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LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

September 17, 2014

Ms. Jessica Wooley, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 S. Beretania Street, Room 702
Honolulu, Hawai'i 96813

Dear Ms. Wooley:

Subject: **HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS FINAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT (FEA-FONSI)**

With this letter, the Board of Land and Natural Resources hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the Hālau Kū Māna Public Charter School Improvements situated at TMK(s) (1)2-5-019:008(por.); (1) 2-5-20:003, 004, 005 & 008, in the Honolulu District on the island of O'ahu for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, two copies of the FEA-FONSI, and an Adobe Acrobat PDF file of the same. Simultaneous with this letter, we have submitted the completed OEQC Publication Form in a text file by electronic mail to your office.

If there are any questions, please contact Stephen Soares at (808) 587-0505.

Sincerely,

for William Aila
Chairman

Enclosures

APPLICANT ACTIONS
SECTION 343-5(C), HRS
PUBLICATION FORM (JANUARY 2013 REVISION)

Project Name: Hālau Kū Māna Public Charter School Improvements
Island: O'ahu
District: Honolulu
TMK: (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)
Permits: Department of Health Wastewater Permit; Grubbing, Grading and Stockpiling Permit; Building Permits; NPDES (if more than one acre)

Approving Agency:
State Board of Land and Natural Resources, 1151 Punchbowl St., Honolulu, HI 96813
Contact: Stephen Soares; Phone: (808) 587-0505; Fax (808) 587-0311

Applicant:
Mana Maoli, c/o Hālau Kū Māna, 2101 Makiki Heights Drive, Honolulu, HI 96822
Contact: Mahina Duarte (808) 945-1600

Consultant:
PBR Hawaii & Associates, Inc., 1001 Bishop Street, Suite 650, Hononlulu, HI 96813
Contact: Catie Cullison; Phone: (808) 521-5631; Fax (808) 523-1402

Status (check one only):

___DEA-AFNSI — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day comment period ensues upon publication in the periodic bulletin.

__x_FEA-FONSI — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to oeqchawaii@doh.hawaii.gov; no comment period ensues upon publication in the periodic bulletin.

__FEA-EISPN — Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to oeqchawaii@doh.hawaii.gov; a 30-day consultation period ensues upon publication in the periodic bulletin.

__Act 172-12 EISPN — Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to oeqchawaii@doh.hawaii.gov. NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

__DEIS — The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); a 45-day comment period ensues upon publication in the periodic bulletin.

__FEIS — The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

__ Section 11-200-23 Determination — The approving agency simultaneous transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.

__Statutory hammer Acceptance — The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

__Section 11-200-27 Determination — The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

__Withdrawal (explain)

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

Hālau Kū Māna Public Charter School will utilize State lands to construct improvements to existing facilities at the school. The school is comprised mainly of ten portable classroom and administrative and support trailers, a 40-foot by 50-foot canopy tent, parking areas and landscaping. This arrangement was appropriate when the school first located at the site, but no longer fits the needs of the student body. The primary purpose for the Hālau Kū Māna Public Charter School Improvements is to provide adequate educational facilities for the existing student population and establish compliance with environmental requirements for new and existing facilities. The improvements will include the renovation of existing structures, installation of a permanent wastewater system, and addition of new classroom facilities.

HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS

Final Environmental Assessment

Prepared for:
MANA MAOLI

Prepared by:

PBR HAWAII
& ASSOCIATES, INC.

September 2014

HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS

Final Environmental Assessment

Applicant:
MANA MAOLI

Approving Agency:
STATE OF HAWAI'I
BOARD OF LAND AND NATURAL RESOURCES

Prepared by:

PBR HAWAII
& ASSOCIATES, INC.

1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

September 2014

SUMMARY

Project Name:	Hālau Kū Māna Public Charter School Improvements
Location:	Makiki *ahupua'a*, Makiki Valley, Honolulu, O'ahu, Hawai'i
Judicial District:	Honolulu District
Tax Map Key (TMK):	(1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)
Land Area:	Approximately 5.2 acres
Applicant:	Mana Maoli
Approving Agency:	State of Hawai'i, Board of Land and Natural Resources
Landowner:	State of Hawai'i, Department of Land and Natural Resources
Existing Use:	Hālau Kū Māna Public Charter School, State Recreation Area
Proposed Action:	The project will utilize State lands to construct improvements at Hālau Kū Māna Public Charter School. The improvements will include the renovation of existing structures, installation of a permanent wastewater system, and addition of new classroom facilities.
Current Land Use Designations:	*State Land Use:* Conservation *Conservation District:* Resource Subzone *County Zoning:* P-1, P-2, R-10 *Primary Urban Center Development Plan:* Preservation, Lower-Density Residential *Special Management Area (SMA):* Not in SMA
Alternatives Considered:	Three alternatives were considered: • No Action: The existing facilities are deficient in capacity and not in compliance with environmental regulations. • Alternative Sites: Other sites on O'ahu were evaluated but would result in further distance from host communities. • Alternative Site Layouts: Conceptual plan alternatives were developed. The consultant team synthesized the plans and prepared the Ultimate Site Plan, the plan subject to this environmental assessment (see Figure 1).

Potential Impacts and Mitigation Measures:

The project will improve the existing facilities at Hālau Kū Māna Public Charter School, meet facility deficiencies, and will have beneficial impacts on the student population by creating safer conditions and improved indoor and outdoor facilities for educational programs. The potential adverse impacts, while minimal can be mitigated:

- Short-term construction impacts to air quality, noise, solid waste generation, storm water quality/quantity are anticipated. The project will address these impacts through compliance with County, State, and Federal rules, regulations, permit, and variance requirements regarding fugitive dust, community noise control, and non-point source discharges. In addition, best management practices that include structural and non-structural controls designed to inhibit run-off, erosion, fugitive dust will be implemented.
- Long-term potential impacts to storm water quality/quantity are anticipated if not addressed within the project design. To reduce storm water quality/quantity impacts the project will include low impact design utilizing such measures as splash blocks, decentralized filtering and infiltration, and grass paved access lanes to ensure storm water quality/quantity is not increased or degraded.

The Project is not anticipated to impact species listed by the U.S. Fish and Wildlife Service as Threatened or Endangered or their habitat, wetlands or any know archaeological or cultural resources. The site is not located within agricultural zoned lands, nor within flood or tsunami zones.

Determination:

Finding of No Significant Impact (FONSI)

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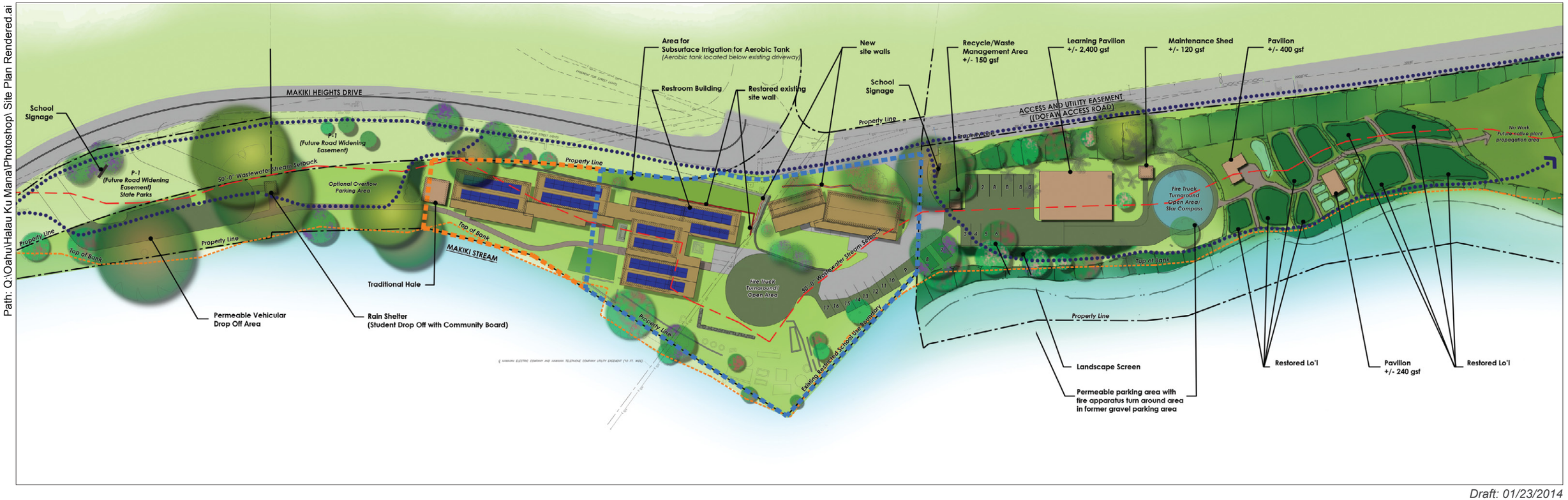

Draft: 01/23/2014

STRUCTURES

Use	Existing	Proposed
Educational Trailers	6	6
Administration & Support Trailers	3	1
Restroom Building	1	1
Temporary Canopy/Tent	1	0
Traditional Hale (Eating Hale)	0	1
Rain Shelter	0	1
Learning Pavilion	0	1
Maintenance Shed	0	1
Pavilions	0	2
Total	**11**	**14**

LEGEND

- Trailers and other structures
- Wastewater System Subsurface Irrigation Area (Approx. Areas)
- Repairs to existing site walls
- New site wall
- Existing Restricted School Use Boundary
- Proposed Restricted School Use Boundary Addition
- 50 Foot Stream Setback for Wastewater System
- Makiki Stream Top of Bank
- Public Walking/Hiking Path

OTHER IMPROVEMENTS

- **Photovoltaic arrays on trailers**
- **Site lighting - solar preferred**
- **Water catchment system for site irrigation**
- **Stormwater management improvements through low impact designs/techniques**
- **Electrical and water infrastructure improvements**

PARKING

Use	Existing	Proposed
Staff & Visitor Parking	+/-16*	+/-17
Bus Parking	4	4

* Note: Existing parking not compliant to City and County of Honolulu Parking Standards

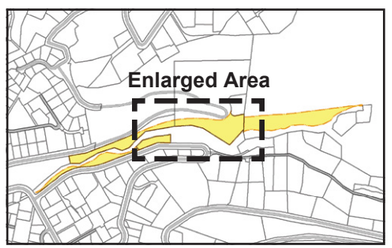

FIGURE 1:
School Site Plan

Hālau Kū Māna Public Charter School Improvements

Mana Maoli
North

Island of O'ahu

Linear Scale (feet)
0 40 80 160

PBR HAWAII & ASSOCIATES, INC.

Source: Mason Architects (Draft - October 20, 2013)
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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ACRONYMS

ALISH	Agricultural Lands of Importance
CDUA	Conservation District Use Permit
CWDA	Critical Wastewater Disposal Area
CWRM	Commission of Water Resource Management
DPR	City and County of Honolulu, Department of Parks and Recreation
DLNR	State of Hawai‘i Department of Land & Natural Resources
DOH	State of Hawai‘i Department of Health
DOFAW	Division of Forestry and Wildlife
EA	Environmental Assessment
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FEIS	Final Environmental Impact Statement
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HAR	Hawai‘i Administrative Rules
HECO	Hawaiian Electric Company
HRS	Hawai‘i Revised Statutes
HTCO	Hawaiian Telecom Company
LSB	University of Hawai‘i Land Study Bureau
LUO	Land Use Ordinance
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OEQC	State of Hawai‘i, Office of Environmental Quality Control
PUC	Primary Urban Center
ROH	Revised Ordinances of Honolulu
SLUD	State Land Use District
SPCSC	State Public Charter School Commission
TMK	Tax Map Key
USFWS	United States Fish and Wildlife Service

1 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Chapter 343, Hawai‘i Revised Statutes (HRS) for the Hālau Kū Mana Public Charter School Improvements, Makiki *ahupua‘a*, Honolulu District, Island of O‘ahu, State of Hawai‘i.

1.1 LANDOWNER

The landowner is the State of Hawai‘i. Mana Maoli, who holds the lease for the property, leases sections of the State-owned land from the State Department of Land and Natural Resources (DLNR). A portion of the Site is located within the Makiki Valley State Recreation Area, which is managed by the Division of State Parks.

DLNR issued lease No. SP0507 to Mana Maoli, a Hawai‘i nonprofit corporation on June 19, 2007 covering TMKs (1) 2-5-019:008 (portion); (1) 2-5-020:003, 005, 008 (portion) and 004 (portion) (the “Leased Property”) for educational purposes. On August 23, 2007, Mana Maoli entered in to Sublease No. 1 under General Lease No. S-SP0507 covering the Leased Property for the purposes authorized pursuant to the underlying lease to Hālau Kū Māna, a Hawai‘i public charter school. On September 6, 2007, the Department gave consent to the sublease without additional modifications or requirements.

The Leased Property was set aside by Governor’s Executive Order No. 3729 to the State Parks for park purposes on March 18, 1998. TMK (1) 2-5-020:008 is not under the jurisdiction of State Parks and is considered unencumbered State land.

1.2 APPLICANT

The applicant is Mana Maoli, a Hawai‘i Nonprofit corporation. Hālau Kū Māna was founded in 2000 by Mana Maoli.

Contact: Mana Maoli
C/o Hālau Kū Māna Public Charter School
ATTN: Mahina Duarte, Po‘o Kumu
2101 Makiki Heights Drive
Telephone: (808) 945-1600
Fax: (808) 945-1604

1.3 ENVIRONMENTAL CONSULTANT

PBR HAWAII is the environmental consultant.

Contact: PBR HAWAII & Associates, Inc.
ATTN: Catie Cullison, AICP, Project Manager/Associate
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96720-4224
Phone: (808) 521-5631
Fax: (808) 523-1402

1.4 APPROVING AGENCY

The Board of Land and Natural Resources is the approving agency.

Contact: State Board of Land and Natural Resources
ATTN: Stephen Soares
1151 Punchbowl St.
Honolulu, HI 96813

1.5 COMPLIANCE WITH STATE OF HAWAI‘I ENVIRONMENTAL LAWS

Preparation of this document is in accordance with the provisions of Chapter 343, HRS and Title 11, Chapter 200, Hawai‘i Administrative Rules (HAR) pertaining to Environmental Impact Statements. Section 343-5, HRS established nine types of actions that “trigger” compliance, which requires either an EA or an Environmental Impact Statement (EIS). The use of State or County lands is one of these “triggers.” Because State lands will be used for the Hālau Kū Māna Public Charter School improvements, the preparation of an Environmental Assessment is required. The use of land classified as a conservation district by the State Land Use Commission is also one of these “triggers.”

1.6 STUDIES CONTRIBUTING TO THIS ENVIRONMENTAL ASSESSMENT

The information contained in this report has been developed from site visits, generally available information regarding the characteristics of the Site and surrounding areas, and technical studies. Technical studies are provided as appendices to this EA. These studies include:

- Flora and Fauna Surveys
- Archaeological Inventory Survey
- Cultural Impact Assessment

2 PROJECT DESCRIPTION

2.1 BACKGROUND INFORMATION

Hālau Kū Māna Public Charter School

Hālau Kū Māna Public Charter School, founded in 2000, is a community, culture, and environment-based place of learning serving grades 4-12. The school has an approximate enrollment of 120 students, who are supported by 13 teachers, and 5 administration staff and faculty members. Students participate in six project areas that seek to instill community and environmental stewardship while remaining academically rigorous and addressing Hawai'i Content Standards as a public school. Special events such as Lā 'Ohana and family work days are held at the school periodically. Each year, the school records well over 1,000 volunteer hours from family and community that help the school meet its goals.

Mana Maoli and Hālau Kū Māna share the same vision and mission. Their vision is to facilitate individual and community healing and empowerment by fostering lifelong learners who think, feel and act in ways that are pono; for recognizing strengths and addressing challenges as they seek positive, systemic change in their local, regional and global communities. Their mission is to *Ho'okumu* (Build grounding and foundation), *Ho'okele* (Forge direction and connections), *Ho'omāna* (Provide sustenance and empowerment).

Hālau Kū Māna's School Governance Board, Papa Kū Māna, provides oversight and policy-making decisions for the school. Papa Kū Māna is composed of different constituencies including parents, school staff, and community members. Given the diverse membership, Papa Kū Māna also supports Hālau Kū Māna Public Charter School through the varied skill sets and experiences each member brings with them.

Hālau Kū Māna History

Prior to locating at the Makiki Valley site, the school was located at the Kamakakūokalani Center for Hawaiian Studies at the University of Hawai'i at Mānoa. In 2003, the school relocated to the Atherton YMCA, and later moved to the Old Paradise Park facility in Mānoa Valley in 2004. When the school's lease was not renewed in 2006, Hālau Kū Māna sought a long-term lease from the State Department of Land and Natural Resources (DLNR) to use portions of Makiki Valley State Recreation Area for their educational programs. The school operated at that site under a revocable permit until a 30-year lease agreement was finalized in 2007.

The Makiki Valley location has provided the school with a place to grow and develop their programs in collaboration with Start Parks, Hawaii Nature Center, and the surrounding communities. The once under-utilized park land was overgrown and an attractive nuisance where illicit activity and illegal dumping occurred. The site was cleared of vegetation and rubbish, especially alien/invasive species and dying/rotting trees, and transformed by Hālau Kū Māna into

a well-manicured environment of native plants and gardens that now provides a safe outdoor leaning space for students. The school's presence has helped to clear away years of overgrowth and trash, prevent acts of vandalism, illegal dumping, and loitering. The school has built extremely valuable partnerships with the surrounding community because of the positive transformation and continued management and stewardship of the land.

2.1.1 Location and Property Description

Hālau Kū Māna Public Charter School (the "School") is located in Makiki *ahupua'a*, Honolulu (Kona) District, Island of O'ahu (Figure 2). The approximately 5.2-acre site (the "Site") is identified as TMKs (1) 2-5-019:008 (portion), (1) 2-5-20:003, (1) 2-5-20:004, (1) 2-5-20:005 (portion), and (1) 2-5-20:008 (portion) (Figure 3).

The Site is generally located between Makiki Heights Drive and Division of Forestry and Wildlife (DOFAW) Makiki access road to the west and Round Top Drive and Maunalaha Road to the east. The Site is long and narrow, stretching over 2,600 feet from *mauka* to *makai* and approximately 250 feet at its widest point.

Makiki Stream traverses the Site and enters at the *mauka* boundary and continues *makai* in its natural state and later becomes channelized off-site. The stream bisects the *makai* portion of the Site.

The school is comprised of six educational trailers, three administrative and support trailers, one temporary restroom trailer, open spaces for physical education classes, and a temporary tented canopy area for outdoor instruction (Figure 4).

A portion of the Site is situated within the Makiki Valley State Recreation Area, an approximately 10-acre State park that accommodates public picnicking, sightseeing, and hiking as well as interpretive and educational programs. Much of the recreation area was in taro cultivation during the pre-contact and early contact period. Remnants of the stepped terraces and *'auwai* are still evident on-site.

Vegetation at the Site is dominated by a wet tropical forest consisting mainly of large canopy tress, vines, and stream vegetation along the riparian corridor. Landscaping around the school facilities include manicured lawns and indigenous plantings. Site photos of the area are provided in Figure 5.

Elevations range from approximately 150 to 250 above mean sea level, with average slope of approximately three percent in a north-south, *mauka* to *makai* direction.

Vehicle access to the Site is from Makiki Heights Drive at the hairpin turn via a paved upper driveway and an unpaved lower pickup area comprised of dirt and gravel (see Figure 5). Public access is permitted outside of the restricted school use boundary (Figure 4). Walking and hiking trails are located throughout the Site.

2.1.2 Land Ownership and Permitted Uses

Most of Makiki Valley was designated as a forest reserve in 1904 when the Territory of Hawai‘i established the Honolulu Watershed Forest Reserve for reforestation of Honolulu’s hillsides. The forest reserve, including the area of the Site, eventually came under the State Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) jurisdiction.

In August 1986, the Hawai‘i Nature Center was issued a ten-year lease and Conservation District Use Permit for lands in Makiki Valley, including a portion of the Site. A new twenty-five year lease for the land was issued to the Hawai‘i Nature Center in 1995 (Board of Land and Natural Resources, 1996).

In 1994, DLNR proposed designation and improvements for, among other things, an approximately 20 acre State Park in Makiki Valley, including a portion of the Site. The formal designation of Makiki Valley State Recreation Area means that the public has the non-exclusive right to access the area. To implement this proposal, DOFAW obtained several State land use approvals for the Site, including:

- Makiki-Tantalus State Park Master Plan and Final Environmental Impact Statement; and
- Conservation District Use Permit for the Makiki Valley State Recreation Area.

In 1998, DOFAW transferred jurisdiction of Makiki Valley State Recreation Area to the Division of State Parks.

In 2004, Maunalaha resident Joslyn Ka‘awa and ‘ohana was granted a curatorship from the Division of State Parks for a portion of Makiki Valley State Recreation Area. The group’s management of the area includes maintenance of the terraces, removal of selected vegetation, planting of native plants, and interpretation of the former *lo‘i kalo* through signs and education brochures.

In 2006, Mana Maoli was issued a revocable permit from DLNR to use portions of Makiki Valley State Recreation Area for Hālau Kū Māna Public Charter School’s educational programs. In 2007, Mana Maoli obtained a 30-year lease agreement from DLNR for continued operation of the school at the Site.

Hālau Kū Māna has consent for access and limited use of facilities from the following entities:

- **Division of State Parks** – allows limited non-exclusive use of approximately 5.2 acres of Makiki Valley State Recreation Area. An approximately one-acre Restricted School Use Area is set aside exclusively for Hālau Kū Māna.
- **Hawai‘i Nature Center** – allows collaborative use of its leased property including the use of their classroom building, outdoor lanai, and surrounding picnic and trailer areas of HNC’s Harry & Jeanette Weinberg Makiki Field site.

2.1.3 Existing Land Use Designations

Current land use designations for the Hālau Kū Māna Public Charter School Site are:

- State Land Use: Conservation (Figure 6)
- Conservation District: Resource Subzone (Figure 6)
- County Zoning: P-1, P-2, R-10 (Figure 7)
- Primary Urban Center Development Plan: Preservation, Lower-Density Residential (Figure 8)
- Special Management Area (SMA): Not in SMA

2.1.4 Surrounding Uses

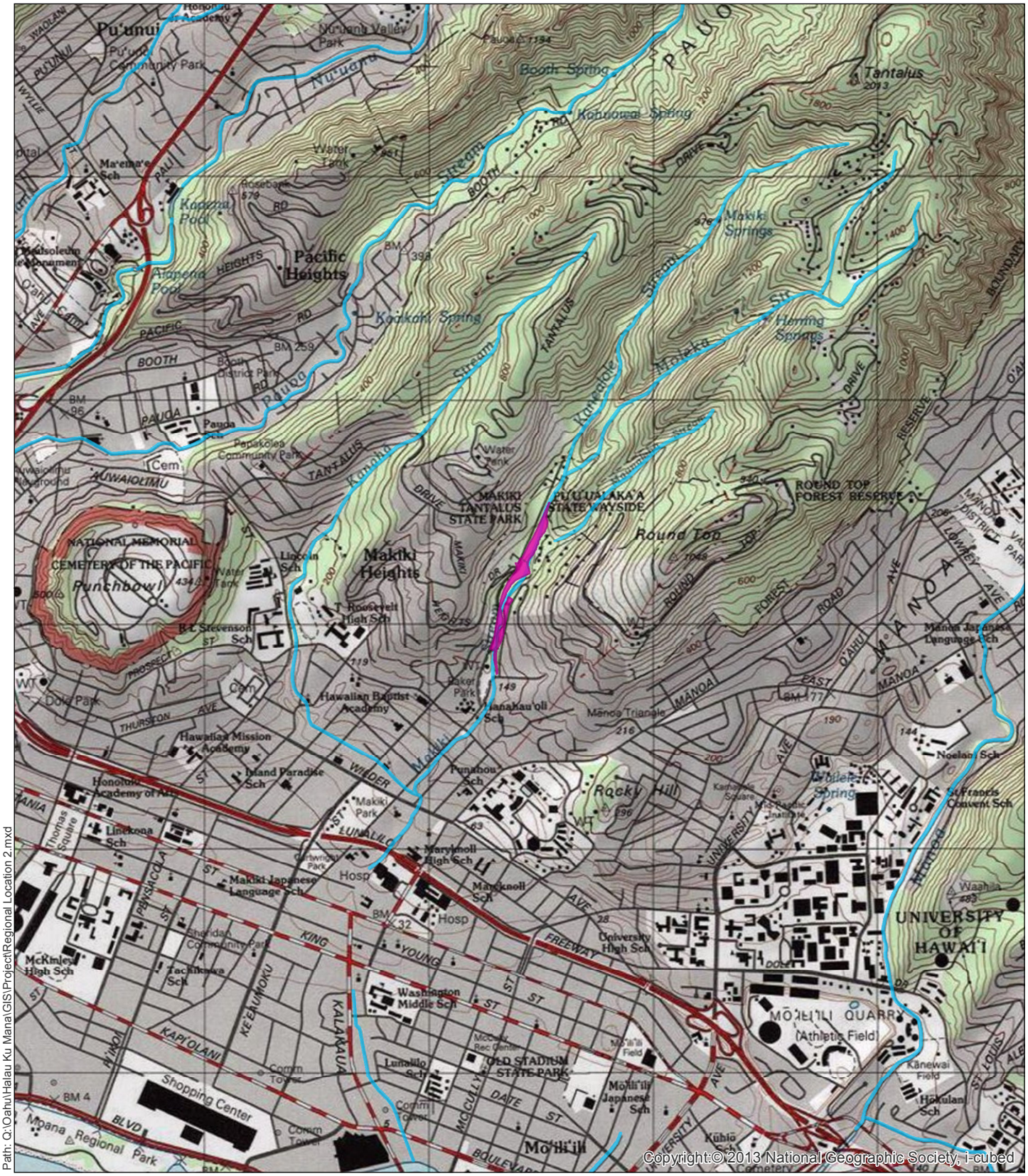
The Hālau Kū Māna Public Charter School Site is in Makiki Valley and is situated adjacent to a reach of Makiki Stream. Hiking and nature study are dominant activities in Makiki Valley. There are numerous single-family homes in the surrounding area.

North: The State DLNR Division of Forestry and Wildlife (DOFAW) base yard is located immediately north of the Site. Hawai‘i Nature Center, a nonprofit organization that provides environmental education and appreciation programs for elementary school children, is located to the north. The *mauka* portion of the Site is located within State lands leased by Hawai‘i Nature Centers.

East: Round Top Drive, a two-lane road, boarders the Site to the east along the *makai* portion of the Site. Makiki Stream borders the Site along the eastern *mauka* portion. Maunalaha Home sites, a 30-lot subdivision where approximately 20 families have long-term leases with the State, is located along Round Top Drive and Maunalaha Road. Pu‘u ‘Ualaka‘a State Park is located to the east on a forested cinder cone that rises approximately 1,050 feet above mean sea level. The park offers panoramic views of O‘ahu’s south shore as well as several popular hiking trails.

South: The Board of Water Supply’s Makiki Pumping Station is located immediately to the south. Archie Baker Mini Park (“Triangle Park”), south of Makiki Pumping Station, is a two-acre park operated by the City and County of Honolulu. Hanahau‘oli School, further south, is a K-6 private school.

West: Makiki Heights Drive, a two-lane road, borders the Site to the west along the *makai* portion. The DOFAW base yard access road borders the Site along the western *mauka* portion. Makiki Valley State Recreation Area, is located to the west.



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 2 Regional Location
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DATE: 12/23/2013

LEGEND

- Site
- Streams

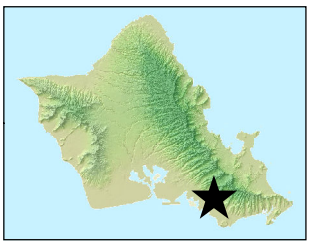


FIGURE 2:
Regional Location

Hālau Kū Māna Public Charter School Improvements

Mana Maoli North

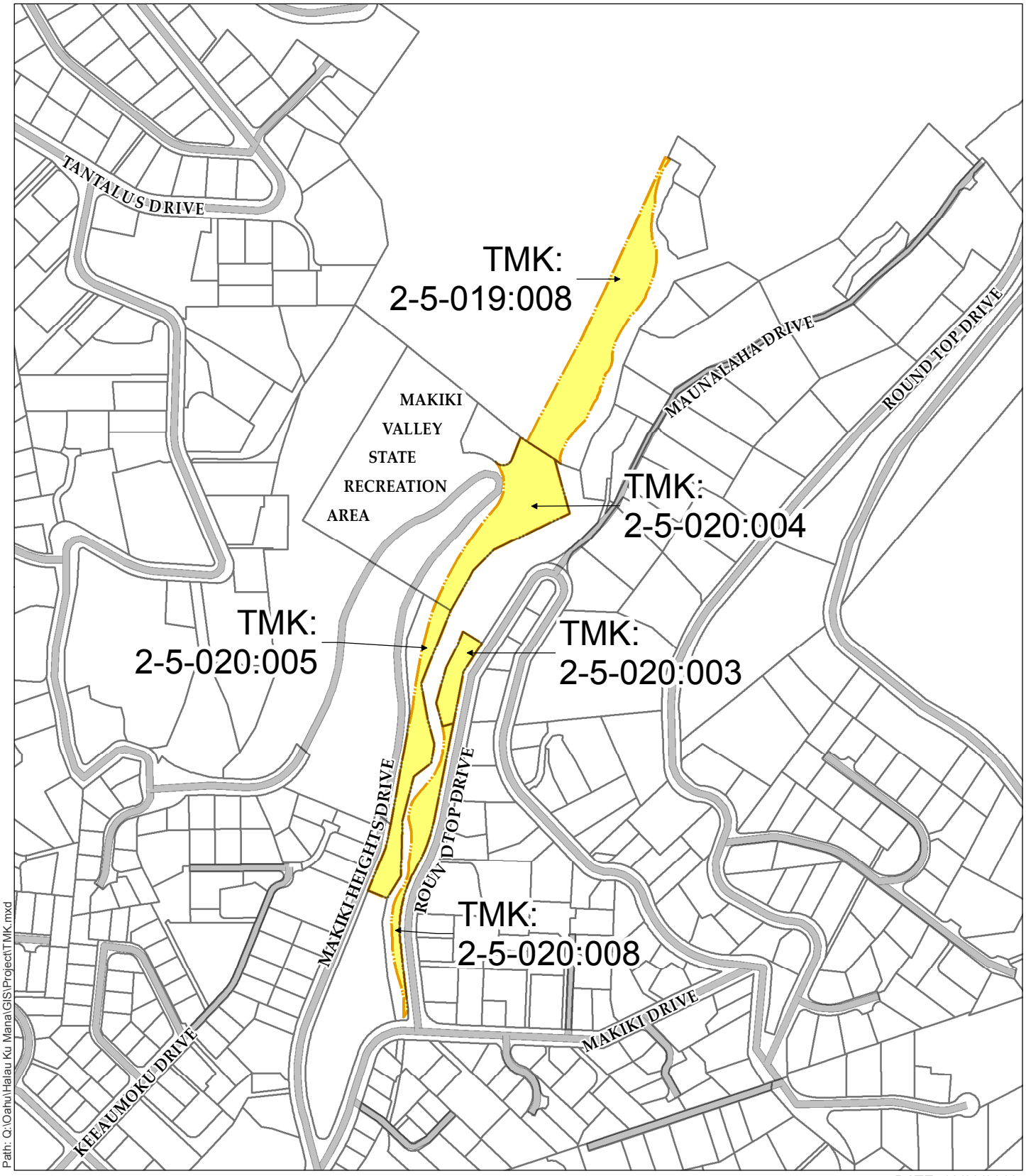
Island of O'ahu

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

PBR HAWAII & ASSOCIATES, INC.

Source: ESRI ArcGIS Online and data partners including USGS and © 2007 National Geographic Society

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



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 3 TMK
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DATE: 12/23/2013

LEGEND

- Site
- Tax Map Key Boundary (2013)
- Public Road

FIGURE 3:
Tax Map Key

Hālau Kū Māna Public Charter School Improvements

Mana Maoli North — Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: City & County of Honolulu Real Property Tax 2013

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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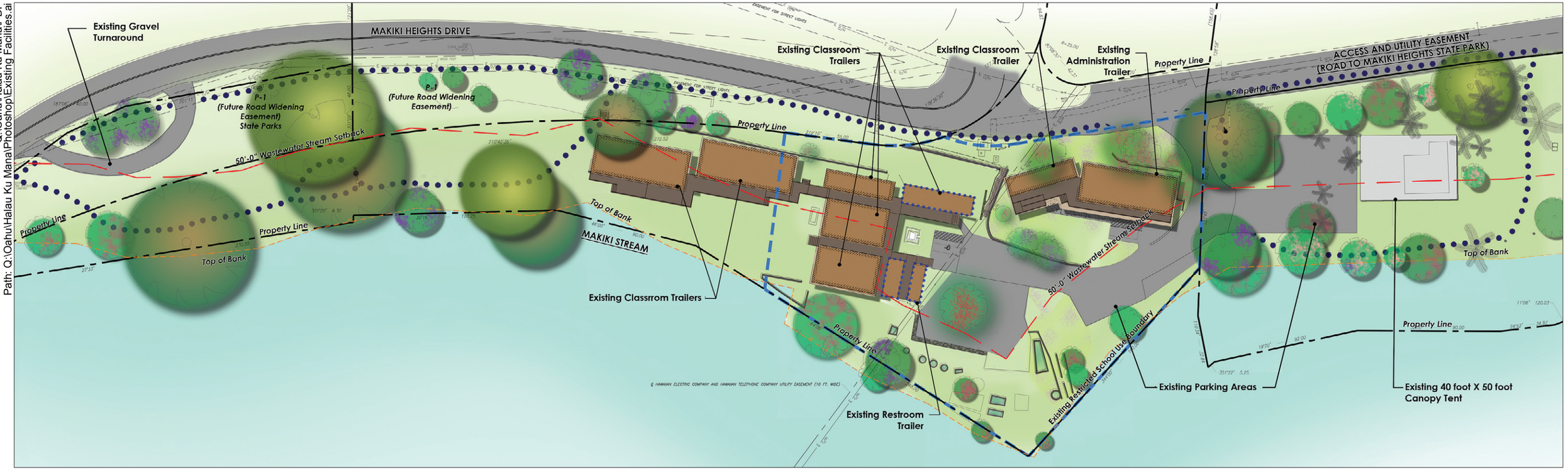


Draft: 01/27/2014

USE SUMMARY

LAND USES

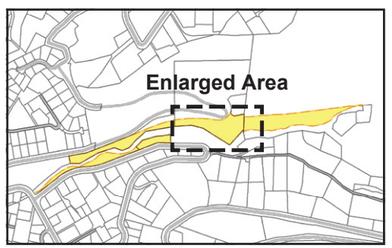
Restricted School Use Area	0.91 acres
Public Park, Restoration and Conservation Use	4.24 acres

STRUCTURES

Use	Existing
Educational Trailers	6
Administration & Support Trailers	3
Restroom Building	1
Temporary Canopy/Tent	1
Other Structures	0
Semi-Outdoor Learning Pavilion	0
Total	**11**

LEGEND

- Trailers and other structures
- Elevated Walkways
- Roof/Awning(Underside)
- Temporary Tents
- Existing pavement - asphalt or gravel
- Existing Restricted School Use Boundary
- Setbacks for Wastewater System
- Public Walking/Hiking Path
- Trailers to be removed



Source: Mason Architects (Draft - September 10, 2013)
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

FIGURE 4:
Existing Facilities

Hālau Kū Māna Public Charter School Improvements

Mana Maoli
North

Island of O'ahu

Linear Scale (feet)
0 30 60 120

PBR HAWAII & ASSOCIATES, INC.

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1. Makiki Heights Drive at hairpin turn

2. Entry to school - upper driveway

3. 40 foot x 50 foot canopy tent

4. School sign

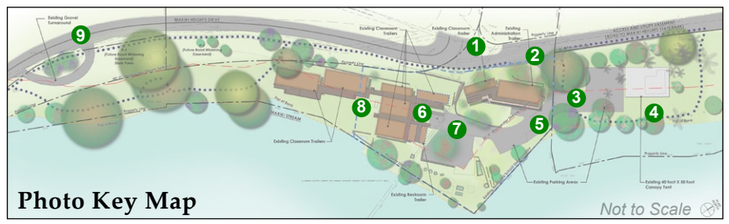
5. Administration and classroom trailers

6. Restroom trailer to be replaced

7. School ahu; Classroom trailer to be replaced (right)

8. Classroom trailers (new)

9. Entry to school - lower driveway and pickup area



DATE PHOTOS TAKEN: 7/11/2013; 1/24/2014.
Source: Key map provided by Mason Architects (Draft - September 10, 2013)
Disclaimer: This graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

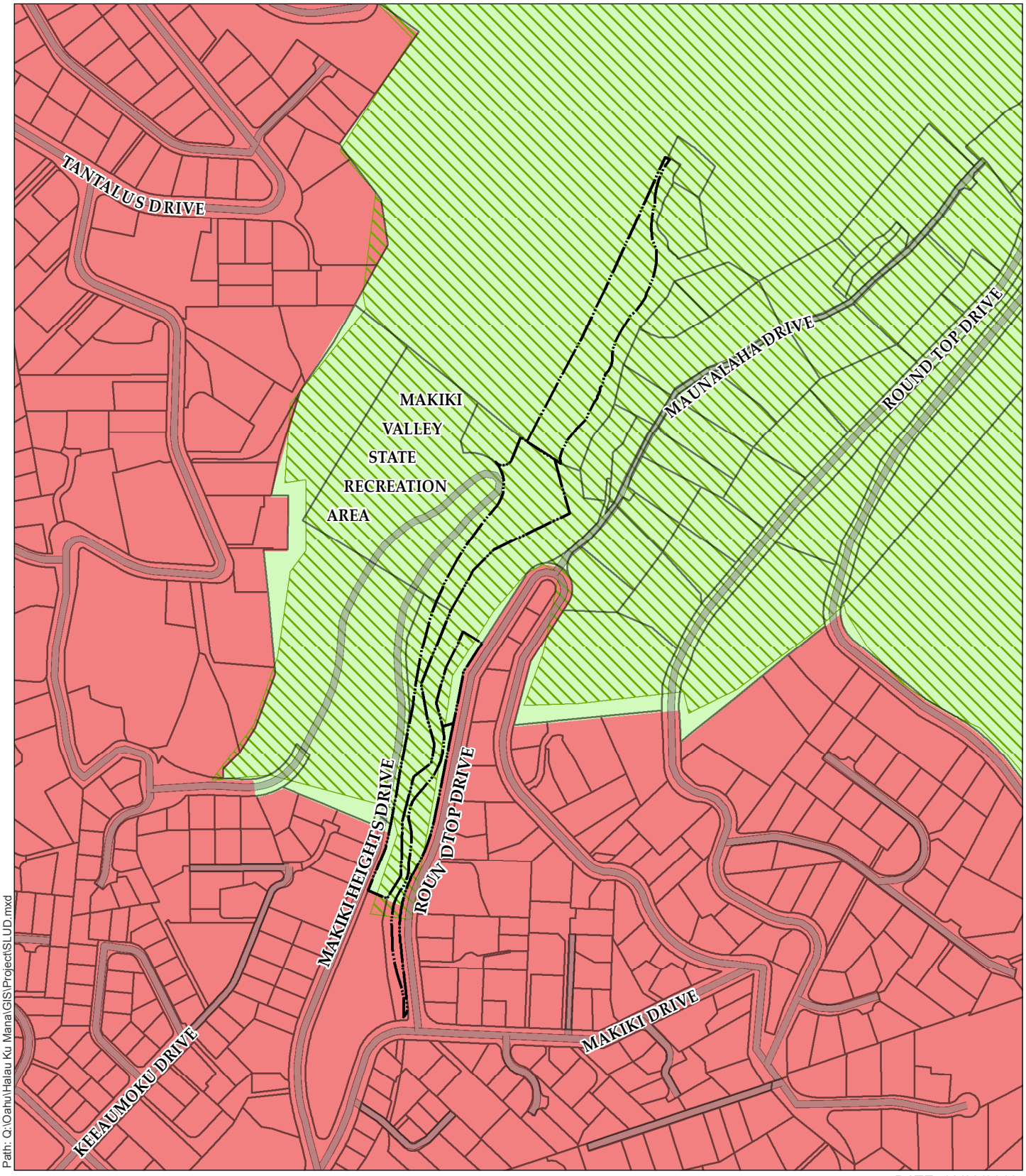
FIGURE 5:
Site Photos

Hālau Kū Māna Public Charter School Improvements

Mana Maoli — Island of O'ahu

Not to Scale

PBR HAWAII & ASSOCIATES, INC.



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Path: Q:\Oahu\Halau Ku Mana\GIS\Project\SLUD.mxd

DATE: 12/23/2013

LEGEND

- Site
- TMK Boundary
- Public Road

Land Use District Boundary Code

- C: Conservation
- U: Urban

Conservation District Subzone

- Limited
- Resource

FIGURE 6:
State Land Use District Boundary

Hālau Kū Māna Public Charter School Improvements

Māna Maoli North

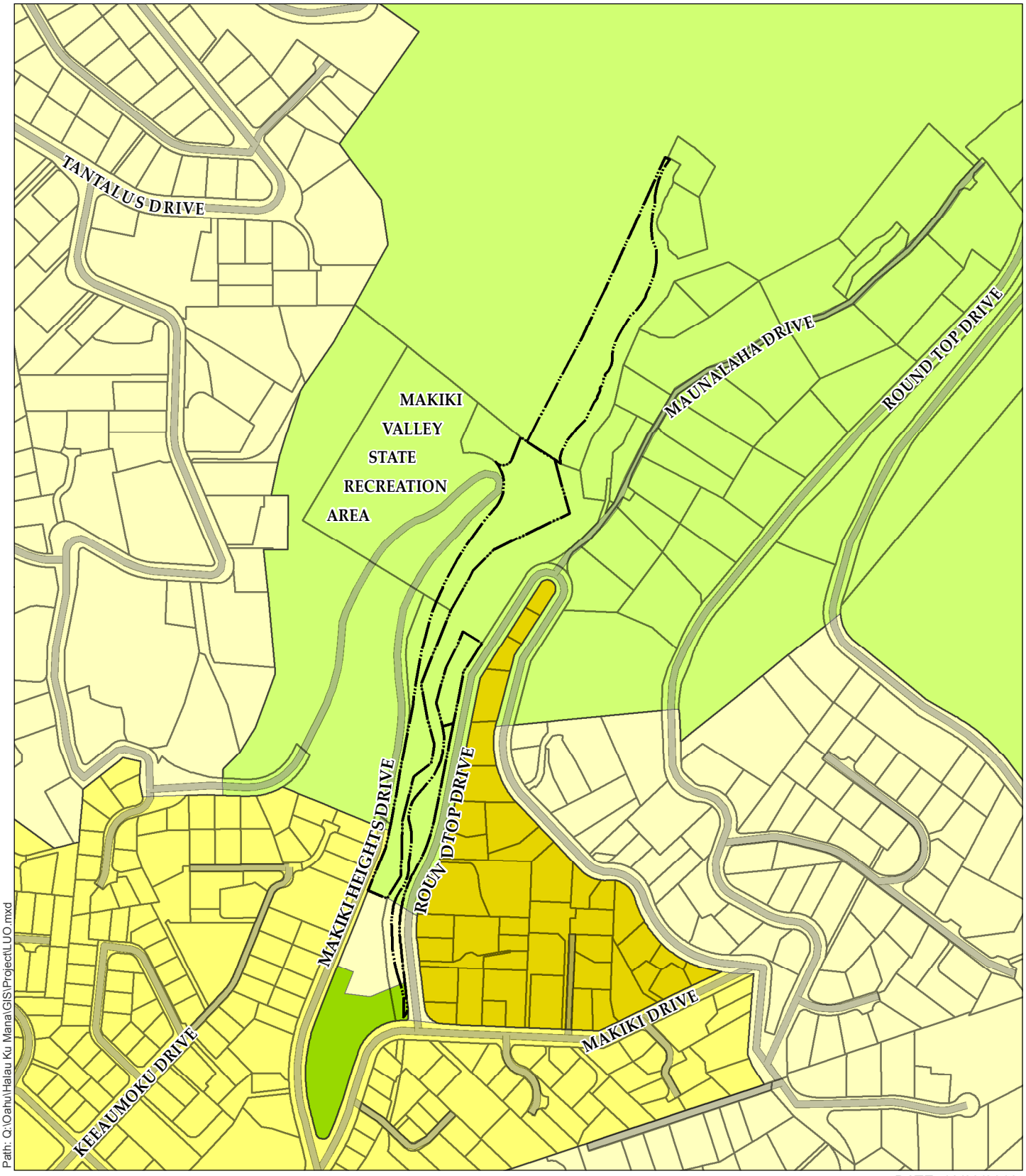
Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: City & County of Honolulu (2013); State Office of Planning (2000); State Land Use Commission (2011, 2013)

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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Path: Q:\Oahu\Halau Ku Mana\GIS\Project\LUO.mxd

DATE: 12/23/2013

LEGEND

- Site
- TMK Boundary
- Public Road

Zone Classifications

- A-2
- P-1
- P-2
- R-10
- R-5
- R-7.5

Source: City & County of Honolulu (2013)

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

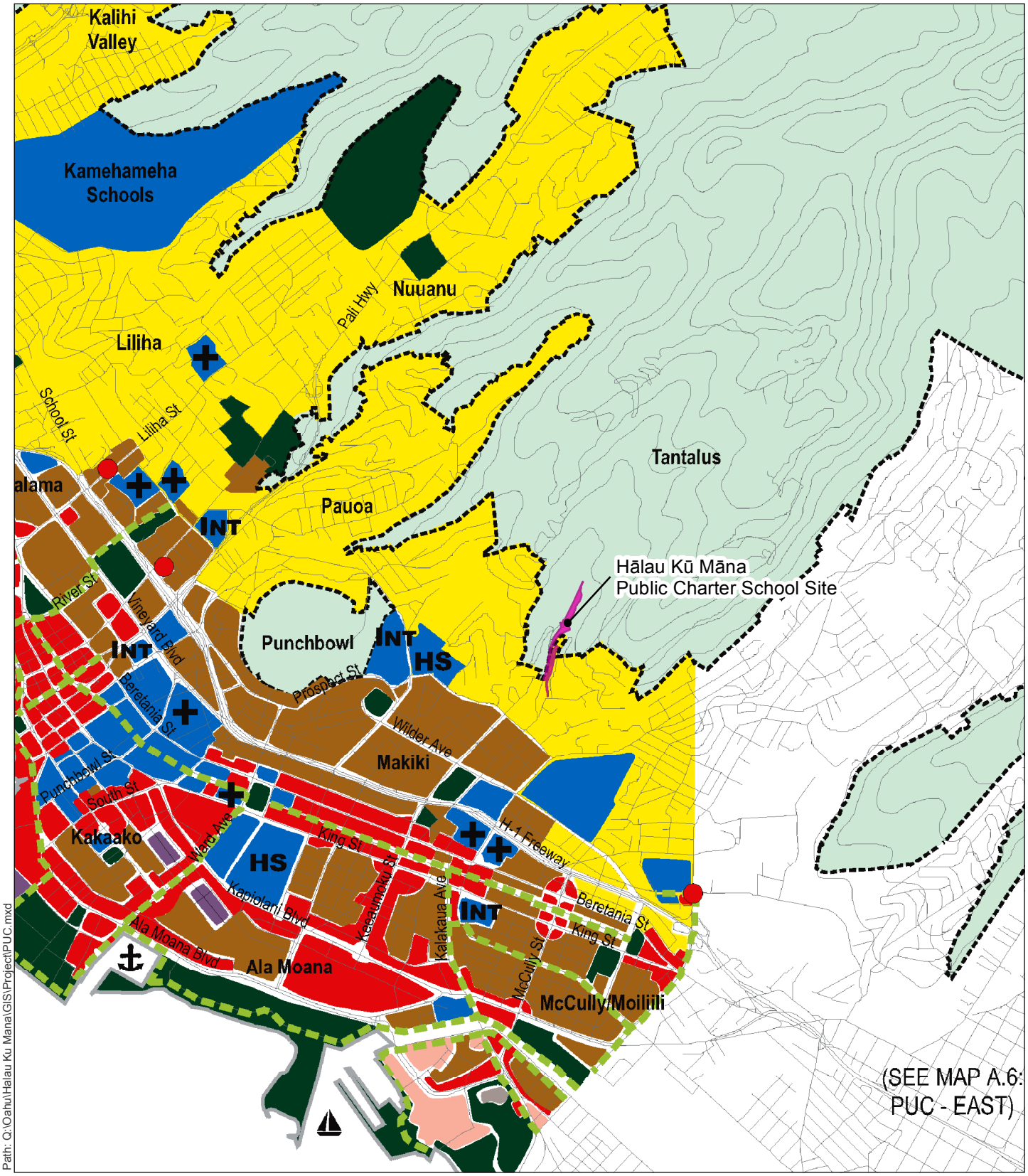
FIGURE 7:
City & County of Honolulu
Land Use Ordinance Zoning
Hālau Kū Māna Public Charter School Improvements

Mana Maoli North

Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.



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Path: Q:\Oahu\Halau Ku Mana\GIS\Project\PUC.mxd

DATE: 1/2/2014

LEGEND

Site

Land Use

- Lower-Density Residential
- Medium and Higher-Density Residential/Mixed Use
- District Commercial
- Industrial
- Resort
- Institutional
- Major Parks and Open Space
- Preservation
- Military
- Community/Neighborhood Commercial
- Urban Community Boundary
- Pedestrian Network
- U College/University
- Hospital/Medical Center
- INT Intermediate School (State)
- HS High School (State)
- Small Boat Marina
- Harbor

Source: Primary Urban Center Development Plan A.5: Land Use Map PUC - Central (2004)

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

FIGURE 8:
PUC Development Plan
Land Use Map

Hālau Kū Māna Public Charter School Improvements

Mana Maoli North

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

Island of O'ahu

PBR HAWAII & ASSOCIATES, INC.

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2.2 PURPOSE AND NEED

The Hālau Kū Māna Public Charter School Improvements will: 1) provide adequate educational facilities for the existing student population; and 2) comply with environmental regulations for new and existing facilities.

Educational Program and Facilities

Hālau Kū Māna's existing facilities were appropriate when the school first located at the site, but no longer fit the needs of the student body. The school requires improved indoor and outdoor classroom space in order to adequately support the educational programs.

Hālau Kū Māna Public Charter School is in need of an updated wastewater system. Currently, the School uses a temporary restroom trailer which includes collection of waste in an above ground storage tank until it is removed by truck for disposal at a sanitation facility. The Department of Health (DOH), Wastewater Branch requires that all buildings generating wastewater must be connected to a wastewater system and that no portable toilets shall be used for any permanent structure unless otherwise approved (Hawai'i Administrative Rules, 2004).

Environmental Compliance

The School first located at the site in 2006. At that time, the Site was undeveloped and derelict. The lease agreement for the School stated that, "the Lessee shall, at its own cost and expense, within one (1) year after the date of the lease, install modular classroom, administrative offices, and a restroom that shall be used temporarily until permanent structures are constructed in accordance with plans and specifications submitted by the Lessee to and approved in writing by the Chairperson and in full compliance with all applicable laws, ordinances, rules and regulations, and this lease." As such, temporary and semi-permanent facilities have been added to the Site to support the school's educational programs. As of January 2014, the Site was comprised of 10 portable trailers, a 40-foot by 50-foot canopy tent, parking areas and landscaping. Existing school facilities as well as the proposed school improvements are subject to environmental review.

2.3 HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS

The project will utilize State lands to construct improvements at Hālau Kū Māna Public Charter School. The improvements will include the renovation of existing structures, installation of a permanent wastewater system, and addition of new classroom facilities. Although the Site is comprised of 5.2 acres, the School Improvements will be located at the center of the Site on approximately 2 acres of land.

2.3.1 Description

The proposed action includes the following elements (collectively referred to as "School Improvements"):

- Inclusion of existing facilities in this environmental assessment:
  - Six educational trailers (existing)
  - Three administration and support trailers (existing)
  - Restroom trailer (existing)
  - Landscaping and tree removal (existing)
- Expansion of Restricted School Use Boundary.
- Improvements to the existing structures and areas that will continue to be used by the school:
  - Three portable trailers
  - Gravel parking areas for staff and visitors
  - Existing rock walls located parallel to the classroom trailers
  - Existing outdoor shower adjacent to classroom trailers
- Installation of:
  - One restroom structure
  - Learning pavilion
  - Rain shelter
  - Traditional Hale for outdoor learning, gathering, and eating
  - Permeable-surface vehicle turnaround in place of current gravel turnaround.
  - Permeable-surface parking area
  - Photovoltaic array on trailers
  - Water catchment system for site irrigation
  - On-site wastewater system
  - Small maintenance shed for equipment storage (+/- 120 gsf)
  - School signage along at the southern vehicle turnaround area and the northern school entrance
  - Roofing over existing trailers
  - Agricultural cultivation using traditional practices (approximately 38,000 square feet)
  - Agricultural support buildings – Greenhouse and Educational Pavilion
- Removal of:
  - Small asphalt area adjacent to existing northern driveway
  - Existing restroom trailer
  - Existing support trailer
  - 40-foot x 50-foot canopy tent
- Improvements to the existing lawn, landscaping, and gardens while maintaining the authentic Native Hawaiian cultural character of the area.

Trailers

Portable trailers can be used for classroom instruction and school administration. Since the trailers are portable, they are temporary in nature and can be removed if needed.

Learning Pavilion

The learning pavilion will be a covered learning facility that will house all daily morning and closing school assemblies as well as special events such as graduation commencement ceremonies. The approximately 2,400-square foot space will serve as the only sheltered space in which the entire student body and faculty may congregate. The learning pavilion will replace the 40-foot x 50-foot canopy tent.

Traditional Hale

A traditional hale will be located next to the new portable classroom trailers. The structure will be a covered open-wall structure designed to incorporate the Schools Native Hawaiian cultural practices. This space will be used for outdoor learning, gathering, and eating.

Vehicle Turnaround and Parking Area

An existing vehicle turnaround area will be improved, consisting of a driveway for convenient student drop-off, and additional parking behind the trailers. The turnaround will be made of permeable surface materials to aid the drainage of the area during the event of rainfall. The additional parking areas will allow for more beneficial space use, as well as decrease traffic congestion on Makiki Heights Drive. Hālau Kū Māna Public Charter School will use on-site parking for all faculty and staff, as well as provide some visitor parking.

Rain Shelter

A rain shelter will be located next to the vehicle turnaround area to keep students dry while waiting for pick-up after school. This shelter will be a covered open-wall structure allowing for natural ventilation and keeping with the School's commitment to be congruent with the Native Hawaiian cultural practice of incorporating existing natural elements into project designs. The open air shelter will also minimize the visual impact by decreasing the mass of the structure.

Photovoltaic array on trailers

Hālau Kū Māna Public Charter School is committed to helping the environment whenever possible. The classroom and restroom trailers on site will be outfitted with roof-mounted photovoltaic (PV) panels. These panels will allow for a more efficient, cost effective source of energy for the school. The PV panels are accessory to the school use and the power generated will be used for school purposes, primarily lighting. This will reduce the School's dependence on traditional electricity and overall costs. An approximately 25kW system is proposed.

