhoods?

4. Is a partnership with Paradise Park feasible to use their land for parking as well as a pathway to connect to the Mānoa Falls Trail? What are the details? Has the organization Save Mānoa Valley been consulted?

5. How will adverse effects from the composting toilets be mitigated? The ammonia from urine may seep into the ground water or stream.

6. How will the archaeological site #8771 be protected? Is an archaeologist presently supervising as various areas are graded?

7. What produce will the farm grow? How will the farm sustain itself? Will it be selling the produce? Will any food processing be done at the site?

8. How will the Hālau Wai Mānoa be impacted by the USACE plans to construct a detention basin on the same parcel of BWS land? Will it be safe for the visitors?

9. We commend the intentions to perpetuate the Native Hawaiian practices of farming lo'i, but are concerned about who is advising and ensuring that whomever is the nonprofit organization to manage the farm is executing the traditional agricultural practices properly. Who is the cultural practitioner who will supervise?

Please know that we would be willing to meet with the Board of Water Supply, an arborist, and your consulting firm to improve the Hālau Wai Mānoa plans in the best interests of the trees, watershed and the whole community.

Thank you for your consideration.

Sincerely,

Vanessa Distajo
Vice President

PBR HAWAII
& ASSOCIATES, INC.

THOMAS S. WITTEN, FASLA
Chairman / Principal

R. STAN DUNCAN, ASLA
President / Principal

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
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June 24, 2020

Vanessa Distajo
Vice President
Mānoa Outdoor Circle
1314 South King Street, Suite 306
Honolulu, Hawai‘i 96814

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Ms. Distajo:

Thank you for your letter dated September 7, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we would like to provide clarification regarding previous correspondence and notifications. A pre-Assessment consultation letter was sent to Mr. Winston Welch, Executive Director of The Outdoor Circle, on October 11, 2018. A subsequent letter was also sent to Mr. Welch on August 6, 2019, to inform The Outdoor Circle of the publication of the Draft Environmental Assessment (EA) in the August 8th edition of *The Environmental Notice*. Additionally, a brief announcement was made regarding the Draft EA to the Mānoa Neighborhood Board No. 7 ("MNB") prior to the adjournment of their meeting held on August 7, 2019, and a subsequent presentation was made at the September 4th MNB meeting, as referenced in your letter. Additional appearances were made at the October 2, 2019, and June 3, 2020, MNB meetings to answer any questions from the MNB and the community. We acknowledge your suggestion to extend the comment period by a minimum of 30 days. While the 30-day comment period is now closed, please note that: 1) a representative from BWS attends every Neighborhood Board meeting; and 2) there will be an additional opportunity for public comment during the Conservation District Use Application (CDUA) review period.

We have reviewed your comments and provide the following responses.

1. The Request for Proposals (RFP) for the operator of the Hālau Wai Mānoa will include a requirement that a certified arborist be engaged in the removal of albizia trees. As a member of the Ko‘olau Mountain Watershed Partnership (KMWP), the BWS intends to consult with KMWP and follow their albizia removal plan.

   We understand the need for carbon sequestration in Mānoa's forests and that the removal of invasive species should be paired with a reforestation plan toward conversion to a native forest. Your organization's advice is greatly appreciated as this project moves forward.

2. The existing Lua‘alaea Stream diversion #861 was registered with the Commission of Water Resources in 1988-1989 by Mr. M. Miyashita (previous BWS tenant on Parcel 20 and 21) for agricultural purposes. The diversion was in operation prior to BWS acquiring the property in 1949. This diversion is located off BWS property, which was common during that time to provide enough head to build pressure in the water lines.

3. At this time, we do not have an estimate on the numbers of people who are expected to visit the Hālau Wai Mānoa, but the controlling factors are parking availability, and traffic and noise impacts.