Infrastructure Improvements

Infrastructure improvements proposed for Hālau Kū Māna Public Charter School include water, wastewater, drainage, and irrigation improvements. In order to provide drainage in the parking and vehicle areas, permeable materials will be used in order to aid natural drainage. An improved wastewater system will also be implemented at the site, consisting of a septic tank, aerobic treatment with subsurface disposal.

Ancillary Maintenance Shed

Hālau Kū Māna proposes to build a maintenance shed to store hand held grounds equipment and tools. This shed will be setback 50 feet from the stream and a minimum of 50 feet from any structure or exterior wall.

Paths and Trails

A walking path from the BWS pump station will be incorporated into the Site and connect with the existing public trails that pass through the site. The walking path will be located between the strip of land between Makiki Heights Drive and the top of bank of Makiki Stream.

2.4 SUSTAINABLE PLANNING AND DESIGN

In the design and construction of the Hālau Kū Māna Public Charter School improvements, the architect will implement feasible measures to promote energy conservation and environmental stewardship, such as standards and guidelines promulgated by the United States Green Building Council (USGBC), the United States Environmental Protection Agency (EPA), or other similar programs.

Sustainable design practices are incorporated into all proposed improvements including:

- Re-use of building material. The proposed portable classrooms will be re-used from a campus facility elsewhere on O‘ahu.
- Energy use policy. Hālau Kū Māna Public Charter School has established energy conservation policies and practices, which include reliance on natural light and airflow to minimize use of artificial lighting and cooling systems.
- Solar – implementation of photovoltaic panels.
- Primary and secondary wastewater treatment.
- Storm water infiltration, bioremediation.
- Food use/waste policies and proposed practices.

2.5 DEVELOPMENT TIMELINE AND PRELIMINARY COSTS

Construction is expected to commence after plans and permit applications are approved. The School Improvements are expected to be completed by 2020. The total anticipated cost for the design and construction will be $5 million.

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

3.1 CLIMATE

Existing Conditions

Makiki Valley is situated on the leeward side of the Koʻolau Mountain Range, which receives an average annual rainfall of 150 inches in the upper reaches near Lyon Arboretum and 25 inches in the lower plains near Ala Moana Shopping Center. According to *The Rainfall Atlas of Hawai'i*, the Site receives an average annual rainfall of approximately 53 inches (Giambelluca, et al., 2013). Seasonal variation in rainfall occurs with higher rainfall during the months of November through April.

Temperatures are typically mild and uniform, with the monthly average temperatures in Makiki Valley ranging from 72 degrees to 80 degrees Fahrenheit. Prevailing winds are northeasterly trade winds which occur approximately 70 percent of the time. Humidity in the area ranges between 70 to 80 percent with higher humidity levels occurring during the winter months.

Potential Impacts and Mitigation Measures

The School Improvements are not expected to have a significant impact on the existing climate conditions in Makiki Valley. No concrete surfaces that would raise temperature of the microclimate are proposed. However, the relatively rainy and windy conditions in this area warrant the consideration for providing a rain shelter and other weather protected facilities for student activities.

3.2 GEOLOGY AND TOPOGRAPHY

Existing Conditions

Makiki Valley is situated between Pauoa Valley to the west and Mānoa Valley to the east. The valley is cut *mauka* to *makai* by streams and ridges. Elevations across the Site range from approximately 150 to 250 feet above mean sea level and gently slopes from north to south. Average slope is three percent. The built portions of the school are near the 210 foot elevation above mean sea level.

The island of Oʻahu was formed by two volcanoes; Koʻolau in the east and the older Waiʻanae, to the west. The volcanoes are believed to have formed during the late tertiary to early pleistocene periods. A long period of volcanic quiet allowed for natural erosion and mass wasting to carve out the canyons and valleys on the leeward side of the Koʻolau. Volcanic activity resumed later to form a series of lava flow, cinder cones, and tuff cones known as the Honolulu Volcanic Series

(Macdonald, Abbott, & Peterson, 1983). The area surrounding the Site is characterized by several distinct geological features:

Tuff Cone – Pūowaina, otherwise known as Punchbowl, is near the center of Honolulu. The cone is made up of ash and *lapilli* with scattered fragments of coral limestone and Koʻolau basalt. Some of the latest ash is gray instead of brown, and close to the crater it grades into cinder and spatter. Toward the end of formation, lava rose into the crater and formed a pool without overflowing the rim and most likely drained through fissures that opened in the flank of the cone (Macdonald, Abbott, & Peterson, 1983).

Cinder Cones - Puʻu ʻUalakaʻa (Round Top), Puʻu Kakea (Sugarloaf), and Puʻu ʻŌhiʻa (Tantalus) mark a row of vents along the ridge of the Koʻolau Range. Puʻu ʻUalakaʻa (Round Top) appears to be older than the other two. No crater is preserved within it. In the valley of Makiki Stream, two dikes trend toward Puʻu ʻUalakaʻa and represent the feeding fissures for the eruption. Puʻu Kakea (Sugarloaf) is a double cone built around two craters, and a well-formed crater indents the summit of Puʻu ʻŌhiʻa (Tantalus). The flow from Puʻu Kakea (Sugarloaf) moved east to form the broad, nearly level floor of Mānoa Valley. The flow from Puʻu ʻŌhiʻa (Tantalus) spilled westward and formed the Pauoa Flats (Macdonald, Abbott, & Peterson, 1983).

Potential Impacts and Mitigation Measures

The School Improvements will not adversely impact the topographic nature of the Site relative to the surrounding lands. Any grading will follow Best Management Practices (BMPs).

The School Improvements and earth disturbance will be limited to surface soils.

3.3 SOILS

Existing Conditions

Three soil suitability studies prepared for lands in Hawaiʻi describe the physical attributes of land and the relative productivity of different land types for agricultural production; these are: 1) the U.S. Department of Agriculture Natural Resource Conservation Services (NRCS) Soil Survey; 2) the University of Hawaiʻi Land Study Bureau (LSB) Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawaiʻi (ALISH) system.

Natural Resource Conservation Service

The majority of the Hālau Kū Māna Public Charter School Site consists of Kawaihāpai stony clay loam, with Kaʻena stony clay in the *mauka* portion of the Site (see Figure 9).

Kawaihāpai stony clay loam, 2-6% slopes, formed in alluvium derived from basic igneous rock in the humid uplands. This soil series consists of well-drained soils and has enough stones to hinder

but not prevent cultivation. Permeability is moderate, runoff is slow, and the erosion hazard is slight. The available water capacity is approximately 1.8 inches per foot of soil. This soil is used for sugarcane, truck crops, and pasture. The agricultural capability classification is IIe for both irrigated and non-irrigated crops. Capability classification IIe means these soils are subject to moderate limitations that reduce the choice of plants or that require moderate conservation practices, or both.

The Ka‘ena stony clay in the *mauka* portion of the Site, 12-20% slopes, formed in alluvium and colluviums (National Cooperative Soil Survey, 2006), and is described as consisting of deep, poorly drained soils with a low water transmitting capacity (United States Department of Agriculture, 2012).

Land Study Bureau Detailed Land Classification

The University of Hawai‘i Land Study Bureau (LSB) Detailed Land Classification, Island of O‘ahu, classifies non-urban land by a five-class productivity rating system, which indicates the degree of overall suitability of the land for agricultural use, using the letters A, B, C, D, and E, where “A” represents the highest class of productivity and “E” represents the lowest class of productivity. The Hālau Kū Māna Public Charter School Site is classified “E,” meaning that the land is of very poor suitability for agricultural use (Nelson, 1972) (Figure 9).

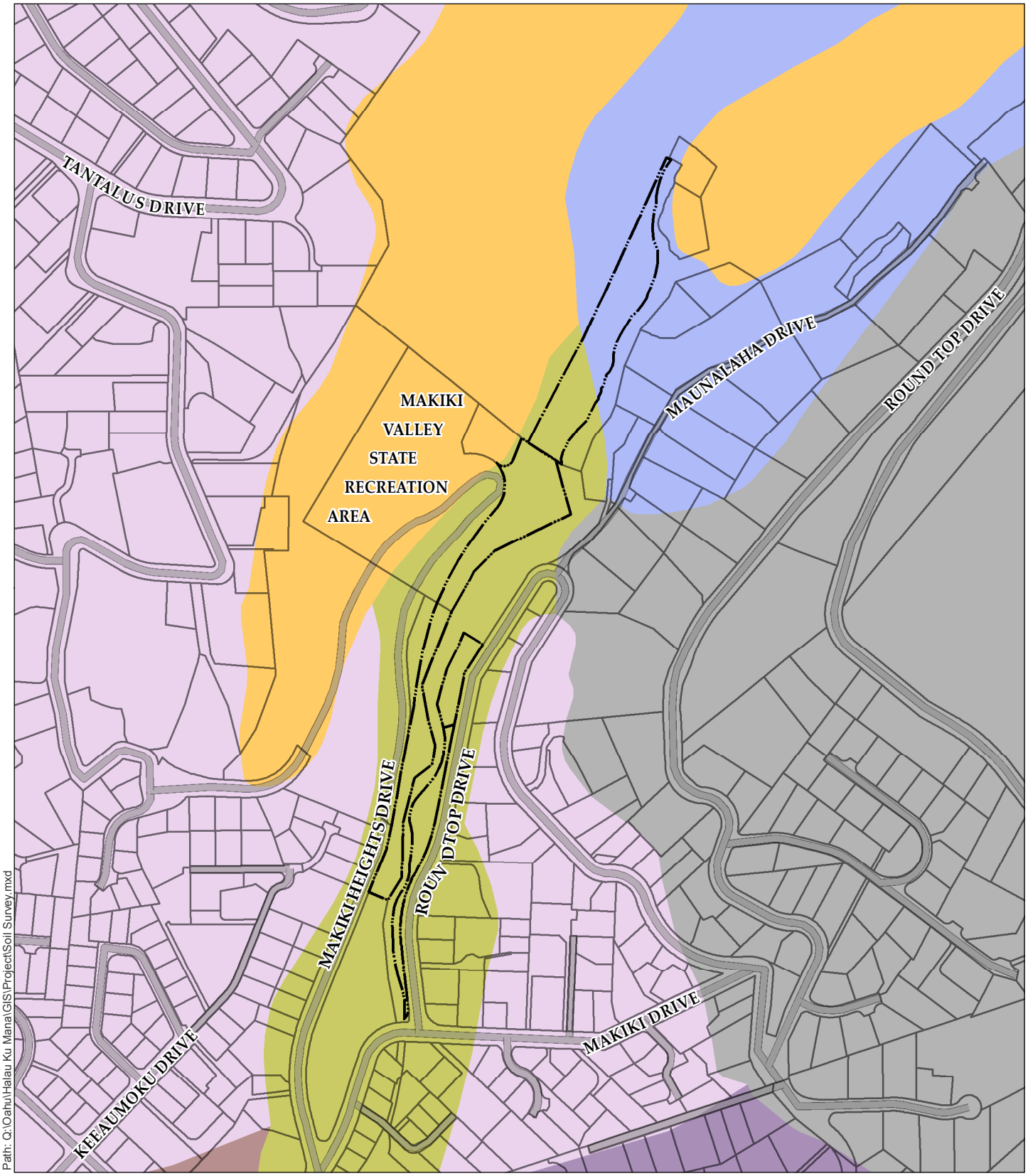
Agricultural Lands of Importance to the State of Hawai‘i

The State of Hawai‘i Department of Agriculture’s Lands of Importance to the State of Hawai‘i (ALISH) system rates agricultural land as “Prime,” “Unique,” or “Other.” The remaining land is not classified. A section of the land in use is classified as “Other,” meaning that the state has deemed the land important for production, but in order to be useful, the land would need additional irrigation or commercial management (United States Department of Agriculture, 2010). The rest of the land is not classified. A map of the land classification in the area can be seen in Figure 10.

Potential Impacts and Mitigation Measures

Construction of Hālau Kū Māna Public Charter School Improvements will not reduce the inventory of agriculturally significant land. The Site has a NRCS capability classification of IIe, meaning it has moderate limitations that reduce the choice of plants, hinder cultivation, or require moderate conservation practices. The Site is classified as “E” on the LSB classification and as “Other” and not classified under the ALISH system, indicating that the Site is not agriculturally significant.

Impacts to the soils include potential for soil erosion and the generation of dust during grading and construction. All construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control. Although not expected, if soil disturbance exceeds one acre in area, a National Pollutant Discharge Elimination System (NPDES) permit for Storm Water Associated with Construction Activity will be necessary.



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 9 Soil Survey
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DATE: 1/2/2014

LEGEND

- Site
- TMK Boundary
- Public Road

Soil Classification

- Kawaihāpai stony clay loam, 2 to 6 percent slopes
- Ka'ena stony clay, 12 to 20 percent slopes
- Cinder land
- Kawaihāpai clay loam, 2 to 6 percent slopes
- Makiki clay loam, 0 to 2 percent slopes
- Rock land
- Tantalus silt loam, 40 to 70 percent slopes
- Tantalus silty clay loam, 15 to 40 percent slopes
- Tantalus silty clay loam, 8 to 15 percent slopes

Source: City & County of Honolulu (2013); Natural Resources Conservation Service (2007)

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

FIGURE 9:
Soil Survey

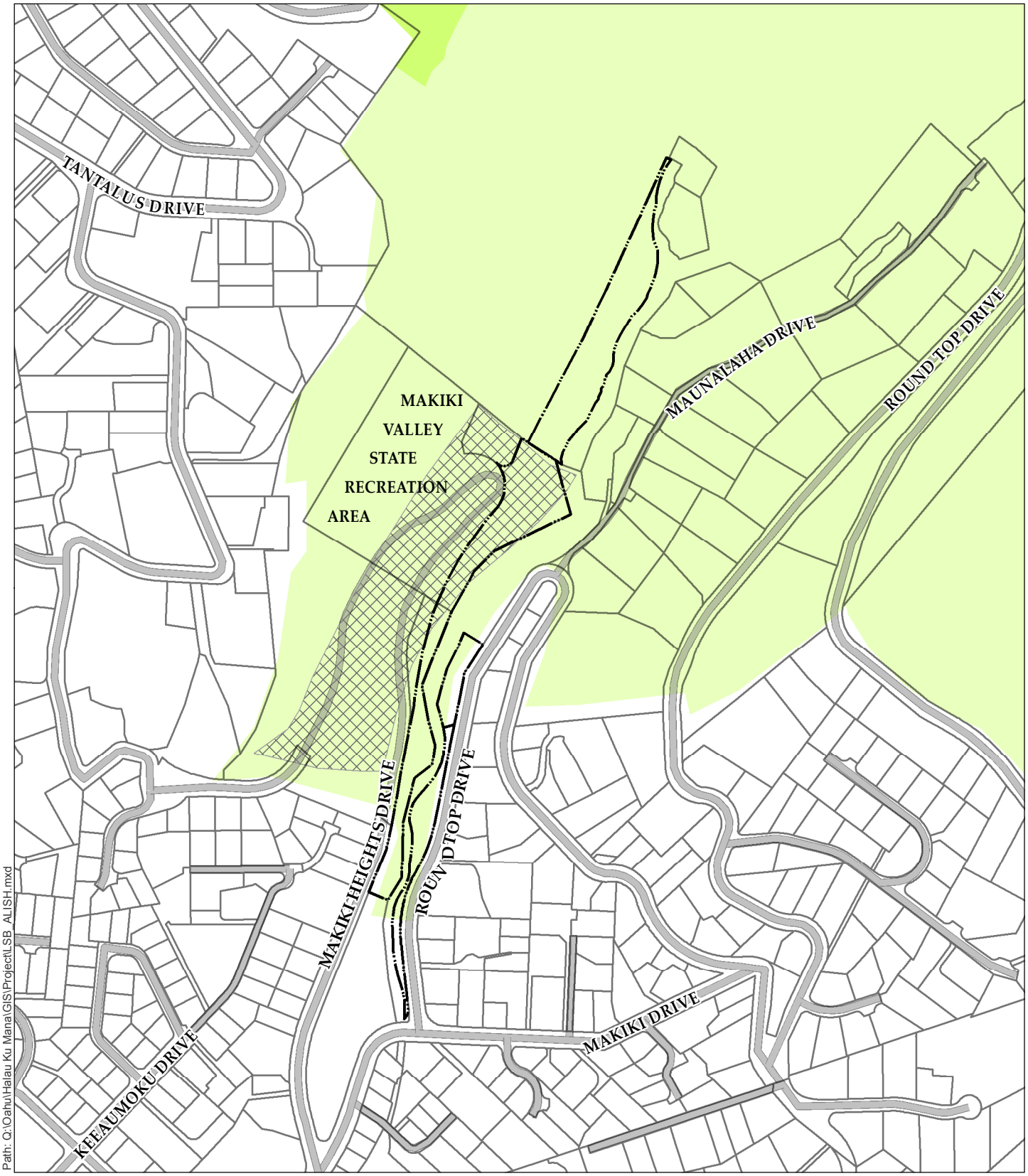
Hālau Kū Māna Public Charter School Improvements

Māna Maoli North

Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 10 Ag Suitability
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DATE: 1/2/2014

LEGEND

- Site
- TMK Boundary
- Public Road

ALISH Classification

- Prime
- Unique
- Other
- Unclassified

LSB Productivity Rating

- A: Excellent
- B
- C
- D
- E: Very Poor

FIGURE 10:
Agricultural Suitability

Hālau Kū Māna Public Charter School Improvements

Mana Maoli North — Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: City & County of Honolulu (2013); Natural Resources Conservation Service (2007)

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

The stony clay soils at the Hālau Kū Māna Public Charter School site will aid in drainage, especially the Kawaihāpai soil where the school improvements are primarily proposed. Also, because Hālau Kū Māna Public Charter School is made up of trailers, there will be minimal compaction to the soil during construction. During construction and landscaping at the Site, top soil and vegetation will be disturbed on a localized basis. Contractors will use best management practices (BMPs) to minimize erosion during construction and planting. Long term, the landscaping will mitigate the potential of soil erosion from wind and water runoff.

3.4 HYDROLOGY

Existing Conditions

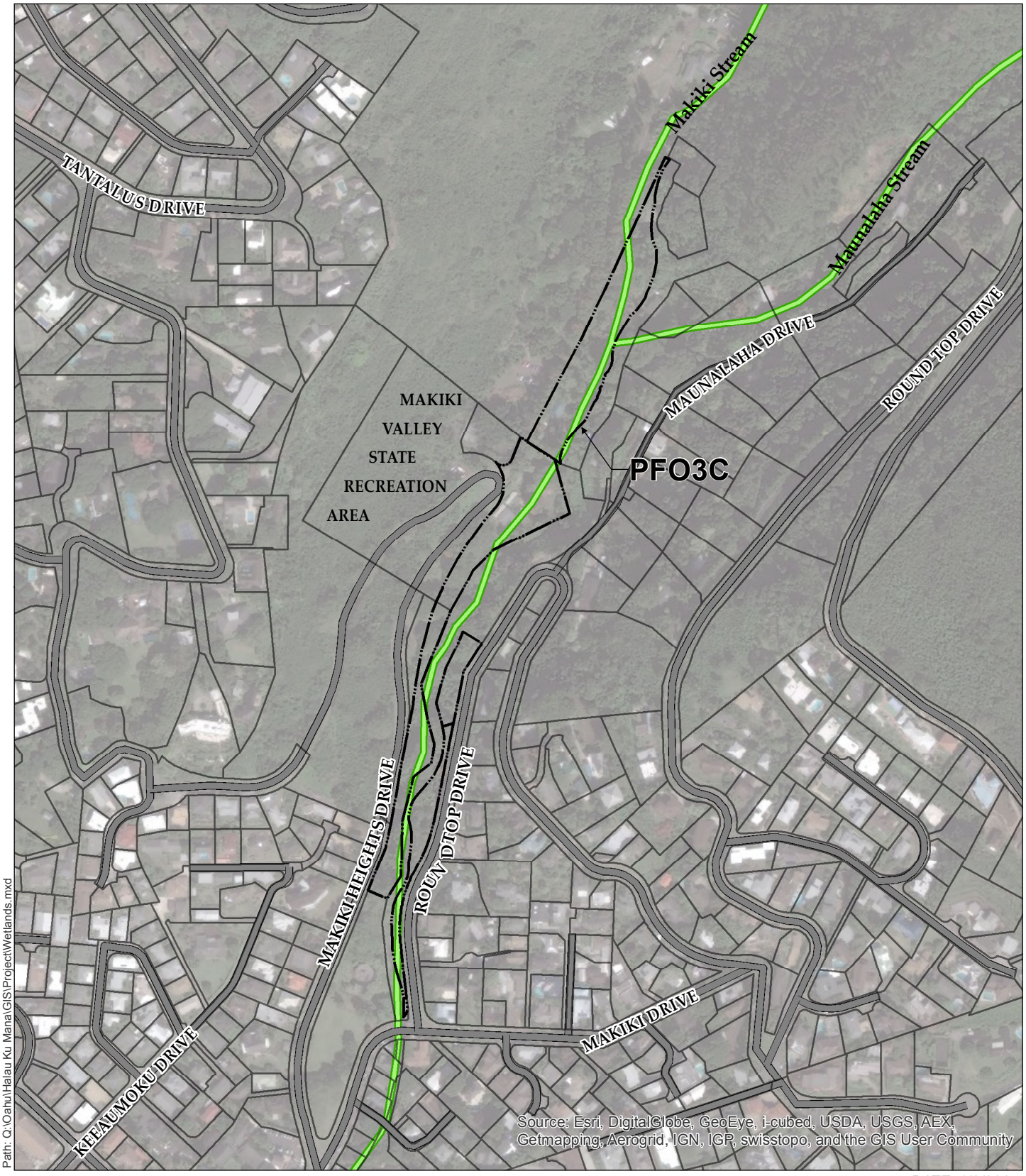
The Site is located within the Ala Wai Watershed, which measures 19 square miles and encompasses three sub-watersheds of Makiki, Mānoa, and Palolo. The watershed reaches a maximum elevation of 3,051 feet along the Koʻolau mountain range (Parham). A watershed area captures rainfall and atmospheric moisture from the air and allows the water to drip slowly into underground aquifers or enter stream channels and eventually the ocean. The Ala Wai Watershed is the most densely populated watershed in Hawaiʻi with 160,000 residents.

Surface Water

The Site is located within the Makiki sub-watershed area. Surface water sources within the Makiki sub-watershed area include Makiki Stream and Ala Wai Canal.

Makiki Stream is a perennial water body that traverses the Hālau Kū Māna Public Charter School Site. Kanakā, Kānealole, Moleka, and Maunalaha are the headwater streams that eventually merge into Makiki Stream. Makiki Stream enters the Site at the *mauka* boundary and continues *makai* in its natural state where it later becomes channelized off-site. Approximately ¼ mile of Makiki Stream is underground and reemerges *makai* of Wilder Avenue. The Makiki stream corridor is classified on the National Wetland Inventory (NWI) maps as having sections of freshwater, forested/shrub wetlands (classified as PFO3C). See Figure 11. The school improvements are not proposed in areas that are mapped as wetlands.

Makiki Stream empties into the Ala Wai Canal, a 2-mile long man-made waterway constructed in 1928 to reduce flooding and to create land for building in and around Waikīkī. The Canal diverts three major and several minor tributary streams away from Waikīkī and into the ocean where the Ala Wai Boat Harbor exists today. Prior to construction, the streams flowed from the mountains into an extensive wetland which was used for growing *kalo* and rice.



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 11 Wetlands
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DATE: 1/2/2014

LEGEND

- Site
- TMK Boundary
- Public Road

Wetland Type

- PFO3C: Freshwater Forested/Shrub Wetland

FIGURE 11:
Wetlands

Hālau Kū Māna Public Charter School Improvements

Mana Maoli North

Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: C&C Honolulu (2008, 2013); U.S. Fish & Wildlife Services, National Wetlands Inventory (2012)

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

The State Department of Health (DOH) observes stream water quality and classifies surface water bodies based on their ability to support stream uses such as aquatic life (State of Hawai‘i Department of Health, 2013). The 2013 State of Hawai‘i Water Quality Monitoring and Assessment Report lists waters downstream from the Site as “impaired” under the State’s Clean Water Act (CWA) 303(d) list, meaning State water quality standards for specific criteria were not attained (State of Hawai‘i Department of Health). Specifically, state water quality standards for surface waters were not attained at: 1) all canals and streams in the Ala Wai Watershed for trash, pesticides and nutrients negatively impacting endemic aquatic species habitat; 2) Makiki Stream for total Nitrogen and total Phosphorus; and 3) Ala Wai Canal downstream of Makiki Stream entrance for enterococci, total Nitrogen, total phosphorus, turbidity, and chlorophyll a. Because these water quality standards were not attained, the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be established for the specific criteria that do not meet the standards. At this time, TMDLs have not been established by the Department of Health, the entity responsible for implementing this water quality program.

Groundwater

The State Commission on Water Resource Management (CWRM) established an aquifer coding system to characterize groundwater resources in Hawai‘i. Based on the CWRM’s coding system, the Site overlies the Nu‘uanu Aquifer System Area, a part of the Honolulu Aquifer Sector Area. Sustainable yield is the amount of groundwater that can be pumped without depleting the source. The sustainable yield of the Nu‘uanu Aquifer System is 15 million gallons per day (MGD) and the existing water use is 13.351 MGD, a difference of 1.649 MGD (Wilson Okamoto Corporation, 2008). Unlike other islands, O‘ahu relies solely on underground water sources for drinking water.

Potential Impacts and Mitigation Measures

The School Improvements are not anticipated to have any significant adverse impact on groundwater or surface water resources. No long-term uses that could contaminate ground water are expected to be developed as part of the School Improvements. Potable water is currently supplied by the Honolulu Board of Water Supply (BWS), which draws water from a network of groundwater wells. Section 4.6.2 (Water System) of this EA provides further information regarding anticipated water demands.

Restoration of the historic lo‘i terraces is proposed as part of the School Improvements. Any water withdrawal from the stream for lo‘i or irrigation will require a stream diversion permit in compliance with the State Water Code, Chapter 174C, HRS, and Chapters 13-168, HAR.

The Site Improvements will result in a slight increase in the amount of impermeable surface area. However, the majority of the Site will be permeable outdoor open space. During construction, best management practices for managing storm water and erosion control will be employed so as to avoid temporary inputs of sediment and pollutants into Makiki Stream. The land that is disturbed

by the School Improvements will be re-vegetated with a combination of Native Hawaiian and other non-invasive plants shortly after the completion of the construction period and will provide a natural buffer between Hālau Kū Māna Public Charter School and Makiki Stream.

After construction, there will be a slight increase in impervious surface area. However, the School Improvements include low impact design (LID) techniques designed to retain the increased runoff, providing protection to Makiki Stream through the use of splash block, grass pavers, vegetation, etc. The LID will serve to both minimize the volume of water running off the Site as well as allowing sediment and other pollutants to settle out before infiltration into the ground. Overflow from the LID features will be conveyed by an outfall to drainage culvert or detention basin on the *makai* side of the Site. The school administration will also be advised that portions of the Ala Wai watershed have been identified as impaired. Although the impaired areas are not within the Site, the information will provide the educators with opportunities to integrate local issues into the curriculum, and adjust maintenance programs if necessary.

To improve the health of Hawai‘i’s watersheds and minimize impacts to ground- and surface-water quality, the State Office of Planning provides two important guidance documents: 1) Storm water Impact Assessments: Connecting primary, secondary and cumulative impacts to Hawaii’s Environmental Review process (PBR Hawaii & Associates, Inc., 2013); and 2) Hawai‘i Watershed Guidance (Tetra Tech EM, Inc., 2010). These documents suggest incorporating specific design concepts and mitigation measures into the planning phase of project development to achieve compliance with existing ordinances, rules, and regulations. The Hālau Kū Māna Public Charter School Improvements will incorporate the following measures to the extent practicable:

- *During site development, disturb only the smallest area necessary to perform current activities to reduce erosion and off-site transport of sediment.*
- *Avoid disturbances of unstable soils or soils particularly susceptible to erosion and sediment loss.*
- *Re-vegetate the site as soon as possible after disturbance, preferable with native vegetation.*
- *Minimize imperviousness to the extent practicable.*
- *Design sites to preserve vegetated or natural buffers adjacent to receiving waters.*
- *Use porous pavements for areas of infrequent use.*

In addition, the U.S. Fish and Wildlife Service (USFWS) recommends incorporating the following Best Management Practices (BMPs) regarding sediment and erosion control:

- *Turbidity and siltation from project-related work shall be minimized and contained within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.*

- *No project-related materials and equipment (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.*
- *Fueling of project-related vehicles and equipment should take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases.*
- *Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydro-seeding, etc.).*

The Site Improvements will comply with all laws and rules regarding water quality and drainage, including the State's Water Quality Standards contained in Hawai‘i Administrative Rules (HAR) Chapter 11-54 and permitting requirements specified in HAR Chapter 11-55.

3.5 MARINE WATERS

Existing Conditions

The Site is approximately two miles inland from the nearest coastline in Waikīkī. Near shore marine waters off the coast of Waikīkī are classified as class "A" waters by the State Department of Health (DOH) (Water Quality Standards Map of the Island of Oahu, 1987).

According to DOH Water Quality Standards, "it is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters" (HAR §11-54-03). Ala Wai Boat Harbor, the marine receiving water is classified as class A waters by the Department of Health and currently listed as a Section 303(d) impaired water body for excessive nutrients and turbidity.

Downstream of the Site are two State designated Fisheries Management Areas, a Marine Life Conservation District, and the Hawaiian Humpback Whale National Marine Sanctuary.

Potential Impacts and Mitigation Measures

Makiki Stream traverses the Site and the stream system eventually empties into the Pacific Ocean. Without mitigation, a secondary impact to marine waters could occur with discharge of storm water runoff into Makiki Stream and ultimately to marine waters. In the long-term, to minimize/eliminate the Park's contribution to the region's cumulative nonpoint source pollution, Low Impact Development (LID) will ensure storm water quality/quantity is not increased or degraded.

The Site Improvements will result in a slight increase in the amount of impermeable surface area. However, the majority of the Site will be permeable outdoor open space. During construction, best management practices for managing storm water and erosion control will be employed so as to avoid temporary inputs of sediment and pollutants into Makiki Stream. The land that is disturbed by the Site Improvements will be re-vegetated with a combination of Native Hawaiian and other non-invasive plants shortly after the completion of the construction period and will provide a natural buffer between Hālau Kū Māna Public Charter School and Makiki Stream.

Low-impact development (LID) storm water management strategies will be used post construction to maintain and restore the natural hydrologic functions of the site. New surfaces, such as the car turnaround and parking lot, will be constructed with permeable paving to allow storm water to infiltrate through the pavement and Site. Rain gardens, grass or vegetated swales will be added adjacent to existing impervious surfaces and open downspouts to capture and treat runoff. The use of a rainwater harvesting system will be explored to capture storm water from the new and existing trailer roofs. The existing natural vegetation along the stream edge will be maintained to continue to act as a bio filter. This combination of low-impact development techniques will mitigate against the potential primary and secondary effects of storm water in the built environment.

3.6 NATURAL HAZARDS

O‘ahu is susceptible to potential natural hazards, such as flooding, tsunami inundation, hurricanes, earthquakes, and wildfires. This section provides an analysis of the Site’s vulnerability to such hazards.

The State of Hawai‘i Department of Defense, Office of Civil Defense operates a system of civil defense sirens throughout the State to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes.

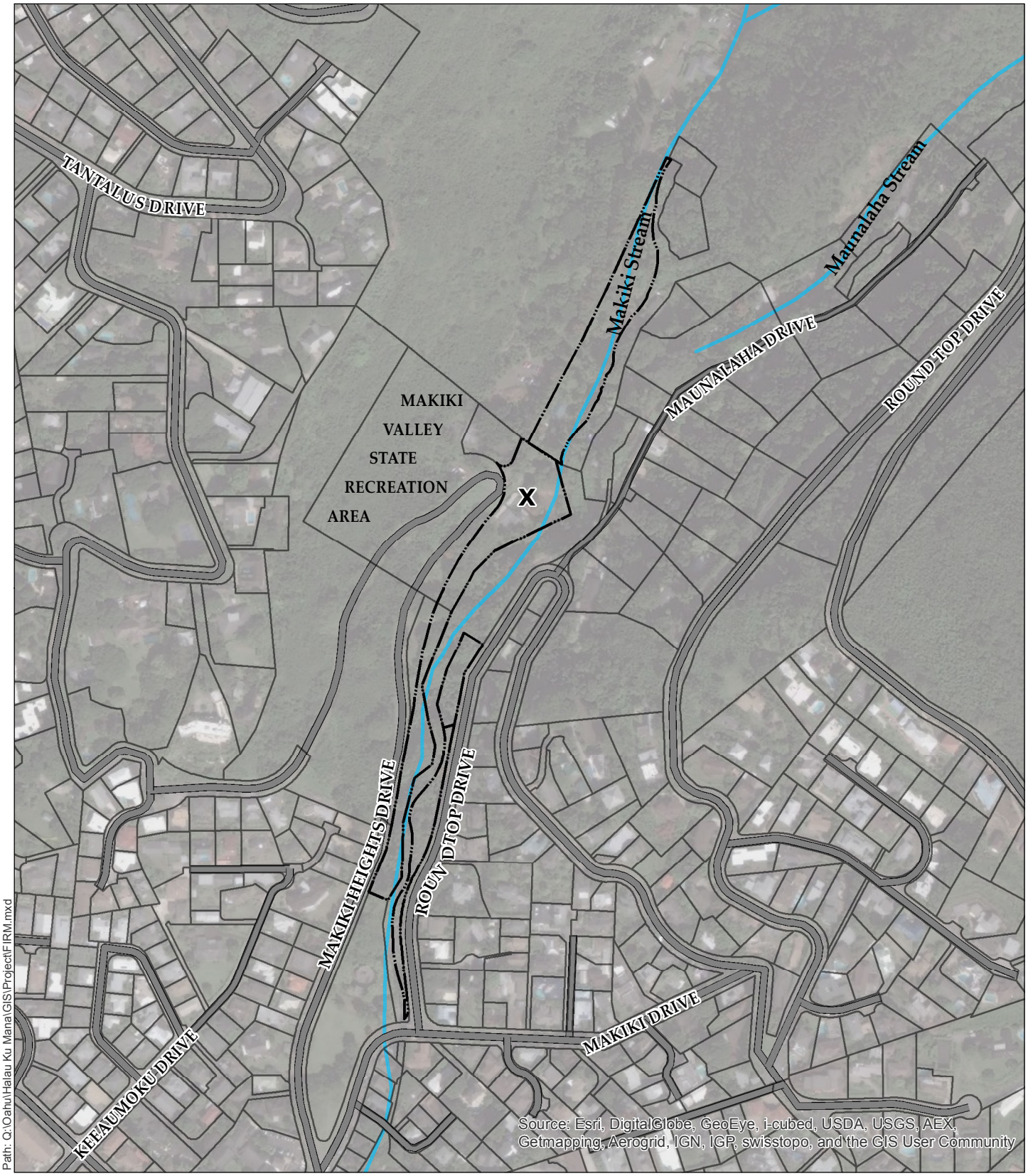
3.6.1 Flood

Existing Conditions

The Federal Emergency Management Agency (FEMA) publishes flood information in the form of Flood Insurance Rate Maps (FIRM) used by government and insurance agencies to determine the relative potential for damage during flood events.

According to the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program, the Site is located within Zone X, an area that has been deemed outside of the 0.2% annual chance floodplain (Figure 12).

Currently, surface runoff sheet flows from west to east into Makiki Stream and *mauka* to *makai* downstream from the Site.



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 12 FIRM
Path: Q:\Oahu\Halau Ku Mana\GIS\Project\FIRM.mxd

DATE: 1/2/2014

LEGEND

- Site
- TMK Boundary
- Public Road
- Streams

Flood Zone

- Zone X: Beyond 500 Year Flood Plain

FIGURE 12:
Flood Insurance Rate Map

Hālau Kū Māna Public Charter School Improvements

Mana Maoli North

Island of O'ahu

Linear Scale (feet)
0 100 200 400

PBR HAWAII & ASSOCIATES, INC.

Source: City & County of Honolulu (2013); Natural Resources Conservation Service (2007)

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

Potential Hazards and Mitigation Measures

The School Improvements are not anticipated to increase the Site's exposure to flooding. The Site is located in an area located outside of the floodplain (Zone X on the FIRM). The construction of the School Improvements is anticipated to increase the amount of impervious surfaces which may cause a slight increase in runoff, especially during a storm or heavy rain event. To reduce such impacts the project will include LID utilizing such measures as splash blocks, decentralized filtering and infiltration, and grass paved access lanes to ensure storm water quality/quantity is not increased or degraded. The LID components capture increased runoff resulting from the School Improvements, allowing it to infiltrate into the ground rather than leave the Site.

3.6.2 Tsunami

Existing Conditions

Since the early 1800's, approximately 50 tsunami have inundated the State of Hawai'i's shores. Seven historical events have caused major damage. According to the FEMA Flood Insurance Rate Maps (FIRM), the Site is located well outside of areas which would be impacted by coastal flooding (from a tsunami). The most recent tsunami to impact O'ahu, occurred on March 11, 2011, causing damage at several locations around the island especially the north shore. There are no records of inundation of lands within Makiki Valley during any of the recorded tsunami.

The Site is located approximately two miles inland from the nearest coastline in Waikīkī, outside of the designated tsunami evacuation zone.

Potential Hazards and Mitigation Measures

The School Improvements will not exacerbate any tsunami hazard conditions. The Site is not in a designated tsunami evacuation zone and is not expected to be adversely impacted by a tsunami.

3.6.3 Hurricane

Existing Conditions

Hurricanes are classified into one of five categories according to the Saffir-Simpson Hurricane Scale. The Scale provides some indication of the potential damage and flooding a hurricane will cause upon landfall. Since 1980, two hurricanes have had a devastating effect on Hawai'i. They were Hurricane 'Iwa in 1982 (Category 1- sustained winds between 75 and 95 mph) and Hurricane 'Iniki in 1992 (Category 4- sustained winds between 131 – 155 mph). In both instances, much of the damage sustained on O'ahu occurred along the Wai'anae Coast as the hurricanes passed between the islands of Kaua'i and O'ahu. While it is difficult to predict such natural occurrences, it is reasonable to assume that future incidents are likely, given historical events.

Potential Impacts and Mitigation Measures

In the event of a hurricane, the potential impact of destructive winds and torrential rainfall will be mitigated through compliance with the 2006 International Building Code for any new construction.

3.6.4 Wildfires

Existing Conditions

The greatest danger of fire is where wildland (trees and brush) borders urban areas. The Hawaiian Islands are vulnerable to wildland fires (especially during the summer months, prolonged drought and/or high winds), and the great majority of wildfires are human-caused (intentionally caused or by negligence) and start along roadsides. Wildfires can and do also occur naturally.

Potential Impacts and Mitigation Measures

While the hazard of wildland fires exists, the typically wet climate in which the Site is located, minimizes risk.

3.7 FLORA

LeGrande Biological Surveys, Inc. conducted a vegetation and wildlife survey of the Site (2013). Field data was collected on July 11, 2013. The results of the survey are summarized below. Appendix B contains the complete report.

Existing Conditions

No plant species currently listed or proposed for listing under either the Federal or State of Hawai‘i endangered species statutes were detected during the course of the survey (LeGrande Biological Surveys Inc., 2013). The natural environment in the vicinity of the Site has been altered by historical agricultural purposes, road construction, building construction, and the introduction and spread of non-native plant species. Vegetation within the Site represents these historic events and does not reflect vegetation patterns prior to western contact. The area is dominated by weedy plant species that have become established and spread over the last century.

Within the Site, there are naturally occurring species and campus plantings, both of which are discussed below.

Naturalized Species

Naturally occurring vegetation at the Site is dominated by a wet alien forest with large trees and liana (vine) species draping the limbs of the trees and lower level stream vegetation. In all, 105 naturalized plant species were observed during the survey. Of that total, 101 species are alien to Hawai‘i and four are native (indigenous).

Dominate tree species at the edges of the Site include kukui (*Aleurites moluccana*), mango (*Mangifera indica*), monkeypod (*Samanea saman*), octopus tree (*Schefflera actinophylla*), African tulip (*Spathodea campanulata*), and Chinese banyan (*Ficus microcarpa*). Trees near the stream were commonly festooned with liana species such as white thunbergia (*Thunbergia fragrans*), Madeira vine (*Anredera cordifolia*), ivy gourd (*Coccinea grandis*), and maunaloa (*Canavalia cathartica*). Other species scattered along the bordering stream to the southeast of the Site includes opiuma (*Pithecellobium dulce*), koa haole (*Leucaena leucocephala*), banana (*Musa sp*), mountain apple (*Psidium malaccense*) with an understory of downy wood fern (*Cyclosorus dentatus*), job's tears (*Coix lachrymajobi*), guinea grass (*Panicum maximum*), pikake honohono (*Clerodendrum chinense*), and kalo (*Alocasia esculenta*).

The native species observed include ekaha (*Asplenium nidus*), kou (*Cordia subcordata*), Milo (*Thespesia populnea*), popolo or glossy nightshade (*Solanum americanum*).

Campus Plantings

Plantings around the school facilities include manicured lawns and indigenous plantings such as Naio (*Myoporum sandwicense*), ʻIlima papa (*Sida jallax*), Kalo (*Colocasia esculenta*), Pōhuehue (*Ipomea pes-caprae*), ʻAweoweo (*Chenopodium oahuense*), and Ti or kī (*Cordyline fruticosa*) (Scientific Consultant Services, Inc., 2013). Other campus plantings include Polynesian introduced tree species such as kukui, mountain apple, ʻulu and niu in the *mauka* portion of the campus around the existing tent facility (LeGrande Biological Surveys Inc., 2013).

A combination of native and Polynesian introduced ornamental and food species have been planted near the classrooms and administrative buildings. They include ʻuala (sweet potato) kō (sugarcane) kalo (taro), ʻawa, pili grass, maiapilo, pōhuehue, ʻākia among others.

Potential Impacts and Mitigation Measures

The School Improvements will not impact any Federal or State of Hawaiʻi listed Threatened, Endangered, or Candidate plant species, as none were detected during the survey. In addition, the Hālau Kū Māna Public Charter School supports and engages students and community in environmental stewardship, culture-based learning, and *mālama ʻāina*. A majority of student instruction is conducted outdoors to foster a sense of *kūleana* (responsibility) to *ʻāina* (land) through ancestral knowledge and practices of Hawaiʻi. These teachings and applications are evident throughout the Site, as campus plantings of native vegetation are abundant and well-maintained. Hālau Kū Māna Public Charter School will continue to foster these practices.

Prior to the School locating at the Makiki Valley location, the Site was undeveloped, overgrown and under-utilized. Hālau Kū Māna transformed the Site with native plants and gardens and continues to remove alien species from the Site.

3.8 FAUNA

LeGrande Biological Surveys, Inc. conducted a vegetation and wildlife survey of the Site (2013). Field data was collected on July 11, 2013. The results of the survey are summarized below. Appendix B contains the complete report.

Existing Conditions

No Federal or State of Hawai‘i listed Threatened, Endangered, or Candidate bird species were detected during the course of the survey. A total of sixteen bird species were observed at the Site, of which 15 were alien and one was native, the ‘Amakihi (*Hemignathus chloris*).

School staff have reported observing the threatened Manu o Kū or White Tern (*Gygis alba*) on other occasions at the Site. Manu o Kū are known to roost and nest at the Board of Water Supply tanks south of the Site, making their occurrence at the Site highly probable (LeGrande Biological Surveys Inc., 2013).

Other wildlife species, such as mammals and insects, were not observed during the survey but are expected. Many species are very small and hidden making observation difficult. Other species are nocturnal and/or may use the area infrequently depending upon season, weather, interaction with other species, and dynamic changes in their populations. Feral species typically found in urban settings would be expected including rats, cats, and chickens.

Although not detected during the survey, it is possible that small numbers of the Endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may occur within the vicinity of the Site. U.S. Fish and Wildlife Service indicates that while there is a general lack of historic and current data on this subspecies of bat, they are most often observed foraging in open areas near the edge of native forests or over open water, and roost in the foliage of trees.

Potential Impacts and Mitigation Measures

The School Improvements are not expected to significantly affect any Federal or State of Hawai‘i listed Threatened, Endangered, or Candidate wildlife species. In addition, the School Improvements should have no detrimental effect on bird species of the area (LeGrande Biological Surveys Inc., 2013).

Manu o Kū roost and breed in large trees and lay a single egg directly on a bare tree branch. Several trees at the Site may provide a suitable nesting area for Manu o Kū including monkeypod, Chinese banyan, kukui, mango, yellow shower, and gunpowder trees. None of these trees are proposed to be cut or trimmed as part of the Site Improvements. However, if an egg or chick is found in any tree, tree removal or trimming will be avoided until the chick has grown up and flown away (fledged).

In addition, although not detected onsite Hawaiian hoary bats are known to roost in native and non-native trees greater than 15 feet tall. USFWS recommends avoiding removal and trimming of trees greater than 15 feet tall during the pup rearing season between June 1 and September 15. So as to avoid any potential for impacts to the Hawaiian hoary bat, these recommendations will be followed.

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

This section describes the existing conditions of the human environment, preliminary potential impacts of Hālau Kū Māna Public Charter School Improvements, and the preliminary mitigation measures to minimize any impacts.

4.1 ARCHAEOLOGICAL AND HISTORIC RESOURCES

Existing Conditions

Scientific Consulting Services conducted an archeological inventory survey for the Hālau Kū Māna Public Charter School Site. The survey report incorporates the findings of previous surveys that have taken place in the area: 1) in 1980 by Martha Yent and Jason Ota; and 2) in 1994 by Martha Yent and Alan Carpenter. Findings of the survey work are summarized below. Appendix C contains the complete archaeological inventory survey report.

Historic Background

The earliest historical account of Makiki Valley is believed to have been the narrative of the German botanist, Dr. Franz Julius Ferdinand Meyen, who visited O‘ahu on a Prussian explorer vessel in 1831. He spent six days touring the southern coast of O‘ahu from Diamond Head to Pearl Harbor, collecting plant and animal species and making notes on the scenes of Hawaiian life that he observed (Hazlett et al. 2011). In general, Meyen describes habitations and agricultural features, including remnant terraces, in the valleys along streams. One of his excursions to Pu‘u Kakea (Sugarloaf) took him to the ridge behind Pūowaina (Punchbowl), over to Kakea, and then down through Makiki Valley, probably along Moleka Stream. He describes vegetation very different from what exists today, which included native species such as ma‘aloa (used to make tapa), maile, ‘ilima, and pāpala.

Evidence of Hawaiian habitation during Meyen’s descent through the valley is described in the following excerpts:

> *As we descended farther into the charming valley the small stream which flows in it became larger and larger. Some Indians [Hawaiians] had built their huts beside it and had prepared some land for the cultivation of taro...*
>
> *As soon as the valley became wider the beautiful vegetation disappeared. The slopes of the mountain were covered only with low grasses, the huts of the Indians became more numerous and here and there large boulders appeared again. The end of a low ridge which runs through the center of this transversal valley had been artificially cleared of vegetation and of the cover of humus. The rock which came to light here is a very attractively colored basalt conglomerate (of black basalt and*

> *white calcite crystals). The Indians were just then busy chipping flat pieces from this rock which they wanted to use to hunt octopus. The rock on the sides of the valley, however, is the usual porous basalt which is found all around Honolulu. Here and there one can find caves in this rock, some of which are inhabited.*
>
> *In the course of our excursion we saw the mountains everywhere covered with grazing horses and horned cattle. One is amazed at the great number of cows which thrive here beautifully with the slightest care...*
>
> *Many and extensive fields through which we have just wandered and which are presently being used as pasture land were formerly covered with sweet potatoes. Today one can still see the remaining traces of their cultivation. They say that in the days of Kamehameha a great part of the Honolulu Valley was used for the cultivation of field- produce. Now there are meadows there and the valley is far less productive than in former times.*

The terraces of Makiki may have been abandoned relatively soon after Western contact due to the decline in population and the more agriculturally favorable adjacent valleys of Pauoa and Mānoa (Carpenter and Yent 1994).

Puʻu ʻUalakaʻa, however, just east of the Site was noted by Handy (1940) as an area famous for the cultivation of sweet potatoes.

> *The region around Makiki and Round Top, between Makiki and Mānoa Valley, is perhaps the most favorable locality on Oʻahu for sweet potato cultivation; here Hawaiians still have many small plantations, mostly for domestic use, though occasionally they market their products. The volcanic cinder mixed with humus in this locality seems to be ideal for sweet potato cultivation and normally the amount of rainfall is about right. Round Top, the Hawaiian name for which is `Ualaka`a (literally, Rolling Potatoes), is famous in the annals of Hawaiian agriculture because here Kamehameha I established his own plantation on the steep slopes above Mānoa.*

In 1903, the Bureau of Agriculture and Forestry became the Territorial Board of Agriculture and Forestry. State Forestry Division acquired Makiki Valley in 1904. Records indicate a deforested valley. Due to the close proximity to Honolulu Harbor, the Makiki-Tantalus forest underwent two periods of deforestation. From 1815 to 1826, timber was cut for the sandalwood trade with China. From 1833 to 1860, wood was harvested to provide fuel for the whaling trade. Additionally, fires, farming, grazing by livestock and feral animals, and harvesting for building materials contributed to the loss of the Makiki-Tantalus forest and its replacement by grasses. A 1873 map of Makiki Valley by W.D. Alexander notes heavily wooded hills and slopes above `Ualaka`a to Tantalus. This vegetation may have been altered radically in the period 1875 to 1900. The reforestation

program by the State Forestry Division began around 1910. This reforestation resulted in a thick growth of non-native species, both trees (i.e. eucalyptus, guava, and acacia trees) and undergrowth. The Civilian Conservation Corps planted additional trees in the mid 1930's. The vegetation reflects the historic utilization of the valley which resulted in deforestation and the later need for reforestation. Following the reforestation of Makiki Valley, a concrete dam was constructed midway along Kānealole Stream, creating a small reservoir, as shown on a 1911 map. This map also shows the carriage road associated with Herring, labeled as the "Tantalus Auto Road." Among the developments implemented by the State Forestry Division was a large nursery at the mauka end of the present-day DOFAW access road.

The Board of Water Supply (BWS) also made use of Makiki Valley to obtain water for the populous Honolulu area. The BWS has a monitoring station just mauka of the forestry base yard and the larger pumping station is further down Makiki Valley, (Makiki-Mānoa Pumping Station) completed in 1935.

The area around the Makiki Park entrance and the present Hālau Kū Māna Public Charter School Site, at the hairpin turn in Makiki Heights Drive was used as a nursery from 1946 through 1984. Approximately 5.5 acres was leased to the Choi family, which they extensively modified for the purpose of clearing, grading, and erecting several buildings (no longer standing).

Identified Sites

A total of five archaeological sites consisting of eight features have been identified within the Hālau Kū Māna Public Charter School Site (7550, 7551, 7552, 7553, and 7554[1]). All five sites are newly identified sites not previously noted in the 1980 and 1994 survey. Each of the five sites are discussed individually below and more detail is available in Appendix C.

- **Site 7550** is a semi-spherical rock wall measuring 6.6 meters in length. Surface feature heights above ground ranged between 90 cm to 2 m, as the retaining wall is on a 5° to 45° slope, along Makiki Stream; the wall thickness was unable to be taken, as the retaining walls boundaries extend into the slope. Construction method of the feature included basalt small boulders/cobbles and mortar. There is a metal pipe 21 cm in diameter near the south end of the retaining wall; the base of the wall has eroded significantly due to its close proximity to Makiki Stream. The main intact portion of the retaining wall contains 3 to 4 courses.

- **Site 7551** is a linear rock wall measuring 6.1 m in length. Surface feature heights above ground ranged between 12 to 96 cm. The wall thickness could not be taken, as the retaining walls boundaries extend into a 45° slope. Construction method of the feature included

[1] Site numbers are State Inventory of Historic Places (SIHP) numbers and are preceded by 50-80-14-.

basalt small boulders/cobbles and mortar. The retaining wall contains 1 to 3 courses and is located adjacent to Makiki Stream.

- **Site 7552** consists of four linear and semi-spherical rock walls; these walls were initially observed by Carpenter and Yent (1994). As stated by Carpenter and Yent (1994) and the results of background research during the subject project, these walls are thought to be associated with Choi Nursery. Construction material for all walls included basalt small boulders/cobbles and mortar, reinforced with concrete poured on top of the walls. There are also some instances of concrete blocks (wall three). Walls one through three (1-3) consisted of linear rock walls. Wall four (4) consisted of a semi-spherical rock wall.

- **Site 7553** consists of four features. According to records from the City and County of Honolulu, this site may be the remnants of a utility shed dated in 1940 which may be associated with agricultural use of the area. Feature 1 consisted of the remnants of a 1940 utility shed. Feature 2 consisted of a small concrete structure. Feature 3 consisted of two (2) rock wall. Feature 4 consisted of a linear rock wall.

- **Site 7554** consists of an L-shaped measuring 18.1 m in length by 5.6 m in width by 25 cm in thickness. Surface feature heights above ground range between 64 cm to 1.6 m. long Construction materials included: basalt cobbles, coquina blocks, mortar, and some instances of red bricks. This wall contains 3 to 7 courses and demonstrates multiple instances of construction phases; basalt cobbles and mortar are located in the lower courses and coquina blocks and mortar are located in the upper courses. Red brick were utilized to fill gaps. This feature is situated in a 10 percent slope; however, it is level on the surface. TMK (1) 2-5-020:003 has an L-shape configuration on the southeast side of the parcel. This feature is most likely that stonewall embankment.

Section 13-275-6, HAR, establishes criteria to evaluate the significance of historic sites. For resources, to be significant, they must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet one or more of the following criteria:

Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: Site is associated with the lives of persons significant to our past.

Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction.

Criterion D: Site has yielded or has the potential to yield information important in prehistory or history.

Criterion E: Site has cultural significance to an ethnic group; examples include religious structures, burials, major traditional trails, and traditional cultural places.

Based on the above criteria, Sites 7550 through 7554 are considered to be significant under Criterion D, for information, only. Due to the proximity to Makiki Stream, State Sites 7550 and 7551 are thought to have been utilized for water management, possibly associated with the Board of Water Supply pumping station (Makiki-Mānoa pumping station). Association of sites 7552-7554 are unknown. Based on the findings of the survey, it seems unlikely that new information would be gleaned from additional study of the documented sites.

Potential Impacts and Mitigation Measures

The archaeological inventory survey recommends no further work for all five sites considered to be significant based on Hawai‘i Register Criterion D. The sites have undergone data recovery investigations therefore no further work is needed at these sites.

The rock wall that comprises site 7552 is proposed to be restored.

Hālau Kū Māna and its contractors will comply with all State and County laws and rules regarding the preservation of archaeological and historic sites. The construction documents will include a provision that if undocumented historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentrations of shell or charcoal or artifacts are inadvertently encountered during construction activities, work will cease immediately in the vicinity of the find and the find will be protected. The contractor will immediately contact the State Historic Preservation Division, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

4.2 CULTURAL RESOURCES

Scientific Consulting Services conducted a cultural impact assessment for the Hālau Kū Māna Public Charter School Site. Findings of the report are summarized below. Appendix D contains the complete cultural impact assessment report.

The following analysis considers the cultural setting of the Site, wahi pana (storied places), gathering practices, burial sites, and trails. Habitation and agriculture in the general vicinity was concentrated in the valley areas along Kānealole and Moleka Streams.

Wahi Pana (Storied Places)

A few legends associated with Makiki refer to an area known as Anianikū (*lit. beckoning*), which is currently known as Papakōlea. Mary Kawena Pūkuʻi recounts that there is a stone above Makiki in Maunalaha called Anianikū where Kamapuaʻa (a demigod) was tied (Scientific Consultant Services Inc., 2013). An earlier legend associated with the area speaks of Pohaku-o-Papakolea and is recounted by J.K.W. Makanikeoe (1908 in Sites of Oahu):

> *Turn to look at Pauoa. Gaze on the beauty of the land and you will see lying in full view Pohaku-o-Papakolea on the edge of Pauoa and the crown land back of Punchbowl. That is the stone that I like for it has a fine and famous legend.*

No *heiau* (pre-Christian place of worship), *hōlua* (sled courses) or other major pre-Contact Hawaiian sites were reported within the immediate vicinity of the Site. The nearest places of note were Puʻu ʻŌhiʻa (Tantalus; elevation 2013 feet) to the northeast, Makiki Springs (at the headwaters of Kānealole Stream) to the northeast and Kahuawai Spring and Booth Spring along Pauoa Stream to the west. The literal meaning of Puʻu ʻŌhiʻa is "the ʻōhiʻa tree hill." On the top of Puʻu ʻŌhiʻa was a *heiau* called Pepeiaoohikiau or Pepeiao o Hikiea, one of the *heiau* associated with human sacrifices at Pūowaina or Punchbowl. Puʻu ʻŌhiʻa is at some distance from the Site. The springs are all in valleys at some distance from the Site (Cultural Surveys Hawaii, 2011).

Land Commission Awards

Land Commission Award (LCA) documentation provides evidence of dry and wet agriculture of taro and sweet potato cultivation in the valleys. Documentation of the claims indicates that their locations concentrated in the lower valley, primarily along Kānealole and Moleka Streams. No LCAs were claimed or awarded within the Site. In terms of land use, most of the awards were for small parcels containing house lots, with only a few containing *loʻi* (irrigated terrace, especially for taro) and *kula* (pasture) land. Documentation shows John Ii as the most notable of the awardees, who received about 250 acres. Ii was awarded a large parcel of land on the western edge of upper Makiki Valley, as well as two large parcels in the lower valley. In Makiki, of the eleven makaʻainana awards, only four definitely contained *loʻi* land. The awards given in Makiki suggest that the traditional agricultural subsistence economy was being abandoned much more rapidly than other areas well outside of Honolulu. The average award size in lower Makiki was considerably larger than in upper Makiki, likely due to the size of the area's fishponds. These records suggest that in this lower area, traditional agricultural and aquaculture practices continued at least through the mid-nineteenth century (Scientific Consultant Services, Inc., 2013).

Un-awarded lands in lower Makiki were again claimed partially by the Crown and partially by the Government. By 1874, Lot Kamehameha (Kamehameha V) had inherited the crown lands and added to them through additional land grants, totaling roughly 500 acres in Makiki (Scientific Consultant Services, Inc., 2013).

During this time, large parcels of land were being granted to various people in lower Makiki. As indicated on a map of Kamehameha V's estate, most awardees were foreigners (Gulick, Baldwin, Paris, Lemon, Meek, Gray, and etc.). One large land grant (Grant # 3535), consisting of 21 acres was awarded to H.W. Schmidt. J.M. Herring purchased several parcels along Kānealole and Moleka Streams between 1864 and 1876 (L.C.A.'s 6489:2,3,4; 3746B; 4283C; 4285B). This is where he apparently built a house, constructed a carriage road leading to his residence, and planted coffee. State Forestry Division acquired Makiki Valley in 1904. Records indicate a deforested valley (Scientific Consultant Services, Inc., 2013).

Gathering Practices

Some plants known to have cultural uses include plants valued for construction materials (*koa, ʻōhiʻa, ʻohe*), for food (*kalo*, *hōʻio* fern, avocado, banana, guava, *ʻōhiʻa ʻai*), for medicine (*koali ʻawa*), and for their fragrance (*ʻawapuhi keʻokeʻo awapuhi melemele*). Many of these (*ʻuala, kō, kalo, ʻawa, pili grass, maiapilo, pōhuehue, ʻākia*) were planted at the Site as part of Hālau Kū Māna's culturally-based curriculum. These plants are not known to occur naturally onsite and are considered ubiquitous.

Burial Sites

No burials have been documented in the vicinity or within the Site. While burials have been identified in Makiki, they have all been located at Puʻu ʻUalakaʻa (Round Top), approximately 2,000 feet away at a much higher elevation (Cultural Surveys Hawaii, 2011).

Trails

The 1919 War Department Fire Control quad map shows trails extending just north of the present project area up to the summit of Puʻu ʻŌhiʻa (Tantalus) and also inland to the west of the Puʻu ʻŌhiʻa trail (the Mānoa Cliffs Trail 2 alignment). It is believed that the relatively large population of lowland Kona District, Oʻahu probably accessed the uplands in the vicinity of Puʻu ʻŌhiʻa for forest resources and recreation. This system of trails was probably always braided – much as the present network of trails in the vicinity maintained by the State Department of Land and Natural Resources.

Potential Impacts and Mitigation Measures

Traditional gathering practices may have taken place in the greater area of Makiki Valley. However, the Site has not been used for traditional cultural purposes within recent times (Scientific Consultant Services Inc., 2013). The CIA concludes that Hawaiian rights related to gathering, access or other customary activities within the Site will not be affected and there will be no adverse effect upon cultural practices or beliefs.

4.3 VISUAL RESOURCES

Existing Conditions

Visual corridors are open areas that provide unobstructed views from distant vantage points. The Primary Urban Center Development Plan identifies the region's major view corridors and indicates view features such as mountain preservation areas and volcanic craters along the coastal plain. Major view corridors and view features in Honolulu include: 1) the Koʻolau and Waiʻanae Mountain Ranges and their foothills (notably, Red Hill and Puʻu ʻUalakaʻa, or Round Top); 2) the Pacific Ocean, Pearl Harbor's East Loch, Ford Island, Honolulu Harbor, Keʻehi Lagoon and Kewalo Basin, and their respective shorelines; and 3) the craters of Leahi (Diamond Head), Pūowaina (Punchbowl), and Āliamanu.

Hālau Kū Māna Public Charter School is situated within Makiki Valley, surrounded by lush forest, steep valley walls, and a stream corridor. The Site is located within a *mauka-makai* view corridor and nearby several view features including Puʻu ʻUalakaʻa, Koʻolau Mountain, and Pūowaina (Punchbowl). The Koʻolau Mountain Range provides a significant backdrop for Honolulu. This view corridor is documented in Honolulu's Primary Urban Center Development Plan Significant Panoramic Views map.

The Site is also located within the Preservation Area, which include lands valued primarily for their natural, cultural, or scenic resource values. The Preservation Area is intended to reserve lands for conservation, preservation, and enhancement of scenic views and other significant sites.

Potential Impacts and Mitigation Measures

Hālau Kū Māna Public Charter School will not impact the visual corridors of its surrounding area. The School's buildings are visible from Makiki Heights Drive, where it used to be open space. However, the natural bluff along the roadside helps to minimize the visual impact. The School Improvements will include rehabilitation of existing single-story structures and replacement of structures that are single-story. Roof lines are consistent with existing structures. The low-profile buildings are not expected to create any negative impacts to onsite or surrounding visual resources. In addition, the landscaping and paint schemes will help to blend in the buildings with the surrounding landscape.

4.4 NOISE

Existing Conditions

The predominant sources of noise in the vicinity of the site are: roads, residential homes, a neighborhood park, and an elementary school. The two major roads surrounding Hālau Kū Māna Public Charter School: Makiki Heights Drive to the west and Round Top Drive to the east, are the source of vehicular noise. The residential homes closest to the School Improvements are

approximately 175 feet to the east from the property line and 600 feet to the west atop a hill. To the south of Hālau Kū Māna Public Charter School is Archie Baker Mini Park, a two acre park operated by the City and County of Honolulu. Also south of Hālau Kū Māna Public Charter School is another school: Hanahau'oli School, which is a K-6 private institution. All other sources of noise are natural such as wind, rain, stream water, and birds.

Potential Impacts and Mitigation Measures

Outdoor activities associated with an average school day at Hālau Kū Māna Public Charter School (work in the *lo'i*, hula practice) may bring a slight increase in noise, but the increase will be negligible. In addition, the trees currently at the site provide a natural sound buffer, decreasing the level of noise heard off-site.

The School has policies about after-hour noise and works to be a good neighbor and keep noise levels down. Hālau Kū Māna has instituted a policy to notify surrounding residents when activities on-campus will take place.

Noise from construction activities will be short-term and will comply with DOH noise regulations (Department of Health, 1969). When construction noise exceeds, or is expected to exceed the DOH's allowable limits, a permit must be obtained from the DOH. Specific permit restrictions for construction activities are:

- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday.
- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels before 9:00 a.m. and after 6:00 p.m. on Saturday.
- No permit shall allow any construction activities that would emit noise in excess of the maximum permissible sound levels on Sundays and holidays.
- The use of pile drivers, hoe rams, jack hammers 25 lbs. or larger, high-pressure sprayers, and chain saws may be restricted to 9:00 a.m. to 5:30 p.m., Monday through Friday.

These permit restrictions, in conjunction with the discretion of the construction company; will mitigate noise levels during the construction period.

4.5 AIR QUALITY

Existing Conditions

Regional and local climate, together with the amount and type of activity generally determine the air quality of a given region. The air quality around the Site is generally excellent year-round. The prevailing northeasterly trade wind flow tends to push any human-made or natural air pollutants out to sea. The School is not a producer of noxious or toxic odors.

According to the EPA, there are no "non-attainment" areas on the island of O'ahu. A non-attainment area is defined as a locality where air pollution levels caused by anthropogenic sources persistently exceed National Ambient Air Quality Standards (NAAQS). Most of the existing airborne pollutants are attributed primarily to vehicle-generated exhaust from the region's roadways.

Potential Impacts and Mitigation Measures

No State or Federal air quality standards will be violated due to the School Improvements.

Short-term impacts that would result from the Improvements would be the emission of fugitive dust during site preparation and construction. An effective dust control plan will be implemented as necessary. All construction activities will comply with the provisions of Section 11-60.1-33, HAR related to Fugitive Dust. Measures to control dust during various phases of construction include:

- Providing an adequate water source at the site prior to start-up construction activities;
- Irrigating the construction site during periods of drought or high winds;
- Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Disturbing only the areas of construction that are in the immediate zone of construction 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 construction activities; and
- Installing dust screening in the areas of disturbance.

The contractor is expected to develop standard procedures should dirt be tracked onto any roadway, to prevent fugitive dust formation. Overall, air quality impacts will be temporary and limited to the duration of construction.

4.6 INRASTRUCTURE

4.6.1 Roadways and Traffic

Existing Conditions

ROADWAYS

Makiki Heights Drive – Makiki Heights Drive, a City and County of Honolulu paved roadway, is a two lane road with a posted speed limit of 25 miles per hour. The right-of-way measures 24 feet in width, with a 10 foot utility easement abutting Hālau Kū Māna Public Charter School. The Department of Transportation Services has designated Makiki Heights Drive as a future road widening project. The right-of-way is proposed to be increased from 24 feet to 56 feet wide. The

landscaped shoulder buffering Hālau Kū Māna Public Charter School from Makiki Heights Drive and the historical rock walls mark the proposed road widening location. A timeline for the implementation of this project is unknown.

DOFAW Makiki Access Road - DOFAW Makiki Access Road is a State-owned and maintained road and is the sole vehicular access for Hawai‘i Nature Center and DOFAW Makiki Baseyard facilities. It is a single lane paved road with a right-of-way width of 10 feet. The road connects to Makiki Heights Drive at the hairpin turn and provides vehicular access to Hālau Kū Māna’s upper driveway. The portion of this road from Makiki Heights Drive to the upper driveway is under Hālau Kū Māna lease where access is non-exclusive. Beyond the School’s entrance, the road is gated to restrict access to Makiki Valley State Recreation Area when it is closed. This road also serves as an easement for overhead utilities. The shoulder area abutting the School’s property serves as parking for park visitors. This limits the area for cars to pass causing occasional bottlenecks at the School’s northern entrance.

Traffic Conditions

Vehicle access to the Site is from Makiki Heights Drive via a paved upper driveway and an unpaved lower pickup area comprised of dirt and gravel. Traffic along Makiki Heights Drive in the vicinity of the Site is generally light with the exception of weekdays during peak morning and afternoon hours when a backlog of cars occurs at the entrance to Hanahau‘oli school in both directions.

Hālau Kū Māna provides a gravel turnaround area from Makiki Heights Drive that serves as the primary drop-off and pick-up area. The School staggers the drop-off and pick-up periods for the elementary and middle/high school students and provides a traffic monitor to keep a continuous flow of traffic. The School also does not allow vehicles to park or idle in the gravel turnaround.

Elementary drop-off period is between 7:15 and 8:00 am on weekday mornings and pick-up between 3:00 and 3:30 pm. Middle and High School drop-off period is between 8:00 and 8:30 am on weekday mornings and pick-up between 3:30 and 4:00 pm. The upper driveway along DOFAW Makiki Access Road is limited to only staff and visitors. Parents are prohibited from dropping-off or picking-up their student from this area.

Hālau Kū Māna Public Charter School also holds a bi-annual school wide student-family event known as Lā ‘Ohana. These events host approximately 250 people on-site on a Saturday morning. The School encourages families to carpool and coordinates alternative parking. The gravel turnaround and open areas south of the classroom trailers are used for overflow parking. Other events that occur at the Site include ‘ohana workdays, meetings, and graduation.

The Makiki Valley State Recreation Area amenities draw large number of vehicles and pedestrians to the area. It is not uncommon to observe an increase in vehicular traffic during the morning hours

between 7 and 10 am. Hawai‘i Nature Center also provides educational programs during school days between 9 am and 1 pm. About two busloads of students visit the Center five days a week.

Alternative transportation options to Hālau Kū Māna Public Charter School is limited. The City bus does not provide service on Makiki Heights Drive. The nearest bus stops are located near Punahou School near the intersection of Punahou Street and Nehoa Street and at the intersection of Wilder and Makiki Street. Hālau Kū Māna Public Charter School provides a school bus shuttle from Makiki District Park for students who use public transportation.

Parking for Hālau Kū Māna Public Charter School is on-site, with enough parking provided for all faculty and staff, as well as a limited number of visitor stalls.

Potential Impacts and Mitigation Measures

Traffic on Makiki Heights Drive in the vicinity of the Site is minimal and is not expected to increase as a result of the School Improvements due to the low enrollment.

Construction of the School Improvements will not cause unnecessary road closures along Makiki Heights Drive. Upon completion of construction, traffic is anticipated to be reduced to pre-development levels. Heavy equipment, construction and contractor vehicles are anticipated to enter via the School’s upper driveway. This will cause some traffic congestion leading to Hawai‘i Nature Center and the DOFAW Base Yard. The School plans to mitigate these impacts by restricting construction delivery during off-peak hours and by communicating a construction schedule with surrounding neighbors. Hālau Kū Māna and its contractors will: 1) implement approved Best Management Practices as needed along Makiki Heights Drive once construction commences; and 2) correct any deficiencies/damages within Makiki Heights Drive right-of-way caused by construction of the school improvements.

Although the lower driveway/turn around area is proposed to be paved, change in traffic flow is only anticipated during peak am and pm hours when traffic will be redirected to the upper driveway during construction. To the extent possible, work will be scheduled during summer time or other breaks to minimize inconvenience.

In the long-term, the School Improvements will not generate any additional trips during school hours as no change in student population is expected. Hālau Kū Māna Public Charter School will use on-site parking for all faculty and staff, as well as provide some visitor parking, in order to keep street parking available for those going to the Hawai‘i Nature Center and to decrease any inconvenience to surrounding homes and motorists. All parking will be in compliance with the Americans with Disabilities Act (ADA).

4.6.2 Water System

Existing Conditions

Potable water is supplied by the Honolulu Board of Water Supply (BWS), which draws water from a network of groundwater wells. An existing 8-inch water line runs along Makiki Heights Road and DOFAW Makiki Access Road.

The Site is supplied by a 6-inch lateral line connection located at the intersection of Makiki Heights Drive and DOFAW access road. The 6-inch lateral line distributes water to the school and an existing fire hydrant. A ¾-inch line connection provides water for school use including the existing restroom trailer, multiple hose bibs, and an outdoor shower. A 6-inch line supplies water to the fire hydrant.

Potential Impacts and Mitigation Measures

The existing 6-inch lateral line will continue to provide service for the school. The ¾-inch line will be upsized to a 1-inch line to adequately service the various school uses. All improvements will be provided through underground conveyances.

The school population is not expected to change; therefore, an increase in the average daily demand is not anticipated. However, the increase in connected fixtures proposed for the new facilities will increase the maximum water demand from 39 to 80 gallons per day (gpd). The water systems will include adequate flow to meet a fire flow demand of 572 gpm. Low-flow, water saving devices will be installed in the restroom to minimize water demand.

Ownership and maintenance of the existing fire hydrant is unknown. A flow test with the owner will be required to determine whether the fire hydrant has adequate capacity to service the Site. An additional fire hydrant may be required to meet current Federal rules and regulations.

4.6.3 Wastewater

Existing Conditions

The Hālau Kū Māna Public Charter School is serviced by a restroom trailer. Waste is collected in an above ground storage tank, removed from the site by truck and disposed of at a sanitary facility. The current facility does not meet DOH sanitation and wastewater requirements.

A 6-inch sewer line is located in Makiki Heights Drive. However, it terminates approximately 2,000 feet from the Site. The sewer line in Makiki Heights Drive delivers wastewater to the Sand Island Wastewater Treatment Plant. Nearby residential properties and State Parks facilities are served by individual on-site wastewater facilities.

Hālau Kū Māna Public Charter School is also located in the Critical Wastewater Disposal Area and the No Pass Zone. The Critical Wastewater Disposal Area (CWDA) designation is applied to

areas where the disposal of wastewater has or may cause adverse effects on human health or the environment due to existing hydrogeological conditions such as high water table, impermeable soil or rock formation, steep terrain, flood zone, protection of coastal waters and inland service waters, high rate of cesspool failures, or protection of groundwater resources. The Hawai‘i Department of Health may impose more stringent standards on wastewater disposal in the CWDA (Hawai‘i Administrative Rules, 2004). The No Pass Zone designation refers to areas in which the installation of waste disposal facilities, which may contaminate groundwater resources, are prohibited (City and County of Honolulu, 2004).

Potential Impacts and Mitigation Measures

Wastewater from the school's uses will be managed to protect human health and the environment, and Hālau Kū Māna will not rely upon or burden any public wastewater facilities.

The School will construct an individual wastewater system (IWS) to replace the existing restroom trailer. The proposed IWS will be an on-site aerobic tank unit with effluent discharge to a sub-surface irrigation system. The proposed system provides both primary and secondary treatment of the effluent. The aerobic tank unit is a multi-chamber unit that combines oxygen with liquid effluent to create a highly oxygenated environment for bacteria breakdown. Unlike traditional septic tanks, aerobic tank units continuously mix liquids and solids through various chambers to prevent scum from settling at the bottom of a tank. This process allows for the effluent to be of a higher quality reducing the area required for a discharge system. Upon treatment in the aerobic system, the resulting water should be of a quality to dispose in absorption beds in the ground or used for sub-surface irrigation of non-edible plants.

The proposed wastewater system is designed to meet the State of Hawai‘i, Department of Health Chapter 11-62 Table 1 requirements for a day school establishment without provisions for a gym, cafeteria, or shower facilities. The system will be designed to meet a 2,200 gallon per day demand. This will require the need for four 600 gallon tanks and an approximate area of 3,000 gross square feet for effluent discharge. School events which anticipate greater site occupancy will require renting additional temporary restroom facilities.

4.6.4 Drainage

Existing Conditions

Currently, there is no storm drainage system in place at the site or in adjacent Makiki Heights Drive. The nearest City and County storm water inlet is located near Archie Baker Mini Park.

Existing site vegetation preserves the natural drainage patterns and helps to reduce storm water runoff to the adjacent stream. However, during heavy rain periods, runoff from Makiki Heights Drive and the internal campus driveway sheet flows on the Site causing ponding. Runoff from Makiki Heights Drive washes away the existing gravel turnaround near the south entrance on an

annual basis. Runoff from the internal campus road causes ponding in the main open gathering area. Storm water runoff that does not infiltrate into the soil continues to sheet flow to Makiki Stream.

Potential Impacts and Mitigation Measures

Proposed impervious surfaces, such as rooftops have the potential to change the Site's drainage patterns. Low-impact development (LID) strategies will be used to maintain or improve the existing storm peak flows and storm water quality. New surfaces, such as the vehicle turnaround and parking lot, will be constructed with permeable paving to allow storm water to infiltrate through the pavement. Rain gardens, grass or vegetated swales will be added adjacent to existing impervious surfaces and open downspouts to capture and treat runoff. The use of a rainwater harvesting system will be explored to capture storm water from the new and existing trailer roofs. The existing natural vegetation along the stream edge will be maintained to continue to act as a bio filter.

4.6.5 Solid Waste Disposal

Existing Conditions

The School employs responsible waste management practices by separating solid waste, recyclables, food and green waste. Trash receptacles, separating solids and recyclables, are located in all of the classrooms and in the main gathering area. A single 10 cubic yard dumpster collects all of the solid waste and is collected weekly by a private disposal company. Recyclables are independently taken to local recycle and redemption centers. The School composts green waste and collects food waste for use at local piggeries. Hālau Kū Māna employs natural farming techniques in their gardens and green cleaning products for use in their classroom and restroom facilities.

Potential Impacts and Mitigation Measures

Solid waste generated at the Site during construction will increase over current conditions. Waste is expected to include materials from renovation and demolition, construction, and grading activities. Therefore low impact development and construction practices are expected to be implemented in an effort to divert materials that can be reused or recycled away from the landfill as well as minimize the amount of waste generated. Every effort will be made to reduce the waste generated during the construction phase and when possible materials and structures will be reused and or recycled.

In the long-term solid waste generation is not expected to increase because there will be no substantive change in enrollment. A centralized dumpster and recyclable collection area will be provided to consolidate waste management activities. The School will continue to employ composting techniques in their gardens.

4.6.6 Electrical and Communication Systems

Existing Conditions

An electrical easement located on the DOFAW Makiki Access Road provides overhead access for HECO and Hawaiian Telcom. An overhead pole located near the center of the Site provides 120/240V 1-phase service to the campus. Power is then distributed through weatherproof conduit located below the existing elevated walkway system. No other power distribution is provided on-site. Electrical panels distribute power through weatherproof conduit located below the existing elevated walkway system. Overhead power from the on-site pole provides electrical power. No other power distribution is provided on-site.

Hawaiian Telcom phone service is provided via the on-site pole. Overhead lines to localized masts provide phone communication to the trailers.

Internet service is provided by Oceanic Time Warner Cable. Primary service is provided to existing centralized Trailer where it connects to a firewall device. A single Cat5e cable, housed in weatherproof conduit located below the existing elevated walkway system, then distributes communication to other trailers. A wireless infrastructure is provided throughout the campus to service localized computers and the Administration Trailer. The School is also in the final stages of installing fiber optics throughout the Site.

Potential Impacts and Mitigation Measures

The proposed electrical and communication systems will be developed in accordance with the specifications and standards of HECO, Hawaiian Telcom, and Oceanic Time Warner Cable.

The current 120/240V 1-phase electrical service will need to increase by 100 amps to support the increased demand. Electrical service will be provided to support the existing and new trailers and structures, and existing canopy tent. Improvements to off-site infrastructure are not anticipated at this time. The only anticipated upgrade is to the existing on-site pole transformer.

Measures for energy efficiency will be implemented as part of the School Improvements to reduce the maximum electrical load and energy consumption. Solar power as well as a photovoltaic system is being considered for the Site if the budget can accommodate. If a photovoltaic system is installed, it will be accessory to the school in that it will provide power for the school's use and not serve as a power generation facility for off-site uses.

4.7 SOCIO-ECONOMIC CHARACTERISTICES

4.7.1 Population

Existing Conditions

The U.S. Census reported that the population of O‘ahu was 953,207 in 2010. The overall population increased by approximately 9% between 2000 and 2010 according to the U.S. Census 2010.

The Site is located within the U.S. Census Bureau’s Honolulu Census Designated Place (Urban Honolulu CDP). In 2010, the population was 337,256 of which 17.4% were 17 years old or younger. The average household size was 2.53 people.

Enrollment at Hālau Kū Māna was 121 students as of December 2013. The School services students in grades 4 through 12. There are 13 teachers and 5 administration staff and faculty members.

The majority of Hālau Kū Māna students are native Hawaiian and live in the communities of Maunalaha and Papakolea. The school is centrally located between these two communities. Papakolea is designated Hawaiian Home Lands with a native Hawaiian population of 1,215 of which 26.3 percent are 17 years old or younger (U.S. Census Bureau, 2010). There are 256 households with average household size of 4.8.

Potential Impacts and Mitigation Measures

The School Improvements will not increase area population and will not create additional strain on other area facilities. The construction itself will improve the school’s facilities in an effort to meet the needs of the existing school population.

4.7.2 Economy

Existing Conditions

The Site is located within the Urban Honolulu Census Designated Place (CDP). Honolulu is O‘ahu’s primary employment center and the center for many commercial, industrial, transportation and government functions essential to the entire State of Hawai‘i.

Potential Impacts and Mitigation Measures

In the long term the School Improvements will not affect the economy within the Urban Honolulu CDP. The construction will improve the school’s facilities in an effort to meet the needs of the existing school population. The construction itself will stimulate the purchase of materials (generating excise tax revenues) and employment for labor (generating income tax revenues).

4.8 PUBLIC SERVICES AND FACILITIES

4.8.1 Schools

Existing Conditions

Public school education is under the direct supervision of the Hawai‘i State Department of Education (DOE). Charter schools, such as Hālau Kū Māna, are public schools that are operated and managed by independent governing boards (Papa Kū Māna for Hālau Kū Māna), along with a performance contract between the schools and the State Public Charter School Commission (SPCSC). Charter Schools are funded on a "per-pupil" basis, separately from Department of Education-operated schools, but are open-enrollment public schools that serve all students and do not charge tuition. Charter schools are unique due to their independent governing boards, which gives administrators of charter schools greater flexibility in their curriculum and school practices. Hālau Kū Māna Public Charter School is one of seventeen Hawaiian-focused charter schools in the state. These schools share a common focus: instruction and learning and founded upon the values, norms, knowledge, practices, beliefs, and language of the Native Hawaiian culture (Community Education Services: Kamehameha Schools, 2012).

The school site is located within the DOE's Kaimukī-McKinley-Roosevelt Complex. The community is served by Lincoln Elementary, Stevenson Middle, and Hālau Kū Māna Public Charter School. High school students are served by Roosevelt High School and Hālau Kū Māna Charter School. The official enrollment count for the 2013-2014 school year was: 362 students at Lincoln Elementary, 653 students at Stevenson Middle School, 121 at Hālau Kū Māna Public Charter School, and 1,416 students at Roosevelt High School (State of Hawai‘i Department of Education, 2013).

There are a number of private schools in the vicinity of the Site including Hanahau‘oli School (K-6), Maryknoll School (K-12), and Punahou School (K-12).

Potential Impacts and Mitigation Measures

Hālau Kū Māna Public Charter School has been in the Kaimukī-McKinley-Roosevelt Complex since 2000 and in its current location since 2006. The improvements to the school will have positive benefits including addressing health and safety requirements, providing adequate facilities to support the school's educational programs, and improving the overall learning environment for students. The School Improvements at Hālau Kū Māna will not significantly impact educational programs or student enrollment at other public or private institutions. No mitigation measures are proposed.

4.8.2 Police, Fire and Medical Services

Existing Conditions

Police Protection

Hālau Kū Māna Public Charter School is located within the Honolulu Police Department's (HPD) District 1, Sector 2 (Upper Makiki, Lower Punchbowl, Tantalus). The nearest police sub-station to the project site is the Alapai Police Headquarters. In addition to the patrol district, HPD has investigative units focused on criminal, narcotics, traffic, and scientific investigation. The HPD also has a number of community policing initiatives including neighborhood security watches and children's programs.

Fire Protection

The Honolulu Fire Department is divided into three platoons that are further divided into battalions which are in turn divided into companies. Fire Company 3 is located in Makiki, approximately 0.7 miles from the project site. Currently, there are two vehicular access points in and out of Hālau Kū Māna Public Charter School. The school is serviced by private fire hydrants.

Medical Services

The nearest Emergency Room and hospital facility is located at Kapi'olani Medical Center for Women and Children, approximately 1 mile from the Site. Kapi'olani Medical Center has 207 beds and 66 bassinets.

Queen's Medical Center is located further away from the Site and is the largest private hospital in Hawai'i with 505 acute care beds and 28 sub-acute beds.

Potential Impacts and Mitigation Measures

The Hālau Kū Māna Public Charter School Improvements are not anticipated to have any adverse effects on crime or police operations in the area. In their letter dated April 10, 2014, HPD provided recommendations to improve pedestrian safety including installing school zone signs in the vicinity and a crosswalk at the intersection of Makiki Street and Makiki Heights Drive. As part of the school improvements, a walking path from the Board of Water Supply pump station will be incorporated into the Site and connect with the existing public trails that pass through the site to improve pedestrian safety. The walking path will be located between the strip of land between Makiki Heights Drive and the top of bank of Makiki Stream. In addition, Hālau Kū Māna will continue to collaborate with surrounding neighbors and stakeholders to provide additional pedestrian safety measures in the area, including a crosswalk and school zone signs.

The Honolulu Fire Department (HFD) requires access roads to extend at least 50 feet from the exterior wall of buildings. A fire hydrant will be installed near the school entrance as part of the

school improvements. In addition, an adequate water supply capable of supplying the required water flow for fire protection is required.

A significant increase in demand for medical services is not expected with the School Improvements.

4.8.3 Recreational Facilities

Existing Conditions

Hālau Kū Māna Public Charter School is located in the Makiki Valley State Recreational Area, a forested, mountainous area that provides the public access to wilderness within urban Honolulu.

Nā Ala Hele hiking trails are a primary recreational activity located in the State Recreational Area. Nā Ala Hele is the State of Hawai‘i Trail and Access Program. The goal of this branch of the Department of Land and Natural Resources is to preserve the state-sanctioned trails, provide access to facilities on DLNR land, and manage regulatory issues due to public and commercial recreational activities. Nā Ala Hele maintains 40 public trails on O‘ahu, with ten of them located in or near to the Makiki Valley State Recreational Area. The trails that can be found in a two-mile radius of Hālau Kū Māna Public Charter School are: Maunalaha trail, ‘Ualaka‘a trail, Kanealole trail, Tantalus Arboretum trail, Makiki Valley trail, Moleka trail, Kalawahine trail, Pu‘u Ohia trail, and Mānoa Cliff trail. Two of these trails, Kanealole and Maunalaha, start at the Makiki Forest Recreation Area, just north of the Hālau Kū Māna Public Charter School. A hiker parking area is provided by the State near the trailhead. The spatial relationship between these two trails can be seen in Figure 13, which details Kanealole and Maunalaha.

The Nā Ala Hele trails described above are found within the Forest Reserve. The Forest Reserve System was created in 1903 to protect the upland forests and the water resources associated with the forests. Managed by the Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW), the system focuses on protecting, managing, restoring, and monitoring the natural resources found within the Forest Reserves. In addition, Forest Reserves provide safe areas for recreation and approved hunting, endangered species habitat protection, and are home to important cultural resources. The public can enjoy the Forest Reserves so long as it is done respectfully and safely. The Hālau Kū Māna Public Charter School is also located within this Forest Reserve, and is required by lease agreement to operate in accordance with the aforementioned public use criteria.

The School’s lease area is also adjacent to Archie Baker Mini Park, which is owned and operated by the City and County of Honolulu. Approximately half a mile south of Hālau Kū Māna Charter School is Makiki District Park, which has ball fields, a swimming pool, and a playground. Additionally, there are numerous community parks in the area surrounding Hālau Kū Māna Public Charter School.

Potential Impacts and Mitigation Measures

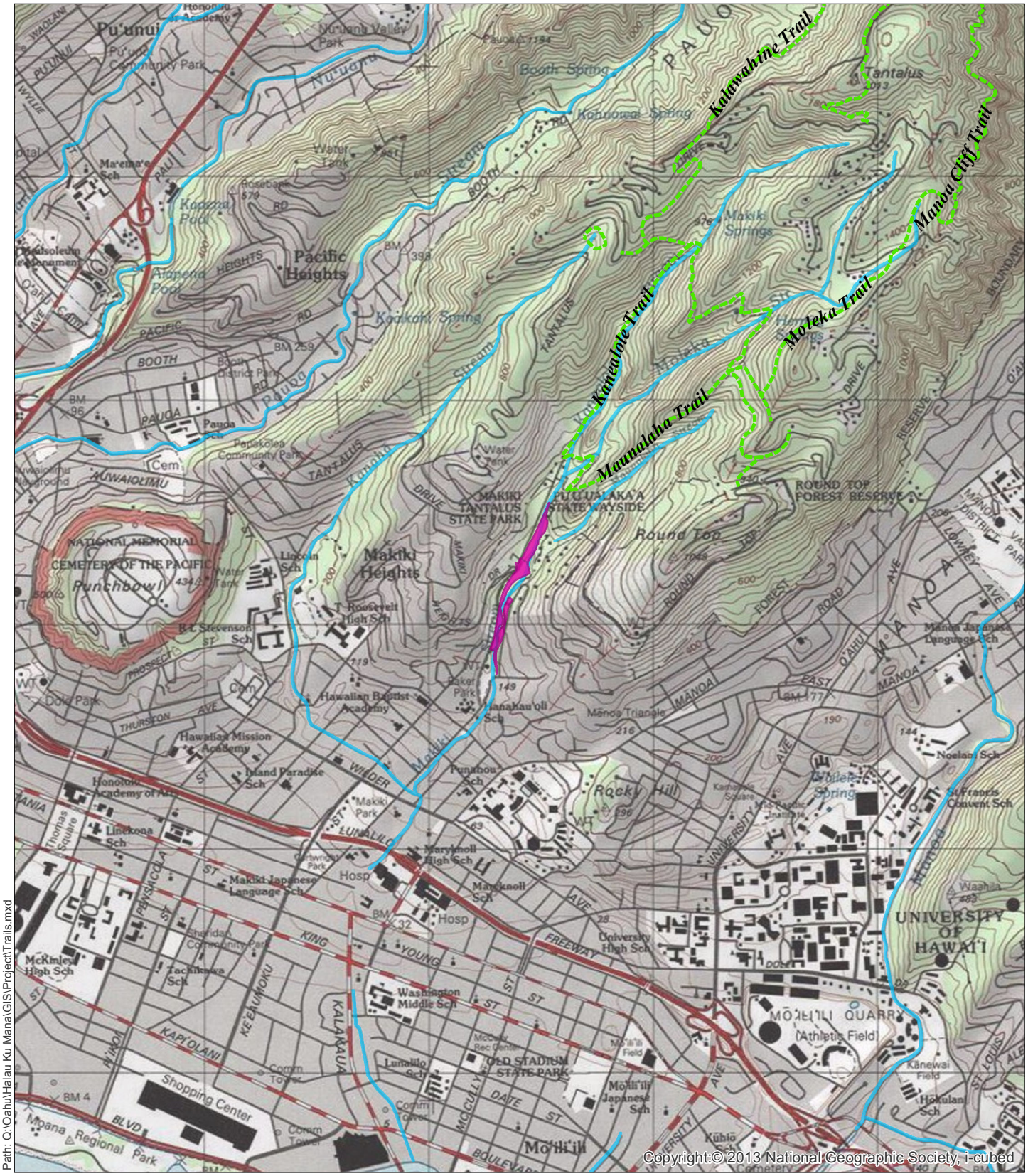
The Hālau Kū Māna Public Charter School site is not expected to negatively impact recreational facilities in the Makiki area. Though located in a small area of the Forest Reserve, Hālau Kū Māna Public Charter School is mindful of their location and the responsibilities attached to operating in that location. The school is an active community service participant, preserving the natural beauty and respect of the land in a traditional Hawaiian manner.

There are no Na Ala Hele trails within the School Site and the school use does not restrict access to any Na Ala Hele trails. Further, the School does not utilize the nearby parking areas that are provided by the State for use by hikers.

By lease agreement, a portion of the School Site is set aside exclusively for school use. For the safety of the students, the public is not permitted in the exclusive school use area. Prior to the School leasing the site, this portion of the State Recreation Area was overgrown and an attractive nuisance where illicit activity and illegal dumping occurred. The site was cleared of vegetation and rubbish and transformed by Hālau Kū Māna into a well-manicured environment of native plants and gardens that provides outdoor leaning space for the students. The school's presence has helped to clear away years of overgrowth and trash, prevent acts of vandalism, illegal dumping, and loitering. The public is permitted to use the area surrounding the school for recreation or other related activities. As such, the Hālau Kū Māna Public Charter School site plan includes walking and hiking paths, a pavilion near the loi and a kiosk near the rain shelter to assist the public with locating trails.

The School's presence does not impact use of the adjacent Archie Baker mini-park, as the school's lease area adjacent to the neighborhood park is forested and not used – or proposed to be used for school development. This forested area serves as a vegetative buffer to the neighborhood park.

In sum, despite a portion of the School Site being an exclusive use area, the school's impact to recreational resources is a net benefit to recreational resources as a result of site clean-up and proposed improvements in the public use areas.



PDF - Q:\Oahu\Halau Ku Mana\PDF\Figure 13 Trails
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DATE: 1/10/2014

LEGEND

- Site
- Streams
- Na Ala Hele Trail

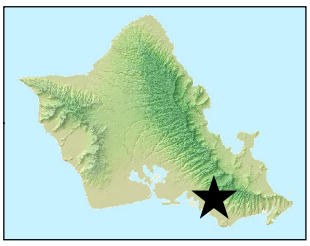

FIGURE 13:
Trails

Hālau Kū Māna Public Charter School Improvements

Māna Maoli North

Island of O'ahu

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

PBR HAWAII & ASSOCIATES, INC.

Source: ESRI ArcGIS Online and data partners including USGS and © 2007 National Geographic Society; Na Ala Hele (2013)

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

5 LAND USE CONFORMANCE

The processing of various permits and approvals are prerequisites to the creation of the project. Relevant State of Hawai‘i and City & County of Honolulu land use plans, policies, and ordinances are described below.

5.1 STATE OF HAWAI‘I

5.1.1 State Environmental Review Law (Chapter 343, Hawai‘i Revised Statutes)

The State Environmental Review Law (Chapter 343, Hawai‘i Revised Statutes (HRS)) (State of Hawai‘i, 2001) requires an environmental assessment for any action that proposes the use of State or County lands or when the land is classified as a conservation district by the state land use commission, as described in Chapter 205 (State of Hawai‘i, 2001). This Environmental Assessment has been prepared in compliance with Chapters 205 and 343, HRS as Hālau Kū Māna Public Charter School lies in the Conservation District and requires the use of State lands.

5.1.2 State Land Use Law (Chapter 205, Hawai‘i Revised Statutes)

The State Land Use Law (Chapter 205, HRS) establishes the State Land Use Commission and authorizes this body to designate all lands in the State into one of four districts: Urban, Rural, Agricultural, or Conservation. Hālau Kū Māna Public Charter School is located within the State Conservation District, Resource Subzone (Figure 6).

As stated in Chapter 205-2 (e), HRS, “Conservation districts shall include areas necessary for protecting watersheds and water sources; preserving scenic and historic areas; providing park lands, wilderness, and beach reserves; conserving indigenous or endemic plants, fish, and wildlife, including those which are threatened or endangered; preventing floods and soil erosion; forestry; open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources; areas of value for recreational purposes; other related activities; and other permitted uses not detrimental to a multiple use conservation concept.”

The objective of the Resource Subzone as stated in Chapter 13-5-13, HAR, “is to ensure sustainable use of the natural resources of those areas.” Permitted land uses in the Resource Subzone applicable to the Hālau Kū Māna School Improvements include, but are not limited to, the following:

- Public purpose uses (Section 13-5-22, P-6)
- Signs (Section 13-5-22, P-8)
- Structures, Existing (Section 13-5-22, P-9)
- Structures, Accessory (Section 13-5-22, P-10)

- Tree Removal (Section 13-5-22, P-12)
- Agriculture (Section 13-5-23, L-1)
- Landscaping, Removal of noxious plants (Section 13-5-24, R-5)

Discussion: Hālau Kū Māna Public Charter School is a community, culture, and environment-based place of learning. The School has been located at the Site since 2006 operating under a 30-year lease agreement with the State Department of Land and Natural Resources. A very mutual and symbiotic relationship has been fostered for years between the School and the Makiki Valley Site under conservation.

The Makiki Valley location has provided the school with a place to grow and develop their programs in collaboration with Start Parks, Hawai‘i Nature Center, and the surrounding communities. The once under-utilized park land was overgrown and an attractive nuisance where illicit activity and illegal dumping occurred. The site was cleared of vegetation and rubbish and transformed by Hālau Kū Māna into a well-manicured environment of native plants and gardens that now provides a safe outdoor leaning space for students. The school's presence has helped to clear away years of overgrowth and trash, prevent acts of vandalism, illegal dumping, and loitering. The school provides active management and stewardship of the land under conservation.

The purpose of the School Improvements is to: 1) provide adequate educational facilities for the existing student population; and 2) comply with environmental regulations for new and existing facilities. The School Improvements will allow Hālau Kū Māna to continue to operate at the Site by providing much needed support facilities and in turn Hālau Kū Māna will continue to fulfill its mission to *Ho‘okumu* (Build grounding and foundation), *Ho‘okele* (Forge direction and connections), *Ho‘omāna* (Provide sustenance and empowerment) while also fulfilling the objective of the Conservation District, Resource Subzone which is to ensure sustainable use of the natural resources of those areas.

5.1.3 Hawai‘i Coastal Zone Management Program, Chapter 205A, Hawai‘i Revised Statutes

The entire state of Hawai‘i is defined as being within the Coastal Zone Management Area (State of Hawai‘i, 2001), which are: "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 United States territorial sea." (State of Hawai‘i, 2001)

The relevant objectives and policies of the Hawai‘i Coastal Zone Management (CZM) Program, along with a detailed discussion of how Hālau Kū Māna Public Charter School Improvements conform with these objectives and policies, is discussed below.

Recreational Resources

Objective*: Provide coastal recreational opportunities accessible to the public.*

Policies

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

(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;

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

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

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

(v) Ensuring public recreational 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;

(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;

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

(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;

Discussion: The Hālau Kū Māna Public Charter School Improvements is not a coastal development, is not located on the coastline, and is not in the SMA; therefore, policies regarding shoreline recreation resources are not applicable; however to protect marine resources for purposes including recreation, the State of Hawai‘i has adopted water quality standards. Generally, these standards will require the submittal and adherence to a National Pollution Discharge Elimination System (NPDES) permit. This permit requires compliance with best management practices during construction to minimize soil erosion into adjacent waterways. The NPDES permit will also

include requirements to maintain water quality during operation. If soil disturbance exceeds an acre in area, an NPDES permit will be required for the School Improvements.

Historic Resources

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

Policies

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources;

Discussion: The School Improvements will not adversely affect historic resources. The archaeological inventory survey recommends no further work for all five sites considered to be significant based on Hawai‘i Register Criterion D. The sites have undergone data recovery investigations therefore no further work is needed at these sites. In addition, destruction, alteration or removal of the archaeological sites is not proposed with the improvements to Hālau Kū Māna Public Charter School.

Scenic and Open Space Resources

Objective*: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.*

Policies

(A) Identify valued scenic resources in the coastal zone management area;

(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

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

(D) Encourage those developments that are not coastal dependent to locate in inland areas;

Discussion: The Hālau Kū Māna Public Charter School Improvements will be located inland, away from the shoreline; therefore, it is anticipated that there will be no direct effect on the quality of the coastal scenic resources.

Coastal Ecosystems

Objective: *Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*

Policies

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

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

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

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

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

Discussion: Makiki Stream traverses the Site and empties into the Pacific Ocean. Without mitigation, eventual discharge of storm water runoff into marine waters is likely to occur due to the Site's proximity to Makiki Stream.

Low-impact development (LID) storm water management strategies will be used post construction to maintain and restore the natural hydrologic functions of the site. This combination of low-impact development techniques will mitigate against the potential primary and secondary effects of storm water in the built environment.

Economic Uses

Objective: *Provide public or private facilities and improvements important to the State's economy in suitable locations.*

Policies

(A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent 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

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

such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

(iii)The development is important to the State's economy.

Discussion: The Hālau Kū Māna Public Charter School Improvements is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

Coastal Hazards

Objective: *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 non-point source pollution hazards;

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and non-point source pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

(D) Prevent coastal flooding from inland projects.

Discussion: The School sits far inland from the coastline and will not exacerbate any coastal hazards. The site is located outside of mapped tsunami and flood hazard areas and no adverse effects during tsunami, flood or storm wave events are anticipated. Makiki Stream traverses the Site and empties into the Pacific Ocean. To minimize/eliminate the Park's contribution to the region's cumulative nonpoint source pollution and storm water runoff volumes, low-impact development (LID) storm water management strategies will be used post construction to maintain and restore the natural hydrologic functions of the site. Through use of a combination of low-impact development techniques mitigation will be provided against the potential primary and secondary effects of storm water in the built environment.

Managing Development

Objective: *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;

(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: The Hālau Kū Māna Public Charter School Improvements are not a coastal development, is not located on the coastline, and is not in the SMA; however, Hālau Kū Māna has worked closely with its neighbors through the course of planning the Improvements.

Pre-consultation comments were obtained and are reproduced in Appendix A. In addition, this EA discusses potential impacts and mitigation measures of the Hālau Kū Māna Public Charter School Improvements and provides an opportunity for input.

Public Participation

Objective: *Stimulate public awareness, education, and participation in coastal management.*

Policies

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

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

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

Discussion: Hālau Kū Māna Public Charter School supports and engages students and community in environmental stewardship, culture-based learning, and mālama ʻāina. The School Improvements will allow Hālau Kū Māna to continue to foster these practices as it relates to public participation and coastal management issues.

Hālau Kū Māna has worked closely with its neighbors through the course of planning the proposed Improvements. A listing of individuals, organizations, and agencies consulted during the EA process is included in Appendix A as well as any comments received. In addition, this EA discusses

potential impacts and mitigation measures of the School Improvements and provides an opportunity for input.

Beach Protection

Objective: *Protect beaches for public use and recreation.*

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

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

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

Discussion: The Hālau Kū Māna Public Charter School Improvements is not a coastal dependent development, is not located on the coastline, and is not in the SMA; therefore, these policies are not applicable.

Marine Resources

Objective: *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;

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

(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;

(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

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

Discussion: Hālau Kū Māna Public Charter School supports and engages students and community in environmental stewardship, culture-based learning, and mālama ʻāina. The School

Improvements will allow Hālau Kū Māna to continue to foster these practices as it relates to marine resources and coastal management issues.

Low-impact development (LID) storm water management strategies will be used post construction to maintain and restore the natural hydrologic functions of the site. Low-impact development techniques along with secondary treatment of effluent will mitigate against the potential primary and secondary effects of storm water and groundwater pollution in the built environment.

5.1.4 Hawai‘i State Plan

The Hawai‘i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. Objectives and policies pertinent to the proposed project are as follows:

HRS § 226-18: Objectives and policies for socio-cultural advancement – health.

Objective: *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.
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.

Policies:

(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.

Discussion: The School Improvements will include the removal of a temporary restroom trailer and installation of a permanent wastewater system. This will improve the conditions of the school by removing the noncompliant restroom trailer that may affect environmental health.

HRS § 226-21: Objectives and policies for socio-cultural advancement – education.

Objective: *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.*

Policies:

(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.

Discussion: The Hālau Kū Māna Public Charter School Improvements will provide educational and recreational opportunities for Honolulu residents to enable them to fulfill their needs, responsibilities, and aspirations. The School Improvements will support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits. It is designed to provide an adequate and accessible educational facility to meet individual and community needs.

5.2 CITY AND COUNTY OF HONOLULU

County-specific land use plans and ordinances pertaining to the Project include the O‘ahu General Plan, Central O‘ahu Sustainable Community Plan and Land Use Ordinances.

5.2.1 The O‘ahu General Plan

The O‘ahu General Plan is a statement of long-range social, economic, environmental, and design objectives for the general welfare and prosperity of the people of O‘ahu. The General Plan is also a statement of broad policies which facilitate the accomplishing of the objectives of the Plan. The General Plan is currently in the process of being updated, however, during this process the adopted plan remains in effect. Applicable General Plan objectives and policies relating to the Hālau Kū Māna Public Charter School Improvements include a section pertaining to health and education that relates to the proposed Improvements:

***Section IX**- Health and Education*

***Objective:** (B) To provide a wide range of educational opportunities for the people of O‘ahu.*

Policies:

(1) Support education programs that encourage the development of employable skills.
(3) Encourage the after-hours use of school buildings, grounds and facilities
(4) Encourage the construction of school facilities that are designed for flexibility and high levels of use.
(5) Facilitate the appropriate location of learning institutions from the preschool through the university levels.

Discussion: The School Improvements are consistent with the City and County of Honolulu General Plan Section IX, Objective B. Existing school programming allows for use of facilities after hours for various programs and activities. The new spaces are designed to allow for flexible uses. These facilities are designed to support educational programs that will develop skills necessary for employment in a technologically advanced society.

5.2.2 Primary Urban Center Development Plan

The second tier of the City and County's system of planning objectives, policies, guidelines, and regulations are the regionally-based Development Plans. These Development Plans are designed to be general frameworks to be used as a base for more detailed planning at the neighborhood level and provides policies for topics concerning all communities: increasing the prosperity of our City and the livability of neighborhoods in harmonious conjunction with our natural surroundings. The Primary Urban Center (PUC) Development Plan was designed to provide a guide for balanced private and public sector development that is consistent with the O'ahu General Plan and works towards future growth in residential population and jobs located in the PUC area.

The PUC encompasses Honolulu and Pearl City in the west and Waialae-Kalaha in the east. Mamala Bay and Pearl Harbor create the southern border, while the Ko'olau Mountain Range makes up the northern border. This area is a bustling metropolis with half of O'ahu's population and three-quarters of O'ahu's jobs, making the livability and appropriate growth of the PUC crucial. Policies listed in the PUC Development Plan that are applicable to Hālau Kū Māna Public Charter School include:

Policy (PUC 3.1.2): *Develop stream greenbelts: Develop and maintain greenbelts and pathways along streams, especially those running from the mountains to the sea through central Honolulu, as visual and physical linkages between mauka and makai open spaces.*

Policy (PUC 3.1.3.2): *Maintain public access points and hiking trails on the slopes of the Ko'olau Range in the areas beyond the Urban Community Boundary, and improve amenities for hiking, camping, and nature study.*

Discussion: Hālau Kū Māna Public Charter School is located within the Makiki Valley State Recreation Area. Nestled at the base of the Ko'olau Mountain Range, Hālau Kū Māna Public Charter School is near numerous hiking trails and contributes to providing access by keeping area clear, clean and safe. Public trails that pass through the site will continue to be open, allowing linear access for the public to experience the *ahupua'a*, and its natural, cultural and historic features, including the Makiki Stream corridor.

Policy (PUC 3.3.2): *Provide adequate parks and schools for in-town neighborhoods: Community parks and recreation facilities should be provided in and near residential neighborhoods. To attract young families, access to elementary schools must be assured.*

Policy (PUC 4.7.2): *Support the development of a high quality educational system of schools and post-secondary institutions that increase the attractiveness of the Primary Urban Center as a place to live and work.*

Discussion: Hālau Kū Māna Public Charter School, while one of many schools in the Kaimukī-McKinley-Roosevelt School District, it is unique from others because of the importance it places

on Native Hawaiian-related learning. The school, which serves grades 4-12, teaches students using Hawaiian values, cultural practices, and language. Many of the students at Hālau Kū Māna Public Charter School are Native Hawaiian and live in the nearby communities of Maunalaha and Papakōlea. Both neighborhoods lie within a two mile radius of Hālau Kū Māna Public Charter School, making schooling more comfortable and accessible to these students.

5.2.3 City and County of Honolulu Land Use Ordinance

The Land Use Ordinance (LUO) regulates land use to encourage orderly development in accordance with the General Plan and Sustainable Communities Plans and works to protect public health, safety, and welfare. The document establishes zoning, permitted uses, and development standards within the zoning districts. It also regulates development in special districts such as the Flood Hazard District. All lands within the City and County of Honolulu are zoned into specific districts. According to the DPP, the Site is zoned P-1 (Restricted Preservation District), P-2 (General Preservation District), and R-10 (Residential District). Though there are three different zones, all of the School Improvements are situated on P-1 zoned land. The state has imposed development restrictions on lands within this designation in order to conserve, protect, or preserve the important natural resources of the islands.

5.2.4 Special Management Area

The Site is not located within the Special Management Area (SMA).

5.3 APPROVALS AND PERMITS

A listing of permits and approvals required for the Project is presented below:

Table 1: Approvals and Permits

Permit/Approval	Responsible Agency
Chapter 343, HRS Compliance	Office of Environmental Quality Control
Historic Preservation, Section 106	State Historic Preservation Division
Chapter 6E, HRS Compliance	
ADA Compliance	State Disability & Communication Access Board
National Pollutant Discharge Elimination System (NPDES) Permit (if over 1 ac. Land disturbance)	State Department of Health
Wastewater System	
Plan Approval	City and County of Honolulu, Department of Planning and Permitting
Grubbing, Grading and Stockpiling Permit	
Building Permits (including electrical, plumbing, civil and demolition)	

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6 ALTERNATIVES

This section identifies and evaluates a range of alternatives that could meet the purpose and need and possibly avoid, reduce, or minimize adverse environmental effects. The reference point to compare alternatives is the "no action" alternative.

6.1 NO ACTION ALTERNATIVE

The primary purpose for the Hālau Kū Māna Public Charter School Improvements is to provide more adequate educational facilities for the existing student population and establish compliance with environmental requirements for new and existing facilities. Under the "no action" alternative, no improvements to the infrastructure or facilities would be made. Hālau Kū Māna Public Charter School would continue to utilize facilities that are not in compliance with the Department of Health's rules regarding wastewater systems. Some of the school's existing facilities that are subject to the Chapter 343 environmental review process, will not have been evaluated.

With the "no action" alternative, no new facilities would be built and there would be no increase in energy demand and no increase in impervious surface area that could impact storm water quality or quantity. However, the need for facility improvements and environmental compliance would not be met, therefore this alternative has been rejected.

6.2 ALTERNATIVE SITES

Alternative sites within the existing school grounds and alternative sites on O'ahu were considered for the school and school improvements. There are other open areas within the Site that could accommodate the new educational facilities, but the lack of infrastructure as well as the long and narrow configuration of the Site would make the project infeasible in terms of cost and efficiency.

Alternative locations on O'ahu include other properties owned by the Department of Land and Natural Resources and the Department of Hawaiian Home Lands. Relocating the school was explored to find other possible locations that could meet the needs of the school. The majority of Hālau Kū Māna students live in the communities of Maunalaha and Papakolea. The current location was selected so that Hālau Kū Māna could serve its students within reasonable driving distance from their host communities of Maunalaha and Papakōlea. Because none of the alternative sites were within reasonable distance from the host communities, this alternative was rejected.