   As stated in sections 4.2.1 and 4.2.2 of the Draft EA, no significant increase in the number of visitors to the site is anticipated over existing conditions due to this project, as its operations are anticipated to be similar to those of the current tenant. However, should an increase in the number of visitations occur, BWS desires to be a "good neighbor" and is sensitive to potential neighbors' concerns about increased traffic, parking, and noise from the project. The BWS has a representative who attends every MNB meeting; in the event that a concern on such matters is raised by a nearby resident, BWS will analyze the concern and provide an appropriate and timely response.

4. At this time, we do not have details regarding the potential utilization of Paradise Park parking and access trail into the farm for volunteer work days, as this would need to be discussed and coordinated with the landowner. Thank you for your suggestion to consult with the Save Mānoa Valley organization. We have attempted to reach out to a representative of this organization but have not received a response.

5. As composting toilets are by nature an absorptive recycling system, we do not believe impacts to groundwater will be significant. As mentioned in section 4.7.2 of the Draft EA, the proposed composting toilet would require the review and approval by the State Department of Health (DOH), pursuant to Section 11-62-35, HAR, related to Other Individual Wastewater Systems.

6. An archaeologist will be consulted should any grading work be necessary. The Archaeological Inventory Survey (AIS) recommends protective measures for all affected sites. We expect this will be a condition of the Conservation District Use Permit (CDUP).

7. The BWS will be issuing a request for proposals to select an appropriate non-profit organization for this project. As a requirement of the RFP, the organization will be required to develop a management plan, which should address the questions in your comment letter.

8. We understand the plan included in the Environmental Impact Statement (EIS) for the U.S. Army Corps of Engineers (USACE) Ala Wai Canal Flood risk Management Study does not show the proposed Waihī and Waiakeakua detention basins to impact the Hālau Wai Mānoa project. USACE is still changing their designs/plans and BWS is monitoring the project closely, particularly in light of concerns for public safety.

9. We thank you and agree that this is a worthy loʻi restoration, cultural education, and watershed management project. The RFP will require the non-profit organization to engage a cultural practitioner to ensure the proper execution of traditional agricultural practices.

Finally, we appreciate and accept your offer to meet and advise on our project. We look forward to working with you to ensure the successful and *pono* implementation of the project to help keep Hawaiʻi clean, green, and beautiful.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final Environmental Assessment (EA).

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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TO: THE BOARD OF WATER SUPPLY
FROM: Dylan P. Armstrong, *in my Individual Capacity*
DATE: 8 September 2019

RE: BWS Hālau Wai Mānoa Project Draft Environmental Assessment (DEA)

On September 4, 2019, the Mānoa Neighborhood Board No. 7 ("Board") held a Regular Meeting. A presentation by the Board of Water Supply (BWS) occurred late in the meeting, within its last 15 minutes, due to a lengthy agenda. The consultant for the DEA had communicated that the public deadline for comment would be 5 days later, on September 9th. The Board will not convene again until October, nearly a month after the public comment deadline.

The Board has not yet taken a position on the proposed project. The Board is unable to come to a conclusion on this project due to these time constraints. I am the Board's current Chairperson, but I am writing this in my individual capacity due to the board having taken no action on this project.

The neighborhood board's role in the public comment process is explained by its bylaws, the Neighborhood Plan of 2008:

> ***§2-13-101 Purpose.*** *The purpose of this neighborhood plan and the neighborhood boards is to increase and assure effective citizen participation in the decisions of government. [Eff. 10/20/08] (Auth: RCH §14-103(a)) (Imp: RCH§14-104)*
>
> ***2-13-102 General powers, duties, and functions of the boards.***
> *(a) The boards are responsible for actively participating in the functions and processes of government by identifying, addressing, communicating, and seeking solutions to neighborhood issues and concerns, both within and outside of their respective neighborhood areas. Their actions should reflect the needs, wants, and interests of the neighborhood. Boards may take the initiative in selecting and prioritizing their activities, and provide reasonable means to increase and assure effective citizen participation in the decisions of government.*
>
> *(b) The powers, duties, and functions of boards shall include:*
> 1. *Increase and assure effective citizen participation in the decisions of government by providing additional and improved opportunities for public input and interaction, and communicating that input to the appropriate persons and agencies;*
> 2. *Initiate, review, comment, and make recommendations concerning any general plan, development and sustainable communities plan, zoning, planning, permitting, and other land use issues within the city;*
> 3. *Identify, prioritize, review, comment, and make recommendations concerning any government capital improvement proposal, plan, or project;*