6.3 ALTERNATE SITE LAYOUTS

Several Site Plan layouts were developed for the School Improvements before the preferred alternative was selected. One alternative proposed locating an animal husbandry area *mauka* of the canopied tent, but after discussing the location with area residents, and hearing their concern about potential for sound or odor impacts, the proposed activity was removed from consideration. Site layouts that included a constructed wetland were also considered at length. The constructed

wetland concept was actively pursued as a means of an alternative wastewater facility and natural system for cleaning effluent prior to disposal. The site's narrow configuration and proximity to Makiki Stream made design of the constructed wetland that treats wastewater infeasible at this site.

7 FINDING AND DETERMINATION

To determine whether the implementation of the School Improvements may have a significant impact on the physical and human environment, all phases 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 (State Board of Land and Natural Resources) has issued a Finding of No Significant Impact (FONSI). The supporting rationale for this finding is presented in this chapter.

7.1 SIGNIFICANCE CRITERIA

The discussion below evaluates the significance of the Project's impacts based upon the Significance Criteria set forth in Hawai'i Administrative Rules section 11-200-12.

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

Discussion: The Site is an existing school within the Makiki Valley State Recreation Area. Due to the nature of the Site as a Recreation Area, all proposed buildings are of a temporary nature that can be removed from the site.

Environmental and cultural studies have been conducted in and around the Site. The School Improvements were designed to avoid the unnecessary destruction of flora; while some trees are being removed, they will be replaced with landscaping that supports cultural activities, specifically the restoration of a historic lo'i.

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

Discussion: The current use of the Site as a school will not change as a result of the School Improvements. The site will continue to be utilized as a school campus where students interact with the environment as part of curriculum. The School Improvements are not permanent buildings and can be removed to return the site to undeveloped, naturalistic state if needed. Additionally, visual resources, stream waters, and Nā Ala Hele trails will be preserved and available to the public for their enjoyment.

(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;

Discussion: The Environmental Policies enumerated in Chapter 344, HRS promote conservation of natural resources, and an enhanced quality of life for all citizens. The Project is not expected to significantly impact any natural resources and is expected to enhance the quality of life of for families with children attending Hālau Kū Māna Public Charter School by improving the

classroom buildings, creating walking paths to increase student safety, and enhancing the school curriculum.

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

Discussion: The Project is anticipated to have a beneficial impact on the social welfare of the community by improving the educational facilities at Hālau Kū Māna Public Charter School.

(5) Substantially affects public health;

Discussion: The Project's recreational facilities will promote exercise and a healthy lifestyle by creating safer walking paths to the school for students, a larger area for outdoor learning in the form of the loʻi and greenhouse, and an expanded sense of school space with the integration of the open space behind the permeable-surface vehicle turnaround. The project provides a wastewater system in accordance with DOH standards. Sustainability initiatives including use of LID, secondary treatment of wastewater and employment of a school-wide energy policy all contribute to the minimization of impacts to the public's health.

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

Discussion: The project will not result in a change in population and is not anticipated to generate or stimulate growth. The area is available for use by the community, with the exception of the school buildings themselves. Secondary impacts to infrastructure are minimized through provision of an on-site wastewater system that provides primary and secondary treatment, use of LID techniques for storm water, and photovoltaic panels to provide the school's power.

(7) Involves a substantial degradation of environmental quality;

Discussion: No environmental degradation is anticipated as a result of the Project. One of the primary purposes of this project is to upgrade the wastewater treatment system at Hālau Kū Māna Public Charter School, consisting of a septic tank, secondary aerobic treatment and subsurface irrigation. This is a two-step treatment process which uses a septic tank and a subsurface sand filter to properly treat the wastewater before it is distributed through the drip irrigation absorption system. In order to comply with all HAR standards, this system will be outside the 50-foot buffer zone from Makiki Stream. The Project as proposed will implement feasible measures to promote green conservation and environmental stewardship. The new vehicle turnaround will be made of permeable surfaced materials, as to aid the drainage of the area during the event of rainfall and minimize water runoff into Makiki Stream. Wherever possible, green materials such as fluorescent light bulbs will be integrated into the ultimate design of the Project. There will also be a good deal of re-used building materials used, the proposed portable classrooms will be re-used from a campus facility elsewhere on Oʻahu. These classrooms will rely primarily on natural light and airflow to

minimize the use of artificial lighting and cooling systems. Also, the Project will be in compliance with all pertinent statutes and regulations (e.g., regulations pertaining to grading).

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

Discussion: The Project is not part of a larger project, nor does it commit the State or County to any other larger actions; and will not generate any additional actions having a cumulative effect on the environment. Due to the nature of the Site as a Recreation Area, the School Improvements are not permanent buildings and can be removed to return the site to undeveloped, naturalistic state if needed. Cumulative impacts to site resources such as archaeology, Makiki Stream and native species are avoided by designing around archaeological features, following USFWS recommendations for native animal species and Low Impact Development techniques. Cumulative impacts to public infrastructure can be minimized through use of photovoltaic arrays for on-site generation of power as well as installation of an on-site wastewater system that provides both primary and secondary water treatment.

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

Discussion: The Project is located within the existing built environment of Hālau Kū Māna Public Charter School. No rare, Threatened or Endangered species or habitats have been identified in the vicinity of the Site.

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

Discussion: No State or Federal air quality standards will be violated during or after the construction of the Project. The only anticipated issues related to air quality would be during construction; however, construction activities would be temporary. Long-term negative impacts related to air quality are not expected.

No State or Federal water quality standards will be violated during or after the construction of the Project; the Project will be required to comply with nonpoint source prevention measures through the NPDES permit, when applicable. The quantity and quality of storm water runoff will not be impacted by the Project.

Construction activities may create temporary noise impacts. If necessary, contractors will employ mitigation measures to minimize those temporary noise impacts including the use of mufflers and implementing construction curfew periods. Pursuant to Chapter 11-46, Hawai‘i Administrative Rules, all construction activities must comply with all community noise controls. Long-term noise impacts are expected to return to preconstruction levels.

(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;

Discussion: Hālau Kū Māna Public Charter School is not located in a designated flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, or in fresh waters or coastal waters. The school's location relative to Makiki Stream, is environmentally sensitive. Because of this, low-impact development practices are proposed to control storm water runoff and infiltrate it on-site when possible. The project site is concentrated on land that is already being used for Hālau Kū Māna Public Charter School, thus minimizing the area of land that will be newly disturbed. The land that is disturbed by the site improvements will be re-vegetated with a combination of Native Hawaiian and other non-invasive plants shortly after the completion of the construction period and will provide a natural buffer between Hālau Kū Māna Public Charter School and Makiki Stream. Mitigation measures to reduce runoff from the site include use of cisterns to re-use water from roofs and installation of permeable pavers to infiltrate water that lands on or flows to new parking areas. Mitigation measures to control and clean storm water include installation of bioswales. This combination of low-impact development techniques will mitigate against the potential primary and secondary effects of storm water in the built environment.

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

Discussion: The Project is located within the Primary Urban Center and is consistent with view plane recommendations identified within the Primary Urban Center Development Plan.

(13) Requires substantial energy consumption.

Discussion: The project will be constructed implementing feasible measures to promote energy conservation and environmental stewardship, using standards and guidelines promulgated by the United States Green Building Council (USGBC), the Environmental Protection Agency (EPA), or similar programs. Energy saving design elements will be added to the existing trailers and proposed facilities to minimize energy demand. The preliminary engineering analysis has determined that power is currently available in the area and the capacity can support the Project.

7.2 DETERMINATION

Pursuant to Chapter 343, HRS, the approving agency has issued a Finding of No Significant Impact (FONSI) for this environmental assessment. This finding is founded on the basis of impacts and mitigation measures examined in this document, public comments received during the pre-consultation and public review phases, and analyzed under the above criteria.

8 CONSULTATION

In the course of planning for the improvements at Hālau Kū Māna Public Charter School, a meeting with neighborhood stakeholders and pre-consultation comments were solicited from agencies that may have an interest in the proposed improvements.

8.1 NEIGHBOR MEETING

A small group meeting comprised of neighboring stakeholders was held at Hālau Kū Māna, with the main objectives of: meeting with members of the community, presenting findings and pertinent data, discussing the planning process, and outlining a tentative timeline for the proposed improvements. In addition, coordination between Hālau Kū Māna and Hanahauʻoli School was discussed regarding the staggering of drop-off/pick-up times to possibly reduce traffic congestion on Makiki Heights Drive. Hanahauʻoli and Hālau Kū Māna representatives discussed a potential cultural collaboration between the two schools, such as an ʻimu. Maunalaha Community representatives expressed concerns about the placement of the animal husbandry area so that as little smell as possible would drift towards the Maunalaha neighborhood.

8.2 PRE-CONSULTATION

Pre-consultation was conducted prior to preparation of the Draft EA. The purpose of the pre-consultation period is to consult with individuals, community organizations, private groups, and government agencies with technical expertise, or an interest or will be affected by the proposed action. This process is part of the scoping process for the Draft EA. Comments and input received during this period are used to identify environmental issues and concerns to be addressed in the Draft EA, which in turn will undergo a 30-day public comment period.

As part of the early consultation process, the following agencies and organizations were sent pre-consultation letters. Notices were also sent to individuals who attended the neighbor meeting and others who were recommended or who requested information on the project. The organizations and individuals were encouraged to distribute the information to their members, friends and neighbors. Copies of the written comments and responses are reproduced in Appendix A.

State of Hawaiʻi

- Department of Accounting and General Services
- Department of Business, Economic Development & Tourism (DBEDT)
- DBEDT – Office of Planning
- Department of Defense
- Department of Education
- Department of Hawaiian Homelands
- Department of Health (DOH)
- DOH - Environmental Planning Office

- Department of Land and Natural Resources (DLNR)
- DLNR – Historic Preservation Division
- DLNR – State Parks Division
- Office of Hawaiian Affairs
- UH Environmental Center

Federal

- U.S. Army Corps of Engineers – Regulatory Branch
- U.S. Fish and Wildlife Service

City & County of Honolulu

- Board of Water Supply
- Department of Community Services
- Department of Design and Construction
- Department of Environmental Services
- Department of Facility Maintenance
- Department of Parks and Recreation
- Department of Planning and Permitting
- Department of Transportation Services
- Fire Department
- Police Department

Elected Officials

- Senator Brian Taniguchi
- Representative Della Au Belatti
- City Councilmember Carol Fukunaga

Private Organizations & Individuals

- Hawaiian Electric Company
- Joslyn Mahealani Kaʻaʻawa
- Coco Needham

8.3 DRAFT ENVIRONMENTAL ASSESSMENT

The Draft EA was distributed to the following agencies, organizations, and individuals. Comments received on the Draft EA are included in Appendix A.

State of Hawaiʻi

- Department of Agriculture
- Department of Accounting and General Services

- Department of Business, Economic Development & Tourism (DBEDT)
- DBEDT – Energy Division
- DBEDT – Office of Planning
- Department of Defense
- Department of Education
- Department of Hawaiian Homelands
- Department of Health (DOH)
- DOH - Office of Environmental Quality Control
- Department of Human Services
- Department of Labor and Industrial Relations
- Department of Land and Natural Resources (DLNR)
- DLNR – Historic Preservation Division
- DLNR – State Parks Division
- Department of Transportation
- Office of Hawaiian Affairs
- UH Water Resources Research Center

Federal

- U.S. Army Corps of Engineers – Regulatory Branch
- U.S. Fish and Wildlife Service
- Federal Emergency Management Agency

City & County of Honolulu

- Board of Water Supply
- Department of Community Services
- Department of Design and Construction
- Department of Environmental Services
- Department of Facility Maintenance
- Department of Planning and Permitting
- Department of Transportation Services
- Fire Department
- Police Department

Elected Officials

- Senator Brian Taniguchi
- Representative Della Au Belatti
- City Councilmember Carol Fukunaga

Libraries

- Hawaii State Library – Hawaii Documents Center
- Hawaii State Library – Mānoa

- UH Hamilton Library

Private Organizations & Individuals

- Hawaiian Electric Company
- Joslyn Mahealani Ka‘awa
- Coco Needham
- Hawai‘i Nature Center
- Hanahau‘oli School

9 REFERENCES

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Appendix A

COMMENTS AND RESPONSES

PRE-CONSULTATION COMMENTS AND RESPONSES

Agencies/Organizations/Individuals	Pre-Cosultation Sent	Comment Date
Board of Land and Natural Resources	No	-
OEQC	No	-
STATE		
Department of Agriculture	No	-
Department of Accounting and General Services	Yes	07-10-2013
Department of Business, Economic Development & Tourism	Yes	-
DBEDT - Energy Division	No	-
DBEDT - Office of Planning	Yes	07-23-2013
Department of Defense	Yes	No Date
Department of Education	Yes	07-11-2013
Department of Human Services	No	-
Department of Hawaiian Home Lands	Yes	-
Department of Health - Environmental Protection Office	Yes	-
Department of Health - Wastewater Branch	Yes	07-15-2013
Department of Labor and Industrial Relations	No	-
Department of Land and Natural Resources	Yes	07-31-2013
DLNR - Historic Preservation Division	Yes	-
DLNR - State Parks Division	Yes	-
Department of Transportation	No	-
Hawaii Housing Finance and Development Corporation	No	-
Office of Hawaiian Affairs	Yes	-
UH Water Resources Research Center	Yes	08-01-2013
FEDERAL		
Federal Emergency Management Agency	No	-
U.S. Army Corps of Engineers- Regulatory Branch	Yes	-
U.S. Geological Survey	No	-
U.S. Fish and Wildlife Service	Yes	07-19-2013
COUNTY		
Board of Water Supply	Yes	-
Dept. of Community Services	Yes	07-12-2013
Dept. of Design and Construction	Yes	07-19-2013
Dept. of Environmental Services	Yes	
Dept. of Facility Maintenance	Yes	07-25-2013
Dept. of Parks and Recreation	Yes	07-30-2013
Dept. of Planning and Permitting	Yes	07-31-2013
Dept. of Transportation Services	Yes	07-31-2013
Honolulu Fire Department	Yes	07-24-2013
Honolulu Police Department	Yes	07-19-2013
PRIVATE ORGANIZATIONS/INDIVIDUALS		
Joslyn Kaawa	Yes	-
Coco Needham	Yes	-

NEIL ABERCROMBIE
GOVERNOR

Dean H. Seki
Comptroller

Maria E. Zielinski
Deputy Comptroller

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

JUL 10 2013

(P)1158.3

Ms. Catie Cullison, AICP, Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: Pre-Consultation for an Environmental Assessment for
Halau Ku Mana Public Charter School Improvements, Oahu
TMKs (1) 2-5-019:008 (por.), (1) 2-5-20:003: 004, 005, and 008

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

If you have any questions, please contact me at 586-0400 or your staff may contact Ms. Gayle Takasaki of the Public Works Division at 586-0584.

Sincerely,

DEAN H. SEKI
Comptroller

PBR HAWAII
& ASSOCIATES, INC.

March 12, 2014

Mr. Dean H. Seki, Comptroller
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai'i 96810-0119

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Seki,

Thank you for your letter dated July 10, 2013 (P 1158.3) regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Hālau Kū Māna Public Charter School improvements will not impact any of the Department of Accounting and General Services' (DAGS) projects or existing facilities and that DAGS has no comments to offer at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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OFFICE OF PLANNING
STATE OF HAWAII

NEIL ABERCROMBIE
GOVERNOR

JESSE K. SOUKI
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
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Web: http://hawaii.gov/dbedt/op/

Ref. No. P-14057

July 23, 2013

Ms. Catie Cullison, AICP
PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

Subject: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements, TMK: (1) 2-5-019:008; (1) 2-5-20:003, 004, 005, & 008

Thank you for the opportunity to provide comments on the Halau Ku Mana Public Charter School Improvement project.

We have reviewed the documents you submitted to us via letter dated July 3, 2013, and have the following comments to offer:

1. The entire state is defined to be within the Coastal Zone Management Area, see HRS §205A-1 (definition of "coastal zone management area"). The Draft Environmental Assessment (Draft EA) should include a discussion of the proposed project's ability to meet the objectives and policies set forth in HRS §205A-2.

2. The construction project may have nonpoint pollution impacts on coastal waters. We invite the applicant to review the Hawaii Watershed Guidance, which provides a summary and links to management measures that may be implemented to minimize coastal nonpoint pollution impact. This Guidance can be viewed or downloaded from the Office of Planning website at http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI Watershed Guidance Final.pdf.

3. The subject parcel is adjacent to Makiki Stream. This stream appears on the State Department of Health, 2012 list of impaired inland waters in Hawaii, prepared under the Clean Water Act. Please consider utilizing the Office of Planning's *Stormwater Impact Assessment*, to identify and evaluate information on hydrology (i.e., proximity to drainage ways, stream channels, sensitive ecosystems in receiving waters), stressors (i.e., water quality and pollutants), sensitivity of resources (i.e., aquatic resources and riparian resources), and management considerations. This guidance document will assist in integrating stormwater impact assessment within your review process. The Appendices include a list of Data Resources, Best Management Practice Techniques, and a Reviewers Checklist. The *Stormwater Impact Assessment* guidance document can be found 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 Leo Asuncion or Josh Hekekia of our Hawaii CZM Program at 587-2846.

Sincerely,

Jesse K. Souki
Director

PBR HAWAII
& ASSOCIATES, INC.

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SCOTT MURAKAMI, ASLA, LEED®AP
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printed on recycled paper

March 12, 2014

Mr. Jesse Souki, Director
State of Hawai'i
Office of Planning
P.O. Box 2359
Honolulu, HI 96804

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Souki,

Thank you for your letter (Ref. No. P-14057) dated July 23, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

1. We acknowledge that the entire State of Hawai'i is located within the Coastal Zone Management Area. As such, the Draft Environmental Assessment (EA) will include a discussion of the proposed project's ability to meet the Coastal Zone Management objectives and policies found in Hawai'i Revised Statutes §205A.

2. We reviewed the *Hawaii Watershed Guidance* document and management measures to minimize coastal nonpoint source pollution. The Hālau Kū Māna Public Charter School Improvements will incorporate the following measures regarding stormwater runoff:

   - During site development, disturb only the smallest area necessary to perform current activities to reduce erosion and off-site transport of sediment.
   - Avoid disturbances of unstable soils or soils particularly susceptible to erosion and sediment loss.
   - Revegetate the site as soon as possible after disturbance, preferably with native vegetation.
   - Minimize imperviousness to the extent practicable.
   - Preserve vegetated or natural buffers adjacent to receiving waters.
   - Use pervious pavements for areas of infrequent use.

3. We understand that the project site is adjacent to Makiki Stream, a surface water body listed as impaired under the Clean Water Act. We reviewed the Office of Planning's *Stormwater Impact Assessment* to help provide a thorough assessment of the area's hydrology, stressors, sensitivity of resources, and management considerations in the Draft EA. The Low Impact Development measures described previously will mitigate for primary, secondary, and cumulative stormwater impacts.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft EA. We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\Pre-Consultation\DBEDT OP.docx

NEIL ABERCROMBIE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

DARRYLL D. M. WONG
MAJOR GENERAL
ADJUTANT GENERAL

JOSEPH K. KIM
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL

Ms. Catie Cullison, Associates
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

Re: Pre-Consultation Request for an Environmental Assessment, Halau Ku Mana Public Charter School Improvements, TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-003, 004, 005 and 008

Thank you for the opportunity to comment on the above project. The State of Hawaii Department of Defense has no comments to offer relative to the project at this time.

Please contact this office upon completion of the Draft Environment Assessment. Should you have any questions or concerns, please have your staff contact Mr. Lloyd Maki, Acting Chief Engineering Officer, at 733-4250.

Sincerely,

Darryll D. M. Wong
Major General
Hawaii National Guard
Adjutant General

c: Mr. Ian Duncan, State Civil Defense

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street, Suite 650
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Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

March 12, 2014

Major General Darryll D.M. Wong
State of Hawai'i
Department of Defense
Office of the Adjutant General
3949 Diamond Head Road
Honolulu, HI 96816-4495

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Major General Wong,

Thank you for your letter regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we acknowledge that the Department of Defense has no comments to offer at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\Pre-Consultation\DOD.docx

NEIL ABERCROMBIE
GOVERNOR

KATHRYN S. MATAYOSHI
SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

July 11, 2013

Ms. Catie Cullison
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

Subject: **Halau Ku Mana Public Charter School**
Environmental Assessment
TMK: (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005, and 008

The proposed charter school will not have any impact on existing or proposed construction projects and plans of the Department of Education (DOE).

However, the charter school would need to comply with policies and programs applicable to charter schools under the DOE.

Should you have any questions, please contact Cheng-Hsin Chang, Project Coordinator, of the Facilities Development Branch at 586-0481 or e-mail at cheng-hsin_chang@notes.k12.hi.us.

Sincerely,

for Duane Y. Kashiwai
Public Works Administrator
Facilities Development Branch

DYK:lm

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
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Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

printed on recycled paper

March 12, 2014

Mr. Duane Y. Kashiwai, Public Works Administrator
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, HI 96804

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Kashiwai,

Thank you for your letter dated July 11, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Hālau Kū Māna Public Charter School improvements will not have any impact on the Department of Education's (DOE) existing or proposed construction projects or plans. The school improvements will be in compliance with policies and programs applicable to DOE charter schools.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\Pre-Consultation\DOE.docx

NEIL ABERCROMBIE
GOVERNOR OF HAWAI

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

LUD-1 2 5 019 008-ID1376
PreCons for EA Halau Ku Mana School

July 15, 2013

Ms. Catie Cullison, Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: Pre-Consultation for Environmental Assessment for
Halau Ku Mana Public Charter School
2131 Makiki Heights Drive, Honolulu 96822
TMK (1) 2-5-019: 008

Thank you for allowing us the opportunity to review the above subject project which requests comments on the Environmental Assessment for Halau Ku Mana Public Charter School.

The subject project is located in the critical wastewater disposal area as determined by the Oahu Wastewater Advisory Committee. The project is also located in the No Pass Zone.

Please be informed that a wastewater system will be required to be constructed in accordance with our Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems", to serve all existing structures as well as any future expansions that are planned for the school.

Should you have any questions, please contact the Planning & Design Section of our branch at phone 586-4294 or fax to 586-4300.

Sincerely,

SINA PRUDER, P.E., CHIEF
Wastewater Branch

LM:lmj

c: Ms. Laura McIntyre, DOH-Environmental Planning Office
Mr. George I. Atta, City & County of Honolulu, Planning & Permitting Office

PBR HAWAII
& ASSOCIATES, INC.

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

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Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

March 12, 2014

Ms. Sina Pruder, P.E., Chief
State of Hawai'i
Department of Health – Wastewater Branch
P.O. Box 3378
Honolulu, HI 96801-3378

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Ms. Pruder,

Thank you for your letter (LUD-1 2 5 019 008-ID1376) dated July 15, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We understand that the school improvements are located within the critical wastewater disposal area and the No Pass Zone. A permanent individual wastewater system will be constructed as part of the school improvements in accordance with Hawai'i Administrative Rules, Chaper 11-62. The wastewater system will serve all existing structures as well as any future expansions that are planned for the school.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\Pre-Consultation\Responses\DOH WWB.docx

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 31, 2013

PBR HAWAII & Associates, Inc.
Attention: Ms. Catie Cullison
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

via email: ccullison@pbrhawaii.com

Dear Ms. Cullison,

SUBJECT: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements

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

At this time, enclosed are comments from (1) Land Division – Oahu District; (2) Office of Conservation & Coastal Lands; (3) Engineering Division; (4) Commission on Water Resource Management; and (5) Division of State Parks. No other comments were received as of our suspense date. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at 587-0439. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 10, 2013

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
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements
LOCATION: Makiki, Oahu; TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008
APPLICANT: PBR Hawaii & Associates, Inc. for Mason Architects

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by July 30, 2013. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Signed: T Chee
Print Name: Tiffany Chee
Date: 7/16/13

BL

c: Central Files

COMMENTS:

We Have No Objections. Current and Proposed School Improvements Are Located On Land Under The Jurisdiction of the Division of State Parks.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 10, 2013

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
- X Office of Conservation & Coastal Lands
- X Land Division – Oahu District
- X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements
LOCATION: Makiki, Oahu; TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008
APPLICANT: PBR Hawaii & Associates, Inc. for Mason Architects

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by July 30, 2013. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Signed: _____
Print Name: SAM LEMMO
Date: 7-11-13

c: Central Files

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 10, 2013

MEMORANDUM

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

TO:
FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements
LOCATION: Makiki, Oahu; TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008
APPLICANT: PBR Hawaii & Associates, Inc. for Mason Architects

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by July 30, 2013. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Signed: _____
Print Name: Carty S. Chang, Chief Engineer
Date: 7/16/13

c: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/StevedMolmen
RE:HalauKuManaPublicCharterSchPreConEA
Oahu.928

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The National Flood Insurance Program does not have any regulations for developments within Zone X.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Mario Siu Li at (808) 768-8098 or Ms. Ardis Shaw-Kim at (808) 768-8296 of t he City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
( ) Ms. Carolyn Cortez at (808) 270-7813 of the County of Maui, Department of Planning.
( ) Ms. Maile Aiu at (808) 241-4884 of the County of Kauai, Department of Public Works.

( ) The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 7/16/13

7/24/13

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
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

RECEIVED
LAND DIVISION
2013 JUL 17 AM 10:31

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII
2013 JUL 12 AM 9:18

July 10, 2013

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
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements
LOCATION: Makiki, Oahu; TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008
APPLICANT: PBR Hawaii & Associates, Inc. for Mason Architects

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by July 30, 2013. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Signed: _____
Print Name: Dean Uyeno
Date: 7/16/2013

c: Central Files

CWRM Comments - A Stream Channel Alteration Permit (SCAP) is required before any alteration can be made to the bed and/or banks of a stream channel.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 10, 2013

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks (dist. 7/29/13)
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-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements
LOCATION: Makiki, Oahu; TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008
APPLICANT: PBR Hawaii & Associates, Inc. for Mason Architects

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by July 30, 2013. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments. at this time as we are reviewing more detailed plans.
( ) Comments are attached.

Signed:
Print Name: Daniel S. Quinn
Date: 7/29/13

c: Central Files

dist. 7/11/13 S

PBR HAWAII
& ASSOCIATES, INC.

HONOLULU OFFICE
1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
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Kapolei, Hawai'i 96707-2005
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Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

March 12, 2014

Mr. Russell Y. Tsuji, Land Administrator
State of Hawai'i
Department of Land and Natural Resources – Land Division
P.O. Box 621
Honolulu, HI 96809

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Tsuji,

Thank you for your letter dated July 31, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements and for coordinating the comments from the various Department of Land and Natural Resources (DLNR) divisions. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We note that the Office of Conservation & Coastal Lands and Division of State Parks have no comments to offer at this time.

Land Division – O'ahu District
We acknowledge that the Land Division – O'ahu District has no objections to the proposed school improvements. We understand that the school improvements are located on land under the jurisdiction of the Division of State Parks.

Engineering Division
We note that the site of the proposed improvements is located in Flood Zone X, where the Flood Insurance Program does not have any regulations for developments.

Commission on Water Resource Management
We acknowledge that the Commission on Water Resource Management has no objections to the proposed school improvements. The school improvements are located next to Makiki Stream; however, no work is proposed within the stream channel. We understand that should any alteration be proposed in the future within the bed and/or bank of the stream channel, a Stream Channel Alteration Permit (SCAP) is required.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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UNIVERSITY of HAWAI'I® MĀNOA

Water Resources Research Center

August 01, 2013
NC: 2013-07-01

Catie Cullison. Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street. Suite 650
Honolulu, HI 96813-3484

Pre-Consultation for an Environmental Assessment
Halau Ku Mana Public Charter School Improvements
Makiki, Oahu

Thank you for your letter dated July 01, 2013 concerning a proposed action at Halau Ku Mana Public Charter School that triggers the requirement to complete an Environmental Assessment. We are not aware of potential impacts that the proposed project might have on our existing and proposed projects, plans, policies and programs. However, we look forward to reading the Draft Environmental Assessment when it becomes available.

Please be advised that the Environmental Center has merged with the Water Resources Research Center and no longer exists as an officially named unit within the university. Therefore, please address future correspondence to:

Water Resources Research Center
University of Hawaii at Manoa
2540 Dole Street, Holmes 283
Honolulu, HI 96822
ATTN: Environmental Assessment & Protection Division

Sincerely,

David Penn
Assistant Specialist

2540 Dole Street, Holmes Hall 283
Honolulu, Hawai'i 96822
Telephone: (808) 956-7847
Fax: (808) 956-5044

PBR HAWAII & ASSOCIATES, INC.

March 12, 2014

Mr. David Penn, Assistant Specialist
Water Resources Research Center
ATTN: Environmental Assessment & Protection Division
University of Hawai'i at Mānoa
2540 Dole Street, Holmes 283
Honolulu, HI 96822

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Penn,

Thank you for your letter (NC: 2013-07-01) dated August 1, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Water Resources Research Center is not aware of any potential impacts that the Hālau Kū Māna Public Charter School improvements may have on its existing and proposed projects, plans, policies, and programs.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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JUL 1 9 2013

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:
2013-TA-0350

Ms. Catie Cullison
PBR Hawaii & Associates. INC.
1001 Bishop Street, Suite 650
Honolulu, Hawai`i 96813

Subject: Pre-consultation for an Environmental Assessment – Hālau Kū Māna Public Charter School Improvements – TMK(s) (1) 2-5-019:008(por.); (1) 2-5-20:003, 004, 005 & 008

Dear Ms. Cullison:

The U.S. Fish and Wildlife Service (Service) received your letter on July 03, 2013, requesting our comments on the proposed improvements to Hālau Kū Māna Public Charter School. The project involves making sure existing facilities are compliant with environmental requirements, upgrading the school with facilities to meet the needs of its students and future community uses, and complying with current standards for environmental health.

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Program. Our data indicate the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may occur within the vicinity of the proposed project site.

Hawaiian hoary bat
The Hawaiian hoary bat is a medium-sized [0.5-0.8 ounces (14-22 grams)], nocturnal, insectivorous bat. The Hawaiian hoary bat is known from the islands of Hawai`i, Maui, O`ahu, Kaua`i, and Molokai. Population numbers are not known, but Hawaiian hoary bats are observed regularly only on Hawai`i, Kaua`i, and Maui. There is a general lack of historic and current data on this subspecies, and its present status is not well understood. Habitat requirements for the Hawaiian hoary bat are also not well known. Bats are most often observed foraging in open areas, near the edges of native forests, or over open water, although this may be due to the ease of detection in these habitats. Hawaiian hoary bats roost solitarily in the foliage of trees.

Threats to the Hawaiian hoary bat include habitat destruction (elimination of roosting sites), direct and indirect effects of pesticides, disease, and entanglement on barbed wire fences. In addition, clearing woody vegetation during the bat-birthing and pup-rearing season could harm

females carrying young or juveniles left in the roost tree as the female forages. Potential adverse effects from such disturbance can be avoided by not clearing vegetation greater than 15-feet between June 1 and September 15, the period in which bats are most vulnerable.

Because the proposed activities may cause soil erosion and sedimentation of Makiki Stream , we are attaching the Service's recommended Best Management Practices regarding sedimentation and erosion in aquatic environments. We encourage you to incorporate the relevant practices into your project design.

Should project plans change, if additional information becomes available, or implementation of minimization measures will not ensure take of listed species can be avoided, we recommend you contact our office so that we may assist you in re-assessing project impacts. If take of listed species cannot be avoided, it will be necessary to consult with us pursuant to section 7(a)(2) of the ESA or apply for an incidental take permit under section 10(a)(1)(a) of the ESA.

We appreciate your efforts to conserve endangered species. If you have questions regarding this consultation, please contact Joy Hiromasa Browning, Fish and Wildlife Biologist (phone: 808-792-9400).

Sincerely,

for Loyal Mehrhoff
Field Supervisor

U.S. Fish and Wildlife Service
Recommended Standard Best Management Practices

The U.S. Fish and Wildlife Service recommends that the measures below be incorporated into projects to minimize the degradation of water quality and minimize the impacts to fish and wildlife resources.

1. Turbidity and siltation from project-related work shall be minimized and contained within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.

2. Dredging/filling in the marine environment shall be scheduled to avoid coral spawning and recruitment periods and sea turtle nesting and hatching periods.

3. Dredging and filling in the marine/aquatic environment shall be designed to avoid or minimize the loss special aquatic site habitat (beaches, coral reefs, wetlands, etc.) and the function of such habitat shall be replaced.

4. All project-related materials and equipment (dredges, barges, backhoes, etc.) to be placed in the water shall be cleaned of pollutants prior to use.

5. No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, wetlands, etc.) or on beach habitats.

6. All debris removed from the marine/aquatic environment shall be disposed of at an approved upland or ocean dumping site.

7. No contamination (trash or debris disposal, non-native species introductions, attraction of non-native pests, etc.) of adjacent habitats (reef flats, channels, open ocean, stream channels, wetlands, beaches, forests, etc.) shall result from project-related activities. This shall be accomplished by implementing a litter-control plan and developing a Hazard Analysis and Critical Control Point Plan (HACCP – see http://www.haccp-nrm.org/Wizard/default.asp) to prevent attraction and introduction of non-native species.

8. Fueling of project-related vehicles and equipment should take place away from the water and a contingency plan to control petroleum products accidentally spilled during the project shall be developed. Absorbent pads and containment booms shall be stored on-site, if appropriate, to facilitate the clean-up of accidental petroleum releases.

9. Any under-layer fills used in the project shall be protected from erosion with stones (or core-loc units) as soon after placement as practicable.

10. Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric etc.) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, etc.).

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March 12, 2014

Mr. Loyal Mehroff
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Mehroff,

Thank you for your letter (2013-TA-0350) dated July 19, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

Thank you for providing information on the Hawaiian hoary bat (*Lasiurus cinereus semotus*). We note that based on information in your files individuals of these species may occur in the vicinity of the Hālau Kū Māna Public Charter School improvements. Although not detected onsite, we acknowledge that Hawaiian hoary bats are known to roost in native and non-native trees greater than 15 feet tall. To avoid any potential for impacts to the Hawaiian hoary bat, removal and trimming of trees greater than 15 feet tall during the pup rearing season will be avoided.

Regarding soil erosion and sedimentation, construction activities will comply with the recommended best management practices to avoid possible soil erosion and sedimentation from entering Makiki Stream. Long-term, Low Impact Development techniques will mitigate potential soil erosion and sedimentation impacts from stormwater runoff.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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DEPARTMENT OF COMMUNITY SERVICES
CITY AND COUNTY OF HONOLULU
715 SOUTH KING STREET, SUITE 311 ● HONOLULU, HAWAII 96813 ● AREA CODE 808 ● PHONE: 768-7762 ● FAX: 768-7792

KIRK CALDWELL
MAYOR

PAMELA A. WITTY-OAKLAND
DIRECTOR

GARY K. NAKATA
DEPUTY DIRECTOR

July 12, 2013

Ms. Catie Cullison
Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

SUBJECT: Pre-Consultation for an Environmental Assessment
Halau Ku Mana Public Charter School Improvements
TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005, and 008

We have reviewed your letter dated July 1, 2013, and the information provided for the subject "Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School" located in the ahupuaa of Makiki, Honolulu Judicial District, Oahu.

Our review of the information provided, indicates that the proposed activities will have no adverse impacts on any Department of Community Services' activities or projects at this time.

Thank you for providing us with the opportunity to comment on this matter.

Sincerely,

Pamela A. Witty-Oakland
Director

PAW:sk

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& ASSOCIATES, INC.

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March 12, 2014

Ms. Pamela A. Witty-Oakland
City and County of Honolulu
Department of Community Services
715 South King St., Room 311
Honolulu, HI 96813

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Ms. Witty-Oakland,

Thank you for your letter dated July 12, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Hālau Kū Māna Public Charter School improvements will have no adverse impact on any of the Department of Community Services' activities or projects at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
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Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR

CHRIS T. TAKASHIGE, P.E., CCM
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

July 19, 2013

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

Attn: Catie Cullison

Dear Ms. Cullison:

Subject: Pre-Consultation for an Environmental Assessment – Halau Ku Mana Public Charter School Improvements – TMK(s) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008

The Department of Design and Construction does not have any comments to offer on the pre-consultation for this environmental assessment.

Thank you for the opportunity to review and comment. Should there be any questions, please contact me at 768-8480.

Sincerely,

for M. Yonamine

Chris T. Takashige, P.E., CCM
Director

CTT: cf (521185)

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& ASSOCIATES, INC.

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March 12, 2014

Mr. Chris T. Takashige, P.E., CCM
City and County of Honolulu
Department of Design and Construction
650 South King St., 11th Floor
Honolulu, HI 96813

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Takashige,

Thank you for your letter dated July 19, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we acknowledge that the Department of Design and Construction has no comments to offer at this time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

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MAYOR

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

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 13-675

July 25, 2013

Ms. Catie Cullison
Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Dear Ms. Cullison:

SUBJECT: PRE-CONSULTATION FOR AN ENVIRONMENTAL ASSESSMENT – HALAU KU MANA PUBLIC CHARTER SCHOOL IMPROVEMENTS – TMK(s) (1) 2-5-019:008 (por.); (1) 2-5-20:003, 004, 005 & 008

Thank you for allowing us the opportunity to review the pre-consultation for an environmental assessment for the subject project. The site of the project is on State lands, which the City does not maintain. Makiki Stream also passes through State lands and is not maintained by the City.

If you have any questions, please contact Thomas Takeuchi, Division of Road Maintenance, at 768-3608.

Sincerely,

Ross S. Sasamura, P.E.
Director and Chief Engineer

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& ASSOCIATES, INC.

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March 12, 2014

Mr. Ross Sasamura, P.E.
City and County of Honolulu
Department of Facility Maintenance
1000 Ulu'ohia Street, Suite 215
Kapolei, HI 96707

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Sasamura,

Thank you for your letter (P 1158.3) dated July 25, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We understand that the project site and the portion of Makiki Stream that passes through the site are located on State land. We acknowledge that the land is not maintained by the City.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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DEPARTMENT OF PARKS & RECREATION

CITY AND COUNTY OF HONOLULU

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KIRK CALDWELL
MAYOR

TONI P. ROBINSON
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

July 30, 2013

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Acctg. Dept.

Ms. Catie Cullison, Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

SUBJECT: Pre-Consultation for an Environmental Assessment-Halau Ku Mana Public Charter School Improvements-TMK(s) (1) 2-5-019:008 (por); (1) 2-5-20:003, 004, 005 & 008

Thank you for the opportunity to review and comment on the Pre-Consultation stage of the Environmental Assessment for the proposed Halau Ku Mana Public Charter School Improvements.

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 Mr. John Reid, Planner at 768-3017.

Sincerely,

Toni P. Robinson
Director

TPR:jr
(522868)

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& ASSOCIATES, INC.

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March 12, 2014

Mr. Toni P. Robinson, Director
City & County of Honolulu
Department of Parks and Recreation
1000 Uluohia Street
Kapolei, HI 96707

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Robinson,

Thank you for your letter dated July 30, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Department of Parks and Recreation (DPR) has no comments and that the Hālau Kū Māna Public Charter School improvements will have no impact on any of DPR's programs or facilities.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will remove DPR from the EA distribution list.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
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DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2013/ELOG-1332 (MS)

July 31, 2013

Ms. Catie Cullison
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

SUBJECT: Pre-Assessment Consultation
Halau Ku Mana Public Charter School Improvements
2101, 2131 and 2133 Makiki Heights Drive and
2124 Round Top Drive - Makiki
Tax Map Key 2-5-19: 8 and 2-5-20: 3, 4, 5, and 8

This is in response to your letter of July 3, 2013, requesting comments on the proposed improvements at the Kalau Ku Mana Public Charter School. Specifically, you are asking if the project will have any impact on any of the surrounding properties and whether there are any specific issues that should be addressed in the Environmental Assessment (EA)

The school will occupy only 5.2 acres (a portion) of the total parcels listed above (6.58 acres). Tax Map Key (TMK) 2-5-19: 3, 4, 5, and 8 are in the P-1 Restricted Preservation District. TMK 2-5-20: 8 is split zoned P-1 Restricted Preservation, P-2 General Preservation, and R-10 Residential Districts. The site is also in the State Land Use Urban and Conservation Districts. Makiki Stream runs through the site. Also, the site is in the Flood Zone X. Flood Zone X consists of areas beyond the 500 year flood plain.

The school operates in five portable classrooms and storage trailers. One temporary restroom trailer is also on the site. You state that the project will involve the following:

- Construct nine temporary classroom and storage trailers, two restroom trailers, and a pavilion with possible kitchen functions
- Install a permanent individual wastewater system for the restroom trailers, photovoltaic (PV) array on trailers, canopy tent
- Provide gravel parking area, permeable-surface vehicle turn-around, rain shelters, boardwalks between trailers and landscaping

For purposes of the Land Use Ordinance (LUO), the public charter school is considered a "public use and structures," because their essential educational function is with the Department of Education. Public uses and structures are permitted in the P-2 General Preservation and

R-10 Residential Districts. The site that is zoned P-1 Restricted Preservation District lies within the State Land Use Conservation District. This portion of the site is under the jurisdiction of the State of Hawaii Department of Land and Natural Resources (DLNR). We suggest you contact DLNR for information concerning potential impacts to historical and/or cultural resources. You may also contact the Office of Conservation and Coastal Land for all zoning matters in the P-1 Restricted Preservation District areas.

The EA should provide information about the PV array on the trailers. If the PV panels are located on the portion of the site zoned P-2 General Preservation and R-10 Residential Districts and will supply energy to the use(s) on the site, then the PV panels are considered accessory to the existing use(s) on the site. However, if the proposed project involves the development of a PV facility; i.e., the PV panels will supply energy to Hawaii Electric Company (HECO), the use will be considered a utility installation, Type A or B. Refer to the Department of Planning and Permitting (DPP) "Solar Farm Guidelines" to determine whether the PV facility is considered a utility installation, Type A or B. A Conditional Use Permit-minor (CUP) is required for a utility installation, Type B.

The project should comply with development standards of the underlying zoning district if the proposed project will be located on the portion of the site zoned P-2 General Preservation and R-10 Residential Districts. The project should comply with current LUO off-street parking and loading requirements, as well as screening and buffering requirements found in Articles 4 and 6. Also, based on your project description, the proposed use will be subject to the provisions in Article 5 of the LUO, relating to specific use standards for schools; and, if applicable, utility installations, Type A or B.

The EA should include a discussion on the Primary Urban Center Development Plan (PUCDP) to address the project's consistency with the PUCDP.

The EA should include a detailed site plan. The regional location map was difficult to understand. For example, the regional plan shows the stream is within the identified site. Also, the property lines were not identified on the map. A location plan should show where site the proposed structures will be located. A site plan should be included which clearly delineate the property lines and the required setbacks.

Please contact Malynne Simeon of our staff at 768-8023 should you have any questions.

Very truly yours,

George I. Atta, FAICP
Director

GIA:nw

PBR HAWAII
& ASSOCIATES, INC.

PRINCIPALS

THOMAS S. WITTEN, ASLA
President

R. STAN DUNCAN, ASLA
Executive Vice-President

RUSSELL Y. J. CHUNG, FASLA, LEED®AP BD+C
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP, LEED®AP BD+C
Vice-President

W. FRANK BRANDT, FASLA
Chairman Emeritus

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March 12, 2014

Mr. George I. Atta, FAICP, Director
City & County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Atta,

Thank you for your letter (2013/ELOG-1332) dated July 31, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

Zoning
We note that the site is zoned P-1 (Restricted Preservation), P-2 (General Preservation), and R-10 (Residential) according to the Land Use Ordinance (LUO). We acknowledge that the school is a permitted use within the P-2 and R-10 districts. We have confirmed with the Department of Land and Natural Resources as well as the Office of Conservation and Coastal Land that the school is a permitted use within the P-1 district. The school improvements will comply with all development standards of the LUO.

We acknowledge that the site is located within the State Land Use Urban and Conservation Districts, adjacent to a reach of Makiki Stream, and within Flood Zone X.

PV Panels
The classroom and restroom trailers on site may be outfitted with roof-mounted photovoltaic (PV) panels. These panels would allow for a more efficient, cost effective source of energy for the school. The PV panels are accessory to the school use and the power generated will be used for school purposes, primarily lighting. PV panels will not supply energy to Hawaiian Electric Company; therefore, it is not considered a utility installation. This information will be included in the Draft Environmental Assessment (EA).

Primary Urban Center Development Plan
The Draft EA will include a discussion on the Primary Urban Center Development Plan and how the school improvements are consistent with the plan.

Site Plan
The Draft EA will include a more detailed site plan and a location map which clearly shows the property boundaries and required setbacks in relation to the site.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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

MICHAEL D. FORMBY
DIRECTOR

MARK N. GARRITY, AICP
DEPUTY DIRECTOR

TP7/13-521636R

July 31, 2013

Ms. Catie Cullison, Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

SUBJECT: Pre-Consultation Draft Environmental Assessment (DEA) Halau Ku Mana Public Charter School Improvements; Honolulu, Oahu, Hawaii

In response to your letter dated July 1, 2013, we have the following comments:

- With the increase in student enrollment, a traffic assessment should be done to determine that motorists do not queue onto the City roadway during peak drop-off and pick-up times.

- The school should provide adequate on-site parking for teachers, administrators, and visitors, and ensure that parking is in compliance with the Americans with Disabilities Act (ADA).

We reserve further comment pending submission and review of the DEA.

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

Very truly yours,

for Michael D. Formby
Director

PBR HAWAII
& ASSOCIATES, INC.

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1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

March 12, 2014

Mr. Michael D. Formby, Director
City & County of Honolulu
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, HI 96813

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Mr. Formby,

Thank you for your letter (TP7/13-521636R) dated July 31, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

Traffic. We understand that a traffic assessment should be completed if student enrollment should increase. However, please note that the school improvements are intended to address a deficiency in existing classroom space and not an increase in student enrollment.

An increase in vehicular traffic is expected during construction. Upon completion of construction, traffic is expected to be reduced to pre-development levels. The construction will not cause unnecessary road closures along Makiki Heights Drive. In the long-term, the Project will not generate any additional trips during school hours as no significant change in student population is expected.

Parking. Hālau Kū Māna Public Charter School will use on-site parking for all faculty and staff, as well as provide some visitor parking, in order to keep street parking available for those accessing Makiki Forest Reserve and to decrease any inconvenience to surrounding homes and motorists. All parking will be in compliance with the Americans with Disabilities Act (ADA).

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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

July 24, 2013

Ms. Catie Cullison, AICP
Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

Subject: Preconsultation for Environmental Assessment
Halau Ku Mana Public Charter School Improvements
Tax Map Keys: 2-5-019: 008 (por.) and 2-5-020: 003, 004, 005, and 008

In response to your letter of July 1, 2013, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Fire department access roads shall be provided such that any portion of the facility or any portion of an exterior wall of the first story of the building is located not more than 150 feet (46 m) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1; Uniform Fire Code [UFC]™, 2006 Edition, Section 18.2.3.2.2.)

   A fire department access road shall extend to within 50 ft (15 m) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1; UFC™, 2006 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 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1; UFC™, 2006 Edition, Section 18.3.1, as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have questions, please call Acting Battalion Chief Gary Lum of our Fire Prevention Bureau at 723-7152 or glum@honolulu.gov.

Sincerely,

ROLLAND J. HARVEST
Assistant Chief

RJH/SY:bh

PBR HAWAII
& ASSOCIATES, INC.

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Hilo, Hawai'i 96720-1553
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March 12, 2014

Mr. Rolland J. Harvest, Assistant Chief
City & County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, HI 96813-5007

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Chief Harvest,

Thank you for your letter dated July 24, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

1. The Hālau Kū Māna Public Charter School improvements will include fire access roads in compliance with the National Fire Protection Association, Uniform Fire Code, 2006 Edition.
2. An adequate water supply capable of supplying the required water flow for fire protection will be provided.
3. Civil drawings will be submitted to the Honolulu Fire Department for review and approval at the appropriate time.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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 W. CALDWELL
MAYOR

LOUIS M. KEALOHA
CHIEF

DAVE M. KAJIHIRO
MARIE A. McCAULEY
DEPUTY CHIEFS

OUR REFERENCE EO-WS

July 19, 2013

Ms. Catie Cullison, AICP
Associate
PBR Hawaii and Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

This is in response your letter dated July 1, 2013, requesting comments on the Pre-Consultation, Environmental Assessment, for the Halau Ku Mana Public Charter School Improvements project located in Makiki.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please contact Major Roy Sugimoto of District 1 (Central Honolulu) at 723-3327 or via e-mail at rsugimoto1@honolulu.gov.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By Clayton G. Kau
CLAYTON G. KAU
Assistant Chief
Support Services Bureau

Serving and Protecting With Aloha

PBR HAWAII
& ASSOCIATES, INC.

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SCOTT MURAKAMI, ASLA, LEED®AP
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printed on recycled paper

March 12, 2014

Chief Louis M. Kealoha
City & County of Honolulu
Honolulu Police Department
801 South Beretania Street
Honolulu, HI 96813

SUBJECT: PRE-CONSULTATION FOR HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS, MAKIKI VALLEY, O'AHU

Dear Chief Kealoha,

Thank you for your letter (EO-WS) dated July 19, 2013 regarding the pre-consultation for the proposed Hālau Kū Māna Public Charter School improvements. As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Hālau Kū Māna Public Charter School improvements will have no significant impact the Honolulu Police Department's facilities or operations.

We appreciate your participation in the environmental review process. Your letter will be included in the Draft Environmental Assessment (EA). We will send you a copy of the Draft EA when it is available.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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DRAFT EA COMMENTS AND RESPONSES
Hālau Kū Māna Public Charter School

Agencies/Organizations/Individuals	Draft EA Sent	Comment Date
Department of Land and Natural Resources (Approving Agency)	3/12/2014	-
OEQC	3/12/2014	-
STATE		
Department of Accounting and General Services	3/23/2014	4/3/2014
Department of Agriculture	3/23/2014	-
Department of Business, Economic Development & Tourism	3/23/2014	-
DBEDT - Office of Planning	3/23/2014	-
DBEDT - Energy Office	3/23/2014	-
Department of Defense	3/23/2014	-
Department of Education	3/23/2014	4/4/2014
Department of Hawaiian Home Lands	3/23/2014	-
Department of Health	3/23/2014	-
DOH - Wastewater Branch	3/23/2014	4/1/2014
DOH - Environmental Planning Office	3/23/2014	4/8/2014
Department of Human Services	3/23/2014	5/7/2014
Department of Labor and Industrial Relations	3/23/2014	3/31/2014
DLNR - HPD (Historic Preservation Division)	3/23/2014	-
DLNR - Land Division	3/23/2014	4/21/2014
DLNR - State Parks	3/23/2014	5/5/2014
Department of Transportation	3/23/2014	4/29/2014
Office of Hawaiian Affairs	3/23/2014	-
UH Water Resources Research Center	3/23/2014	-
FEDERAL		
U.S. Army - Engineer Division	3/23/2014	6/6/2014
U.S. Fish and Wildlife Service	3/23/2014	3/31/2014
Federal Emergency Management Agency	3/23/2014	3/31/2014
CITY & COUNTY OF HONOLULU		
Board of Water Supply	3/23/2014	4/14/2014
Department of Community Services	3/23/2014	-
Department of Design & Construction	3/23/2014	4/28/2014
Department of Environmental Services	3/23/2014	-
Department of Facility Maintenance	3/23/2014	4/15/2014
Department of Parks & Recreation	3/23/2014	3/27/2014
Department of Planning & Permitting	3/23/2014	-
Department of Transportation Services	3/23/2014	4/21/2014
Fire Department	3/23/2014	4/2/2014
Police Department	3/23/2014	4/10/2014
LIBRARIES		
Hawaii State Library - Hawaii Documents Center	3/23/2014	-
Hawaii State Library - Manoa	3/23/2014	-
UH Hamilton Library	3/23/2014	-
Makiki Community Library	3/23/2014	-
Kaimuki Regional Library	3/23/2014	-
ELECTED OFFICIALS		
Rep. Della Au Belatti	3/23/2014	-
Sen. Brian Taniguchi	3/23/2014	-
Councilmember Carol Fukunaga	3/23/2014	-
CITIZEN GROUPS/INDIVIDUALS, CONSULTED PARTIES		
Joslyn Mahealani Kaawa	3/23/2014	-
Coco Needham	3/23/2014	-
HECO	3/23/2014	-
Hawaii Nature Center	3/23/2014	-
Hana Hauoli School	3/23/2014	-

NEIL ABERCROMBIE
GOVERNOR

Dean H. Seki
Comptroller

Maria E. Zielinski
Deputy Comptroller

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

APR - 3 2014

(P)1123.4

Ms. Catie Cullison, AICP, Project Manager/Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: Draft Environmental Assessment for the
Halau Ku Mana Public Charter School Improvement Project
TMK: (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004
(1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)

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 Mr. Alva Nakamura of the Planning Branch at 586-0488.

Sincerely,

JAMES K. KURATA
Public Works Administrator

AN:lnn
c: Mr. Mana Maoli, c/o Halau Ku Mana Public Charter School

PBR HAWAII
& ASSOCIATES, INC.

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September 24, 2014

Mr. James K. Kurata, Public Works Administrator
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

Attn: Mr. Alva Nakamura

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Kurata:

Thank you for your letter ((P)1123.4) dated April 3, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the school improvements do not impact any of the Department of Accounting and General Services' (DAGS) projects or existing facilities in this area and that DAGS has no comments to offer at this time.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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NEIL ABERCROMBIE
GOVERNOR

KATHRYN S. MATAYOSHI
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

April 4, 2014

Ms. Catie Cullison
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: **Draft Environmental Assessment (DEA) for the Proposed Halau Ku Mana Public Charter School Improvements, Makiki Valey, Oahu, Hawaii, TMK (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)**

The Department of Education (DOE) has reviewed the Draft Environmental Assessment (DEA) for the Proposed Halau Ku Mana Public Charter School Improvements.

The DOE has no comment to offer regarding this project.

Thank you for the opportunity to provide comments. If you have any questions, please call Heidi Meeker of the Facilities Development Branch at 377-8301.

Respectfully,

Kenneth G. Masden II
Public Works Manager
Planning Section

KGM:jmb

c: Mana Maoli, Halau Ku Mana Public Charter School

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

PBR HAWAII
& ASSOCIATES, INC.

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September 24, 2014

Mr. Kenneth G. Masden II
Public Works Manager
Planning Section
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, HI 96804

Attn: Ms. Heidi Meeker, Facilities Development Branch

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Masden:

Thank you for your letter dated April 4, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we acknowledge that the Department of Education has no comments to offer at this time.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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NEIL ABERCROMBIE
GOVERNOR OF HAWAII

LINDA ROSEN, M.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

LUD-2 5 019 008-ID1662
DEA Halau Ku Mana Imprv

April 1, 2014

Ms. Catie Cullison, AICP
Project Manager/Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: Draft Environmental Assessment for Halau Ku Mana Public Charter School Improvements at 2131 Makiki Heights Drive, Honolulu, Oahu 96822
TMK (1) 2-5-019: 008 (portion); 2-5-020: 003; 2-5-020: 004; 2-5-020: 005 (portion); 2-5-020: 008 (portion)

Thank you for allowing us the opportunity to provide comments on the above subject project. We have the following information to offer.

As the development will be updated to current rules and standards, we have no objections to the proposed improvements to the Halau Ku Mana Public Charter School. All wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems."

Should you have any questions, please contact Mr. Mark Tomomitsu of our branch at 586-4294.

Sincerely,

SINA PRUDER, P.E., CHIEF
Wastewater Branch

LM/MST:lmj

c: Ms. Mana Maoli, Halau Ku Mana Public Charter School
Ms. Laura McIntyre, DOH-Environmental Planning Office
Mr. George I. Atta, C&C of Honolulu, Dept. of Planning & Permitting 7th Floor

PBR HAWAII
& ASSOCIATES, INC.

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September 24, 2014

Ms. Sina Pruder, P.E., Chief
State of Hawai'i
Department of Health
Wastewater Branch
P.O. Box 3378
Honolulu, HI 96801-3378

Attn: Mr. Mark Tomomitsu

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Ms. Pruder:

Thank you for your letter (your reference number LUD-2 5 019 008-ID1662) dated April 1, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the Department of Health Wastewater Branch has no objections to the proposed improvement as the development will be updated to current rules and standards. We understand that all wastewater plans must conform to applicable provisions of the Hawai'i Administrative Rules, Chapter 11-62, "Wastewater Systems."

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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NEIL ABERCROMBIE
GOVERNOR OF HAWAII

LINDA ROSEN, M.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
[EPO 14-055]
[DEA Halau Ku Mana Public Charter School Improvements]

April 8, 2014

Ms. Catie Cullison, Associate
PBR Hawaii & Associates, Inc
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison

SUBJECT: Draft Environmental Assessment for Halau Ku Mana Public Charter School

The Department of Health (DOH), Environmental Planning Office (EPO), has not yet received a specific letter seeking comments from our office or a notification as to when comments are due. However, we would like to comment on the subject document. The document was routed to the relevant Environmental Health divisions and offices including the Wastewater branch that provided comments on July 15, 2013 during the pre-consultation phase. EPO recommends that you review the standard comments at: http://health.hawaii.gov/epo/home/landuse-planning-review-program/. You are required to adhere to all applicable standard comments.

You may also wish to review the recently revised Water Quality Standards Maps that have been updated for all islands. The new Water Quality Standards Maps (2013) can be found at: http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/water-quality-standards/

The EPO suggests that you examine the many sources available on strategies to support the sustainable and healthy design of communities and buildings, including the:
State of Hawaii, Office of Planning: www.planning.hawaii.gov and the 2013 ORMP;
U.H., School of Ocean and Earth Science and Technology: www.soest.hawaii.edu;
U.S. Health and Human Services: www.hhs.gov/about/sustainability;
U.S. Environmental Protection Agency's sustainability programs: www.epa.gov/sustainability;
U.S. Green Building Council's LEED program: www.usgbc.org/leed; and
Smart Growth America: www.smartgrowthamerica.org
International Well Building Standard: http://delosliving.com

The DOH encourages everyone to apply these sustainability strategies and principles early in the planning and review of projects. We also request that for future projects you consider conducting a Health Impact Assessment (HIA). More information is available at:
www.cdc.gov/healthyplaces/hia.htm
www.epa.gov/research/healthscience/health-impact-assessment.htm

We request you share all of this information with others to increase community awareness on sustainable, innovative, inspirational, and healthy community design.
Mahalo,
Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

PBR HAWAII
& ASSOCIATES, INC.

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

KAPOLEI OFFICE
1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

September 24, 2014

Ms. Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office
State of Hawai'i
Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Ms. McIntyre:

Thank you for your letter (your reference number EPO 14-055) dated April 8, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

1. As recommended, the Environmental Planning Office's (EPO) standard comments were reviewed for applicability to the proposed school improvements at Hālau Kū Māna.
2. Thank you for informing us that the Water Quality Standards Maps were recently revised. We reviewed the new maps and have confirmed that the information provided in the EA is still accurate.
3. We have examined the available resources on strategies to support the sustainable and healthy design of communities and buildings. As such, the following concepts will be incorporated into the proposed school improvements.
    - Re-use of building material. The proposed portable classrooms will be re-used from a campus facility elsewhere on O'ahu.
    - Energy use policy. Hālau Kū Māna Public Charter School has established energy conservation policies and practices, which include reliance on natural light and airflow to minimize use of artificial lighting and cooling systems.
    - Solar – implementation of photovoltaic panels.
    - Primary and secondary wastewater treatment.
    - Stormwater infiltration, bioremediation.
    - Food use/waste policies and proposed practices.
4. Hālau Kū Māna will consider conducting a Health Impact Assessment for future projects.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\DOH-EPO.docx

NEIL ABERCROMBIE
GOVERNOR

PATRICIA McMANAMAN
DIRECTOR

BARBARA A. YAMASHITA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment & Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawaii 96813

May 7, 2014

Refer to 14-0178

Ms. Catie Cullison, AICP
Project Manager
PBR Hawaii and Associates
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: Halau Ku Mana Public Charter School Improvements Project

Thank you for your letter dated March 20, 2014 that requests the Department of Human Services (DHS) review and comment on the draft Environmental Assessment (EA) for the Halau Ku Mana Public Charter School Improvement Project.

The DHS has reviewed the 300 page CD of the proposed draft EA. Please be advised that there are several DHS licensed child care facilities in the near vicinity that may be impacted by the proposed project.

If you have any questions or need further information, please contact Ms. Jill Arizumi, Child Care Program Specialist, at (808) 586-5240.

Sincerely,

Scott Nakasone
Assistant Division Administrator

c: Patricia McManaman, DHS Director

PBR HAWAII
& ASSOCIATES, INC.

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

KAPOLEI OFFICE
1001 Kamokila Boulevard
Kapolei Building, Suite 313
Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

September 24, 2014

Mr. Scott Nakasone
Assistant Division Administrator
State of Hawai'i
Department of Human Services
820 Mililani Street, Suite 606
Honolulu, HI 96813

Attn: Ms. Jill Arizume

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Nakasone:

Thank you for your letter (14-0178) dated May 7, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We note that there are several DHS licensed family child care facilities located in the vicinity of the school that may be impacted by the construction. We acknowledge that while there will be temporary construction-related impacts to air quality, noise, solid waste generation, and storm water quality/quantity, the school as an educational institution provides a significant beneficial impact for education and social welfare. The project will address any short-term, construction-related impacts through compliance with County, State and Federal rules, regulations, and permit requirements.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\DHS.docx

NEIL ABERCROMBIE
GOVERNOR

DWIGHT TAKAMINE
DIRECTOR

JADE T. BUTAY
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
830 PUNCHBOWL STREET, ROOM 321
HONOLULU, HAWAII 96813
www.hawaii.gov/labor
Phone: (808) 586-8844/Fax: (808) 586-9099

March 31, 2013

PBR HAWAII & Associates, Inc.
ATTN: Catie Cullison, AICP, Project Manager/Associate
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Catie Cullison:

This is in response to your request for comments dated March 20, 2014 on the Environmental Assessment report for the Halau Ku Mana Public Charter School Improvements project in Makiki Valley on the island of Oahu.

The Department of Labor and Industrial Relations has no comments, and we foresee no impact on our existing or proposed programs. Should you have any questions, please call me at (808) 586-8844.

Sincerely,

DWIGHT TAKAMINE
Director

PBR HAWAII
& ASSOCIATES, INC.

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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Kapolei, Hawai'i 96707-2005
Tel: (808) 521-5631
Fax: (808) 535-3163

HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

printed on recycled paper

September 24, 2014

Mr. Dwight Takamine
State of Hawai'i
Department of Labor and Industrial Relations
830 Punchbowl Street, Room 321
Honolulu, HI 96813

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Takamine:

Thank you for your letter dated March 31, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the school improvements will not impact any of the Department of Labor and Industrial Relations' existing or proposed programs and that the department has no comments to offer at this time.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\DLIR.docx

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
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

April 21, 2014

Mana Maoli
c/o Halau Ku Mana Public Charter School
Attn: Mahina Duarte, Po'o Kumu
2101 Makiki Heights Drive
Honolulu, HI 96822

via email: mahina@halaukumana.org

Dear Ms. Duarte,

SUBJECT: Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments. and (3) Commission on Water Resource Management

At this time, enclosed are comments from (1) Land Division – Oahu District; and (2) Engineering Division. No other comments were received as of our suspense date. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at 587-0439. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)

c: PBR HAWAII & Associates, Inc.
Attn: Ms. Catie Cullison via email: ccullison@pbrhawaii.com

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
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

March 24, 2014

MEMORANDUM

TO:

DLNR Agencies:
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X 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: Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment
LOCATION: Makiki Valley, O`ahu, Honolulu; Tax Map Keys: (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)
APPLICANT: Mana Maoli by its consultant, PBR HAWAII & Associates, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document which can be found here:

1. Go to: https://sp01.ld.dlnr.hawaii.gov/LD
2. Login: Username: LD\Visitor Password: 0pa$$word0 (first and last characters are zeros)
3. Click on: Requests for Comments
4. Click on the subject file "Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment" then click on "Files" and "Download a copy". (Any issues accessing the document should be directed to Jonathan Real, Applications/Systems Analyst at 587-0427.)

Please submit any comments by April 21, 2014. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Comments:

According to our research, TMK (1) 2-5-20:008 portion is currently not under the management jurisdiction of the Division of State Parks (State Parks). An executive order setting aside the subject land to State Parks would be in order.

Signed:
Print Name:
Date: 3/27/14

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
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

'14 MAR 24 PM 02:39 ENGINEERING

March 24, 2014

FR:

MEMORANDUM

TO:

DLNR Agencies:
X Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X 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: Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment
LOCATION: Makiki Valley, O`ahu, Honolulu; Tax Map Keys: (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)
APPLICANT: Mana Maoli by its consultant, PBR HAWAII & Associates, Inc.

2014 MAR 27 P 2:53 DEPT OF NATURAL RESOURCES STATE OF HAWAII

RECEIVED LAND DIVISION

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document which can be found here:

1. Go to: https://sp01.ld.dlnr.hawaii.gov/LD
2. Login: Username: LD\Visitor Password: 0pa$$word0 (first and last characters are zeros)
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4. Click on the subject file "Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment" then click on "Files" and "Download a copy". (Any issues accessing the document should be directed to Jonathan Real, Applications/Systems Analyst at 587-0427.)

Please submit any comments by April 21, 2014. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Signed: _____
Print Name: Carty S. Chang, Chief Engineer
Date: 3/24/14

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
REF: DEA for Halau Ku Mana Public Charter School Improvements, Makiki Valley, Honolulu Oahu.022

COMMENTS

(X) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone X. The National Flood Insurance Program (NFIP) does not regulate developments within Zone X.

( ) Please take note that the project site according to the Flood Insurance Rate Map (FIRM), is located in Zone ___.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
( ) Mr. Carolyn Cortez at (808) 270-7813 of the County of Maui, Department of Planning.
( ) Mr. Stanford Iwamoto at (808) 241-4884 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

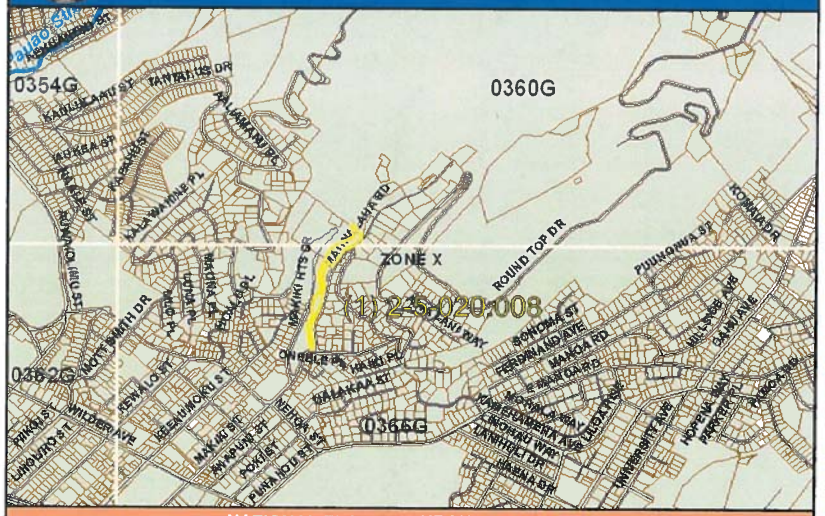
( ) Other: _____

Should you have any questions, please call Mr. Dennis Imada of the Planning Branch at 587-0257.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER
Date: 3/24/14

State of Hawaii

FLOOD HAZARD ASSESSMENT REPORT



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD ZONE DEFINITIONS

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD – The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water-surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- **Zone A:** No BFE determined.
- **Zone AE:** BFE determined.
- **Zone AH:** Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO:** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V:** Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE:** Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF:** Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA – An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded):** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X:** Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D:** Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

PROPERTY INFORMATION

COUNTY:	HONOLULU
TMK NO:	(1) 2-5-020-008
PARCEL ADDRESS:	
FIRM INDEX DATE:	JANUARY 19, 2011
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL(S):	15003C0360G-JANUARY 19, 2011 15003C0366G-JANUARY 19, 2011
PARCEL DATA FROM:	APRIL 2013
IMAGERY DATA FROM:	MAY 2006

IMPORTANT PHONE NUMBERS

County NFIP Coordinator	
City and County of Honolulu	
Mario Siu-Li, CFM	(808) 768-8098
State NFIP Coordinator	
Carol Tyau-Beam, P.E., CFM	(808) 587-0267

Disclaimer: The Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use of the information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR from any liability, which may arise from its use.

If this map has been identified as 'PRELIMINARY' or 'UNOFFICIAL', please note that it is being provided for informational purposes and is not to be used for official/legal decisions, regulatory compliance, or flood insurance rating. Contact your county NFIP coordinator for flood zone determinations to be used for compliance with local floodplain management regulations.

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

Department of Land and Natural Resources
State of Hawaii

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2014 APR 21 PM 2:33

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

2014 MAR 25 AM 11:03

March 24, 2014

MEMORANDUM

TO:

DLNR Agencies:
X Div. of Aquatic Resources
__ Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X 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: Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment
LOCATION: Makiki Valley, O`ahu, Honolulu; Tax Map Keys: (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)
APPLICANT: Mana Maoli by its consultant, PBR HAWAII & Associates, Inc.

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document which can be found here:

1. Go to: https://sp01.ld.dlnr.hawaii.gov/LD
2. Login: Username: LD\Visitor Password: 0pa$$word0 (first and last characters are zeros)
3. Click on: Requests for Comments
4. Click on the subject file "Halau Ku Mana Public Charter School Improvements, Draft Environmental Assessment" then click on "Files" and "Download a copy". (Any issues accessing the document should be directed to Jonathan Real, Applications/Systems Analyst at 587-0427.)

Please submit any comments by April 21, 2014. 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 Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

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

Signed:
Print Name: William M. Tam, Deputy Director
Date: April 21, 2014

FILE ID: RFD 3832.3
DOC ID: 11526

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON

WILLIAM D. BALFOUR, JR.
KAMANA BEAMER
MILTON D. PAVAO
LINDA ROSEN, M.D., M.P.H.
JONATHAN STARR
TED YAMAMURA

WILLIAM M. TAM
DEPUTY DIRECTOR

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

April 21, 2014

REF: RFD.3833.3

TO: Russell Tsuji, Administrator
Land Division

FROM: William M. Tam, Deputy Director
Commission on Water Resource Management

SUBJECT: Halau Ku Mana Public Charter School Improvements

FILE NO.:
TMK NO.: (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion)

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://www.hawaii.gov/dlnr/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 EPA 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://hawaii.gov/dbedt/czm/initiative/lid.php.

☐ 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.

Permits required by CWRM:
Additional information and forms are available at http://hawaii.gov/dlnr/cwrm/info_permits.htm.

☐ 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) required before any well construction work begins.

☐ 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(s) can be made to the bed and/or banks of a stream channel.

☐ 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) 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 implementation of stormwater BMPs and low-impact design measures are commended.

To help you select the type of plants appropriate for the climate in your area, visit the Board of Water Supply's website at http://www.boardofwatersupply.com/cssweb/display.cfm?sid=1360.

We also recommend following the Landscape Industry Council of Hawaii's irrigation water conservation best practices (see page 6-2 of Hawaii Water Conservation Plan located at http://files.hawaii.gov/dlnr/cwrm/planning/hwcp2013.pdf).

Please consider using high efficiency fixtures. A listing of EPA-certified high-efficiency fixtures can be found at http://www.epa.gov/watersense/products/index.html

If there are any questions, please contact Lenore Ohye at 587-0216.

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& ASSOCIATES, INC.

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1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

September 24, 2014

Mr. Russell Y. Tsuji, Land Administrator
State of Hawai'i
Department of Land and Natural Resources
PO Box 621
Honolulu, HI 96809

Attn: Mr. Steve Molmen, Supervising Land Agent

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Tsuji:

Thank you for your letter dated April 21, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to the comments received from the following Department of Land and Natural Resources (DLNR) division: 1) Land Division; 2) Engineering Division; and 3) Commission on Water Resource Management. We understand that no comments from other DLNR Divisions where received as of your suspense date.

Land Division: We acknowledge that an executive order setting aside a portion of the subject land (TMK [1] 2-5-20:008 portion) to State Parks would be in order because it is not currently under the management jurisdiction of the Division of State Parks.

Engineering Division: We appreciate the Engineering Division's confirmation that the project is located in the Flood Insurance Rate Map Zone X which is not regulated by the National Flood Insurance Program.

Commission on Water Resource Management: We acknowledge the recommendations to refer to the State Water Code, Chapter 174C, Hawai'i Revised Statutes, and Hawai'i Administrative Rules, Chapters 13-167 to 13-171, in addition to the recommendation that the project implement storm water best management practices and low-impact design measures according to the links of resources provided in the comment letter. If you have any questions regarding this project, please do not hesitate to contact me at 521-5631.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

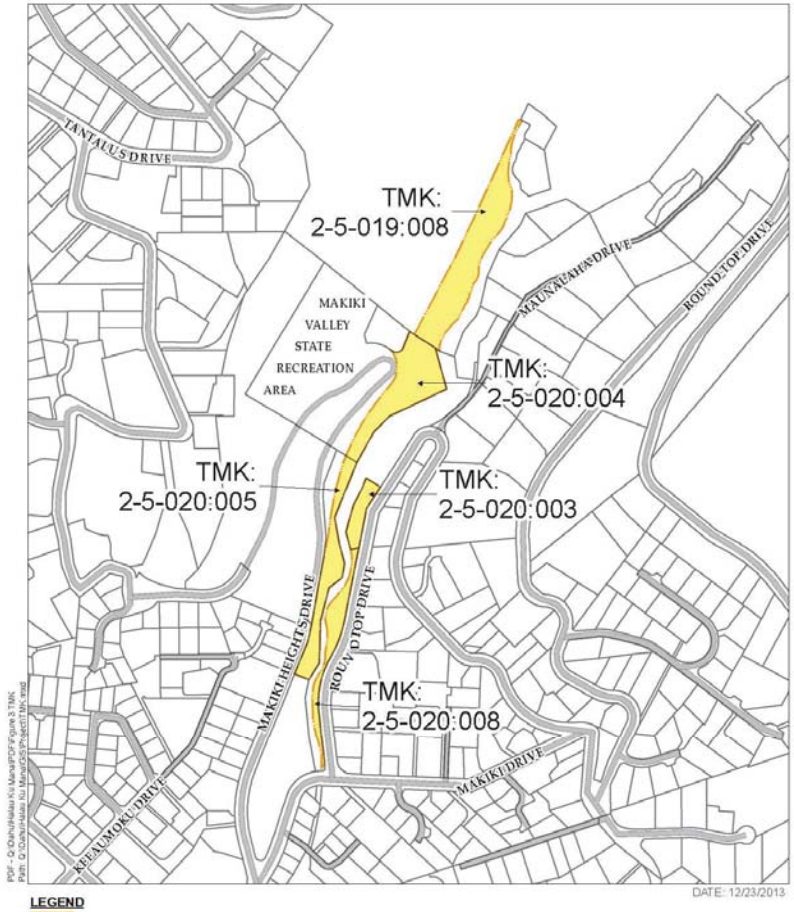
Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\DLNR.docx



LEGEND
Site
Tax Map Key Boundary (2013)
Public Road

Source: City & County of Honolulu Real Property Tax 2013
Disclaimer: This Graphic has been prepared for general planning purposes only and should not be used for boundary interpretations or other spatial analysis.

FIGURE 3:
Tax Map Key

Hālau Kū Māna Public Charter School Improvements

NEIL ABERCROMBIE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

JESSE K. SOUKI
FIRST DEPUTY

WILLIAM M. TAM
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

May 5, 2014

SENT VIA REGULAR MAIL
Ms. Catie Cullison, AICP, Associate
PBR Hawai'i & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, HI 96813

Dear Ms. Cullison:

RE: Hālau Kū Māna Public Charter School Improvements, Draft Environmental Assessment, Lease No. SP0507, Makiki, O'ahu Dated March 2014

In response to the Draft Environmental Assessment, the Department of Land and Natural Resources, Division of State Parks (State Parks) is generally supportive of the proposed action covered under the DEA and offers the following comments:

The Department of Land and Natural Resources (Department) issued lease No. SP0507 to Mana Maoli, a Hawai'i nonprofit corporation on June 19, 2007 covering tax map key parcels: (1) 2-5-19: Por. 008, (1) 2-5-020:003, 005 and Por. 008 & Por. 004 (the "Leased Property") for educational purposes. On August 23, 2008, Mana Maoli entered in to Sublease No. 1 Under General Lease No. S-SP0507 covering the Leased Property for the purposes authorized pursuant to the underlying lease to Hālau Kū Māna, a Hawai'i public charter school. On September 6, 2007, the Department gave consent to the sublease without additional modifications or requirements.

State Parks notes that although no specific improvements appear to be planned for, or affected by parcel (1) 2-5-020:008, this parcel is not under the jurisdiction of State Parks and is considered unencumbered State land. The other parcels covered under the lease were set aside by Governor's Executive Order No. 3729 to the State Parks for park purposes on March 18, 1998.

The Leased Property is subject to public use in accordance with the terms and conditions of the lease except for a portion of Parcel 002 labeled as a restricted area (see attached map). Both the lessee/sublessee and the public are bound by State Parks' rules/statutes and other relevant regulation for the public use areas, except that the lessee/sublessee may use the public use areas for the purpose stated in the lease. The portion of Parcel 002 for restricted use

("Exclusive Use Area") includes approximately .911 acres near the Makiki Heights hairpin turn and is the area where the improvements were intended to be at the outset of the lease.

Regarding new improvements, we note the lease requires the prior written approval of the Chairperson and approvals, if any, are subject to conditions the Chairperson may impose. In addition, improvements located outside the Exclusive Use Area, while the Chairperson may authorize the improvements, the area is still subject to public use and access.

In the public use area covered under the lease Mauka of the restricted area, State Parks has worked with the adjacent Maunalaha community by enabling a curator agreement with Jocelyn Ka'awa which began in 2004 and has since expired. Although discussions have taken place regarding a new curator agreement, no final decisions have been made.

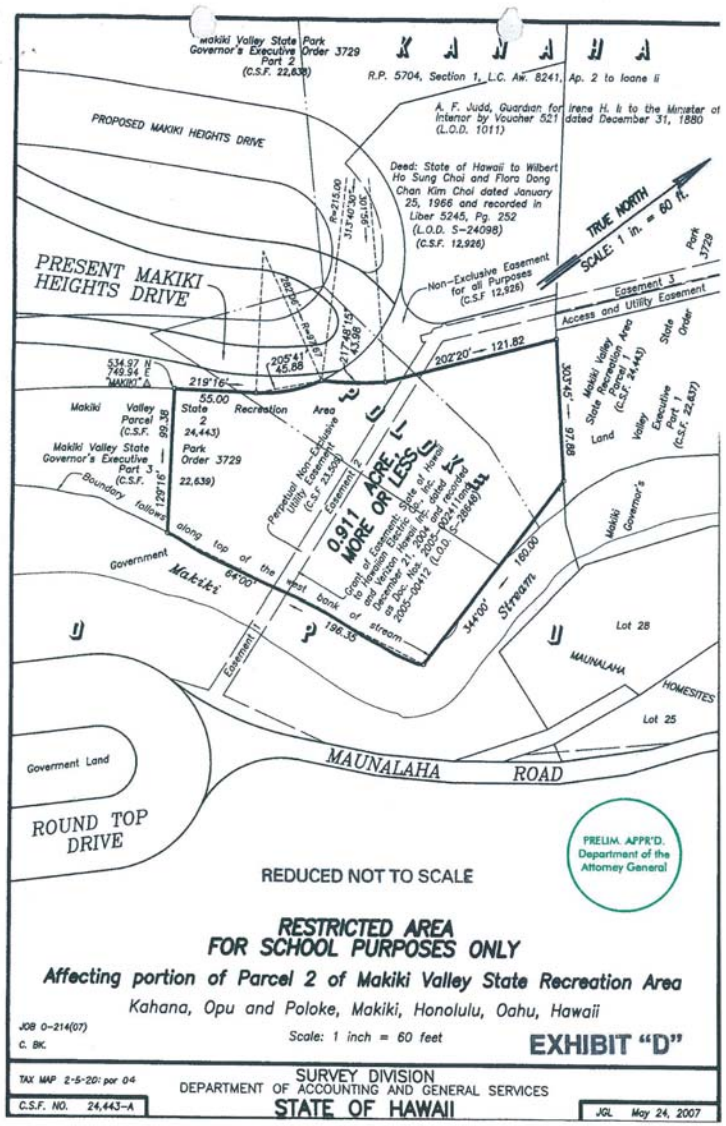
Please feel free to contact Stephen Soares at the Division of State Parks at 808 587-0505 if you have any questions.

Sincerely,

DANIEL S. QUINN
Administrator

Encl.

c: Mahina Duarte – via email



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printed on recycled paper

September 24, 2014

Mr. Daniel S. Quinn, Administrator
State of Hawai'i
Department of Land and Natural Resources
Division of State Parks
P.O. Box 621
Honolulu, HI 96809

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Quinn:

Thank you for your letter dated May 5, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

In general, we note that the Department of Land and Natural Resources (DLNR), Division of State Parks (State Parks) is supportive of the school improvements.

We acknowledge that TMK (1) 2-5-020:008 is not under the jurisdiction of State Parks and is considered unencumbered State land. A portion of TMK (1) 2-5-020:002 is set aside for restricted use ("Exclusive Use Area"). We understand that any school improvements located outside of the Exclusive Use Area is still subject to public use and access unless otherwise permitted.

Thank you for clarifying that the curatorship agreement covering the mauka public use area has expired and that there is ongoing discussion regarding a new curatorship agreement.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\DLNR-State Parks.docx

NEIL ABERCROMBIE
GOVERNOR

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
FORD N. FUCHIGAMI
RANDY GRUNE
AUDREY HIDANO
JADINE URASAKI

IN REPLY REFER TO:
DIR 0470
STP 8.1536

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

April 29, 2014

Ms. Mahina Duarte, Po'o Kumu
Mana Maoli
c/o Halau Ku Mana Public Charter School
2101 Makiki Heights Drive
Honolulu, Hawaii 96822

Dear Ms. Duarte:

Subject: Halau Ku Mana Public Charter School Improvements
Draft Environmental Assessment (DEA)
TMK: (1) 2-5-019:008 (por), 2-5-020:003, 2-5-020:004,
2-5-020:005 (por) and 2-5-020:008 (por)

The subject project is not expected to significantly impact the State highway facility. However, a permit from DOT Highways Division is required for the transport of oversized and/or overweight materials and equipment on State highway facilities.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

EKT:gm

c: ✓ Catie Cullison, PBR HAWAII & Associates, Inc.

bc: HWY-P (w/incoming), STP (2-5-019-008)

PBR HAWAII
& ASSOCIATES, INC.

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Tel/Cel: (808) 315-6878

September 24, 2014

Mr. Glenn M. Okimoto, Ph.D.
Director of Transportation
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Attn: Mr. Norren Kato

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Okimoto:

Thank you for your letter (your reference number DIR 0470, STP 8.1536) dated April 29, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the school improvements are not expected to significantly impact the State highway facility. We note that a permit from DOT Highways Division is required if the project requires the transport of oversized and/or overweight materials and equipment on State highway facilities.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\DOT.docx

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, HONOLULU DISTRICT
FORT SHAFTER, HAWAII 96858-5440

June 6, 2014

Regulatory Office

File No. POH-2014-00096

PBR HAWAII & Associates, Inc.
ATTN: Ms. Catie Cullison, AICP
Project Manager/Associate
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

The U.S. Army Corps of Engineers (Corps) has evaluated the information submitted on March 20, 2014, for the proposed Halau Ku Mana Public Charter School Improvements project. The project site is located within TMKs # (1) 2-5-019:008 (portion); (1) 2-5-20:003; (1) 2-5-20:004; (1) 2-5-20:005 (portion); (1) 2-5-20:008 (portion); Latitude 21.31293° N., Longitude 157.82942° W.) Honolulu, Island of Oahu, Hawaii. Your project has been assigned number POA-2014-00096, which should be referred to in all correspondence with us.

The Corps' regulatory authorities are based on two laws: Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403), which prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the Corps; and Section 404 of the Clean Water Act (CWA), which prohibits the discharge of dredged or fill material into waters of the U.S., including wetlands, without a Corps' permit. Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include "muskegs", swamps, marshes, bogs, and similar areas.

Based on the information you provided the proposed work shown on the drawing attached would not occur in wetlands and/or Waters of the U.S. and would, therefore, not be within the Corps' jurisdiction.

If changes to the plans or location of the work are necessary for any reason, your revised plans must be submitted to our office immediately for review and approval prior to conducting work in waters of the U.S. Additionally, nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

You may contact Mary Romero via email at mary.r.romero@usace.army.mil, by mail at the address above, or by phone at (808) 835-4300 if you have questions. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form is available at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Office

Enclosure: Drawing of project

PBR HAWAII
& ASSOCIATES, INC.

PRINCIPALS

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Chairman

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President

RUSSELL Y. J. CHUNG, FASLA, LEED®AP BD+C
Executive Vice-President

VINCENT SHIGEKUNI
Vice-President

GRANT T. MURAKAMI, AICP, LEED®AP BD+C
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TOM SCHNELL, AICP
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Managing Director - Hilo

SCOTT MURAKAMI, ASLA, LEED®AP
Associate

DACHENG DONG, LEED®AP
Associate

MARC SHIMATSU, ASLA
Associate

CATIE CULLISON, AICP
Associate

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September 24, 2014

Mr. George P. Young, P.E.
Chief, Regulatory Office
Department of the Army
U.S. Army Corps of Engineers
Honolulu District
Fort Shafter, HI 96858-5440

Attn: Ms. Mary Romero

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Young:

Thank you for your letter (your file number POH-2014-00074) dated June 6, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the proposed work would not occur in wetlands and/or waters of the U.S. and is, therefore, not under the jurisdiction of the U.S. Army Corps of Engineers. We understand that we must comply with other Federal, State, and local statutes, ordinances, or regulations; and that if any changes occur to the plans or location of work, revised plans are to be submitted to your office immediately for review.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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, Hawaii 96850

In Reply Refer To:
2014-TA-0236

MAR 3 1 2014

Ms. Catie Cullison
PBR Hawaii & Associates, INC.
101 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Subject: Technical assistance for the Draft Environmental Assessment for the Halau Ku Mana Public Charter School Improvements Project in Makiki, Oahu [TMKs: (1)-2-5-019-008 (portion), (1)-2-5-20:003, (1)-2-5-20:004, (1)-2-5-20:005 (portion), (1)-2-5-20:008 (portion)]

Dear Ms. Cullison:

The U.S. Fish and Wildlife Service (Service) received your letter, dated March 21, 2014, in which you requested our comments on the Draft Environmental Assessment (DEA) for the improvements on the Halau Ku Mana Public Charter School in Makiki, Oahu. This response is in accordance with sect 7 of the Endangered Species Act (ESA) of 1973, as amended [16 U.S.C. 1531 *et seq.*].

We have reviewed the draft EA and find that it successfully incorporates the guidance offered by the Service in our original response letter to you, dated July 19, 2013, regarding the protection of the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) and its habitat. In addition, the draft EA includes the Service's Best Management Practices to avoid or minimize impacts to fish and wildlife resources, including the relevant procedures and materials that will reduce direct and indirect negative impacts to aquatic habitats that result from project construction-related activities.

We appreciate your efforts to conserve endangered species. If you have any questions concerning these recommendations please contact Carrie Harrington, Fish and Wildlife Biologist (phone: 808-792-9400; fax: 808-792-9581).

Sincerely,

Aaron Nadig
Acting Assistant Field Supervisor:
Oahu, Kauai, NWHI, Am. Samoa

PBR HAWAII
& ASSOCIATES, INC.

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September 24, 2014

Mr. Aaron Nadig, Acting Assistant Field Supervisor:
United States Department of Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Nadig:

Thank you for your letter (your reference number 2014-TA-0236) dated March 31, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

Thank you for acknowledging that the Draft EA successfully incorporates the guidance offered by the U.S. Fish and Wildlife Service regarding efforts to conserve endangered species, including the Hawaiian hoary bat (*Lasiurus cinereus semotus*) and its habitat.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843

April 14, 2014

Ms. Catie Cullison, AICP
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

Subject: Your Letter Dated March 20, 2014 Requesting Comments on the Draft Environmental Assessment for The Halau Ku Mana Public Charter School Improvements on Makiki Heights Drive - Tax Map Key: 2-5-019: 008; 2-5-020: 003, 004, 005, 008

Thank you for the opportunity to comment on the proposed school improvements.

The applicant will be required to install a fire hydrant off the existing Board of Water Supply (BWS) 8-inch water main near the access to the school. The construction drawings should be submitted for our approval. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

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

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

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

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

Very truly yours,

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

cc: Mahina Duarte, Po'o Kumu

Water for Life . . . Ka Wai Ola

PBR HAWAII
& ASSOCIATES, INC.

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Tel/Cel: (808) 315-6878

September 24, 2014

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, HI 96843

Attn: Mr. Robert Chun

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT, MAKIKI VALLEY, O'AHU

Dear Mr. Lau:

Thank you for your letter dated April 14, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We understand that a fire hydrant off the existing Board of Water Supply (BWS) 8-inch water main must be installed as part of the school improvements. Construction drawings will be submitted to BWS for approval. Additional on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Water System Facility fees for resource development, transmission and daily storage will be paid at the appropriate time.

We acknowledge that the school improvements are subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the building permit.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

O:\Job30\3009.01 Halau Ku Mana EA\EA\DEA\DEA Comments-Responses\Responses\BWS.docx

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

CHRIS T. TAKASHIGE, P.E., CCM
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

April 28, 2014

PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Attn: Catie Cullison, AICP, Project Manager/Associate

Dear Ms. Cullison:

Subject: Draft Environmental Assessment (EA) for the Halau Ku Mana Public School Improvements

Thank you for the opportunity to review and comment. The Department of Design and Construction has the following comment to offer on the subject project:

Paragraph 4.6.3 (page 51), Currently Sand Island Wastewater Treatment Plant does not treat to secondary. Please note and correct.

Should there be any questions, please contact Russell Takara, Assistant Chief, Wastewater Division at 768-8746.

Sincerely,

Chris T. Takashige, P.E., CCM
Director

CTT: cf (555256)

PBR HAWAII
& ASSOCIATES, INC.

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1001 Bishop Street, Suite 650
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HILO OFFICE
1719 Haleloke Street
Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

September 24, 2014

Mr. Mark K. Yonamine, P.E., Acting Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, HI 96813

Attn: Mr. Russell Takara

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Takashige:

Thank you for your letter dated April 28, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

Thank you for clarifying that Sand Island Wastewater Treatment Plant does not treat to secondary. We will revise Section 4.6.3 (Wastewater) of the Draft EA accordingly.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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 14-298

April 15, 2014

Ms. Catie Cullison, AICP, Project Manager/Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Cullison:

SUBJECT: Halau Ku Mana Public Charter School Improvements

Thank you for the opportunity to review and to give our input regarding the subject Draft Environmental Assessment (DEA) dated March 20, 2014.

Our comments are as follows:

- Once construction phase commence, approved Best Management Practices (BMP) shall be placed as needed along Makiki Heights Drive.
- Upon completion of project; any deficiencies/damages within Makiki Heights Drive's right-of-way caused during construction of the subject project, shall be corrected and accepted by the City.

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.

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September 24, 2014

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, HI 96707

Attn: Mr. Kyle Oyasato, Division of Road Maintenance

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Sasamura:

Thank you for your letter (your reference number DRM 14-298) dated April 15, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

Hālau Kū Māna and its contractors will: 1) implement approved Best Management Practices as needed along Makiki Heights Drive once construction commences; and 2) correct any deficiencies/damages within Makiki Heights Drive right-of-way caused by construction of the school improvements.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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

TONI P. ROBINSON
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

March 27, 2014

Mana Maoli
c/o Halau Ku Mana Public Charter School
Attn: Mahina Duarte, Poo Kumu
2102 Makiki Heights Drive
Honolulu, Hawaii 96822

PBR HAWAII & Associates, Inc.
Attn: Ms. Catie Cullison, AICP, Project Manager/Associate
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Ms. Duarte and Cullison:

SUBJECT: Draft Environmental Assessment
Halu Ku Mana Public Charter School Improvements Project

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the proposed Halu Ku Mana Public Charter School Improvements Project.

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 Mr. John Reid, Planner at 768-3017.

Sincerely,

Toni P. Robinson
Director

TPR:jr
(555341)

PBR HAWAII
& ASSOCIATES, INC.

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1001 Bishop Street, Suite 650
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1719 Haleloke Street
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September 24, 2014

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

Attn: Mr. John Reid

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Ms. Nakota:

Thank you for your letter (your reference number 555341) dated March 27, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge that the school improvements will have no impact on any program or facility of the department. Per your request, we will remove the Department of Parks and Recreation from the Final EA distribution list.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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

MICHAEL D. FORMBY
DIRECTOR

MARK N. GARRITY, AICP
DEPUTY DIRECTOR

TP3/14-521636R

April 21, 2014

Ms. Catie Cullison, AICP
Associate
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

SUBJECT: Draft Environmental Assessment (DEA) Halau Ku Mana Private Charter School Improvements; Makiki Valley, Oahu, Hawaii

In response to your letter dated March 20, 2014, we have no comments to offer at this time.

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

Very truly yours,

for Michael D. Formby
Director

cc: Stephen Soares
Department of Land and Natural Resources

Mahina Duarte
Halau Ku Mana

PBR HAWAII
& ASSOCIATES, INC.

September 24, 2014

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

Attn: Mr. Michael Murphy

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Formby:

Thank you for your letter (your reference number TP3/14-521636R) dated April 21, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we acknowledge that the Department of Transportation Services has no comments to offer at this time.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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

April 2, 2014

Ms. Catie Cullison, AICP
Project Manager/Associate
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

Subject: Draft Environmental Assessment
Halau Ku Mana Public Charter School Improvements
Tax Map Keys: 2-5-019: 008 (Portion) and 2-5-020: 003, 004, 005 (Portion), and 008 (Portion)

In response to your letter of March 20, 2014, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) 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 m) from fire department access roads as measured by an approved route around the exterior of the building or facility. (National Fire Protection Association [NFPA] 1, Uniform Fire Code [UFC]™, 2006 Edition, Section 18.2.3.2.2.)

   A fire department access road shall extend to within 50 ft (15 m) of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. (NFPA 1, UFC™, 2006 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 mm) from a

water supply on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the AHJ [Authority Having Jurisdiction]. (NFPA 1, UFC™, 2006 Edition, Section 18.3.1, as amended.)

3. The unobstructed width and unobstructed vertical clearance of a fire apparatus access road shall meet county requirements. (NFPA 1, UFC™, 2006 Edition, Section 18.2.3.4.1.1, as amended.)

4. Submit civil drawings to the HFD for review and approval.

Should you have questions, please contact Acting Battalion Chief Terry Seelig of our Fire Prevention Bureau at 723-7151 or tseelig@honolulu.gov.

Sincerely,

Socrates D. Bratakos

SOCRATES D. BRATAKOS
Assistant Chief

SDB/SY:bh

cc: Mahina Duarte, Mana Maoli

PBR HAWAII
& ASSOCIATES, INC.

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September 24, 2014

Mr. Socrates D. Bratakos
Assistant Chief
Honolulu Fire Department
City and County of Honolulu
636 South Street
Honolulu, HI 96813-5007

Attn: Terry Seelig, Acting Battalion Chief

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Chief Bratakos:

Thank you for your letter dated April 2, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

1. Fire department access roads will be provided in compliance with NFPA 1, UFC, 2006 Edition, Sections 18.2.3.2.1 and 18.2.3.2.2.
2. A fire hydrant will be installed off the existing Board of Water Supply 8-inch water main as part of the school improvements in compliance with NFPA 1, UFC, 2006 Edition, Section 18.3.1, as amended. In addition, Hālau Kū Māna and its contractors will coordinate with the Fire Prevention Bureau regarding additional on-site fire protection requirements.
3. The fire apparatus road will meet county requirements (NFPA, UFC, 2006 Edition, Section 18.2.3.4.1.1, as amended).
4. Civil drawings will be submitted to the Honolulu Fire Department for review and approval.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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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

LOUIS M. KEALOHA
CHIEF

DAVE M. KAJIHIRO
MARIE A. McCAULEY
DEPUTY CHIEFS

OUR REFERENCE EO-WS

April 10, 2014

Ms. Catie Cullison, AICP
Project Manager/Associate
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Ms. Cullison:

This is in response to your letter dated March 20, 2014, requesting comments on the Draft Environmental Assessment for the Halau Ku Mana Public Charter School Improvements project.

The Honolulu Police Department has concerns regarding the project. We recommend installing school zone signs in the vicinity for students who walk to school since there are currently no sidewalks. Additionally, we recommend creating a crosswalk at the intersection of Makiki Street and Makiki Heights Drive for students to cross safely.

If there are any questions, please contact Major Roy Sugimoto of District 1 (Honolulu) at 723-3327 or via e-mail at rsugimoto1@honolulu.gov.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By Randal K. Macadangdang
RANDAL K. MACADANGDANG
Assistant Chief
Support Services Bureau

cc: Ms. Mahina Duarte, Halau Ku Mana
Public Charter School

Serving and Protecting With Aloha

PBR HAWAII
& ASSOCIATES, INC.

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Hilo, Hawai'i 96720-1553
Tel/Cel: (808) 315-6878

printed on recycled paper

September 24, 2014

Mr. Louis M. Kealoha
Chief of Police
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Attn: Randal K. Macadangdang, Assistant Chief, Support Services Bureau

SUBJECT: HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL IMPROVEMENTS DRAFT ENVIRONMENTAL ASSESSMENT

Dear Chief Kealoha:

Thank you for your letter (your reference number EO-WS) dated April 10, 2014 regarding the Hālau Kū Māna Public Charter School Improvements Draft Environmental Assessment (EA). As the planning consultant for the applicant, Mana Maoli, we are responding to your comments.

We acknowledge your department's recommendations to improve pedestrian facilities in the area. As part of the school improvements, a walking path from the Board of Water Supply pump station will be incorporated into the Site and connect with the existing public trails that pass through the site to improve pedestrian safety. The walking path will be located between the strip of land between Makiki Heights Drive and the top of bank of Makiki Stream. In addition, Hālau Kū Māna will continue to collaborate with surrounding neighbors and stakeholders to provide additional pedestrian safety measures in the area, including a crosswalk. We acknowledge that in the absence of sidewalks in the vicinity of the school, installation of school zone signs is recommended.

It is our understanding that the school will continue to work with its neighbors toward other pedestrian improvements such as school zone signage and crosswalks.

Thank you for reviewing the Draft EA. Your letter will be included in the Final EA.

Sincerely,

PBR HAWAII & Associates, Inc.

C. Cullison

Catie Cullison, AICP
Associate

cc: Stephen Soares, Department of Land and Natural Resources
Mahina Duarte, Hālau Kū Mana

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Appendix B

FLORA & FAUNA SURVEYS

Terrestrial Vegetation and Wildlife Surveys
Halau Ku Mana New Century Public Charter School
Makiki, Oʻahu, Hawaiʻi

Prepared for:
PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Prepared by:
LeGrande Biological Surveys, Inc.
68-310 Kikou Street
Waialua, Hawaii 96791
And:
Pacific Rim Conservation
3038 Oahu Avenue
Honolulu, Hawaii 96822

July 2013

Table of Contents

INTRODUCTION

This report includes the findings of a plant and animal inventory conducted at the current Halau Ku Mana School location as well as the surrounding areas within the subject TMKs. The subject property is located in Makiki on the Island of O'ahu, Hawaii. The purpose of the surveys is to inventory the plant and wildlife species present within the project area, with special attention to Listed, Proposed, and Candidate Endangered Species, critical habitats, and Species of Special Concern.

SITE DESCRIPTION

The existing school buildings and proposed construction is located at the first hairpin turn at 2101 Makiki Heights Drive. The property lines are delineated by Makiki Heights Drive and the Access Road to the DOFAW Makiki Baseyard to the north and the Makiki Stream to the South [a few sections cross the stream in some areas along the TMKs]. Principal soil types within the subject property include "Kawaihapai Stony Clay Loam" (KlaB) and "Kaena Stony Loam" (KaeD) (NRDC 2013).

The primary terrestrial habitat encountered in the study area is characterized by a disturbed wet alien forest. Photographs of the project area are found in Appendix A.

METHODS OF STUDY

This study was conducted by biologists Eric VanderWerf (Pacific Rim Conservation) and Maya LeGrande (LeGrande Biological Surveys). Prior to conducting fieldwork, the biologists reviewed existing scientific literature, older environmental impact assessments and statements, biological survey reports, topographic maps and images, and engineering drawings relevant to the proposed project. Field data was collected on July 11, 2013.

Plants were inventoried during a pedestrian survey along the entire interior length of the subject property as well as all boundaries. Observations were noted on plant associations and plant distribution, disturbances, topography, substrate types, exposure, drainage, and related factors. Faunal surveys were conducted by walking over the proposed project area and noting all bird and mammalian species observed. Birds were identified by sight using the naked eye and 10x binoculars, and by calls.

No effort was made to develop quantitative estimates of mammal populations within the project area.

SURVEY RESULTS

Vegetation

Prior to conducting fieldwork, we reviewed the U.S. Fish and Wildlife database (USFWS 2010a) in order to determine if any Threatened or Endangered taxa are known to reside within the study area or in close proximity. Although all plant species observed during the survey of the subject property were noted, the species list is restricted to naturally occurring species (or those presumed to be). The plant species that are obviously planted as ornamentals on the property were not included in the species list as they would skew the native vs. non-native data. We observed a total of 105 naturalized plant species. These species are listed in Appendix C. One hundred one (101) of the 105 species observed, or over 96%, are alien to Hawai'i and four are native (indigenous).

The subject property is dominated by a wet alien forest with large trees and liana species draping the limbs of the trees and lower stature stream vegetation. In areas where the current school is located, maintained lawns and ornamental plantings dominate.

Alien Wet Forest

Dominate tree species at the edges of the school campus include kukui (*Aleurites moluccana*), mango (*Mangifera indica*), monkeypod (*Samanea saman*), octopus tree (*Schefflera actinophylla*), African tulip (*Spathodea campanulata*), and Chinese banyan (*Ficus microcarpa*). Trees near the stream were commonly festooned with liana species such as white thunbergia (*Thunbergia fragrans*), Madeira vine (*Anredera cordifolia*), ivy gourd (*Coccinea grandis*), and maunaloa (*Canavalia cathartica*). Other species scattered along the bordering stream to the south-east of the current campus includes opiuma (*Pithecellobium dulce*), koa haole (*Leucaena leucocephala*), banana (*Musa* sp), mountain apple (*Psidium malaccense*) with and understory of downy wood fern (*Cyclosorus dentatus*), job's tears (*Coix lachrymajobi*), guinea grass (*Panicum maximum*), pikake honohono (*Clerodendrum chinense*), and kalo (*Alocasia esculenta*).

Campus Plantings

Several large tree and palm species are planted on the current campus along with areas of mowed lawn. In the upper section of the campus around the existing tent facility Polynesian introduced tree species such as kukui, mountain apple, and ulu (*Artocarpus altilis*), and niu or coconut (*Cocos nucifera*) have been planted. Near the teaching and administration buildings areas have been set aside for growing native Hawaiian and Polynesian plants. They include, uala or sweet potato, ko or sugarcane, kalo, awa, and pili grass. Other native ornamentals include, maiapilo, pohuehue, akia, hala, koa, wauke, noni, pia, oahi, uhaloa, and naio. None of these species were included in the species list at the end of the report as they were planted recently by the school and do not indicate natural vegetation at the site.

Wildlife

A total of 16 bird species were observed on the property during the site visit on 11 July 2013, of which 15 were alien (non-native) and one was native (see Table 1). None of the

species observed are listed as endangered or threatened. The only native bird species observed was the O'ahu 'Amakihi, of which one was seen and two more were heard. Some birds were observed perched in trees on the property, some were standing on the ground, and others were flying over the property.

Although the White Tern or Manu-o-Ku (*Gygis alba*) was not observed at the site during the visit, staff of the school said they had observed them on the property occasionally. White Terns are known to roost and nest at the Board of Water Supply tanks lower on Makiki Road (VanderWerf 2003), and it is not surprising that they may visit the school, which is located only a few hundred feet away.

DISCUSSION & RECOMMENDATIONS

The natural environment encompassed by the subject property has been altered by historical agricultural purposes, road construction, building construction, and the introduction and spread of non-native plant species. The area is dominated by weedy plant species that have become established and spread over the last century. None of the naturally occurring plant species (those not planted as ornamentals) are known to be a listed Endangered, Threatened, or Species of Concern (USFWS, 2012).

White Terns roost and breed in large trees on O'ahu and are considered threatened by the State of Hawai'i on this island. They do not build a nest, but lay their single egg directly on a large, bare tree branch (VanderWerf 2003). Several trees on the property appeared to be suitable for White Terns, including monkeypod, Chinese banyan, kukui, mango, yellow shower, and gunpowder trees. If any of the large trees on the property are to be cut or trimmed as part of the proposed work, they first should be carefully searched for White Tern eggs or chicks. If an egg or chick is found, the tree should not be cut or trimmed until the chick has grown up and flown away (fledged). Otherwise, the proposed work should have no detrimental effect on the avian resources of the area.

The results of our fieldwork represent a one-time snapshot of the wildlife and plants inhabiting the subject property. As such, these data cannot be considered a definitive list of all species that utilize habitats within the project area. Many species are diminutive and cryptic in nature making observation difficult. Other species are nocturnal and/or may use the area infrequently depending upon season, weather, interaction with other species, and dynamic changes in their populations.

In accordance with current USFWS guidance, pre-construction clearing of vegetation higher that 15 ft. in stature should be prohibited from June 1 to September 15 to help ensure that non-volant bat pups are not harmed by land clearing activities.

LITERATURE REVIEWED

American Ornithologists Union. 2005. List of the 2,037 Bird Species (with scientific and English names) known from the A.O.U. checklist area. 55pp.

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APPENDIX A – SITE PHOTOGRAPHS

Fig. 1 Entrance to Halau Ku Mana School from inside school property.

Fig. 2 View of upper campus with tent and bus parking.

Fig 3. View of existing campus with administration and teaching buildings.

Fig. 4 Typical stream vegetation with guinea grass, ape, coconut, and kukui.

APPENDIX B: BIRD SPECIES LIST

The following list is an inventory of the bird species observed at the Halau ku Mana Charter School during a site visit on 11 July 2013. It is possible that additional introduced bird species are present in the area and might be seen with greater survey effort. The names are arranged in generally accepted phylogenetic order and named in accordance with the American Ornithologists Union Checklist (2005) and the Hawaii Audubon Society (2005).