4. *Assist with evaluations of the efficiency and effectiveness of government services and programs, whether provided by government agencies or their contractors;*
5. *Initiate, review, comment, and make recommendations concerning any other substantive issue reasonably related to the processes or decisions of government;*
6. *Encourage understanding of the decision-making processes of government; and*
7. *Encourage the role of the board as a public and informational forum on community and governmental issues.*

...(d) Each board may express its neighborhood's view, opinion, or advice on matters within the scope of the board's jurisdiction to properly fulfill its duty. No deference is required of a board to any other board

In my individual capacity, I am requesting an additional 30-day comment period, which would allow various civic and non-governmental organizations time to be adequately involved in the public comment process.

Mahalo nui loa,

DPArmstrong

DYLAN P. ARMSTRONG
INDIVIDUAL CAPACITY

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& ASSOCIATES, INC.

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Project Director

RAMSAY R. M. TAUM
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CATIE CULLISON, AICP
Senior Associate

MARC SHIMATSU, ASLA
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Senior Associate

MICAH McMILLEN, ASLA, LEED® AP
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NATHALIE RAZO
Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Associate

BRIAN WOLF, ASLA, LEED® AP
Associate

BLAINE ONISHI, ASLA
Associate

HONOLULU OFFICE
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Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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June 24, 2020

Dylan P. Armstrong
2121 McKinley Street
Honolulu, Hawai'i 96822

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Armstrong:

Thank you for your comment in your individual capacity submitted online on September 8, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we have reviewed your comments and provide the following responses.

We appreciated the opportunity to provide a presentation to the Mānoa Neighborhood Board No. 7 ("Board") at its Regular Meeting held on September 4, 2019, and then to answer questions at subsequent meetings held on October 2, 2019, and June 3, 2020.

It should be noted that we were also on the agenda for the Board's Regular Meeting held on August 7, 2019. Due to the lengthy agenda and particularly the Board's house-keeping items and discussions, we were unable to give our full presentation to the Board at the August 7th meeting. However, we did, in fact, make an announcement before the meeting was adjourned to inform the Board of the project, including information on the August 8th publication of the Draft Environmental Assessment (EA) and the initiation of the 30-day public review and comment period. At that time, we invited the Board and the public to review and provide comments on the Draft EA. To facilitate public comments, we provided an on-line option that you and several other members of the community have taken advantage of.

We acknowledge that the Board has not yet taken a position on the proposed project, as well as your personal request for an additional 30-day comment period. While the 30-day comment period is now closed, please note that: 1) a representative from BWS attends every Neighborhood Board meeting; and 2) there will be an additional opportunity for public comment during the Conservation District Use Application review period.

Again, we appreciated the four appearances before the Mānoa Neighborhood Board. Your letter and our responses will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply

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From:	noreply@smartcomment.com
To:	atabaque1992@gmail.com
Subject:	BWS Hālau Wai Mānoa comment
Date:	Monday, September 9, 2019 1:23:15 PM

Thank you for your comments on the BWS Halau Wai Manoa. Your comments have been received.

Name: Andrew Tabaque
Address: 68-088B Akule St.
City: Waialua
State: Hawaii
ZIP: 96791
Email: atabaque1992@gmail.com

BWS Halau Wai Manoa

As a conservationist and educator on the north shore of Oahu, I support BWS Halau Wai Manoa. Its critical to pass on the knowledge and protection of our watersheds to the keiki so that future generations may continue to love and cherish our aina.