1. Scientific name.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:
   E= endemic= native only to the Hawaiian Islands.
   I= indigenous= native to the Hawaiian Islands and elsewhere.
   X=introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is Cook's arrival in the islands in 1778

SCIENTIFIC NAME	COMMON NAME	STATUS
COLUMBIDAE-PIDGEONS AND DOVES		
Streptopelia chinensis	Spotted Dove	X
Geopelia striata	Zebra Dove	X
PSITTACIDAE-PARROTS		
Psittacula krameri	Rose-ringed Parakeet	X
PYCNONOTIDAE-BULBULS		
Pycnonotus cafer	Red-vented Bulbul	X
Pycnonotus jocosus	Red-Whiskered Bulbul	X
TURDIDAE-THRUSHES		
Copsychus malabaricus	White-rumped Shama	X
ZOSTEROPIDAE-WHITE-EYES		
Zosterops japonicus	Japanese White-eye	X
STURNIDAE-MYNAS AND STARLINGS		
Acridotheres tristis	Common Myna	X
SYLVIIDAE-OLD WORLD WARBLERS		
Cettia diphone	Japanese Bush-warbler	X
FRINGILLIDAE-FINCHES		
Carpodacus mexicanus	House Finch	X
Paroaria coronate	Red-crested Cardinal	X
Cardinalis cardinalis	Northern Cardinal	X
Hemignathus chloris	O'ahu 'Amakihi	E
ESTRRILDIDAE-WAXBILLS AND MANNIKINS		
Padda oryzivora	Java Sparrow	X
Estrilda astrild	Common Waxbill	X
Lonchura punctulata	Nutmeg Mannikin	X

APPENDIX C: PLANT SPECIES LIST

The following checklist is an inventory of all the naturally occurring plant species observed within the Halau Ku Mana School subject property. The plant names are arranged alphabetically by family and then by species into each of three groups: Pteridophytes, Monocots, and Dicots. The taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner *et al.* (1990), Wagner and Herbst (1999) and Staples and Herbst (2005). Recent name changes are those recorded in the Hawaii Biological Survey series (Evenhuis and Eldredge, eds., 1999-2002). For each species, the following name is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:
   E= endemic= native only to the Hawaiian Islands.
   I= indigenous= native to the Hawaiian Islands and elsewhere.
   X=introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is Cook's arrival in the islands in 1778

SCIENTIFIC NAME	COMMON NAME	STATUS
PTERIDOPHYTES		
ASPLENIACEAE		
Asplenium nidus	ekaha	I
POLYPODIACEAE		
Phlebodium aureum	lauae haole	X
Phymatosorus grossus	lauae, maile scented fern	X
THELYPTERIDACEAE		
Cyclosorus dentatus	downy wood fern	X
MONOCOTS		
AGAVACEAE		
Cordyline fruticosa (L.) A.Chev.	*ti, ki*	X
Sansevieri trifasciata Prain	mother-in-laws tongue	X
ALOEACEAE		
Aloe vera (L.) N.L.Burm.	aloe	X
ARACEAE		
Alocasia macrorrhizos	ape	X
Colocasia esculenta	kalo, taro	X
Dracaena sp. L.	dracaena	X
Epipremnum pinnatum (L.) Engl.	golden pathos	X

ARECACEAE		
Areca catechu L.	betel nut palm	X
Caryota mitis Lour.	Clumbing fish tail palm	X
Cocos nucifera L.	coconut	X
Livistonia chinensis (Jacq.) R.Br.ex Blume	chinese fan palm	X
Phoenix hybrid	date palm	X
Pritchardia sp.	Fan palm	X
Roystonea regia Kunth	royal palm	X
CYPERACEAE		
Cyperus haspan L.		X
Cyperus rotundus L.	kili o'opu	X
Kyllinga nemoralis	white kyllinga	X
MUSACEAE		
Musa x paradisia L.	banana, mai`a	X
POACEAE		
Axonopus fissifolius(Raddi) Juhlm.	Narrow-leaved carpetgrass	X
Brachiaria mutica (Forssk.) Stapf	California grass	X
Coix lachrymajobi L.	job's tears	X
Cynodon dactylon (L.) Pers	manienie	X
Digitaria insularis (L.) Mez ex Ekman	sourgrass	X
Eragrostis tenella (L.) P.Beauv. Ex Roem.&Schult.		X
Melinis minutiflora P.Beauv.	molasses grass	X
Panicum maximum L.	Guinea grass	X
Paspalum urvillei Steud.	Vasey grass	X
Setaria verticillata (L.) P.Beauv.	Bristly foxtail	X
ZINGIBERACEAE		
Alpinia zerumbet (Pers.) BL Burtt	shell ginger	X
DICOTS		
ACANTHACEAE		
Asystasia gangetica (L.) T. Anderson	Chinese violet	X
Justicia betonica L.	white shrimp plant	X
Thunbergia fragrans Roxb.	White thunbergia	X
AIZOACEAE		
Trianthema portulacastrum L.		X

AMARANTHACEAE		
Achyranthes aspera L.		X
Alternanthera pungens Kunth	Khaki weed	X
Amaranthus spinosus L.	Spiny amaranth	X
Amaranthus viridis L.	Slender amaranth	X
ANACARDIACEAE		
Mangifera indica L.	mango	X
Schinus terebinthifolius Raddi	Christmas berry	X
APOCYNACEAE		
Thevetia peruviana (Pers.) K.Schum.	Be-still tree	X
ARALIACEAE		
Schefflera actinophylla (Endl.) Harms	Octopus tree	X
ASTERACEAE		
Bidens pilosa L.	Spanish needle	X
Conyza bonariensis (L.) Cronq.	Hairy horseweed	X
Crassocephalum crepidioides (Benth.) S.Moore	crassocephalum	X
Emilia fosbergii Nicolson	Red pualele	X
Montanoa hibiscifolia Benth.	Tree daisy	X
Pluchea carolinensis (Jacq.) G. Don	sourbush	X
Sphagneticola trilobata (L.) Pruski	coatbuttons, wedelia	X
Tridax procumbens (L.)	Coat buttons	X
BASELLACEAE		
Anredera cordifolia (Ten.) Steenis	Madeira vine	X
Basella alba L.	Ceylon spinach	X
BEGONIACEAE		
Begonia hirtella Link		X
BIGNONIACEAE		
Spathodea campanulata P. Beauv.	African tulip	X
BORAGINACEAE		
Cordia subcordata Lam.	Kou	I
CARICACEAE		
Carica papaya L.	papaya	X
CLUSIACEAE		
Clusia rosea Jacq.	Autograph tree	X
COMBRETACEAE		
Terminalia catappa	tropical almond	X
COMMELINACEAE		
Commelina benghalensis L.	Hairy honohono	X

CONVOLVULACEAE		
Ipomoea obscura (L.) Ker Gawl.		X
Ipomoea triloba L.	Little bell	X
CUCURBITACEAE		
Coccinea grandis (L.) Voigt	Ivy gourd	X
Momordica charantia L.	Balsam pear	X
EUPHORBIACEAE		
Aleurites moluccana (L.) Willd.	kukui	X
Chamaesyce hirta (L.) Millsp.	hairy spurge	X
Chamaesyce hypercifolia (L.) Millsp.	graceful spurge	X
Chamaesyce hyssopifolia (L.) Small		X
Euphorbia heterophylla L.	kaliko	X
Macaranga tanarius (L.) MullArg.		X
Ricinus communis L.	Castor bean	X
FABACEAE		
Canavalia cathartica Thouars	maunaloa	X
Chamaecrista nictitans (L.) Moench	Partridge pea	X
Desmanthus pernambucanus (L.) Thell.	Slender or virgate mimosa	X
Desmodium tortuosum (Sw.) DC	Florida beggarweed	X
Indigofera hendecaphylla Jacq.	Creeping indigo	X
Indigofera suffritocosa Mill.	Iniko	X
Leucaena leucocephala (Lam.) de Wit	Koa haole	X
Pithecellobium dulce (Roxb.) Benth.	opiuma	X
Samanea saman (Jacq.) Merr.	monkeypod	X
Tamarindus indica L.	Tamarind	X
LAMIACEAE		
Clerodendrum chinense (Osbeck) Mabb.	Pikake honohono	X
MALVACEAE		
Abutilon grandifolium (Willd.) Sweet	Hairy abutilon	X
Malva parviflora L.	Cheese weed	X
Malvastrum coromandelianum (L.) Garcke	False mallow	X
Sida ciliaris L.		X
Thespesia populnea (L.) Sol. Ex Correa	Milo	I
MORACEAE		
Ficus microcarpa L.f.	Chinese banyan	X
MYRTACEAE		
Psidium guajava L.	common guava	X
Psidium malaccense (L.) Merr.&L.M.Perry	mountain apple	X
OLEACEAE		
Olea europaea subsp. *europaea* L.	olive	X
OXALIDACEAE		
Oxalis corniculata L.	yellow wood sorrel	X

PASSIFLORACEAE		
Passiflora foetida L.	Love-in-a-mist	X
Passiflora quadragularis L.	corkystem passionflower	X
POLYGONACEAE		
Antigonon leptopus Hook&Arnott	Mexican creeper	X
PLANTAGINACEAE		
Plantago major L.	common plantain	X
RUTACEAE		
Murraya paniculata (L.) Jack	mock orange	X
SOLANACEAE		
Solanum americanum Mill.	Glossy nightshade, popolo	I
Solanum lycopersicum L. var. *cerasiforme* (Dunal) Spooner, G.J. Anderson & R.K. Jansen	Cherry tomato	
Solanum seaforthianum Andrews		X
ULMACEAE		
Trema orientalis (L.) Blume	gunpowder tree	X
VERBENACEAE		
Stachytarpheta jamaicensis (L.) Vahl	Jamaican vervain	X
VITACAEA		
Tetrastigma pubinerve Merr. & Chun		X

Appendix C

ARCHEOLOGICAL INVENTORY SURVEY

SCS Project Number 1441-AIS-2

AN ARCHAEOLOGICAL INVENTORY SURVEY REPORT FOR THE HĀLAU KŪ MĀNA PUBLIC CHARTER SCHOOL AND UNDEVELOPED PARCELS ALONG MAKIKI STREAM IN MAKIKI HEIGHTS, MAKIKI AHUPUA`A, HONOLULU (KONA) DISTRICT, O`AHU ISLAND, HAWAI`I [TMK (1) 2-5-019:008 (por.), 2-5-020:003, 004(por.), 005, 008 (por.)]

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October 2013
DRAFT

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INTRODUCTION

At the request of Catie Cullison of PBR Hawai`i & Associates, Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey (AIS) on an estimated 7.3-acres of the existing Hālau Kū Māna Public Charter School and undeveloped parcels along Makiki Stream, Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i TMK (1) 2-5-019:008 (por.), 2-5-020:003, 004 (por.), 005, 008 (por.) (Figures 1 through 4). The Land is owned by the State of Hawai`i.

Fieldwork was conducted July 19, 24, and August 7, 2013 by SCS archaeologists Stephanie Medrano, B.A. and Charmaine Wong B.A. under the direction of Robert L. Spear, Ph.D., Principal Investigator. The Archaeological Inventory Survey was performed in order to identify and document all sites in the project area, to gather sufficient information on the sites in order to evaluate the significance of the sites, and to compile the information in accordance with Hawai`i Administrative Rules (HAR) §13-276.

Five archaeological sites (State Site 50-80-14-7550 through -7554), comprised of eight (8) features were identified during the AIS project. State Site -7550 consisted of one (1) retaining wall, associated with agricultural/water management. State Site -7551 consisted of (1) retaining wall, associated with agricultural/water management. State Site -7552 consisted of (4) retaining walls, associated with Choi's Makiki Nursery. State Site -7553 consisted of four (4) features, one (1) remnants of a utility shed, one (1) small concrete structure, and (3) rock walls. State Site -7554 consisted of an L-shaped rock wall, associated with agriculture/soil retention.

Based on feature type, construction methods, and construction materials, State Sites -7550 through -7554 were interpreted to be associated with Historic use of the project area.

ENVIRONMENTAL SETTING

PROJECT AREA

Makiki Valley is situated on the leeward side of the Koʻolau Mountain Range, between Pauoa Valley to the west and Manoa Valley to the east. The project area is located an estimated 2,900 m north of the coastline at an elevation of 150-250 feet (45-76 m) above mean sea level (amsl). The valley is cut northwest to southwest by streams, ridges, and valleys. Kanakā, Kānealole, Moleka, and Maunalaha are the headwater streams that eventually merge into Makiki Stream. Located in Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i TMK (1) 2-5-019:008 (por.), 2-5-020:003, 004 (por.), 005, 008 (por.) (Figures 1 through 4), the project

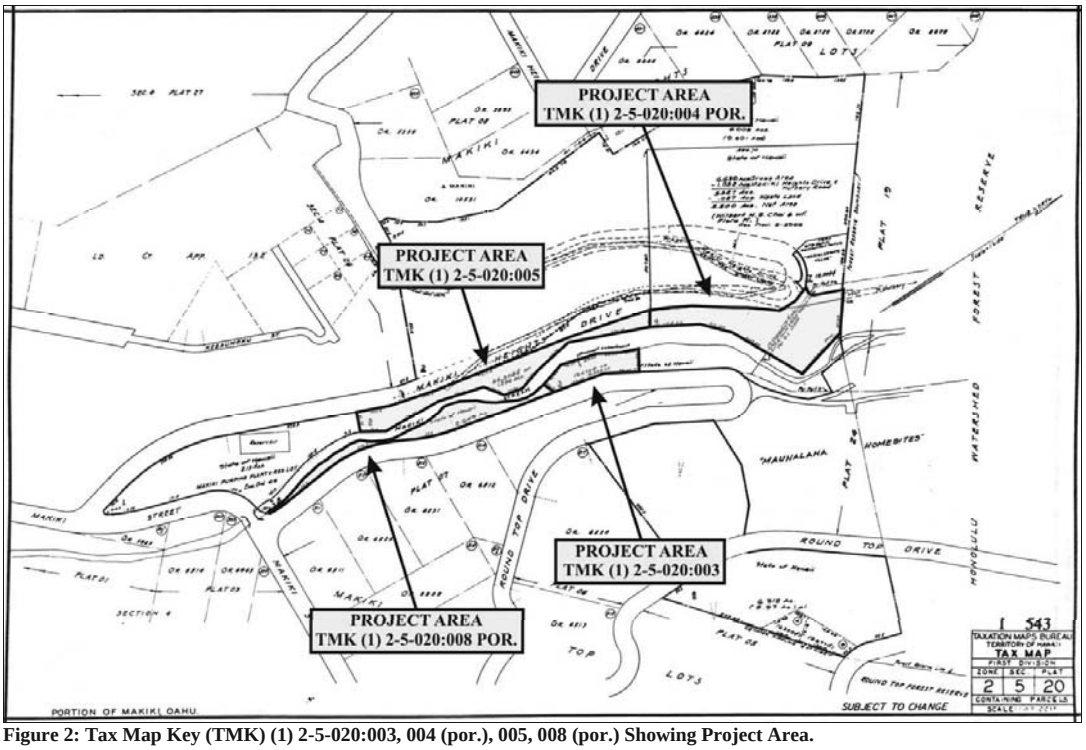

Figure 2: Tax Map Key (TMK) (1) 2-5-020:003, 004 (por.), 005, 008 (por.) Showing Project Area.

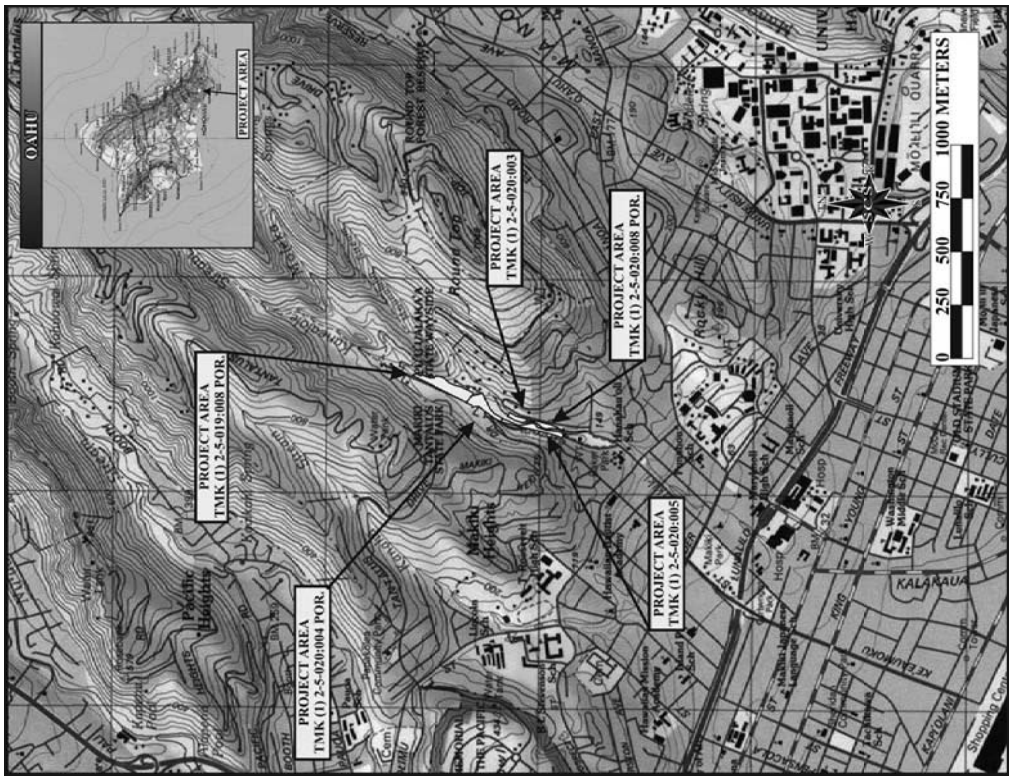

Figure 1: USGS (1998) Quadrangle Map of Makiki Showing Project Area.

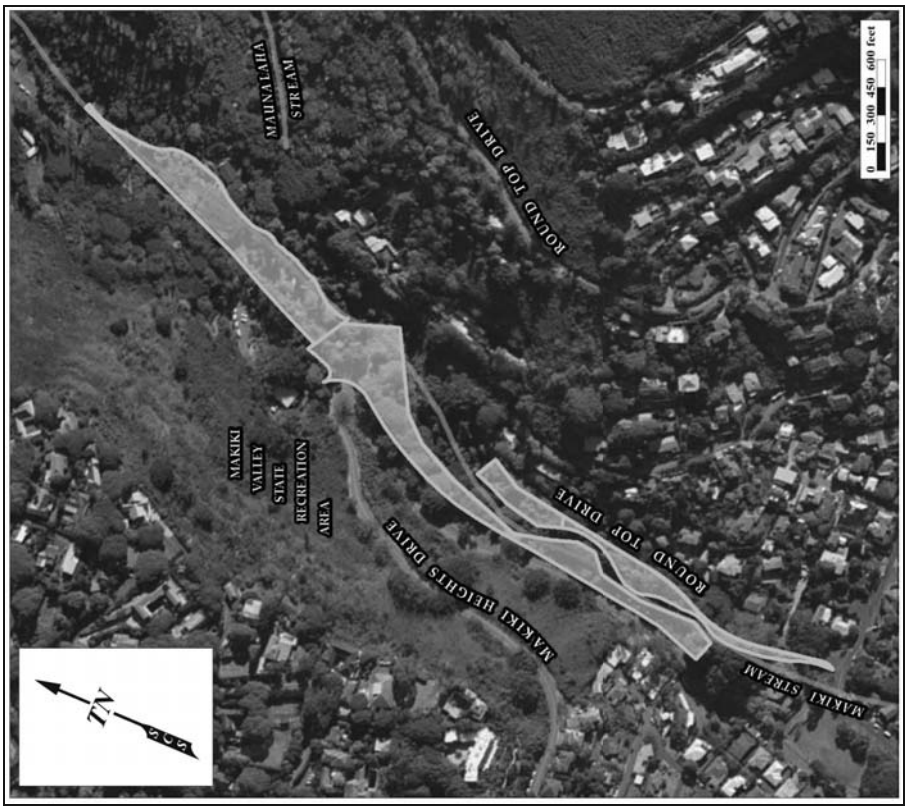

Figure 4: Google Map Image Showing Project Area.

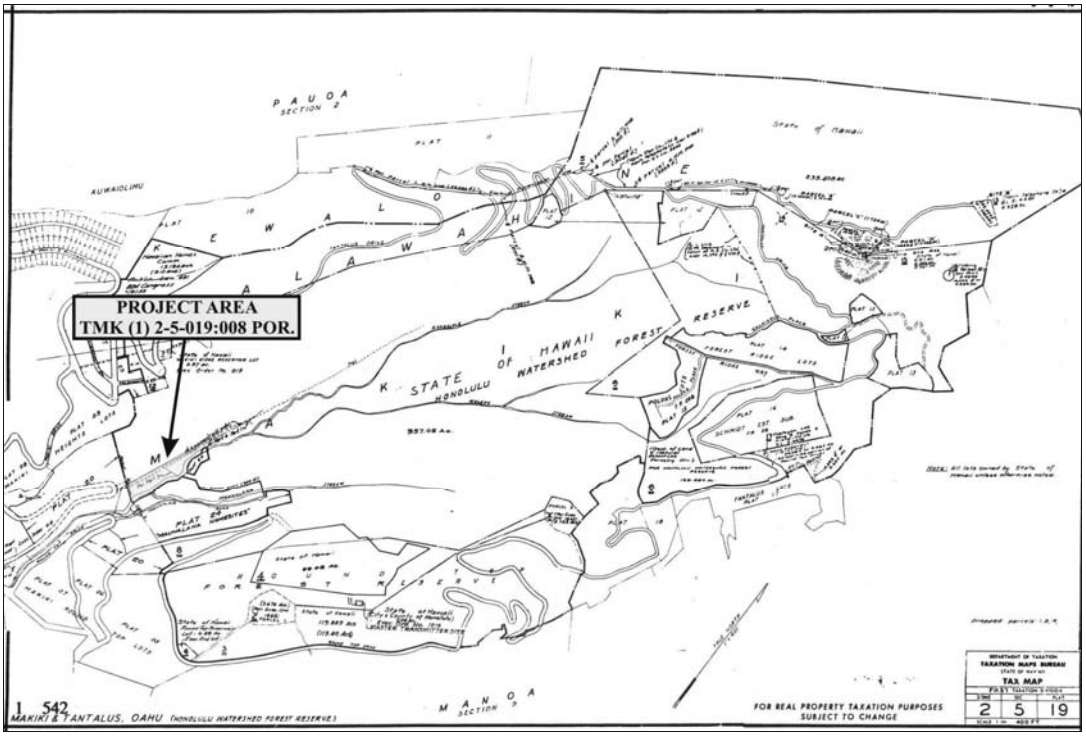

Figure 3: Tax Map Key (TMK) (1) 2-5-019:008 (por.) Showing Project Area.

area comprises of an estimated 7.3-acres and is bound on the north by residential parcels and the Watershed forest reserve; to the east by Makiki Heights drive; to the west by Round Top Dive; and to the south by Archie Backer Mini Park and The Makiki-Manoa Pumping Station.

CLIMATE

Makiki Valley is situated in the wet Ko`olau Mountain Range, which receives an average rainfall of 100 inches in the upper valley near Pu`u `Ōhi`a and 25 inches in the lower plain. The average rainfall within the project area is approximately 30 inches (Giambelluca *et al.* 1986).

SOILS

According to Foote *et al.* (1972:63, 64, Sheet Map 62), the project area is located within the Kawaihapai stony clay loam, 2 to 6 percent slopes (Klab) deposits. Soils of the Kawaihapai Series consist of "well-drained soils in drainage ways". Kawaihapai soils formed in alluvium derived from basic igneous rock in humid uplands (Foote *et al.* 1972:63)

VEGETATION

The vegetation within the project area represents historic events and does not reflect the vegetation pattern prior to contact. It is currently dominated by a dense growth of exotic species. The portion of the project area within TMK (1) 2-5-020:004 (por.) includes manicured lawns and indigenous vegetation, such as Naio (*Myoporum sandwicense*), `Ilima papa (*Sida jallax*), Kalo (*Colocasia esculenta*), Pohuehue *(Ipomea pes-caprae*), `Aweoweo (*Chenopodium oahuense*), and Ti (*Cordyline fruticosa).*

CULTURAL HISTORICAL CONTEXT

HISTORICAL LAND USE

The historical record has very little indication of Traditional Native Hawaiian land use in and around the project area, however, the remnant terraces identified by (Carpenter and Yent 1994; see below) indicate that Makiki and its system of small valleys was developed for irrigated agriculture in prehistory. The earliest historical account of Makiki Valley is believed to be the narrative of the German botanist Dr. Franz Julius Ferdinand Meyen, who visited O`ahu on the Prussian explorer vessel, *Prinzess Louis*, in 1831. He spent six days touring the southern coast of O'ahu from Diamond Head to Pearl Harbor, collecting plant and animal species and making notes on the scenes of Hawaiian life that he observed **(**Hazlett *et al.* 2011). In general, Meyen describes habitations and agricultural features, including remnant terraces, in the valleys along streams (Botanist Meyen in 1831, cited in Pultz 1981). Meyen was a trained observer and recorded not only botanical observations, but cultural and geological ones as well. One of his

excursions to Pu`u Kakea (Sugarloaf) took him to the ridge behind Punchbowl, over to Kakea, and then down through Makiki Valley, probably along Moleka Stream. He describes vegetation very different from what exist today, which included native species such as *ma`aloa* (used to make tapa), *maile*, *` ilima*, and *papala*.

Evidence of Hawaiian habitation during Meyen's descent through the valley is described in the following excerpts:

> As we descended farther into the charming valley the small stream which flows in it became larger and larger. Some Indians [Hawaiians] had built their huts beside it and had prepared some land for the cultivation of taro...
>
> As soon as the valley became wider the beautiful vegetation disappeared. The slopes of the mountain were covered only with low grasses, the huts of the Indians became more numerous and here and there large boulders appeared again. The end of a low ridge which runs through the center of this transversal valley had been artificially cleared of vegetation and of the cover of humus. The rock which came to light here is a very attractively colored basalt conglomerate (of black basalt and white calcite crystals). The Indians were just then busy chipping flat pieces from this rock which they wanted to use to hunt octopus. The rock on the sides of the valley, however, is the usual porous basalt which is found all around Honolulu. Here and there one can find caves in this rock, some of which are inhabited.
>
> In the course of our excursion we saw the mountains everywhere covered with grazing horses and horned cattle. One is amazed at the great number of cows which thrive here beautifully with the slightest care...
>
> Many and extensive fields through which we have just wandered and which are presently being used as pasture land were formerly covered with sweet potatoes. Today one can still see the remaining traces of their cultivation. They say that in the days of Kamehameha a great part of the Honolulu Valley was used for the cultivation of field-produce. Now there are meadows there and the valley is far less productive than in former times (ibid.:46-47)

The terraces of Makiki may have been abandoned relatively soon after Western contact due to the decline in population and the more agriculturally favorable adjacent valleys of Pauoa and Manoa (Carpenter and Yent 1994).

Pu`u `Ualaka`a, however, just east of the project area was noted by Handy (1940) as an area famous for the cultivation of sweet potatoes.

> The region around Makiki and Round Top, between Makiki and Manoa Valley, is perhaps the most favorable locality on Oahu for sweet potato cultivation; here

Hawaiians still have many small plantations, mostly for domestic use, though occasionally they market their products. The volcanic cinder mixed with humus in this locality seems to be ideal for sweet potato cultivation and normally the amount of rainfall is about right. Round Top, the Hawaiian name for which is `Ualaka`a (literally, Rolling Potatoes), is famous in the annals of Hawaiian agriculture because here Kamehameha I established his own plantation on the steep slopes above Manoa.

THE GREAT MAHELE

The *Mahele* claims for Makiki are consisted with the pattern observed by Meyen (1831, cited in Pultz 1981). Documentation of the claims indicates that their locations concentrated in the lower valley, primarily along Kanealole and Moleka Streams (Figure 5). In terms of land use, most of the awards were for small parcels containing houselots, with only a few containing *lo`i* and *kula* land. Documentation shows John Ii as the most notable of the awardees, who received about 250 acres. Ii was awarded a large parcel of land on the western edge of upper Makiki Valley, as well as two large parcels in the lower valley. Two claims appear to have been located within the project area: LCA 24MA:2 and a portion of Ii's larger claim, LCA8241. The un-awarded land in Makiki was partially Crown Lands, claimed by Kamehameha III, and the remainder became Government Lands (Indices of Awards, Part I). A list of the LCA documented in Makiki Valley, obtained from (Carpenter and Yent 1994) is presented in Appendix A.

It is important to note the awards of several parcels given to John Papa Ii (Figure 5). As stated in (Carpenter and Yent 1994:15), if one were a *maka'ainana* living in Makiki, he was very unlikely to be awarded more than one parcel and it would be about a half acre in size. This award size was significantly smaller then those awarded in Wailua, Kaua`i where the average *maka'ainana* award was just under two acres (Stauffer 1990) and in Kahana Valley, O`ahu the average *maka'ainana* award was just under three acres in size (Stauffer 1990). The awards in these areas included both houselot (*pahale*) and agricultural land (*lo`i* and *kula*), usually in two parcels. In Makiki however, of the eleven *maka'ainana* awards, only four definitely contained *lo`i* land. The awards given in Makiki suggest that the traditional agricultural subsistence economy was being abandoned much more rapidly in Makiki as opposed to other areas well outside of Honolulu.

In the areas referred to as Pāwa`a and Kalia (below King Street) but which may have once belonged to Makiki (at least one claimant referred to this area as Makiki) there were at least fifteen Land Commission Awards, including another large parcel awarded to John Ii. These awards included houselots, sixteen *lo`i*, ten fishponds and thirteen *ki`apua* (ponds for raising young fish or fry). The largest fishpond was Loko Kuwili fishpond. Its was located adjacent to the mouth of Makiki Stream, encompassing 9.7 acres (Kikuchi 1973) and was claimed by the

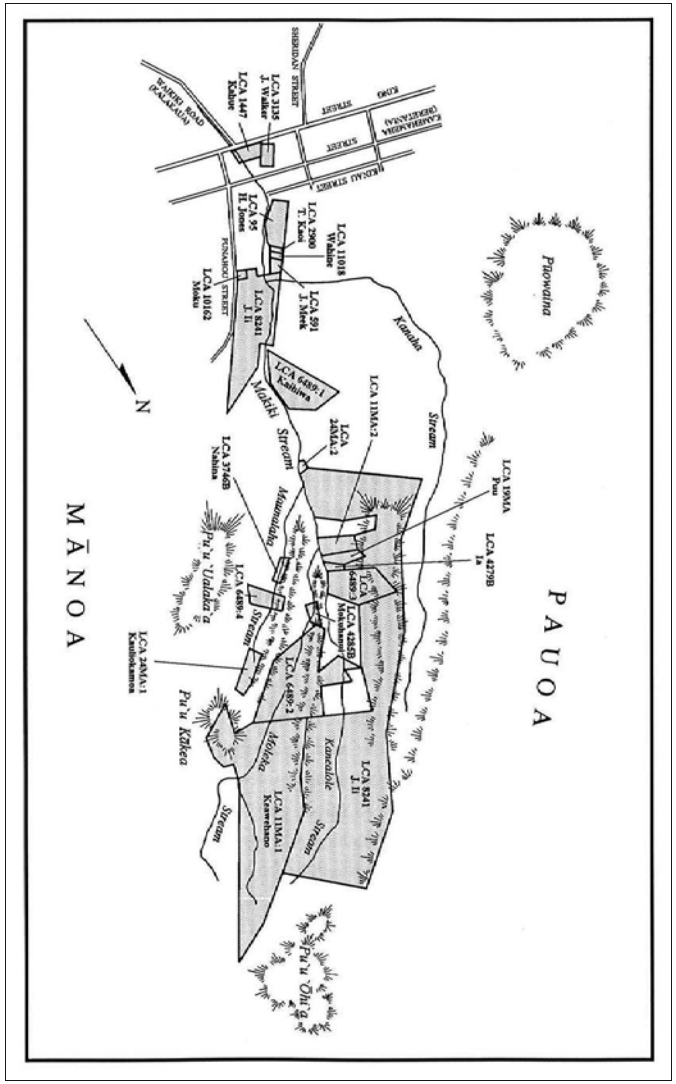

Figure 5: Location and Approximate Boundaries of Known Land Commission Awards in Makiki. Adapted from Reg. Map No. 813 by W.D. Alexander (1874) and Carpenter and Yent (1994).

ali`i Kaunuohua (LCA #6450). The average award size in lower Makiki was considerably larger than in upper Makiki, likely due to the size of the fishponds. These records suggest that in this lower area, traditional agricultural and aquacultural practices continued at least through the mid-nineteenth century. Un-awarded lands in lower Makiki were again claimed partially by the Crown and partially by the Government (Stauffer 1990).

By 1874, Lot Kamehameha (Kamehameha V) had inherited the Crown Lands and added to them through additional land grants, totaling roughly 500 acres in Makiki (Carpenter and Yent 1994). During this time, large parcels of land were being granted to various people in lower Makiki. As indicated on a map of Kamehameha V's estate (Alexander 1874; Appendix B), most awardees were foreigners (Gulick, Baldwin, Paris, Lemon, Meek, Gray, and etc.). One large land grant (Grant # 3535), consisting of 21 acres was awarded to H.W. Schmidt. This award was located far back in the valley (Newton 1911; Appendix B). Here he built a house and attempted to grow coffee, but the venture proved unprofitable (Young n.d.).

J.M. Herring also ventured into growing coffee lower in the valley. Herring purchased several parcels along Kanealole and Moleka Streams between 1864 and 1876 (L.C.A.'s 6489:2,3,4; 3746B; 4283C; 4285B). This is where he apparently built a house, constructed a carriage road leading to his residence, and planted coffee. Podmore's 1913 map (Figure 6) indicates the route of the carriage road as connecting with Makiki Heights Drive on the west, paralleling the west side of Kanealole Stream mauka, then winding eastward along the ridges and through the valleys to connect with Round Top Drive on the east, crossing the streams of Kanealole, Moleka, and Maunalaha. Possible bridge foundations associated with this road, located along Kanealole and Moleka Streams were identified by Yent (1993:7). Herring also apparently altered existing terraces to create his house site, the carriage road, and planting areas, although the extent of this modification is unclear (Carpenter and Yent 1994) The U.S. Geological Survey still labels this feature as Herring Spring on their topographic maps (see Figure 1).

MAKIKI VALLEY EARLY 1900'S

In 1903, the Bureau of Agriculture and Forestry became the Territorial Board of Agriculture and Forestry. State Forestry Division acquired Makiki Valley in 1904. Records indicate a deforested valley. Due to the close proximity to Honolulu Harbor, the Makiki-Tantalus forest underwent two periods of deforestation. From 1815 to 1826, timber was cut for the sandalwood trade with China. From 1833 to 1860, wood was harvested to provide fuel for the whaling trade. Additionally, fires, farming, grazing by livestock and feral animals, and

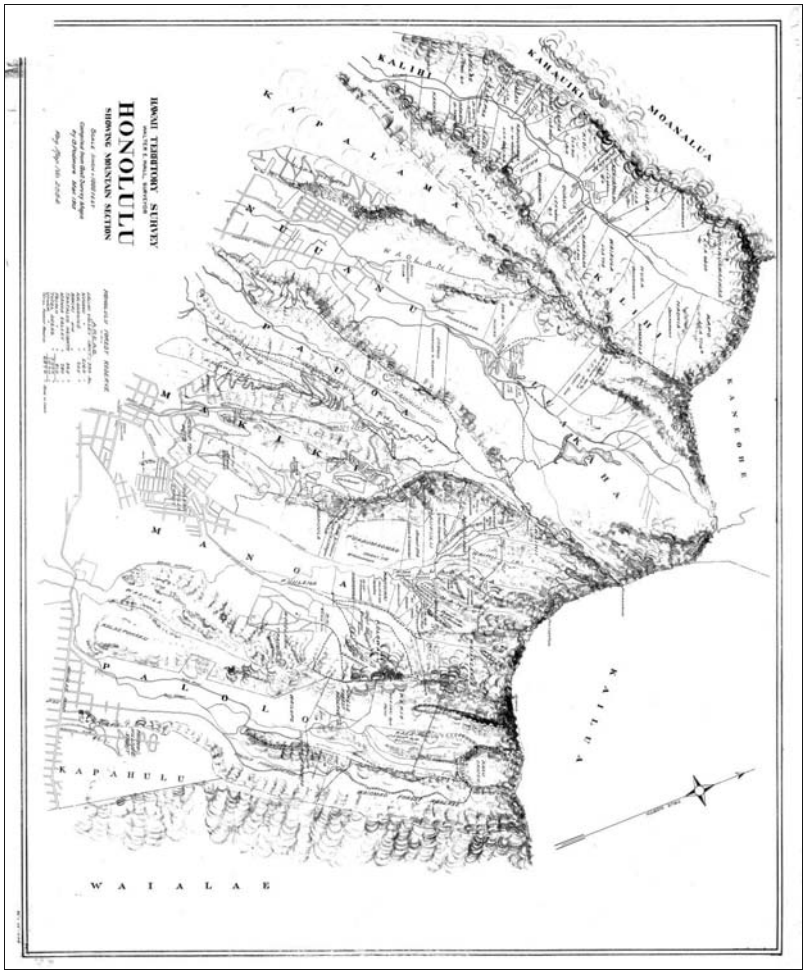

Figure 6: Reg. Map No. 2554 by G. Podmore (1913) X.

harvesting for building materials contributed to the loss of the Makiki-Tantalus forest and its replacement by grasses (Hazlett *et al*. 2011). A 1873 map of Makiki Valley by W.D. Alexander (Appendix B) notes heavily wooded hills and slopes above `Ualaka`a to Tantalus. This vegetation may have been altered radically in the period 1875 to 1900. The reforestation program by the State Forestry Division began around 1910. This reforestation resulted in a thick growth of non-native species, both trees (*i.e.* eucalyptus, guava, and acacia trees) and undergrowth. The Civilian Conservation Corps planted additional trees in the mid 1930s (O'Hare *et al*. 2010:59). The vegetation reflects the historic utilization of the valley which resulted in deforestation and the later need for reforestation. Following the reforestation of Makiki Valley, a concrete dam was constructed midway along Kanealole Stream, creating a small reservoir, as shown on a 1911 map (Newton 1911, Appendix B). This map also shows the carriage road associated with Herring, labeled as the "Tantalus Auto Road". Among the developments implemented by the State Forestry Division was a large nursery at the mauka end of the present-day DOFAW access road (Carpenter and Vent 1994).

A Photograph taken by Bertram circa 1900 (Figure 7) from the top of Punchbowl looking toward Diamond Head illustrates the development of lower Makiki (Hawaii State Archives). In this view, the area between Makiki Heights and the ocean is visible. The upper area is divided into large residential lots, containing large homes and fenced cleared areas, presumably for the stabling of horses. Closer to the ocean, there are few buildings and large fishponds or irrigated pondfields are still visible (Carpenter and Yent 1994). A 1927 aerial photograph of Makiki (Figure 8) shows the success of the Forestry Division's reforestation efforts, the dam and reservoir along Kanealole Stream, and the Nutridge macadamia plantation on the west side of `Ualaka`a. It also shows additional agricultural plots on the southern slope of `Ualaka`a, possibly the small sweet potato gardens referred to by Handy (1940).

The Board of Water Supply (BWS) also made use of Makiki Valley to obtain water for the populous Honolulu area. The BWS has a monitoring station just mauka of the forestry base yard and the larger pumping station is further down Makiki Valley, (Makiki-Manoa Pumping Station) completed in 1935.

The area around the Makiki Park entrance and the present Hālau Kū Māna Public Charter School, at the hairpin turn in Makiki Heights Drive was used as a nursery from 1946 through 1984. Approximately 5.5 acres was leased to the Choi family, which they extensively modified for the purpose of clearing, grading, and erecting several buildings (no longer standing).

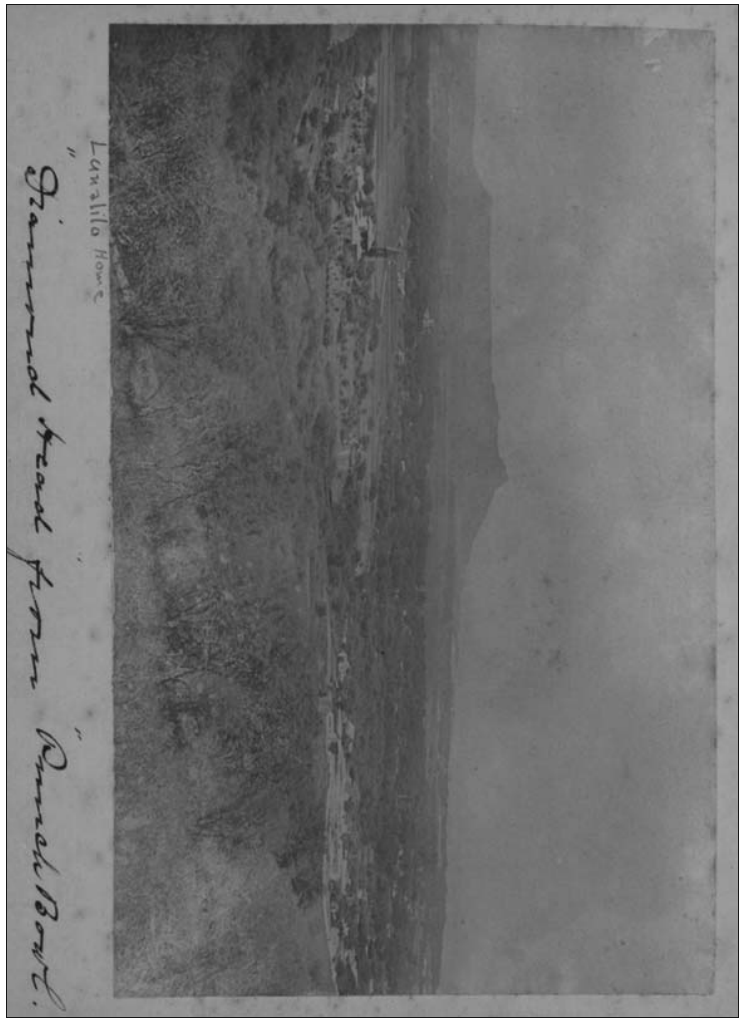

Figure 7: Photograph of Diamond Head from Punchbowl by Bertram (1900).

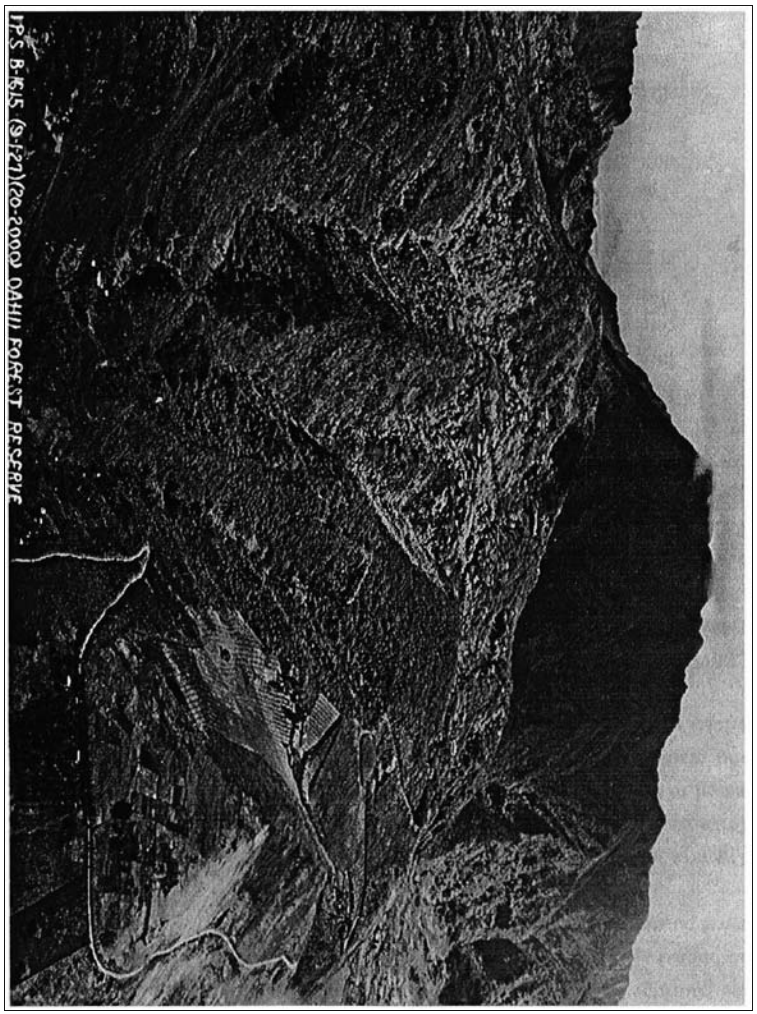

Figure 8: 1927 Aerial photograph of Makiki Showing Forestry Division Reforestation Efforts.

PREVIOUS ARCHAEOLOGICAL STUDIES

Previous archaeological projects have been completed along the Kanealole, Moleka, and Makiki Streams within the Makiki Valley-Tantalus area (Figure 9; Table 1). Two systematic archaeological projects in the Makiki Valley area have been conducted. The First was conducted in 1980 by Martha Yent and Jason Ota. Five areas in Makiki Valley were surveyed. A variety of pre-contact and historic sites (see below) were documented. The second was conducted in 1994 by Martha Yent and Alan Carpenter. Four areas along Makiki Stream were surveyed. Remnant agricultural terraces were documented and radiocarbon testing was conducted (see below).

Yent and Ota (1980) conducted an Archaeological Field Survey of the Makiki Valley access hiking trails in upper Makiki Valley, along Kanealole and Moleka Streams in TMK (1) 2-5-019 and 020. The project area is part of the Makiki State Recreation Area and the larger Makiki-Tantalus State Park. In addition to describing an historic house site (Herrings settlement), carriage road, and retaining walls, Yent and Ota also recorded agricultural terraces and *`auwai* (traditional irrigation ditches), rock shelters, walled enclosures, one (1) platform, one (1) rock lined pit, and dump site. Recommendations for these features involve further mapping and testing to determine significance and interpretative value more accurately.

Martha Yent (1982) conducted an Archaeological Inspection of a Short Nature Trail for the Makiki Environmental Education Center, along Kanealole Stream in TMK (1) 2-5-019:008. An old carriage road, associated retaining wall, a 1950s pig pen, and a historic series of terraces and planting holes associated with a former residence were noted. These sites were previously identified during the Archaeological Field Survey in the area known as Survey Area 3 by (Yent and Ota 1980). Further testing of Survey Area 3 is recommended.

Carol Kawachi (1988) conducted a Field Check at 2182 Round Top Drive in TMK (1) 2-5-006:014. Terrace facings/retaining walls in a hairpin turn of Round Top Drive were noted. The terrace facings/retaining walls demonstrated evidence of modern modifications and were not deemed significant.

Alan Carpenter (1993) conducted an informal Survey and Archaeological Testing within the Makiki State Recreation Area on the eastern slope of Moleka Stream in TMK (1) 2-5-019:003. The survey included mapping and testing of a rock shelter, designated as State Site 50-80-14-4668, situated above an agricultural field system near Moleka Stream.

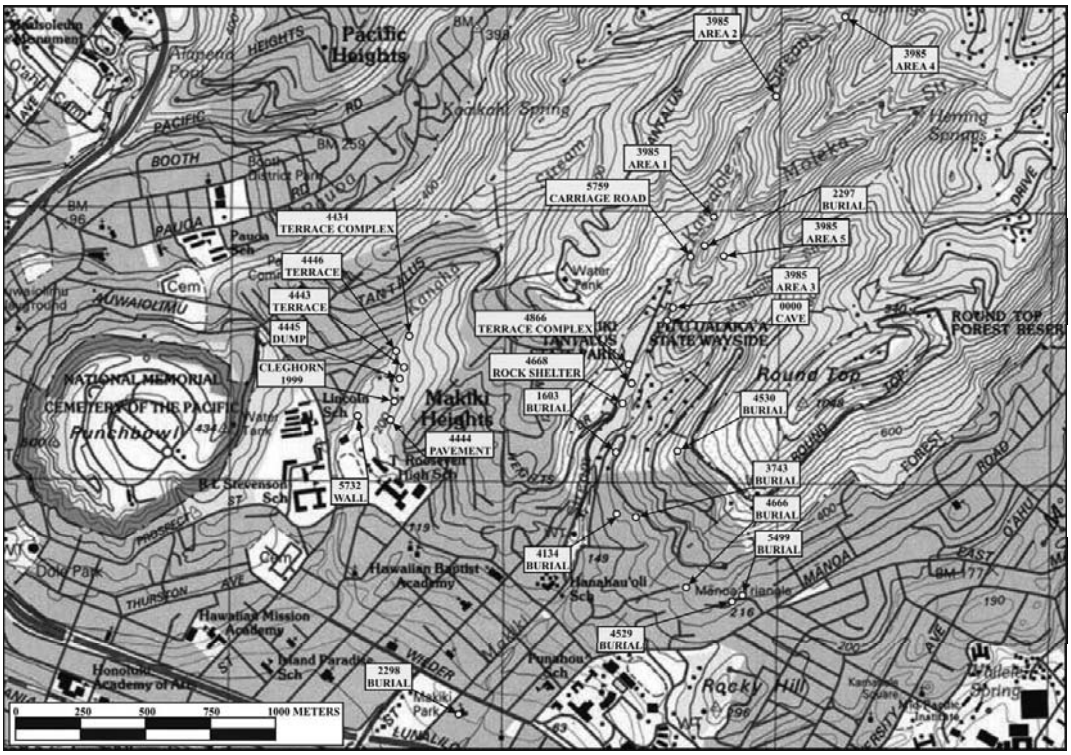

Figure 9: USGS (1998) Quadrangle Map of Makiki Showing State Sites.

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

Reference	Location of Study	Nature of Study	Findings	Site Number(s) 50-80-14-
McCoy 1971	TMK (1) 2-5-019:008	Memo: Makiki Valley Burial Shelter	Burial Shelter with Flexed, Historic Burial	2297
Sinto 1979	TMK (1) 2-4-022:001	Memo: Burial Report	Two (2) early Historic Burials	2298
Yent & Ota 1980	TMK (1) 2-5-019, 020	Archaeological Field Survey	Herrings Settlement, Carriage Road, and Retaining Walls, Agricultural Terraces and *`auwai* (Traditional Irrigation Ditches), Rock Shelters, Walled Enclosures, One (1) Platform, One (1) Rock Lined Pit, and Dump Site	3985
Yent 1982	TMK (1) 2-5-020	Archaeological Inspection	Old Carriage Road Associated Retaining Wall and a 1950s Pig Pen, and a Historic series of Terraces and Planting Holes Associated with a Former Residence (see Yet & Ota 1980)	0000*
Bath & Smith 1988	TMK (1) 2-5-007:043	Burial Removal	One (1) pre-Contact Distirbed Burial	3743
Bath 1989	TMK (1) 2-5-007:007	Burial Call	Two (2) to Three (3) pre-Contact Burials	4134
Kawachi 1988	TMK (1) 2-5-006:014	Field Check	Site Deemed Insignificant	
Kawachi 1991	TMK (1) 2-5-007:039	Inadvertent Discovery of Human Skeletal Remains	One (1) Burial, Left *in situ*	1603

Reference	Location of Study	Nature of Study	Findings	Site Number(s) 50-80-14-
Kawachi 1992a; Pietrusewsky 1992a	TMK (1) 2-5-004:044	Inadvertent Discovery of Human Skeletal Remains and Osteology Report	One (1) pre-Contact Burial	4529
Kawachi 1992b; Pietrusewsky 1992b	TMK (1) 2-5-005:008	Inadvertent Discovery of Human Skeletal Remains and Osteology Report	One (1) pre-Contact Burial	4530
Pietrusewsky 1992c	TMK (1) 2-5-024:024	Osteology Report	One (1) Burial	4648
Carpenter 1993	TMK (1) 2-5-019:003	Survey and Archaeological Testing	(1) Rock Shelter	4668
Kolb *et al.* 1993	TMK (1) 2-4-034:008	Archaeological Inventory Survey	Three (3) Poorly Constructed Terraces, One (1) Oval Shaped Paved Area with Alignment, One (1) Modern Dump, and One (1) Terrace	4434 and 4443 through 4446
Dagher 1993	TMK (1) 2-5-003:0014	Inadvertent Discovery of Human Skeletal Remains	One (1) Burial	4666
Yent & Carpenter 1994	TMK (1) 2-5-019:003 (por.), 004, 008 (por.) and 2-5-020:004 (por.), 005	Archaeological Survey	One (1) Rock Shelter (see Carpenter 1993) and Series of Large Terraces	4668 and 4866
Jourdane 1997	TMK (1) 2-5-004:010	Inadvertent Discovery of Human Skeletal Remains	One (1) Burial, Over Fifty (50) Years Old	5497

Reference	Location of Study	Nature of Study	Findings	Site Number(s) 50-80-14-
Masterson & Hammatt 1999	TMK (1) 2-4-043:082 and 090 (por.); (1) 2-4-032:001 and 002; (1) 2-4-014, 017, 018, 030, and 032; (1) 2-1-039	Archaeological Inventory Survey	Boulder Wall with Three (3) Segments	5732
Cleghorn 1999	Kalāwahine Stream	New Site Report	Newly Discovered Cave in Kalāwahine Stream; Contained Historic Material; Possibly of Burial Deposits. Cave was Sealed No Site # Assigned	
Nagata 1999	TMK (1) 2-5-019:008	Evaluation	Old Carriage Road (see Yent 1982) with Bridge Segments	5759
Hammatt *et al.* 2002	TMK (1) 2-5-019	Archaeological Assessment	No Significant Artifacts, Features, or sites were Observed	
Rohrer *et al.* 2003	TMK (1) 2-2-005:035	Archaeological Assessment	Historic Road Alignment and House Foundation	6529
Cordy & Hammatt 2006		Archaeological Monitoring	No Cultural Subsurface Features or Deposits were Documented	
Collins *et al.* 2007	TMK (1) 2-5-019:008	An Addendum to an Archaeological Monitoring Plan	Two (2) Burials, Over Fifty (50) Years Old (see Clark *et al*. 2008)	6864 and 6865
Cark *et al.* 2008	TMK (1) 2-5-024:014, 030, 031, and 32; (1) 2-5-019:008	Archaeological Monitoring	One (1) Burials, Over Fifty (50) Years Old (see Collins *et al.* 2007)	6865
Collins *et al*. 2008a	TMK (1) 2-5-018: 001	Burial Recovery Report	One (1) Burial, Over Fifty (50) Years Old	6917

Kolb *et al.* (1993) conducted an Archaeological Inventory Survey of Kalāwahine `ili on the lower slopes of Tantalus Ridge, between Tantalus Drive and Kalāwahine Place in TMK (1) 2-4-034:008. Five (5) sites (State Sites 50-80-14-4434 and -4443 through -4446), comprised of 38 features were documented. State Site -4434 consisted of a terrace cluster with multiple features. State Site -4443 consisted of a double-faced terrace. State Site -4444 consisted of a paved oval area. State Site -4445 consisted of a modern dump site. State Site -4446 consisted of a historic terrace.

Alan Carpenter and Martha Yent (1994) conducted an Archaeological Survey of Proposed State Park Areas in Makiki Valley and Pu`u `Ualaka`a in TMK (1) 2-5-019:003 (por.), 004, 008 (por.) and 2-5-020:004 (por.), 005 (Figure 10). Archaeological testing was conducted in the area along the west side of Makiki Stream between the park entrance and the forestry baseyard. The rockshelter (State Site 50-80-14-4668) identified by Carpenter (1993) and the remnant agricultural terraces (State Site 50-80-14-4866) were tested to determine the presence or absence of archaeological deposits and to determine their significance and age. Radiocarbon results suggest that lower Makiki Valley was developed for irrigated agriculture by the twelfth century AD. Radiocarbon dates from State Site- 4668 (rockshelter) indicate that it was being utilized from as early as the fifteenth century. State Site -4866 (terraces) relatively early dates, indicates it is a significant site which still contains valuable research potential (Carpenter and Yent 1994:A-1).

Masterson and Hammatt (1999) conducted an Archaeological Inventory Survey of the Kalāwahine Reservoir Site on the hillside east of the dry streambed known as Kahawai o ka Po `opo `o in TMK (1) 2-4-043:082 and 090 (por.); (1) 2-4-032:001 and 002; (1) 2-4-014, 017, 018, 030, and 032; (1) 2-1-039. State Site 50-8014-5732 (retaining wall) of 20th century construction was identified. This site is associated with historic used of agriculture and erosion control.

Cleghorn (1999) reported a newly discovered cave at the Kalāwahine Stream side project. This cave contained Historic material, possibly of burial deposits. The cave was sealed. No site number was assigned. (Cleghorn 1999) report was not available in the SHPD library when this report went into production.

Ralston Nagata (1999) conducted an Evaluation of Carriage Road Remnant within Honolulu Watershed Forest Reserve near the Makiki Valley State Recreation Area and Kanealole Stream in TMK (1) 2-5-019:008. The historic cart road (State Site 50-80-14-5759) and

Reference	Location of Study	Nature of Study	Findings	Site Number(s) 50-80-14-
Collins *et al.* 2008b	TMK (1) 2-9-020:002	Burial Recovery Report	Two (2) Burials, Over Fifty (50) Years Old	6961
Loynaz *et al.* 2009	TMK (1) 2-5-007, 020 and 024	Archaeological Monitoring	Only a Small Amount of Historic Trash (Mostly Modern) was Observed.	
Park *et al.* 2009	TMK (1) 2-5-024:14,030,031 and 032; (1) 2-5-019:008	Archaeological Monitoring	No Subsurface Cultural Artifacts or Datable Materials were Encountered	
Hazlett et al. 2011	TMK (1) 2-5-012:014 and (1) 2-5-019:005	Historic Preservation Literature Review and Field Inspection	Tantalus Drive listed on the Hawai‘i Register of Historic Places	9019
*No site # listed in report but listed as 50-80-14-000 in SHPD database				

associated features were related to a coffee plantation established by J. M. Herring between 1864 and 1876.

Hammatt *et al.* (2002) conducted an Archaeological Assessment in Support of the Kala`iopua Place Road Improvements Project just below the summit of Tantalus in TMK (1) 2-5-019. No significant artifacts, features, or sites were observed.

Rohrer *et al.* (2003) conducted an Archaeological Assessment of the proposed Honolulu Board of Water Supply Makiki-Punchbowl Reservoir Parcel E. in TMK (1) 2-2-005:035. No significant historic or traditional sites were documented. One archaeological site, designated State Site 50-80-14-6529 consisting of remnants of an old road bed, associated retaining wall features, and foundation mounds from the early 20th century was evaluated to be of no particular historic significance.

Cordy and Hammatt (2006) conducted Archaeological Monitoring for the Board of Water Supply Punchbowl Water System Improvements Project. No cultural subsurface features or deposits were documented. Most of the soil excavated for the sewer improvements consisted of fill material. (Cordy and Hammatt 2006) report was not available in the SHPD library when this report went into production.

Clark *et al.* (2008) conducted Archaeological Monitoring during a slope stabilization along a portion of Round Top Drive in TMK (1) 2-5-024:014, 030, 031, and 32; (1) 2-5-019:008. One (1) inadvertent burial (State Site 50-80-14-6864) was identified prior to the commencement of the monitoring program. A second inadvertent burial (State Site 50-80-14-6865) was discovered during the monitoring program. Both burials were documented in (Collins *et al.* 2007). No evidence of cultural layer or cultural materials were observed in association with the burials.

Park *et al.* (2009) conducted Archaeological Monitoring in Support of Emergency Roadway Improvements at Round Top Drive in TMK (1) 2-5-024:14,030,031 and 032; (1) 2-5-019:008. No subsurface cultural artifacts or datable materials were encountered.

Loynaz *et al* (2009) conducted an Archaeological Monitoring for the Board of Water Supply Makiki Heights and Maunalaha Home Sites Water System Improvements Project in TMK (1) 2-5-007:020 and 024. One feature, consisting of one (1) dog burial (Feature A) and one (1) concentration of previously disturbed historical rubbish (feature B) were observed. No significant cultural artifacts were recovered.

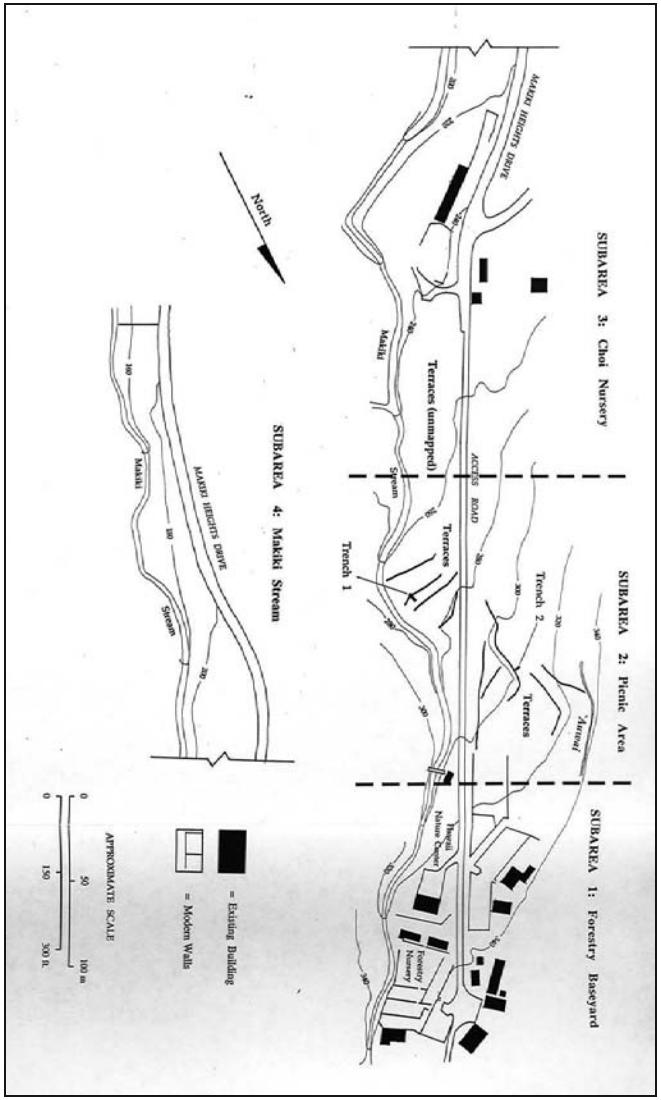

Figure 10: Carpenter and Yent (1994) Makiki Valley Survey Areas. Adapted from Topographic Survey Map: Makiki-Tantalus State Park (Park Engineering 1977).

Hazlett *et al*. (2011) conducted a Historic Preservation Literature Review and Field Inspection of for the Highway Improvements and Roadway Repair Vicinity of 3798 Tantalus Drive (Tantalus Crib Wall Repair) Project. Tantalus Drive is listed on the Hawai'i Register of Historic Places (State Site 50-80-14-9019). It is not currently listed on the National Register of Historic Places.

The Makiki Valley has also yielded a relatively large number of burials, mostly consisting of single individuals inadvertently discovered, or exposed, by recent activities and erosion (see Table 1).

EXPECTED FINDINGS WITHIN THE SURVEY AREA

The site types identified in the Archaeological Survey, conducted by Yent and Ota (1980) and Yent and Carpenter (1994) and the results of the radiocarbon analysis suggest lower Makiki Valley was developed for irrigated agriculture by the twelfth century A.D. Expected sites included a continuation of pre-Contact and Historic features. Sites of a traditional nature would include terraces and *`auwai* (traditional irrigation ditches), rock shelters, walled enclosures, and human burials. Sites of a Historic nature would include dump sites, terraces associated with agriculture and erosion control, house sites, and foundations. Combined, a long span of archaeological signatures relating to both pre-Contact and Historic times were thought to be present within the project area.

FIELD METHODS

Multiple field tasks were completed during the Archaeological Inventory Survey. Pedestrian survey was conducted from July 19, 24, and August 7, 2013, by SCS archaeologists Stephanie Medrano, B.A. and Charmaine Wong B.A. under the direction of Robert L. Spear, Ph.D., Principal Investigator. Transect spacing of ten to fifteen meter (32.8 to 49.2 feet) intervals was employed as ground visibility was moderate-good. Once surface archaeological features were identified, they were marked with biodegradable flagging tape. During the pedestrian survey, results were compiled on standard graphing paper as well as with digital photography. Based on spatial context (*i.e.*, proximity) surface architectural features were consolidated into sites. Each site was given an SCS temporary site designation (*e.g.* TS-1) and plotted on a United States Geological Survey (USGS) map with a handheld Garmin GPSMap76CSx global positioning system (GPS) unit. The datum and coordinate system used for the GPS unit was NAD83 and UTM (Universal Transverse Mercator) 4. Magnetic north compass orientation was also employed. All measurements were recorded in metric units. Individual sites were documented in plan view.

Subsurface testing was also completed during the current Inventory Survey in the form of

three (3) manually excavated shovel probes (SP). The purpose of subsurface testing was to identify human alteration, archaeological features, and associated artifacts/deposits in subsurface contexts. Subsurface testing terminated when sterile soil was encountered. All excavated material was visually inspected for the presence of cultural material. Equipment utilized to perform these excavations included shovels, trowels, and metric tape measure. Soil matrices were recorded using United States Department of Agriculture (USDA) Munsell (2000) soil color descriptions. Stratigraphic profiles were completed for each excavated unit, with profiles of the shovel probes presented respectively below.

LABORATORY METHODOLOGY

Because there were no findings, laboratory work was limited to drafting, creating a database of notes and photos, and reporting. All photographs, illustrations, and field notes accumulated during the project are being curated at the contracting archaeologist laboratory. Representative plan view sketches and stratigraphic profiles showing the location and morphology of identified features and deposits during the Archaeological Inventory Survey have been compiled and illustrated. This manuscript represents drafting of all site figures and reporting.

CURATION

Scientific Consultant Services Inc. will curate all notes and photographs for the project in the Honolulu laboratory, unless the client requests to curate the materials.

ARCHAEOLOGICAL INVENTORY SURVEY RESULTS

The project area was situated between Makiki Heights Drive and Round Top Drive, along Makiki stream, in Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i TMK (1) 2-5-019:008 (por.), 2-5-020:003, 004 (por.), 005, 008 (por.) (see Figures 1 through 4). Excavations associated with the project led to the identification of State Sites -7550 through -7554 (Figure 11; Table 2). State Site -7550 consisted of a semi spherical rock wall. State Site -7551 consisted of a linear rock wall. State Site -7552 consisted of four (4) rock walls. Walls one through three (1-3) consisted of linear rock walls. Wall four (4) consisted of a semi-spherical rock wall. State Site -7553 consisted of four (4) Features. Feature 1 consisted of the remnants of a 1940 utility shed. Feature 2 consisted of a small concrete structure. Feature 3 consisted of two (2) rock wall. Feature 4 consisted of a linear rock wall. State Site -7554 consisted of an L-shaped rock wall.

Each of the five (5) locations containing Historic features are discussed individually below, with their geographic reference points are presented in Figure 11.

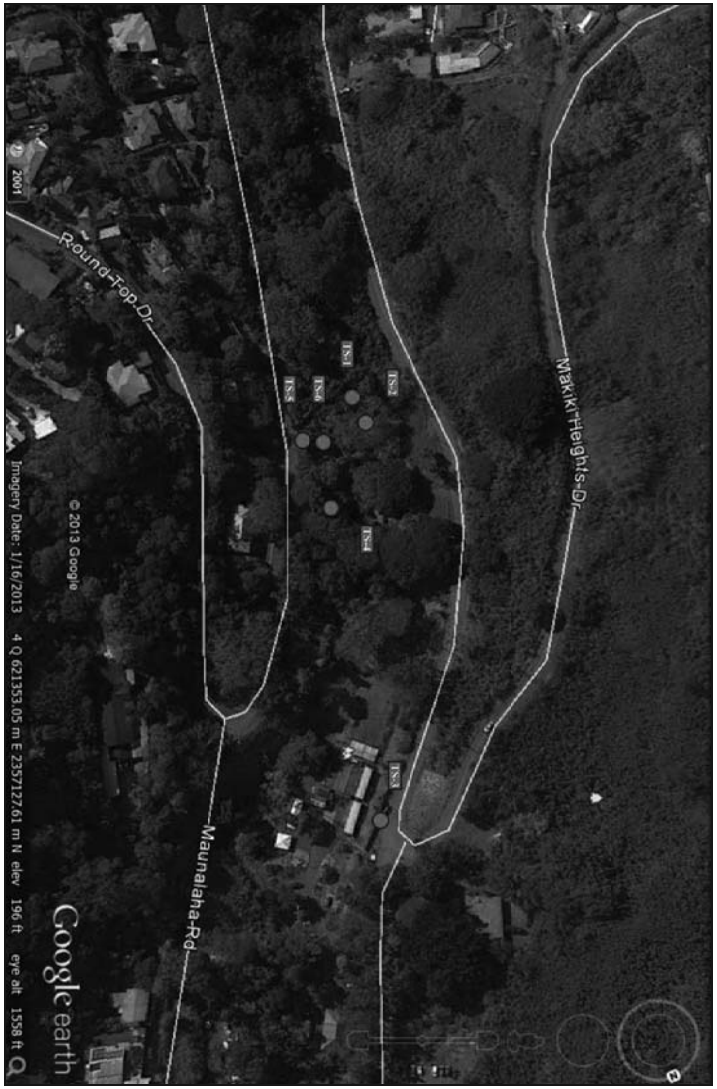

Figure 11: Google Earth Image of State Sites 50-80-14-7550 though -7445 (TS-1 though -6) Locations.

Table 2: State Sites

Site Number 50-80-14-/Feature	SCS Site	Site Type	Function	Age	GPS Coordinates Northing/Easting	
7550/F1	TS-1	Retaining wall	Agriculture/water management	Historic	621330	2357066
7551/F1	TS-2	Retaining wall	Agriculture/water management	Historic	621329	2357079
7552/F1	TS 3	Retaining walls	Soil retention/ agriculture	Historic	621391	2357240
7553/F1	TS-4	Remnents of 1940 utility shed	Associated with agricultural use of area	Historic	621358	2357108
7553/F2	TS-4	Remnents of 1940 utility shed (small concrete structure),	Associated with agricultural use of area	Historic	621358	2357108
7553/F3	TS-4	Remnents of 1940 utility shed (stone walls)	Associated with agricultural use of area	Historic	621358	2357108
7553/F4	TS-4	Retaining wall	Agriculture/soil retention	Historic	621358	2357076
7554/F1	TS-6	Retaining wall	Agriculture/soil retention	Historic	621350	2357080

SITE DESCRIPTIONS

STATE SITE 50-80-14-7550
SCS Site: TS-1
Site Type: Retaining wall
Function: Agricultural/water management
Feature: 1
Age: Historic
Condition: Fair
Description: State Site -7550 consisted of a semi-spherical rock wall (Figures 12 through 15), measuring 6.6 meters in length. Surface feature heights above ground ranged between 90 cm to 2.0 m, as the retaining wall is on a roughly 5˚ to 45˚ slope, along Makiki Stream. Long axis of feature is oriented 40/220˚ northeast/southwest. Wall thickness could not be taken, as the retaining walls boundaries extend into the slope. Construction method of feature included basalt small boulders/cobbles and mortar. There is a 21 cm in diameter metal pipe near the south end of the retaining wall. The main intact portion of the retaining wall contained 3 to 4 courses. The base of the retaining wall has eroded significantly, due to its close proximity of Makiki Stream.

Figure 12: Photograph of Site -7550. View to West.

Figure 13: Photograph of Site -7550. View to West.

Figure 14: Photograph of Site -7550. View to Northwest.

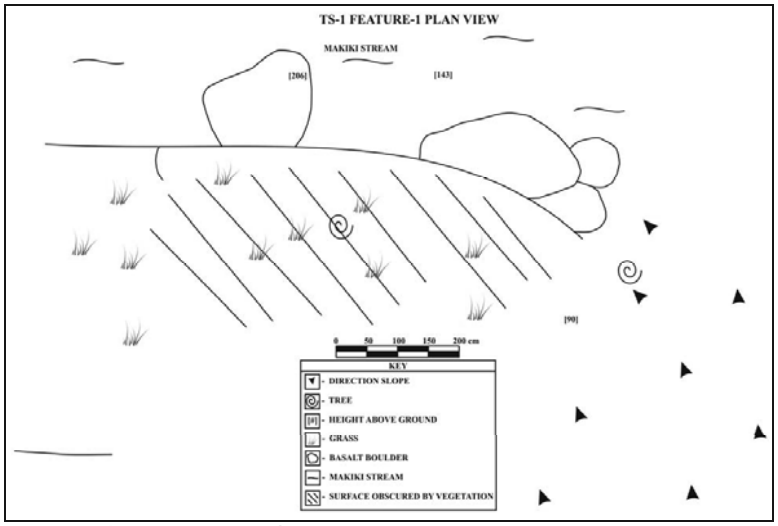

Figure 15: Plan View Drawing of Site -7550.

STATE SITE 50-80-14-7551
SCS Site: TS-2
Site Type: Retaining wall
Function: Agricultural/water management
Feature: 1
Age: Historic
Condition: Fair
Description: State Site -7551 consisted of a linear rock wall (Figures 16 and 19), measuring 6.1 m in length. Surface feature heights above ground ranged between 12 cm to 96 cm. Long axis of feature is oriented 10°/190° north/south. Wall thickness could not be taken, as the retaining walls boundaries extend into a 45° slope. Construction method of feature included basalt small boulders/cobbles and mortar. The retaining wall contained 1 to 3 courses and is located adjacent to Makiki Stream.

Figure 16: Photograph of Site -7551. View to Northeast.

Figure 17: Photograph of Site -7551. View to Northwest.

Figure 18: Photograph of Site -7551. View to Northwest.

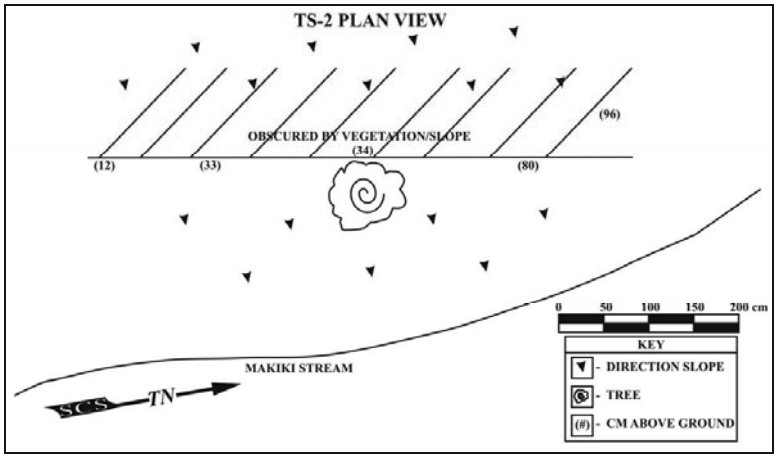

Figure 19: Plan View Drawing of Photograph of Site -7551.

STATE SITE 50-80-14-7552
SCS Site: TS-3
Site Type: Retaining walls
Function: Soil retention/agricultural
Feature: 1
Age: Historic
Condition: Fair
Description: State Site -7552 consisted of four linear and semi-spherical rock walls (Figures 20 through 30). These walls were initially observed during an Archaeological Survey, conducted by Yent and Carpenter (1994). As stated by Carpenter and Yent (1994) and the results of background research during the subject project, these walls are thought to be associated with Choi Nursery.

The first (1) wall (Figures 20 through 22) is linear and is located in southeastern side of the parcel and measures 17.7 m in length by 35 to 40 in thickness. Surface feature heights ranged between 50 cm to 1.21 m. This wall contained 2 to 6 courses.

The second (2) wall (Figures 23 through 24) is linear and is located in the center of the parcel and measures 57.2 m in length by 35 to 50 cm in thickness. Surface feature heights ranged between 32 cm to 1.18 m. The northern half of the wall is situated at the base of a 40˚ slope. The entire wall contained 3 to 7 courses. There is a small set of stairs at the southern most end of the wall.

The third (3) wall (Figure 25 through 27) is linear and is located in the northeastern side of the parcel and measures: 19.5 m in length by 55 to 68 cm in thickness. Surface feature heights: ranged from 45 cm to 1.22 m. This wall contained 5 to 6 courses.

The fourth (4) wall (Figure 28 and 29) is L-shaped with a round elbow. It is located in the northern side of the parcel and measures 22.5 m in length by 38 to 50 cm in thickness. Surface feature heights ranged between 23 cm to 1.73 m. This wall contained 3 to 9 courses.

Construction materials for all walls included basalt small boulders/cobbles, mortar, reinforced with concrete (poured on top of the walls), and some instances of concrete blocks (wall three).

Figure 20: Photograph of Site -7552 Wall One (1). View to Northwest.

Figure 21: Photograph of Site -7552 Wall One (1). View to North.

Figure 22: Photograph of Site -7552 Wall One (1). View to Northwest.

Figure 23: Photograph of Site -7552 Wall Two (2). View to Northwest.

Figure 24: Photograph of Site -7552 Wall Two (2). View to North.

Figure 25: Photograph of Site -7552 Wall Three (3). View to West.

Figure 26: Photograph of Site -7552 Wall Three (3). View to North.

Figure 27: Photograph of Site -7552 Wall Three (3). View to Northeast.

Figure 28: Photograph of Site -7552 Wall Four (4). View to North.

Figure 29: Photograph of Site -7552 Wall Four (4). View to North..

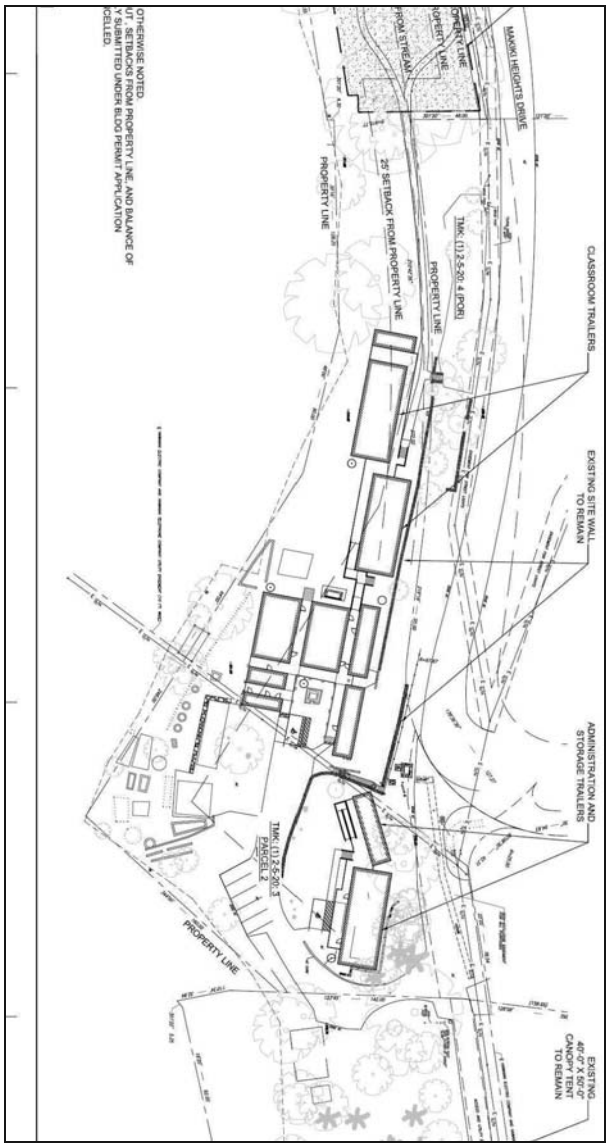

Figure 30: Plan View of Site -7552 in Red. Construction Plans Courtesy of Mason Architects.

STATE SITE 50-80-14-7553
SCS Site: TS-4
Site Type: Remnants of 1940 utility shed structure
Function: Associated with agricultural use of area
Features: 4
Age: Historic
Condition: Fair
Description: State Site -7553 consisted of four (4) features (Figures 31 through 39). According to City and County of Honolulu records (Appendix C), this site may be the remnants of a utility shed that dates to 1940 and may be associated with agricultural use of the area.

STATE SITE 50-80-14-7553 FEATURE 1

Feature 1 is situated on a 60° slope. Long axis of the feature is oriented 18°/198° north/south. The interior contains two (2) tiers, a small set of stairs on the northern end with an attached stone wall, a stone wall on the eastern end, concrete walls and pillars on the northern and western ends of the structure, and a stone wall on the southeastern end.

The stone wall attached to the small set of stairs (Figure 31) on the northern end measured 2.5 m in length by 30 cm in thickness by 30cm to 70cm in height. Construction materials included basalt small boulders/cobbles and mortar. The wall contained 2 to 7 courses.

The stone wall on the eastern end (Figure 32) measured 8.75 m in length by 30 cm in thickness by 60 cm in height (exterior)/1.5 m in the interior (interior). Construction materials included basalt small boulders/cobbles and what appears to be stucco on the surface of the wall. This wall contained 9 courses.

The concrete wall on the north/west side (Figure 33 and 34) is L-shaped and measured 6.2 m in length by 1.5 m in width by 25 to 30 cm in thickness by 75 cm in height (exterior)/84 cm in height (interior). The five (5) concrete pillars measured 45 to 60 cm in length by 30 to 35 cm in width by 75 to 100 in height (exterior)/1.83 m in height (interior). Construction materials for both wall and pillars included concrete blocks, stacked 2 to 5 courses high.

The stone wall on the southeastern end (Figure 35) measured 4.6 m in length by 10 to 32 cm in thickness by 35 to 65 cm in height. Construction materials included basalt small boulders/cobbles, concrete bricks, and mortar. This wall contained 1 to 2 courses.

Figure 31: Photograph of Site -7553 Feature 1 (Wall with Attached Stairs). View to East.

Figure 32: Photograph of Site -7553 Feature 1 (Stone Wall). View to Northeast.

Figure 33: Photograph of Site -7553 Feature 1 (L-shaped Concrete Wall). View to North.

Figure 34: Photograph of Site -7553 Feature 1 (L-shaped Concrete Wall). View to Southwest.

Figure 35: Photograph of Site -7553 Feature 1 (Stone Wall). View to North.

STATE SITE 50-80-14-7553 FEATURE 2

State Site -7553, Feature 2, consists of a rectangular concrete structure (Figure 36) with attached concrete foundation. The small structures exterior dimensions measures 1.9 m in length by 1.35 m in width by 2.38 m in height. The entrance of the structure faces north and measures 2.10 m in height by 54 cm in width. A small window on the upper portion of the west wall measures 62 cm in height by 55 cm in width. The interior dimensions of the structure measures 1.6 m in length by 1 m in width. The small concrete structure has no ceiling. The attached concrete foundation measures 1.9 m in length by 1.5 m in width. The southern end of the foundation has a large crack and is partially missing on the western end.

Figure 36: Photograph of Site -7553 Feature 2 (Small Concrete Structure). View to South.

STATE SITE 50-80-14-7553 FEATURE 3

State Site -7553 Feature 3 consists of two (2) low semi-spherical stone walls (Figure 37 and 38). The first is located 60 cm southwest of Feature 2. This wall measures 2.6 m in length by 1.1 m in width by 34 to 50 cm in height. The second wall is located about 1 m to the east of the first wall. This wall measures 2.7 m in length by 20 cm in thickness by 45 to 60 in height. Construction materials included basalt small boulders/cobbles and mortar. These walls may have been utilized for soil retention purposes.

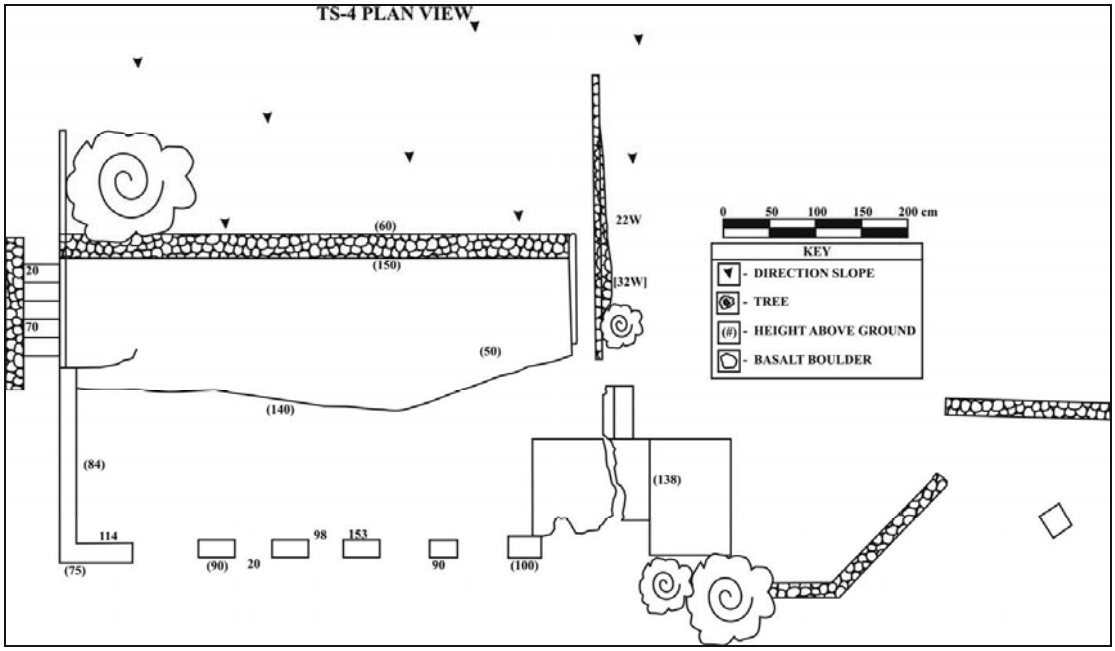

Figure 39: Plan View Drawing of Site -7553.

Figure 37: Photograph of Site -7553 Feature 3 (Stone Wall). View to Northeast.

Figure 38: Photograph of Site -7553 Feature 3 (Stone Wall). View to East.

STATE SITE 50-80-14-7553 FEATURE 4

State Site -7553 Feature 4 consisted of a linear rock wall (Figures 40 through 43), measuring 20.2 m in length by 20cm in thickness. Surface feature heights above ground ranged between 35 cm to 84 cm. Long axis of feature is oriented10°/190° north/south. Construction materials included: basalt cobbles, coquina blocks, and mortar. This wall contained 3 to 5 courses and demonstrates multiple instances of construction phases, as basalt cobbles and mortar are located in some sections of the wall and coquina blocks and mortar are located throughout most of the length of the wall. This feature is situated at the base of a 45° slope and runs parallel to Round Top Drive.

Figure 40: Photograph of Site -7553 Feature 4 (Stone Wall). View to Southeast.

Figure 41: Photograph of Site -7553 Feature 4 (Stone Wall). View to Southeast.

Figure 42: Photograph of Site -7553 Feature 4 (Stone Wall). View to Southeast.

Figure 43: Photograph of Site -7553 Feature 4 (Stone Wall). View to North.

STATE SITE 50-80-14-7554
SCS Site: TS-6
Site Type: Retaining wall
Function: Agricultural/soil retention
Feature: 1
Age: Historic
Condition: Fair
Description: State Site -7554 consisted of an L-shaped rock wall (Figure 44 through 45), measuring 18.1 m in length by 5.6 m in width by 25cm in thickness. Surface feature heights above ground ranged between 64 cm to 1.6 m. Long axis of feature is oriented 4°/184° north/south. Construction materials included: basalt cobbles, coquina blocks, mortar, and some instances of red bricks. This wall contained 3 to 7 courses and demonstrates multiple instances of construction phases, as basalt cobbles and mortar are located in the lower courses and coquina blocks and mortar are located in the upper courses. Red brick were utilized to fill in gaps. This feature is situated in a 10° slope; however, it is level on the surface. TMK (1) 2-5-020:003 illustrates an L-shaped "stonewall embankment" (see Figure 2) on the southeast side of the parcel. This feature is most likely the stonewall embankment.

Figure 44: Photograph of Site -7554 (Stone Wall). View to South.

Figure 45: Photograph of Site -7554 (Stone Wall). View to East.

TESTING RESULTS

Limited subsurface testing was conducted during the current Archaeological Inventory Survey in order to identify human alteration, archaeological features, and associated artifacts in subsurface contexts. For the purpose of addressing these issues, three shovel probes (SP-1 through SP-3) were manually excavated during the current survey. All excavations produced negative results. A description of each Shovel Probe is presented below. The GPS point associated with SP-1 through SP-4 are presented in Table 3.

Table 3: Shovel Probe GPS Locations

Shovel Probe	Easting	Northing	Accuracy (m)
1	0621356	2357151	±3
2	0621437	2357324	±3
3	0621356	2357103	±3

SHOVEL PROBE 1

Shovel Probe 1 (SP-1) (0.15 m diameter by 0.20 m deep) was placed on a level ground surface, within the southeast area of TMK (1) 2-5-020:004 (por.) (see Figure 2). Shovel Probe 1 contained two culturally sterile stratigraphic layers which are described below (Figures 46 and 47).

- Layer I (0-3 cmbs) consisted of reddish black (2.5 YR 2.5/1) loose loam, top soil with decomposing vegetation, small basalt cobbles, and rootlets. No Traditional- or Historic-type cultural material was identified within Layer I.

- Layer II (3-20 cmbs) consisted of dark yellowish brown (10YR 3/6) very fine loose silt. Layer II is interpreted as a natural stratum. No Traditional- or Historic-type cultural material was identified within Layer II.

Figure 46: Photograph of SP-1 Stratigraphic Profile. View to North.

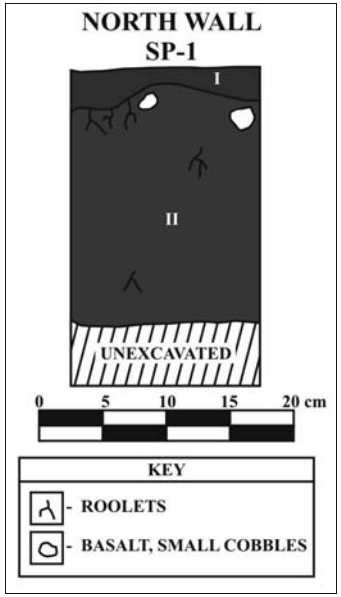

Figure 47: Drawing of SP-1 Stratigraphic Profile.

SHOVEL PROBE 2

Shovel Probe 2 (SP-2) (0.15 m diameter by 0.20 m deep) was placed on a level ground surface, within the northwest area of TMK (1) 2-5-020:004 (por.) (see Figure 2). Shovel Probe 2 contained two culturally sterile stratigraphic layers which are described below (Figures 48 and 49).

- Layer I (0-10 cmbs) consisted of dark brown (7.5YR 3/2) loose loam with small basalt cobbles and roots/rootlets (most likely base course), as it is in close proximity to a vehicle parking. No Traditional- or Historic-type cultural material was identified within Layer I.

- Layer II (10-20 cmbs) consisted of dark brown (7.5YR 3/2) semi-compacted loam. Layer II is interpreted as a natural stratum. No Traditional- or Historic-type cultural material was identified within Layer II.

Figure 48: Photograph of SP-2 Stratigraphic Profile. View to North.

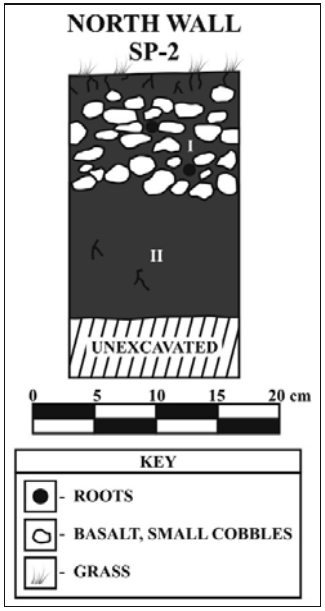

Figure 49: Drawing of SP-1 Stratigraphic Profile.

SHOVEL PROBE 3

Shovel Probe 3 (SP-3) (0.12 m diameter by 0.40 m deep) was placed on a level ground surface, just south of State Site -7553 Feature 2, within TMK (1) 2-5-020:004 (see Figure X). Shovel Probe 3 contained one culturally sterile stratigraphic layers which are described below (Figures 50 and 51).

- Layer I (0-40 cmbs) consisted of black (7.5YR 2.5/1) loose loamy silt with medium and small roots and decomposing vegetation on the surface. No Traditional- or Historic-type cultural material was identified within Layer I.

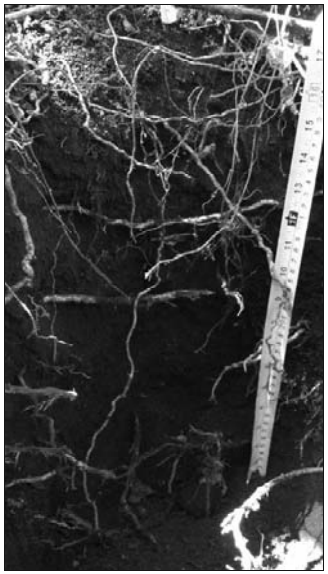

Figure 50: Photograph of SP-3 Stratigraphic Profile. View to Southeast.

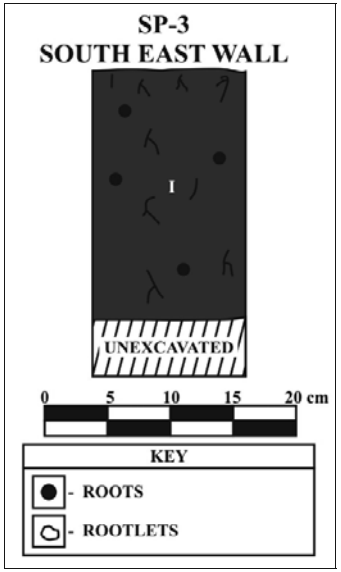

Figure 51: Drawing of SP-3 Stratigraphic Profile.

DISCUSSION AND RECOMMENDATION

Scientific Consultant Services, Inc. (SCS) conducted an Archaeological Inventory Survey of the estimated 7.3-acre project area situated within the existing Hālau Kū Māna Public Charter School and undeveloped parcels along Makiki Stream, Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i TMK (1) 2-5-019:008 (por.), 2-5-020:003, 004 (por.), 005, 008 (por.) (see Figures 1 through 4). During the survey a total of eight (8) surface architectural features were identified. Based on spatial context, the eight (8) features were consolidated into six (6) new archaeological sites (State Site -7550 through -7554). No portable cultural material was observed or collected during the current survey.

Due to the proximity to Makiki Stream, State Sites -7550 and -7551 are thought to have been utilized for water management, possibly associated with the Board of Water Supply pumping station (Makiki-Manoa pumping station).

As stated, State Site -7552 is thought to be associated with Choi Nursery, owed by Wilbur Choi, which was in operation from 1946 to 1984. Choi Nursery encompassed the private parcel in TMK (1) 2-5-020:007 and leased State land in TMK (1) 2-5-020:004 (por.) totaling 5.5 acres (Carpenter and Yent 1994) and operated within the area near the DOFAW access road and Makiki Heights Drive.

According to City and County records of TMK (1) 2-5-020:003, two utility sheds were erected within the parcel in area 96 and 16 in 1940 (Appendix C). State Site -7443 is thought to be the remnants of at least one of the utility sheds. There was no evidence of a second.

The terraces documented during the Archaeological Survey conducted by Carpenter and Yent (1994), within TMK (1) 2-5-019:008 (por.) (Survey Area 2) were no longer visible, most likely due to modern landscaping. Terraces observed by Carpenter and Yent (1994:31) on the eastern side of Makiki Stream are most likely those of State Site -7554, documented during the subject project.

All Sites are Historic in nature with multiple instances of construction phases, as indicated by construction materials.

SIGNFICANCE ASSESSMENTS

The Archaeological Inventory Survey led to the identification of five sites: State Site -7550, State Site -7551, State Site -7552, State Site -7553, and State Site -7554. These sites have been evaluated for significance according to the criteria established for the Hawai`i State Register of Historic Places (HSRHP). The five criteria are outlined below:

> Criterion A: Site is associated with events that have made a significant contribution to the broad patterns of our history.
>
> Criterion B: Site is associated with the lives of persons significant to our past.
>
> Criterion C: Site is an excellent site type; embodies distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual construction.
>
> Criterion D: Site has yielded or has the potential to yield information important in prehistory or history.
>
> Criterion E: Site has cultural significance to an ethnic group; examples include religious structures, burials, major traditional trails, and traditional cultural places.

State Site -7550 through State Site -7554 were evaluated and found to be significant under Criterion D, for information, only. Based on the findings of the survey, it seems unlikely that new information would be gleaned from additional study of the documented sites. Thus, no further archaeological work is recommended for State Sites -7550 through 7554, situated within the existing Hālau Kū Māna Public Charter School and the undeveloped parcels along Makiki Stream.

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APPENDIX A: LAND COMMISSION AWARDS (ADAPTED FROM CARPENTER AND YENT (1994)

L.C.A. #	11MA (Mahele Award)	R.P. #	6715
Location:	*`ili* of Poloke		
Awardee:	Keawehano		
Pcs (*Apana*):	2		
Acreage:	119.99		
Notes:	No description of this claim found.		

L.C.A. #	19MA (Mahele Award)	R.P. #	5584
Location:	Kahaumakaawe, Waikiki, Oahu		
Awardee:	Kanehiwa		
Pcs (*Apana*):	1		
Acreage:	3.25		
Notes:	Award is for half of Kahaumakaawe *`ili*. The other half was government land, located just south of the summit of Pu`u Kakea.		

L.C.A #	24MA (Mahele Award)	R.P. #	none
Location:	Kaiwiokaihu, Waikiki, Oahu [2 parcels - 1 along upper Maunalaha Stream, other along Makiki Stream]		
Awardee:	Kauliokamoa		
Pcs (*Apana*):	2		
Acreage:	unknown		
Notes:	No description of this claim found.		

L.C.A. #	95	R.P. #	6305
Location:	Makiki, Kona, Oahu		
Awardee:	Hannah Jones		

Pcs (*Apana*): 2
Acreage: 8.02
Notes: *Kula* land received from John L. Jones, who received it in turn from Kalaimoku circa 1825.

L.C.A. # 591 R.P # 2387
Location: Kaaihee, Waikiki, Oahu [at corner of Makiki Street and Wilder Ave.]
Awardee: Capt. John Meek
Pcs (*Apana*): 1
Acreage: 1.73
Notes: Houselot received from Boki in 1817. The area was enclosed by a stone wall and contained 2 houses, built in 1826.

L.C.A. # 1447 R.P. # 4432
Location: Hamohamo, Waikiki, Kona, Oahu [lower Makiki - surrounded by Keeaumoku, Kamehameha (Beretania), Punahou & King Streets.]
Awardee: Kahue
Pcs (*Apana*): 2
Acreage: .39
Notes: Claim for a small houselot and one *lo`i*, received from Kane in 1843.

L.C.A. # 2900 R.P. # 4310
Location: Pawaa, Waikiki, Oahu [adjacent to Makiki Street just below Wilder Ave.]
Awardee: T. Kaoi
Pcs (*Apana*): 1
Acreage: .42
Notes: Claim for a houselot.

L.C.A. # 3135 R.P. # 6924
Location: Pawaa, Waikiki, Oahu [Surrounded by Young, Punahou, King & Keeaumoku Streets.]
Awardee: James Walker
Pcs (*Apana*): 1
Acreage: 1.15
Notes: *Kula* land received in 1828 from Manuia, containing three houses.

L.C.A. # 3746B R.P. # 3863
Location: Kupahee, Makiki, Oahu [Maunalaha Stream]
Awardee: Nahina
Pcs (*Apana*): 1
Acreage: .66
Notes: Claim for a *moo`aina* [Agricultural lot] called Kupahee, received from Ii in the time of Kinau.

L.C.A. # 4263B R.P. # none
Location: Makiki, Kona, Oahu [Kanealole Stream]
Awardee: Kaaiahua
Pcs (*Apana*): 1
Acreage: .61
Notes: Claim was for the entire valley of Kanealole, from Pu`u `Ohi`a to a waterfall called Ohialolo (location unknown), received from Ii in the time of Kinau. Obviously only a small portion of this claim was awarded, as evidenced by the size of the award. The exact location of the award is unknown.

L.C.A. # 4279B R.P. #5463
Location: Pawaa, Waikiki, Kona, Oahu [along Kanealole Stream]
Awardee: Ia
Pcs (*Apana*): 1
Acreage: .40
Notes: No testimony found.

L.C.A. # 4283C R.P. #7410
Location: Poohukini, Makiki, Kona, Oahu
Awardee: Moo
Pcs (*Apana*): 1
Acreage: .56
Notes: No testimony found. The location of this award is unknown.

L.C.A. # 4285B R.P. # 3830
Location: Manu, Makiki, Kona, Oahu [Lower Moleka Stream]
Awardee: Mokuhanui

Pcs (*Apana*): 1
Acreage: .67
Notes: Claim for houselot and taro land, received from Ii in the time of Kinau.

L.C.A. # 6489 R.P. # 4519
Location: Kauhikio, Makiki, Kona, Oahu
Awardee: Kaihiwa
Pcs (*Apana*): 4
Acreage: 73.80
Notes: Claim for a houselot and land at Kauhikio, an *`ili kupono*. Land received from the *Mo`i* [King].

L.C.A. # 8241 R.P. # 5699
Location: Kalawahine
Awardee: John Ii
Pcs (*Apana*): 1
Acreage: .77
Notes: Claim for three *lo`i* and *kula* land. Exact location of this award is unknown.

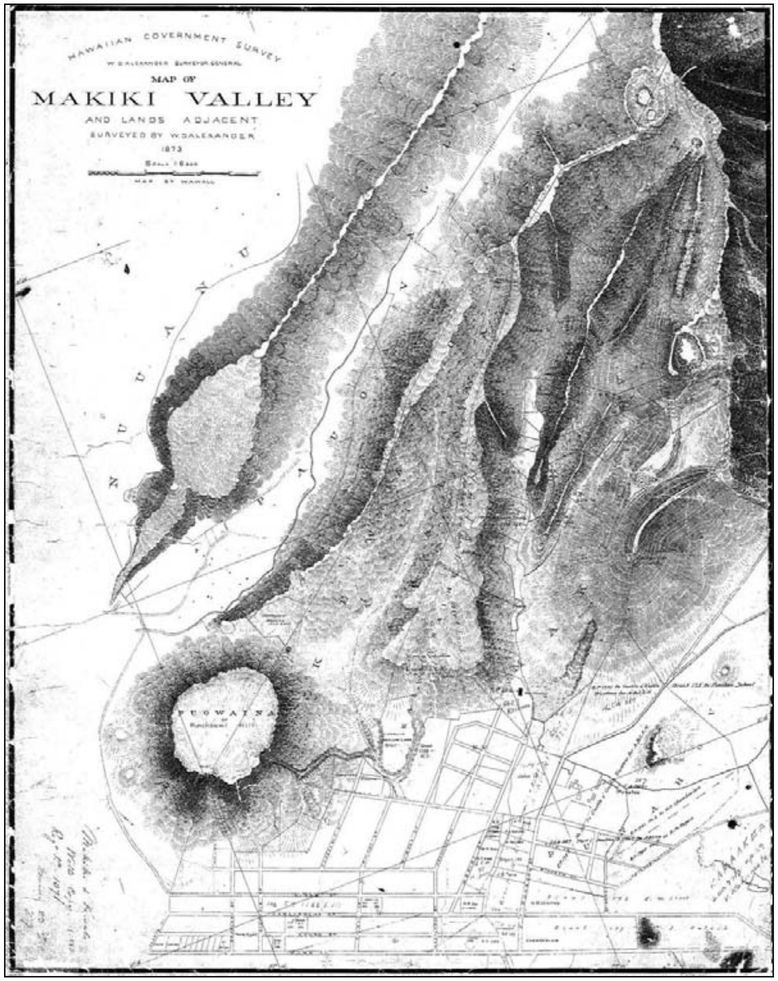
L.C.A. # 8241 R.P. # none
Location: Pawaa
Awardee: John Ii
Pcs (*Apana*): 1
Acreage: 2.59
Notes: Exact location unknown. Possibly combined with below award.

L.C.A. # 8241 R.P. # 5704
Location: Pawaa
Awardee: John Ii
Pcs (*Apana*): 5
Acreage: 250.80
Notes: Claim for the *`ili* of Pawaa, received from Kamehameha I after the battle of Nuuanu. At the time of the claim 14 families were living on this land with Ii`s permission.

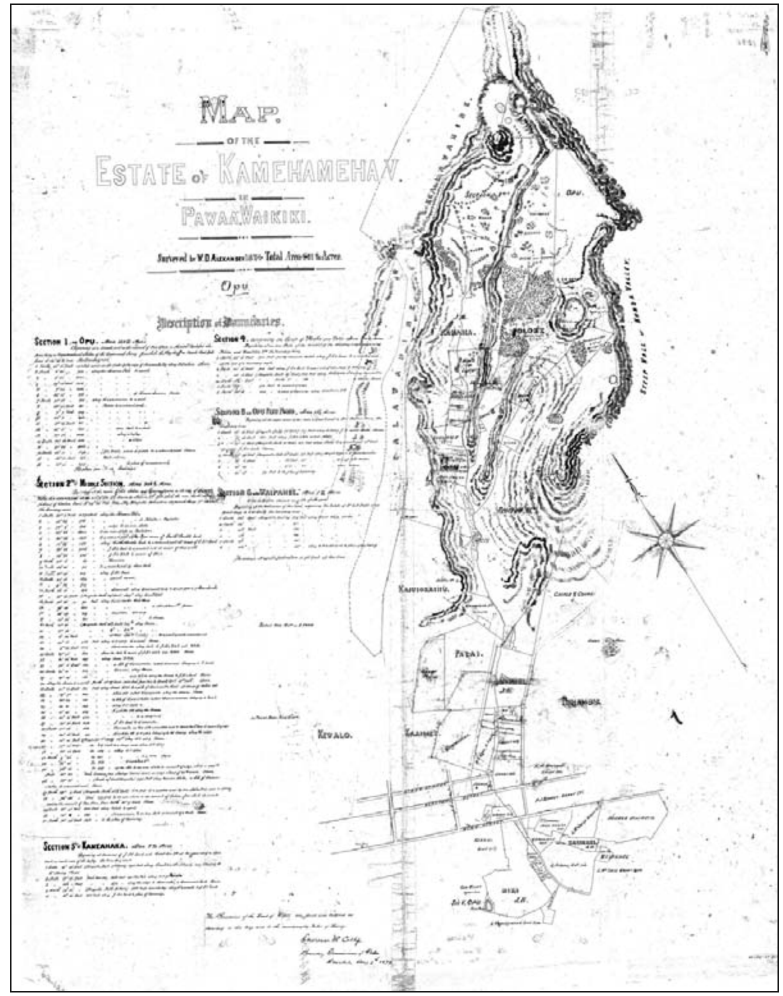
L.C.A. # 10162 R.P. # 2270
Location: Makiki, Waikiki, Oahu [at intersection of Wilder and Punahou Streets]
Awardee: Moku
Pcs (*Apana*): 1
Acreage: .56
Notes: Claim for a houselot, taro land and a *kula*.

L.C.A. # 11018 R.P. # 3690
Location: Pawaa, Waikiki, Oahu [adjacent to Makiki Street just below Wilder Ave.]
Awardee: Wahine
Pcs (*Apana*): 1
Acreage: .42
Notes: Claim for a houselot containing two houses, received from M. Kekuanaoa in the time of Kaomi's disturbance.

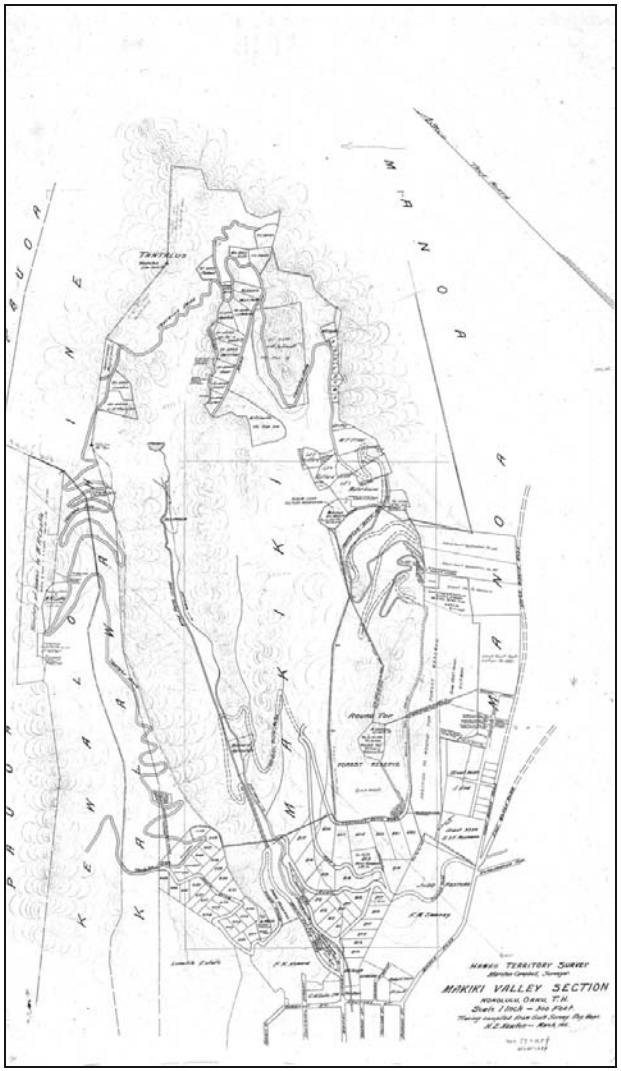
APPENDIX B: HISTORIC MAPS AND PHOTOGRAPHS OF MAKIKI


HAWAIIAN GOVERNMENT SURVEY
W. D. ALEXANDER SURVEYOR GENERAL
MAP OF
MAKIKI VALLEY
AND LANDS ADJACENT
SURVEYED BY W. D. ALEXANDER
1873
PUOWAINA

B2


MAP
OF THE
ESTATE OF KAMEHAMEHA V.
PAWAA WAIKIKI.
Opu
Description of Boundaries.
SECTION 1. OPU.
SECTION 2. MIDDLE SECTION.
SECTION 3. KAKAAKO.
OPU
KEWALO.
PAPAI.