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June 24, 2020

Andrew Tabaque
68-088B Akule Street
Waialua, Hawai‘i 96791

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI‘I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Tabaque:

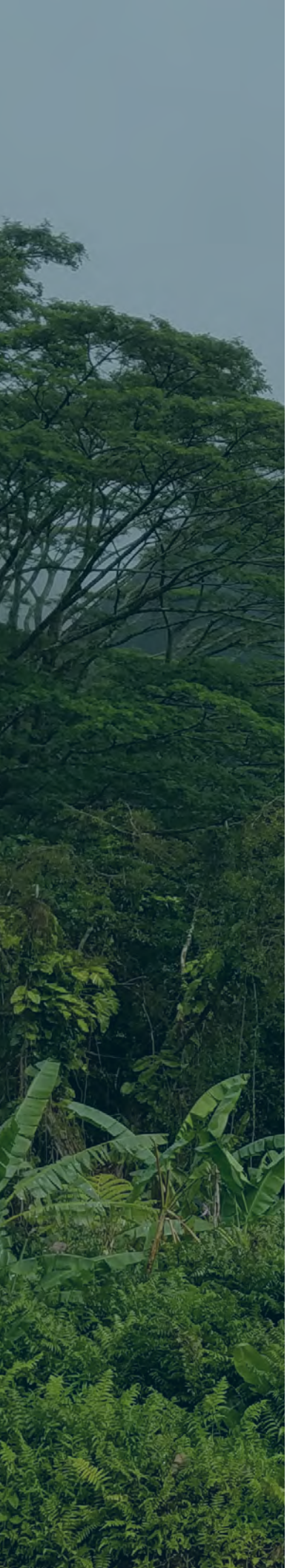
Thank you for your comment submitted online on September 9, 2019, regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we appreciate your support of the project as a conservationist and educator. We agree with your comment that it is critical to pass on the knowledge and protection of our watersheds to the keiki so that future generations may continue to love and cherish our ‘āina.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply



APPENDIX H

Correspondence from the U.S. Army Corps of Engineers

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-----Original Message-----
From: Winter, Frank J II CIV (USA) <Frank.J.Winter@usace.army.mil>
Sent: Monday, March 9, 2020 11:16 AM
To: Greg Nakai <gnakai@pbrhawaii.com>
Subject: RE: POH-2019-00169 (Board of Water Supply, Halau Wai Manoa, Oahu, HI)

Mr. Nakai,
The proposed BWS Hālau Wai Mānoa project would not require a Corps permit as the work is in a Section 404 only waterbody and would not constitute a discharge of fill material into a waters of the U.S. If you have any proposed changes to the project please reach back out to the Corps for review. Much appreciated.

Thank you,

Frank J. Winter
Biologist, Regulatory Branch
Honolulu District
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440
808-835-4107
Frank.J.Winter@usace.army.mil

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E-mail: sysadmin@pbrhawaii.com

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June 24, 2020

Mr. Frank J. Winter
Biologist, Regulatory Branch
Honolulu District
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawai'i 96858-5440

SUBJECT: POH-2019-00169 BOARD OF WATER SUPPLY, HĀLAU WAI MĀNOA, O'AHU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Winter:

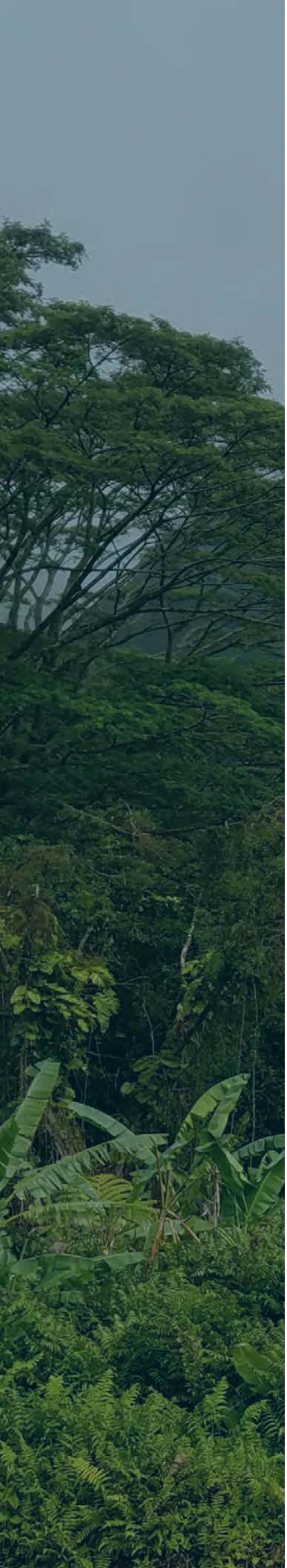
Thank you for your email dated March 9, 2020 (your reference number POH-2019-00169), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply (BWS), we acknowledge your comment that the proposed project would not require a U.S. Army Corps of Engineers (Corps) permit as the work is in a Section 404 only waterbody and would not constitute a discharge of fill material into a waters of the U.S. If any substantive changes to the project are proposed, the Corps would again be contacted for review.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Final EA.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply



APPENDIX I

Letter from the Department of Transportation Services

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

KIRK CALDWELL
MAYOR

WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP8/19-782608R

September 27, 2019

Mr. Greg Nakai, Planner
PBR Hawaii & Associates, Inc
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Nakai:

SUBJECT: Draft Environmental Assessment (DEA) for the Board of Water Supply Halau Wai Manoa, Oahu, Hawaii
TMKs: (1) 2-9-054:019, 020 & 021, (1) 2-9-054:004, 006 & 029

This responds to your correspondence of August 6, 2019, requesting our review and comment on the subject project. Based on our review, we have no comments to offer at this time. However we recommend 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.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Virginia Sosh, of my staff, at 768-5461.

Very truly yours,

Wes Frysztacki
Director

PBR HAWAII
& ASSOCIATES, INC.

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Chairman / Principal

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President / Principal

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Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

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June 24, 2020

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

Attn: Ms. Virginia Sosh

SUBJECT: HRS CHAPTER 343 DRAFT ENVIRONMENTAL ASSESSMENT – HĀLAU WAI MĀNOA, HONOLULU, HAWAI'I, PORTIONS OF TMK (1) 2-9-054: 004, 006, 019, 020, 021, & 029

Dear Mr. Frysztacki:

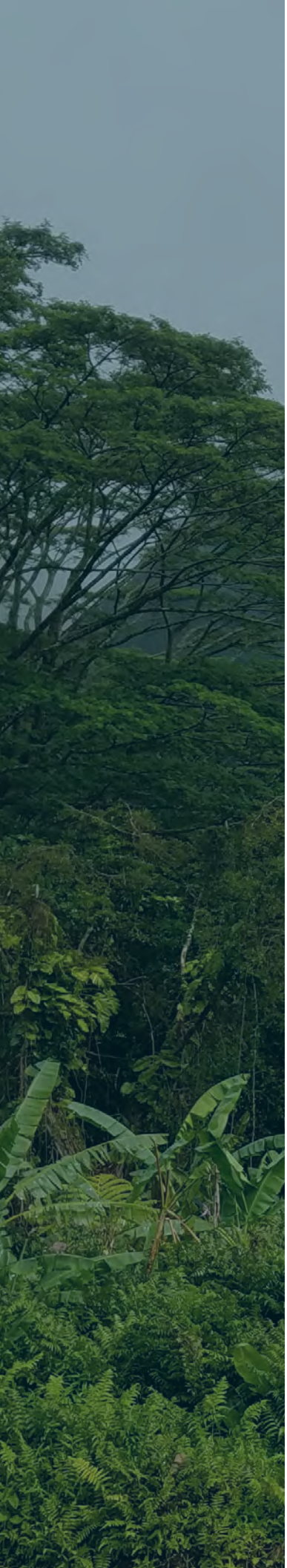
Thank you for your letter dated September 27, 2019 (your reference number TP8/19-782608R), regarding the subject project. As the planning consultant for the Honolulu Board of Water Supply, we acknowledge that the Department of Transportation Services (DTS) has no further comments to offer at this time. We also acknowledge that DTS recommends the area representatives, neighborhood board, area residents, businesses, emergency personnel (fire, ambulance, and police), O'ahu 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. This recommendation was included in the Draft Environmental Assessment (EA) and will be included in the Final EA.

We value your participation in the environmental review process.

Sincerely,
PBR HAWAII

Greg Nakai
Associate

cc: Board of Water Supply



APPENDIX J

Letter from the Office of Conservation and Coastal Lands (OCCL)

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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

M. KALEO MANUEL
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

OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:TM

BWS-Manoa
RE: Correspondence: OA 19-74

JAN - 9 2020

Ernest Y.W. Lau, Chief
Board of Water Supply
City and County of Honolulu
630 South Beretania St.
Honolulu, HI 96843

SUBJECT: Board of Water Supply (BWS) Property Located at 3760 Haukulu Road, Mānoa, O'ahu, TMK: (1) 2-9-054:020

Dear Mr. Lau:

The Office of Conservation and Coastal Lands (OCCL) would like to thank your staff, Amy Tsuneyoshi and Michael Matsuo, for facilitating a site inspection on December 20, 2019 to the subject location and for being very responsive to OCCL's questions and concerns. The site inspection revealed that with the exception of the nonconforming agricultural use of the property, the existing land uses appear to be minor in scope consisting of accessory structures such as temporary tent structures and freight containers.

The subject area appears to lie within the Conservation District Resource subzone. As these land uses (tent structures and containers) appears to have been present on site for more than 30-days, should these land uses be retained, an after the fact Site Plan Approval **must be applied for** pursuant to the Hawai'i Administrative Rules (HAR), 13-5-22 P-9 STRUCTURES, ACCESSORY (B-1) Construction or placement of structures accessory to existing facilities or uses. This would require the filing of a Site Plan Approval that could be processed by the OCCL. The SPA application is available on our website at dlnr.hawaii.gov/occl. The other option would be to remove these features.

In addition, the OCCL has recently reviewed the Hālau Wai Mānoa proposal for this parcel and adjacent parcels 019 & 021. According to BWS's information, the proposal is to create a place-based, hands-on learning area to promote forest restoration, watershed protection/conservation, and sustainable agricultural practices. Conceptualized land uses may include ancillary structures, a meeting hale, agriculture, off site access trail, land/forest restoration, and invasive species removal. The proposal would provide an alternative outdoor space to learn about watersheds, forest health, water conservation and sustainable resource management practices.

The Hālau Wai Mānoa proposal appears to be an identified land use pursuant to HAR, §13-5-24 R-8 BOTANICAL GARDENS, PRIVATE PARKS, AND NATURE CENTERS (D-1) For a profit or non-profit establishment featuring plants or other natural resources and offering tours or other nature-based, outdoors educational and recreational activities, primarily during daylight hours. Facilities may include access road, restrooms, shelters, and not more than one structure for housing, administration, and maintenance not to exceed 1,200 square feet, under a management plan approved simultaneously with the permit, is also required. This proposed use would require the filing of a Conservation District Use Application (CDUA) and all required attachments such as an Environmental Assessment; HRS, 6E-8 compliance; and a Management Plan for a Board permit. Therefore, to allow, modify or deny the proposed use would be at the discretion of the Board of Land and Natural.

It is most likely that a Public Hearing would be required. The OCCL strongly suggest community conversations with community organizations and the neighbors be initiated.

However please note, the OCCL will be unable to process any requests for land uses until after the fact authorization is processed for the accessory structures or the land use is removed. Should you have any questions regarding this matter, contact Tiger Mills of our Office at (808) 587-0382.

Sincerely,

for Michael Cain

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

C: ODLO/CWRM/DOFAW
City-DPP