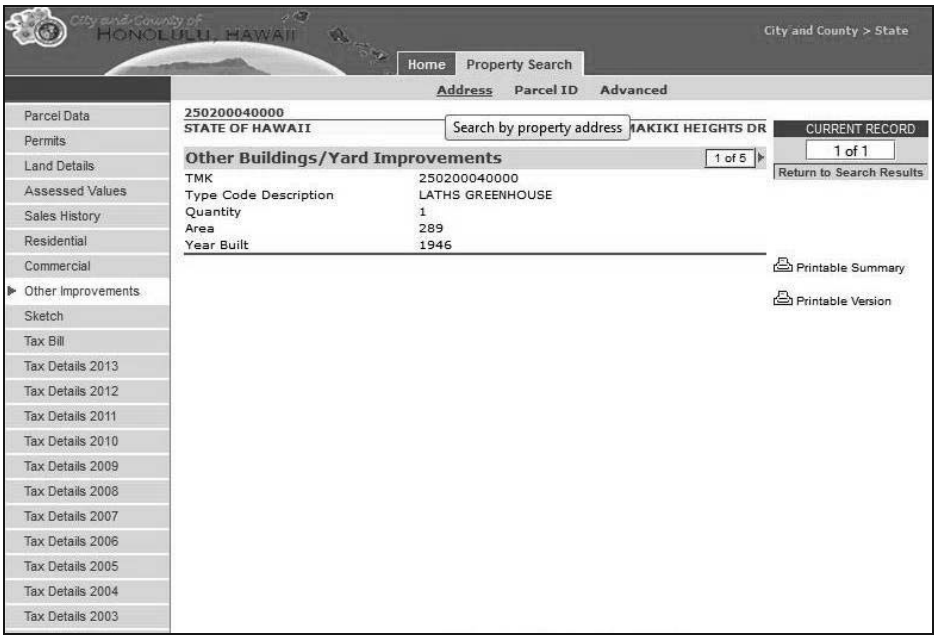
B3



B4

APPENDIX C: CITY AND COUNTY OF HONOLULU RECORDS

C


City and County of HONOLULU, HAWAII
City and County > State
Home
Property Search
Address
Parcel ID
Advanced
Parcel Data
Permits
Land Details
Assessed Values
Sales History
Residential
Commercial
Other Improvements
Sketch
Tax Bill
Tax Details 2013
Tax Details 2012
Tax Details 2011
Tax Details 2010
Tax Details 2009
Tax Details 2008
Tax Details 2007
Tax Details 2006
Tax Details 2005
Tax Details 2004
Tax Details 2003
250200040000
STATE OF HAWAII
Search by property address
MAKIKI HEIGHTS DR
CURRENT RECORD
1 of 1
Return to Search Results
Other Buildings/Yard Improvements
1 of 5
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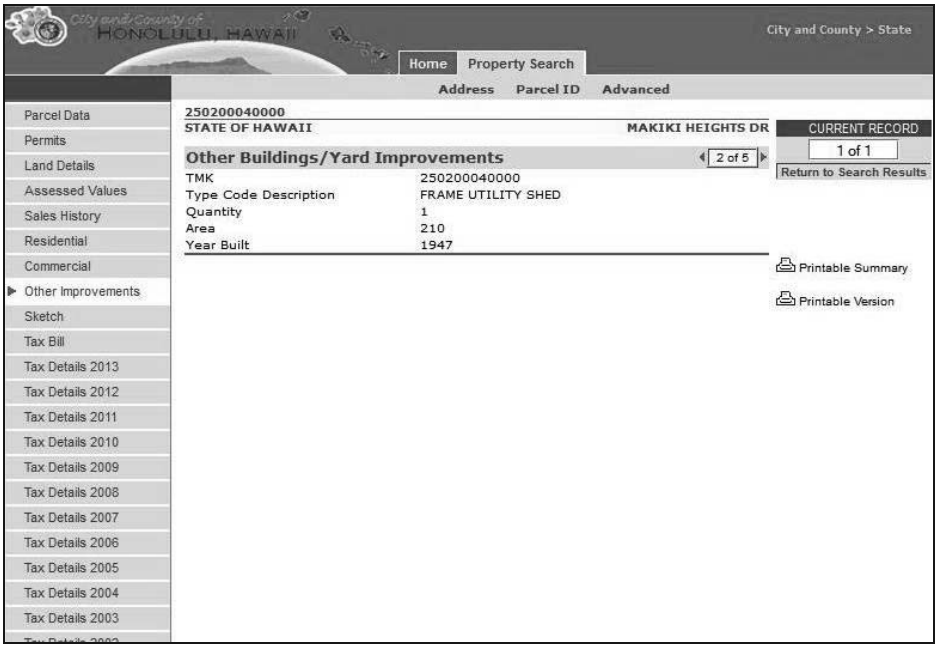
Type Code Description LATHS GREENHOUSE
Quantity 1
Area 289
Year Built 1946
Printable Summary
Printable Version

C1


City and County of HONOLULU, HAWAII
City and County > State
Home
Property Search
Address
Parcel ID
Advanced
Parcel Data
Permits
Land Details
Assessed Values
Sales History
Residential
Commercial
Other Improvements
Sketch
Tax Bill
Tax Details 2013
Tax Details 2012
Tax Details 2011
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Tax Details 2009
Tax Details 2008
Tax Details 2007
Tax Details 2006
Tax Details 2005
Tax Details 2004
Tax Details 2003
250200040000
STATE OF HAWAII
MAKIKI HEIGHTS DR
CURRENT RECORD
1 of 1
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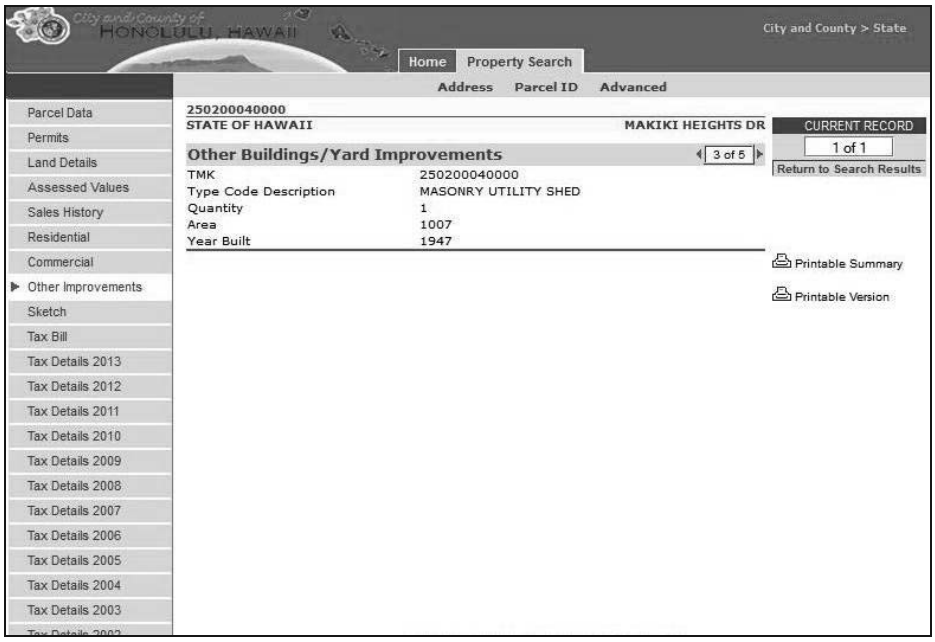
2 of 5
TMK 250200040000
Type Code Description FRAME UTILITY SHED
Quantity 1
Area 210
Year Built 1947
Printable Summary
Printable Version

C2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City and County > State
Home
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Address
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Parcel Data
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Land Details
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Sales History
Residential
Commercial
Other Improvements
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Tax Bill
Tax Details 2013
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Tax Details 2008
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Tax Details 2005
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Tax Details 2003
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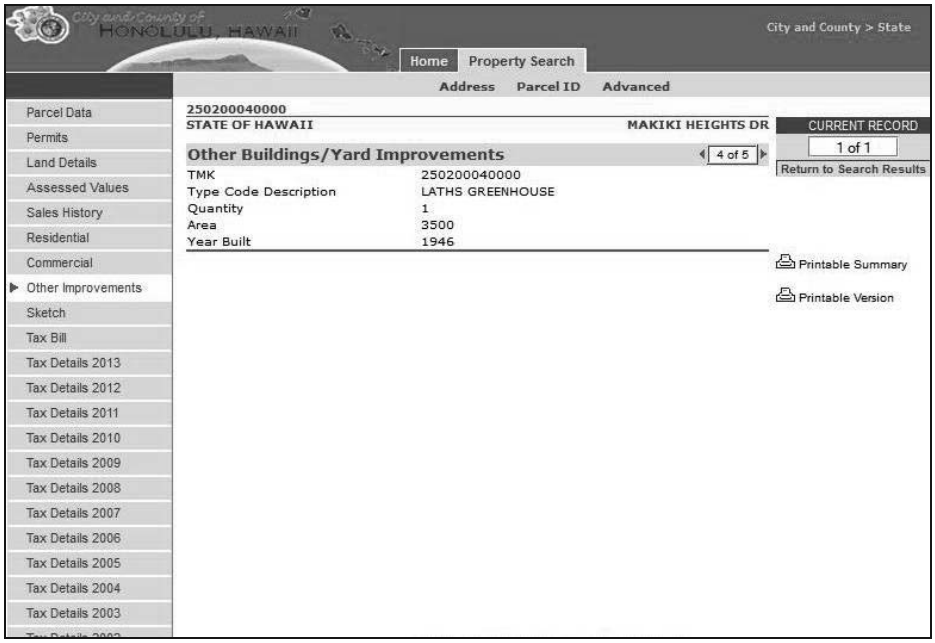
STATE OF HAWAII
MAKIKI HEIGHTS DR
CURRENT RECORD
1 of 1
Return to Search Results
Other Buildings/Yard Improvements
3 of 5
TMK 250200040000
Type Code Description MASONRY UTILITY SHED
Quantity 1
Area 1007
Year Built 1947
Printable Summary
Printable Version

C3


City and County of HONOLULU, HAWAII
City and County > State
Home
Property Search
Address
Parcel ID
Advanced
Parcel Data
Permits
Land Details
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Sales History
Residential
Commercial
Other Improvements
Sketch
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STATE OF HAWAII
MAKIKI HEIGHTS DR
CURRENT RECORD
1 of 1
Return to Search Results
Other Buildings/Yard Improvements
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Area 3500
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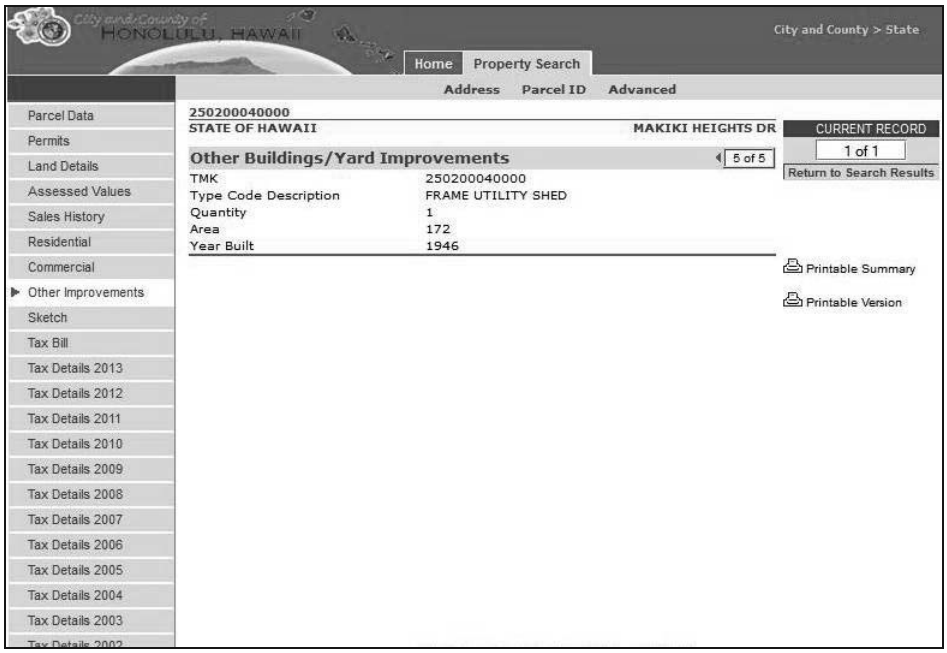
Printable Summary
Printable Version

C4


City and County of HONOLULU, HAWAII
City and County > State
Home
Property Search
Address
Parcel ID
Advanced
Parcel Data
Permits
Land Details
Assessed Values
Sales History
Residential
Commercial
Other Improvements
Sketch
Tax Bill
Tax Details 2013
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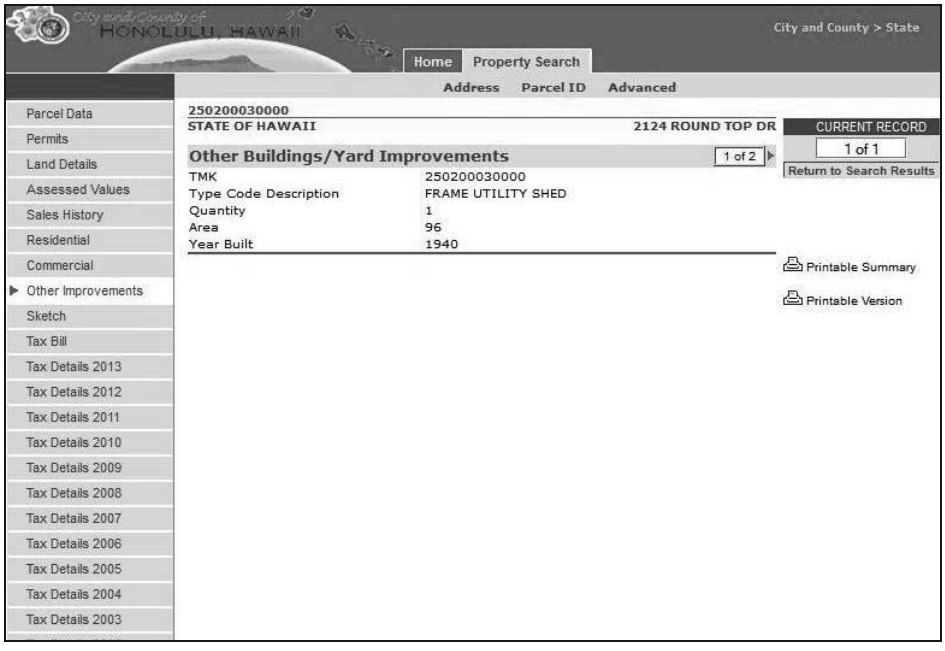
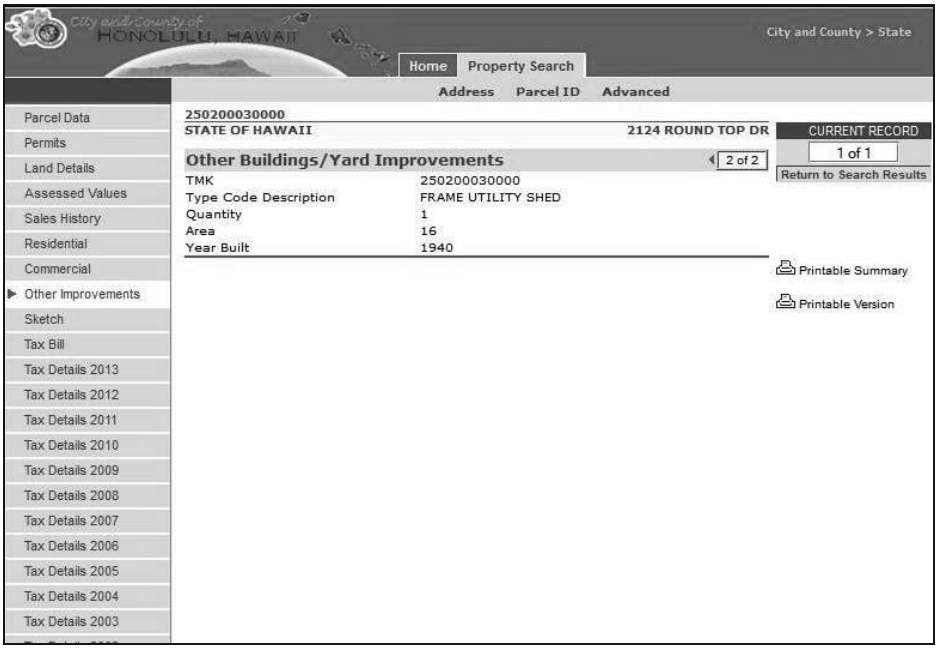
Tax Details 2011
Tax Details 2010
Tax Details 2009
Tax Details 2008
Tax Details 2007
Tax Details 2006
Tax Details 2005
Tax Details 2004
Tax Details 2003
250200040000
STATE OF HAWAII
MAKIKI HEIGHTS DR
CURRENT RECORD
1 of 1
Return to Search Results
Other Buildings/Yard Improvements
5 of 5
TMK 250200040000
Type Code Description FRAME UTILITY SHED
Quantity 1
Area 172
Year Built 1946
Printable Summary
Printable Version

C5


City and County of HONOLULU, HAWAII
City and County > State
Home
Property Search
Address
Parcel ID
Advanced
Parcel Data
Permits
Land Details
Assessed Values
Sales History
Residential
Commercial
Other Improvements
Sketch
Tax Bill
Tax Details 2013
Tax Details 2012
Tax Details 2011
Tax Details 2010
Tax Details 2009
Tax Details 2008
Tax Details 2007
Tax Details 2006
Tax Details 2005
Tax Details 2004
Tax Details 2003
250200030000
STATE OF HAWAII
2124 ROUND TOP DR
CURRENT RECORD
1 of 1
Return to Search Results
Other Buildings/Yard Improvements
1 of 2
TMK 250200030000
Type Code Description FRAME UTILITY SHED
Quantity 1
Area 96
Year Built 1940
Printable Summary
Printable Version

C6


City and County of HONOLULU, HAWAII
City and County > State
Home
Property Search
Address
Parcel ID
Advanced
Parcel Data
Permits
Land Details
Assessed Values
Sales History
Residential
Commercial
Other Improvements
Sketch
Tax Bill
Tax Details 2013
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Tax Details 2007
Tax Details 2006
Tax Details 2005
Tax Details 2004
Tax Details 2003
250200030000
STATE OF HAWAII
2124 ROUND TOP DR
CURRENT RECORD
1 of 1
Return to Search Results
Other Buildings/Yard Improvements
2 of 2
TMK 250200030000
Type Code Description FRAME UTILITY SHED
Quantity 1
Area 16
Year Built 1940
Printable Summary
Printable Version

Appendix D

CULTURAL IMPACT ASSESSMENT

SCS Project No. 1442-1 CIA

A CULTURAL IMPACT ASSESSMENT FOR THE HĀLAU KŪ MĀNA CHARTER SCHOOL MAKIKI AHUPUA`A, HONOLULU (KONA) DISTRICT O`AHU ISLAND, HAWAI`I

[TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004 (por.), 005, and 008]

Prepared by:
Cathleen A. Dagher, B.A.
and
Robert L. Spear, Ph.D.

June 2014
FINAL

Prepared for:
Catie Cullison
PBR Hawai
1001 Bishop Street, Suite 650
Honolulu, Hawai`i 96813

SCIENTIFIC CONSULTANT SERVICES Inc.

1347 Kapiolani Blvd., Suite 408 Honolulu, Hawai`i 96814

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LIST OF FIGURES

INTRODUCTION

At the request of Catie Cullison (PBR Hawaii), Scientific Consultant Services, Inc. (SCS) has prepared a Cultural Impact Assessment (CIA) for the proposed Hālau Kū Māna Charter School, Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004 (por.), 005, and 008] (Figures 1 through 4).

The Constitution of the State of Hawai`i clearly states the duty of the State, and its agencies, is to preserve, protect, and prevent interference with the traditional and customary rights of Native Hawaiians. Article XII, Section 7 (2000) requires the State to "protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua`a* tenants who are descendants of Native Hawaiians who inhabited the Hawaiian Islands prior to 1778." In spite of the establishment of the foreign concept of private ownership and western-style government, Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result in 1850, the Hawaiian Government confirmed the traditional access rights to Native Hawaiian *ahupua`a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai`i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, "native Hawaiian rights…may extend beyond the *ahupua`a* in which a Native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner" (Pele Defense Fund v. Paty, 73 Haw.578, 1992).

Act 50, enacted by the Legislature of the State of Hawai`i (2000) with House Bill (HB) 2895, relating to Environmental Impact Statements, proposes that:

> …there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawaii's culture, and traditional and customary rights… [H.B. NO. 2895].

Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs and practices, and resources of Native Hawaiians as well as other ethnic groups. Act 50 also requires state agencies and other developers to assess the effects of proposed land use or shore line developments on the

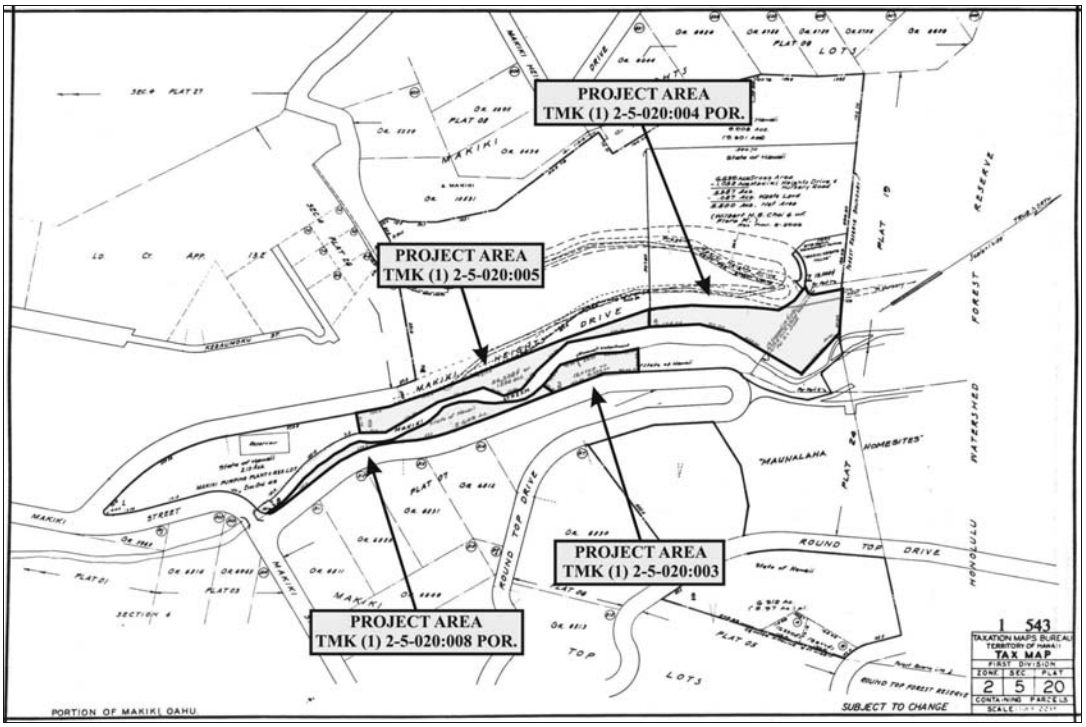

Figure 2: Tax Map Key [TMK: (1) 2-5-020] Showing Project Area.

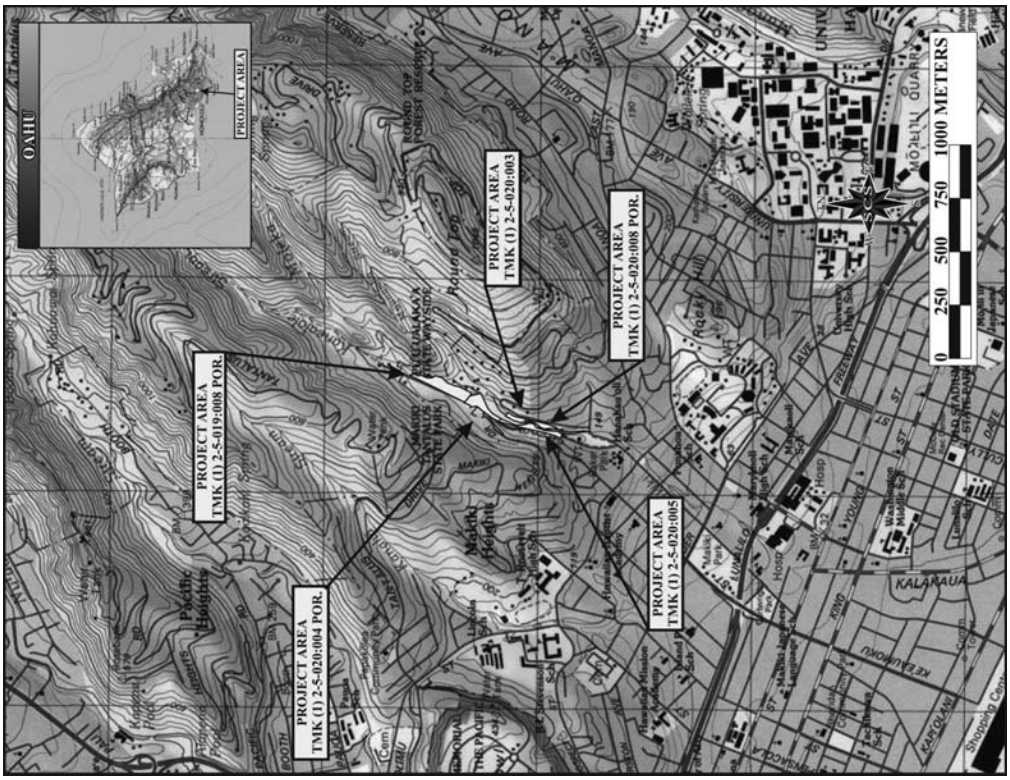

Figure 1: USGS (Honolulu 1998) Quadrangle Map of Makiki Showing Project Area.

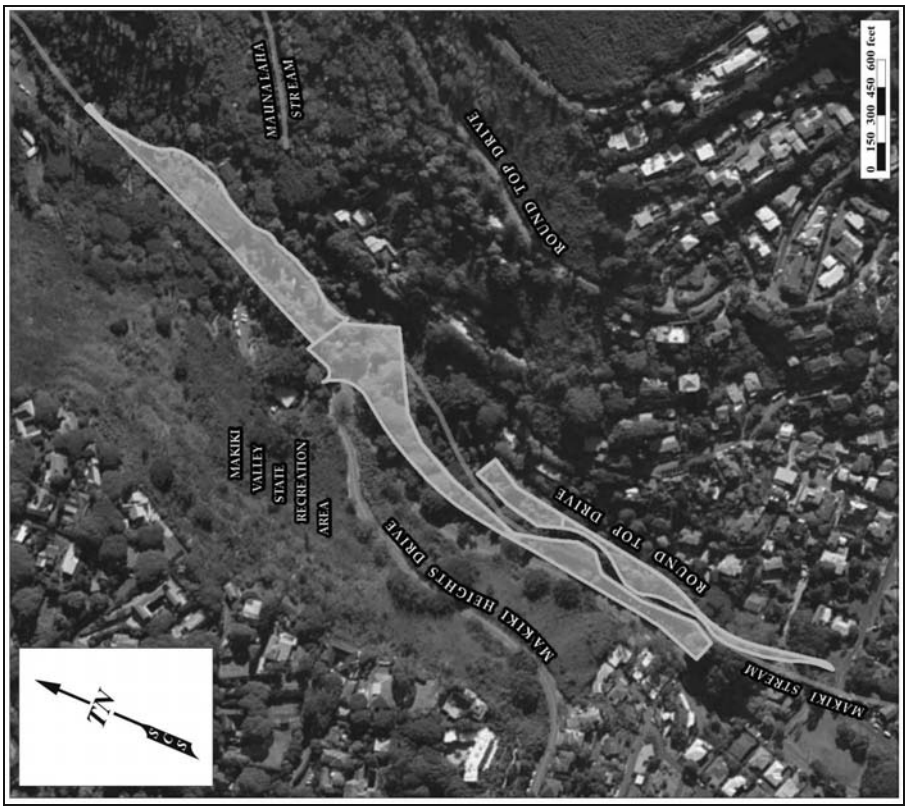

Figure 4: Google Earth (2013) Map Image Showing Project Area.

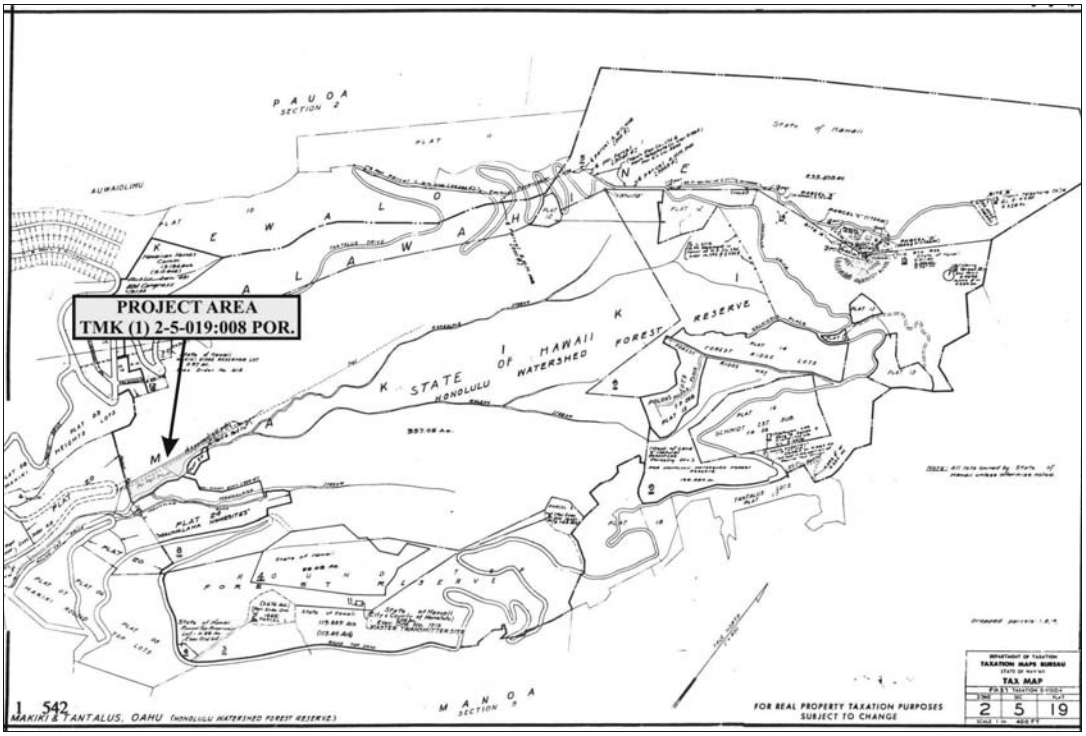

Figure 3: Tax Map Key [TMK: (1) 2-4-019] Showing Project Area.

"cultural practices of the community and State" as part of the HRS Chapter 343 (2001) environmental review process.

It also re-defined the definition of "significant effect" to include "the sum of effects on the quality of the environment including actions impact a natural resource, limit the range of beneficial uses of the environment, that are contrary to the State's environmental policies . . . or adversely affect the economic welfare, social welfare or cultural practices of the community and State" (H.B. 2895, Act 50, 2000). Cultural resources can include a broad range of often overlapping categories, including places, behaviors, values, beliefs, objects, records, stories, etc. (H.B. 2895, Act 50, 2000).

Thus, Act 50 requires that an assessment of cultural practices and the possible impacts of a proposed action be included in Environmental Assessments and Environmental Impact Statements, and to be taken into consideration during the planning process. As defined by the Hawaii State Office of Environmental Quality Control (OEQC), the concept of geographical expansion is recognized by using, as an example, "the broad geographical area, e.g. district or *ahupua`a*" (OEQC 2012:12). It was decided that the process should identify 'anthropological' cultural practices, rather than 'social' cultural practices. For example, *limu* (edible seaweed) gathering would be considered an anthropological cultural practice, while a modern-day marathon would be considered a social cultural practice.

Therefore, the purpose of a Cultural Impact Assessment is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assessing the potential for impacts on these cultural resources. The CIA is not intended to be a document of in depth archival-historical land research, or a record of oral family histories, unless these records contain information about specific cultural resources that might be impacted by a proposed project.

According to the Guidelines for Assessing Cultural Impacts established by the Hawaii State Office of Environmental Quality Control (OEQC 2012:12):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both manmade and natural, which support such cultural beliefs.

The meaning of "traditional" was explained in *National Register Bulletin*:

> Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations', usually orally or through practice. The traditional cultural significance of a historic property then is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. . . . [Parker and King 1990:1]

METHODOLOGY

This Cultural Impact Assessment was prepared as much as possible in accordance with the suggested methodology and content protocol in the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). In outlining the "Cultural Impact Assessment Methodology", the OEQC (2012:11) states that:

> "…information may be obtained through scoping, community meetings, ethnographic interviews and oral histories…"

This report contains archival and documentary research, as well as communication with organizations having knowledge of the project area, its cultural resources, and its practices and beliefs. An example of the letters of inquiry is presented in Appendix A, copies of the posted legal notice and Affidavit are presented in Appendix B, and an example Follow-up Letter of Inquiry is presented in Appendix C. The signed information release form is presented in Appendix D. This Cultural Impact Assessment was prepared in accordance with the suggested methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 2012:13), whenever possible. The assessment concerning cultural impacts may include, but not be limited to:

A. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.

B. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.

C. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.

D. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.

E. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.

F. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.

G. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.

H. An explanation of confidential information that has been withheld from public disclosure in the assessment.

I. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.

J. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.

K. A bibliography of references, and attached records of interviews which were allowed to be disclosed.

If on-going cultural activities and/or resources are identified within the project area, assessments of the potential effects on the cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps, land records, such as Land Commission

Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological reports.

INTERVIEW METHODOLOGY

Interviews are conducted in accordance with Federal and State laws, and guidelines, when knowledgeable individuals are able to identify cultural practices in, or in close proximity to, the project area. If they have knowledge of traditional stories, practices and beliefs associated with a project area or if they know of historical properties within the project area, they are sought out for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input, and suggest further avenues of inquiry, as well as specific individuals to interview. It should be stressed again that this process does not include formal or in-depth ethnographic interviews or oral histories as described in the OEQC's *Guidelines for Assessing Cultural Impacts* (2012). The assessments are intended to identify potential impacts to on-going cultural practices, or resources, within a project area or in its close vicinity.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then transcribed. These draft transcripts are returned to each of the participants for their review and comments. After corrections are made, each individual signs a release form, making the interview available for this study. When telephone interviews occur, a summary of the information is usually sent for correction and approval, or dictated by the informant and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

ENVIRONMENTAL SETTING

LOCATION

Makiki Valley is situated on the leeward side of the Ko`olau Mountain Range, between Pauoa Valley to the west and Mānoa Valley to the east. The project area is located an estimated 2,900 m north of the coastline at an elevation of 150-250 feet (45-76 m) above mean sea level

(amsl). The valley is cut northwest to southwest by streams, ridges, and valleys. Kanakā, Kānealole, Moleka, and Maunalaha are the headwater streams that eventually merge into Makiki Stream. Located in Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i TMK: (1) 2-4-019:008 (por.), 2-5-020:003, 004, 005 (por.), 008 (por.) (see Figures 1 through 4), the project area comprises of an estimated 7.3-acres and is bound on the north by residential parcels and the Watershed forest reserve; to the east by Makiki Heights drive; to the west by Round Top Dive; and to the south by Archie Backer Mini Park and The Makiki-Manoa Pumping Station.

CLIMATE

Makiki Valley is situated in the wet Ko`olua Mountain Range, which receives an average rainfall of 100 inches in the upper valley near P`u `Ōhi`a and 25 inches in the lower plain. The average rainfall within the project area is approximately 53 inches (Giambelluca *et al.* 1986)

SOILS

According to Foote *et al.* (1972:63, 64, Sheet Map 62), the project area is located within the Kawaihapai stony clay loam, 2 to 6 percent slopes (Klab) deposits. Soils of the Kawaihapai Series consist of "well-drained soils in drainage ways". Kawaihapai soils formed in alluvium derived from basic igneous rock in humid uplands (Foote *et al.* 1972:63)

VEGETATION

The vegetation within the project area represents historic events and does not reflect the vegetation pattern prior to contact. It is currently dominated by a dense growth of exotic species. The portion of the project area within TMK: (1) 2-5-020:004 includes manicured lawns and indigenous vegetation, such as Naio (*Myoporum sandwicense*), `Ilima papa (*Sida jallax*), Kalo (*Colocasia esculenta*), Pohuehue *(Ipomea pes-caprae*), `Aweoweo (*Chenopodium oahuense*), and Ti (*Cordyline fruticosa).*

CULTURAL HISTORICAL CONTEXT

The island of O`ahu ranks third in size of the eight main islands in the Hawaiian Archipelago. The Wai`anae and Ko`olau mountain ranges were formed by two volcanoes. Through the millennia the constant force of water carved fertile amphitheater-headed valleys and rugged passes eroded at lower elevations providing access from one side of the island to another (Macdonald and Abbott 1970). The region were the project area is located was created by delta drainage from the Ko`olau Mountains. As the modern reef formed offshore, a barrier was created leaving the drainage from the mountains to form a lagoon behind it.

PAST POLITICAL BOUNDARIES

Traditionally, the division of O`ahu's land into districts (*moku*) and sub-districts was said to be performed by *Mā`ilikukahi* who was chosen by the chiefs to be the *mō`ī ho`oponopono o ke aupuni* (administrator of the government; Kamakau 1991:53–55). Cordy (2002) places Mā`ilikukahi at the beginning of the 16th century. Mā`ilikukahi created six districts and six district chiefs (*ali`i `ai moku*). Land was considered the property of the king or *ali`i `ai moku* (the *ali`i* who eats the island/district), which he held in trust for the gods. The title of *ali`i `ai moku* ensured rights and responsibilities to the land, but did not confer absolute ownership. The king kept the parcels he wanted; his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The *maka`āinana* (commoners) worked the individual plots of land. It is said that Mā`ilikukahi gave land to *maka`āinana* (commoners) all over the island of O`ahu (*ibid*).

In general, several terms, such as *moku*, *ahupua`a*, *`ili* or *`ili`āina* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua`a*) that customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the *ahupua`a* were therefore able to harvest from both the land and the sea. Ideally, this situation allowed each *ahupua`a* to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The *`ili `āina* or *`ili* were smaller land divisions next to importance to the *ahupua`a* and were administered by the chief who controlled the *ahupua`a* in which it was located (Lyons 1875:33; Lucas 1995:40). The *mo`o`āina* were narrow strips of land within an *`ili*. The land holding of a tenant or *hoa `āina* residing in an *ahupua`a* was called a *kuleana* (Lucas 1995:61). The project area is located in the Waikīkī Ahupua`a. Waikīkī means literally "spouting water" and is said to be named for the swamps (Pukui *et al.* 1974:223).

TRADITIONAL SETTLEMENT PATTERNS

The Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various *ahupua`a*. During pre-Contact times, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinaruma*) and *mai`a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as *`uala* (sweet potato, *Ipomoea batatas*) were produced. This was the

typical agricultural pattern seen during traditional times on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985). Agricultural development on the windward side of O`ahu was likely to have begun early (AD 1100–1300) during what is known as the Expansion Period (Kirch 1985).

In Hawai`i, much of the coastal lands were preferred for chiefly residence. Easily accessible resources such as offshore and onshore fish ponds, the sea with its fishing and surfing—known as the sports of kings, and some of the most extensive and fertile wet taro lands were located in the area (Kirch and Sahlins, 1992 Vol. 1:19). Inland resources necessary for subsistence, could easily be brought to the *ali`i* residences on the coast from nearby inland plantations. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch and Sahlins 1992, Vol. 2:59). Historic research indicates:

> [F]arming was one of the principal duties of the chiefs, and the land [in Waikiki] was rich under cultivation. It was planted from the upper part to its entering the coconut grove [along the shore]…Water courses were made throughout the land, thereby feeding the taro patches and fishponds. A good chief was Kalamakua, who was well known for his farming. He constructed the large taro *lo`i* of Keokea. Kalamanamana, Kualualu and others at Waikiki. [*Ka Nupepa Kuokoa*, Aug 12, 1865]

Because of its fine beach and rich agricultural lands, the ruling chiefs of Hawai`i chose this area for the seat of government in very early times (Handy and Handy 1972). The *ali`i nui*, Mā`ilikukahi, transferred the government from Waialua to Waikīkī in the 1400s, thus making it one of the main political and economic centers of O`ahu for the next 400 years (Kamakau 1991; Kanahele 1995). Chiefs of O`ahu, including Kuamanuia, Ka`ihikapuamanuia whose large fishpond is under Fort DeRussy, Kakuhihewa and Ka`ihikapuakakuhihewa his son, chose to live in Waikīkī, at least part of the time (Kanahele 1995).

WAHI PANA (LEGENDARY PLACES)

The name 'Makiki' may refer to "a type of stone used as weights used for octopus lures and adzes (Pukui and Elbert 1971: 229). However, it is not clear from the references cited whether the raw materials used to manufacture the octopus lures and adzes were quarried from the Makiki area. In fact, research indicates there is a paucity of legends associated with the Makiki area; in general, suggesting this area may have been sparsely populated during the pre-

and early post-Contact Periods. The few legends associated with Makiki refer to an area known as Aniani-kū, which is currently known as Papakōlea.

Mary Kawena Pukui (1953 in Sterling and Summers 1978:290) relates two legends pertaining to Aniani-kū:

> Above Makiki is Mauna-laha. There is a stone there called Aniani-ku (Stand beckoning) where Kamapua`a was tied.

And a similar legend related by Mary Kawena Pukui (1954 in Sterling and Summers 1978:290):

> A girl lived near there and would go up onto this place from where you can look in to Manoa. In Manoa lived a girl who chanted beautifully. This girl was entranced by it and would go up there and wave. The girl in Manoa said, If that is a girl; waving, she will be my friend; if it is a man, he shall be my husband." She found out it was a girl. The place where she used to stand is called Aniani-ku, meaning " Beckoning."

An earlier legend associated with this area referring to Pohaku-o-Papakolea was recounted by J.K.W. Makanikeoe (1908 in Sterling and Summers 1978:290):

> Turn to look at Pauoa. Gaze on the beauty of the land and you will see lying in full view Pohaku-o-Papakolea on the edge of Pauoa and the crown land back of Punchbowl. That is the stone that I like for it has a fine and famous legend.

HISTORICAL LAND USE

The historical record has very little indication of Traditional Native Hawaiian land use in and around the project area, however, the remnant terraces identified by Carpenter and Yent (1994; see below) indicate that Makiki and its system of small valleys was developed for irrigated agriculture during the pre- and early post-Contact Periods. The earliest historical account of Makiki Valley is believed to be the narrative of the German botanist Dr. Franz Julius Ferdinand Meyen, who visited O`ahu on the Prussian explorer vessel, *Prinzess Louis*, in 1831.Meyen spent six days touring the southern coast of O`ahu from Diamond Head to Pearl Harbor, collecting plant and animal species and making notes on the scenes of Hawaiian life that he observed (Hazlett *et al.* 2011). In general, Meyen describes habitations and agricultural features, including remnant terraces, in the valleys along streams (Meyen in 1831, cited in Pultz 1981). Meyen was a trained observer and recorded not only botanical observations, but cultural and geological ones as well. One of Meyen's excursions to Pu`u Kākea (Sugarloaf) took him to

the ridge behind Punchbowl, over to Kākea, and then down through Makiki Valley, probably along Moleka Stream. Meyen describes vegetation very different from what exist today, which included native species such as *ma`aloa (Neraudia melastomaefolia)* (used to make tapa), *maile* (*alyxia olivaeformis*), *`ilima* (*S. fallax*), and *pāpala* (*Charpentuera*).

Evidence of Hawaiian habitation during Meyen's (in 1831, cited in Pultz 1981) descent through the valley is described in the following excerpts:

> As we descended farther into the charming valley the small stream which flows in it became larger and larger. Some Indians [Hawaiians] had built their huts beside it and had prepared some land for the cultivation of taro...
>
> As soon as the valley became wider the beautiful vegetation disappeared. The slopes of the mountain were covered only with low grasses, the huts of the Indians became more numerous and here and there large boulders appeared again. The end of a low ridge which runs through the center of this transversal valley had been artificially cleared of vegetation and of the cover of humus. The rock which came to light here is a very attractively colored basalt conglomerate [of black basalt and white calcite crystals). The Indians were just then busy chipping flat pieces from this rock which they wanted to use to hunt octopus. The rock on the sides of the valley, however, is the usual porous basalt which is found all around Honolulu. Here and there one can find caves in this rock, some of which are inhabited.
>
> In the course of our excursion we saw the mountains everywhere covered with grazing horses and horned cattle. One is amazed at the great number of cows which thrive here beautifully with the slightest care...
>
> Many and extensive fields through which we have just wandered and which are presently being used as pasture land were formerly covered with sweet potatoes. Today one can still see the remaining traces of their cultivation. They say that in the days of Kamehameha a great part of the Honolulu Valley was used for the cultivation of field-produce. Now there are meadows there and the valley is far less productive than in former times.

The terraces of Makiki may have been abandoned relatively soon after Western contact due to the decline in population and the more agriculturally favorable adjacent valleys of Pauoa and Manoa (Carpenter and Yent 1994).

Pu`u `Ualaka`a, however, was noted by Handy (1940) as an area famous for the cultivation of sweet potatoes:

> The region around Makiki and Round Top, between Makiki and Manoa Valley, is perhaps the most favorable locality on Oahu for sweet potato cultivation; here

> Hawaiians still have many small plantations, mostly for domestic use, though occasionally they market their products. The volcanic cinder mixed with humus in this locality seems to be ideal for sweet potato cultivation and normally the amount of rainfall is about right. Round Top, the Hawaiian name for which is Ualakaa (literally, rolling potatoes), is famous in the annals of Hawaiian agriculture because here Kamehameha I established his own plantation on the steep slopes above Manoa.

During the Historic Period, and possibly earlier, a trail existed which connected the royal center of Waikīkī to lower Waikīkī, Kamo`ili`ili (Mo`ili`ili), and Mānoa. According to `Ī`ī (1959: 92), this trail exited the royal center of Waikīkī:

> at the south side of the coconut grove of Honuakaha and went on to Kalia. From Kalia it ran eastward along the borders of the fish ponds and met the trail from lower Waikiki. At Kawaiahao a trail passed in front of the stone house of Kania, late father of Kikaha. The trail went above Kalanipuus place, along the stream running from Poopoo to the sea, close to 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.

THE MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on western law. While it is a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kauikeaouli (Kamehameha III) was forced to establish laws changing the traditional Hawaiian economy to that of a market economy (Kame`eleihiwa 1992:169-70, 176; Kelly 1983:45, 1998:4; Daws 1962:111; Kuykendall 1938 Vol. I: 145). The Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were thus made available and private ownership was instituted, the *maka`āinana* (commoners), if they had been made aware of the procedures, were able to claim the plots on which they had been cultivating and living. These claims did not include any previously cultivated but presently fallow land, *`okipū* (on O`ahu), stream fisheries, or many other resources necessary for traditional survival (Kelly 1983; Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16). There were about 250 claims for land in Waikīkī Ahupua`a.

The Māhele claims for Makiki are consisted with the pattern observed by Meyen (1831, cited in Pultz 1981). Documentation of the claims indicates that their locations concentrated in

the lower valley, primarily along Kanealole and Moleka Streams (Figure 5). In terms of land use, most of the awards were for small parcels containing houselots, with only a few containing *lo`i* and *kula* land. Documentation shows John Papa `Ī`ī as the most notable of the awardees, who received about 250 acres. `Ī`ī was awarded a large parcel of land on the western edge of upper Makiki Valley, as well as two large parcels in the lower valley. Two un-awarded claims appear to have been located within the project area: LCA 24MA:2 and a portion of `Ī`ī's larger claim, LCA8241. The un-awarded land in Makiki was partially Crown Lands, claimed by Kamehameha III, and the remainder became Government Lands (Indices of Awards, Part I). Based on archival research, no LCAs were claimed or awarded within the current project area. A list of the LCA documented in Makiki Valley, obtained from (Carpenter and Yent 1994) is presented in Appendix E.

It is important to note the awards of several parcels given to John Papa `Ī`ī (see Figure 5). As stated in (Carpenter and Yent 1994:15), if one were a *maka`ainana* living in Makiki, he was very unlikely to be awarded more than one parcel and it would be about a half acre in size. This award size was significantly smaller then those awarded in Wailua, Kaua`i where the average *maka`ainana* award was just under two acres (Stauffer 1990) and in Kahana Valley, O`ahu the average *maka`ainana* award was just under three acres in size (Stauffer 1990). The awards in these areas included both houselots (*pahale*) and agricultural land (*lo`i* and *kula*), usually in two parcels. In Makiki however, of the eleven *maka`ainana* awards, only four definitely contained *lo`i* land. The awards given in Makiki suggest that the traditional agricultural subsistence economy was being abandoned much more rapidly in Makiki as opposed to other areas well outside of Honolulu.

In the areas referred to as Pāwa`a and Kālia (below King Street) but which may have once belonged to Makiki (at least one claimant referred to this area as Makiki) there were at least fifteen Land Commission Awards, including another large parcel awarded to John Papa `Ī`ī. These awards included houselots, sixteen *lo`i*, ten fishponds and thirteen *ki`apua* (ponds for raising young fish or fry). The largest fishpond was Loko Kuwili Fishpond. Its was located adjacent to the mouth of Makiki Stream, encompassing 9.7 acres (Kikuchi 1973) and was

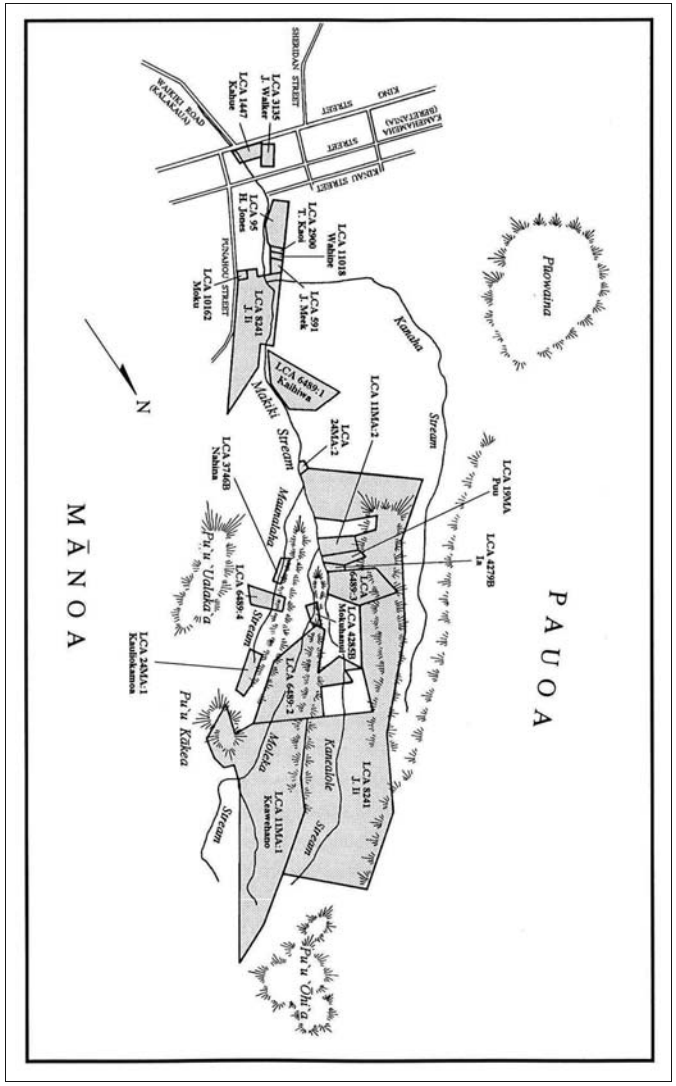

Figure 5: Location and Approximate Boundaries of Known Land Commission Awards in Makiki. Adapted from Reg. Map No. 813 by W.D. Alexander (1874) and Carpenter and Yent (1994).

claimed by the *ali`i* Kaunuohua (LCA #6450). The average award size in lower Makiki was considerably larger than in upper Makiki, likely due to the size of the fishponds. These records suggest that in this lower area, traditional agricultural and aquacultural practices continued at least through the mid-nineteenth century. Un-awarded lands in lower Makiki were again claimed partially by the Crown and partially by the Government (Stauffer 1990).

By 1874, Lot Kamehameha (Kamehameha V) had inherited the crown lands and added to them through additional land grants, totaling roughly 500 acres in Makiki (Carpenter and Yent 1994). During this time, large parcels of land were being granted to various people in lower Makiki. As indicated on a map of Kamehameha V's estate (Alexander 1874; Appendix F), most awardees were foreigners (Gulick, Baldwin, Paris, Lemon, Meek, Gray, and etc.). One large land grant (Grant # 3535), consisting of 21 acres was awarded to H.W. Schmidt. This award was located far back in the valley (Newton 1911; see Appendix F). Here he built a house and attempted to grow coffee, but the venture proved unprofitable (Young n.d.).

J.M. Herring also ventured into growing coffee lower in the valley. Herring purchased several parcels along Kanealole and Moleka Streams between 1864 and 1876 (LCAs 6489:2, 3, 4; 3746B; 4283C; 4285B). This is where he apparently built a house, constructed a carriage road leading to his residence, and planted coffee. Podmore's 1913 map (Figure 6) indicates the route of the carriage road as connecting with Makiki Heights Drive on the west, paralleling the west side of Kanealole Stream mauka, then winding eastward along the ridges and through the valleys to connect with Round Top Drive on the east, crossing the streams of Kanealole, Moleka, and Maunalaha. Possible bridge foundations associated with this road, located along Kanealole and Moleka Streams were identified by Yent (1993:7). Herring also apparently altered existing terraces to create his house site, the carriage road, and planting areas, although the extent of this modification is unclear (Carpenter and Yent 1994) The U.S. Geological Survey still labels this feature as Herring Spring on their topographic maps (see Figure 1).

MAKIKI VALLEY EARLY 1900'S

In 1903, the Bureau of Agriculture and Forestry became the Territorial Board of Agriculture and Forestry. State Forestry Division acquired Makiki Valley in 1904. Records indicate a deforested valley. Due to the close proximity to Honolulu Harbor, the Makiki-Tantalus forest underwent two periods of deforestation. From 1815 to 1826, timber was cut for the sandalwood trade with China. From 1833 to 1860, wood was harvested to provide fuel for the whaling trade. Additionally, fires, farming, grazing by livestock and feral animals, and harvesting for building materials contributed to the loss of the Makiki-Tantalus forest and its replacement by grasses

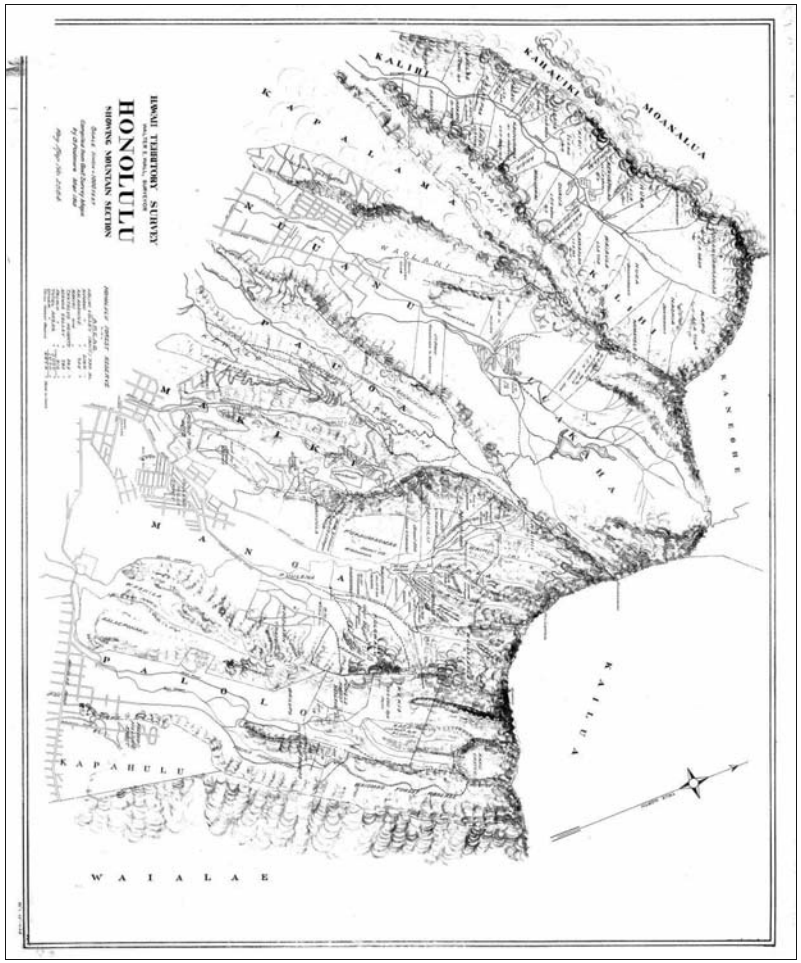

Figure 6: Reg. Map No. 2554 by G. Podmore (1913).

(Hazlett *et al*. 2011). A 1873 map of Makiki Valley by W.D. Alexander (see Appendix F) notes heavily wooded hills and slopes above `Ualaka`a to Tantalus. This vegetation may have been altered radically in the period 1875 to 1900. The reforestation program by the State Forestry Division began around 1910. This reforestation resulted in a thick growth of non-native species, both trees (*i.e.* eucalyptus, guava, and acacia trees) and undergrowth. The vegetation reflects the historic utilization of the valley which resulted in deforestation and the later need for reforestation. Following the reforestation of Makiki Valley, a concrete dam was constructed midway along Kanealole Stream, creating a small reservoir, as shown on a 1911 map (Newton 1911, see Appendix F). This map also shows the carriage road associated with Herring, labeled as the "Tantalus Auto Road". Among the developments implemented by the State Forestry Division was a large nursery at the mauka end of the present-day DOFAW access road (Carpenter and Yent 1994).

A Photograph taken by Bertram circa 1900 (Figure 7) from the top of Punchbowl looking toward Diamond Head illustrates the development of lower Makiki (Hawaii State Archives). In this view, the area between Makiki Heights and the ocean is visible. The upper area is divided into large residential lots, containing large homes and fenced cleared areas, presumably for the stabling of horses. Closer to the ocean, there are few buildings and large fishponds or irrigated pondfields are still visible (Carpenter and Yent 1994). A 1927 aerial photograph of Makiki (Figure 8) shows the success of the Forestry Division's reforestation efforts, the dam and reservoir along Kanealole Stream, and the Nitride Macadamia Plantation on the west side of `Ualaka`a. It also shows additional agricultural plots on the southern slope of `Ualaka`a, possibly the small sweet potato gardens referred to by Handy (1940).

The Board of Water Supply (BWS) also made use of Makiki Valley to obtain water for the populous Honolulu area. The BWS has a monitoring station just mauka of the forestry base yard and the larger pumping station is further down Makiki Valley, (Makiki-Manoa Pumping Station) completed in 1935.

The area around the Makiki Park entrance and the present Halau Ku Mana Charter School, at the hairpin turn in Makiki Heights Drive was used as a nursery from 1946 through 1984. Approximately 5.5 acres was leased to the Choi family, which they extensively modified for the purpose of clearing, grading, and erecting several buildings (no longer standing).

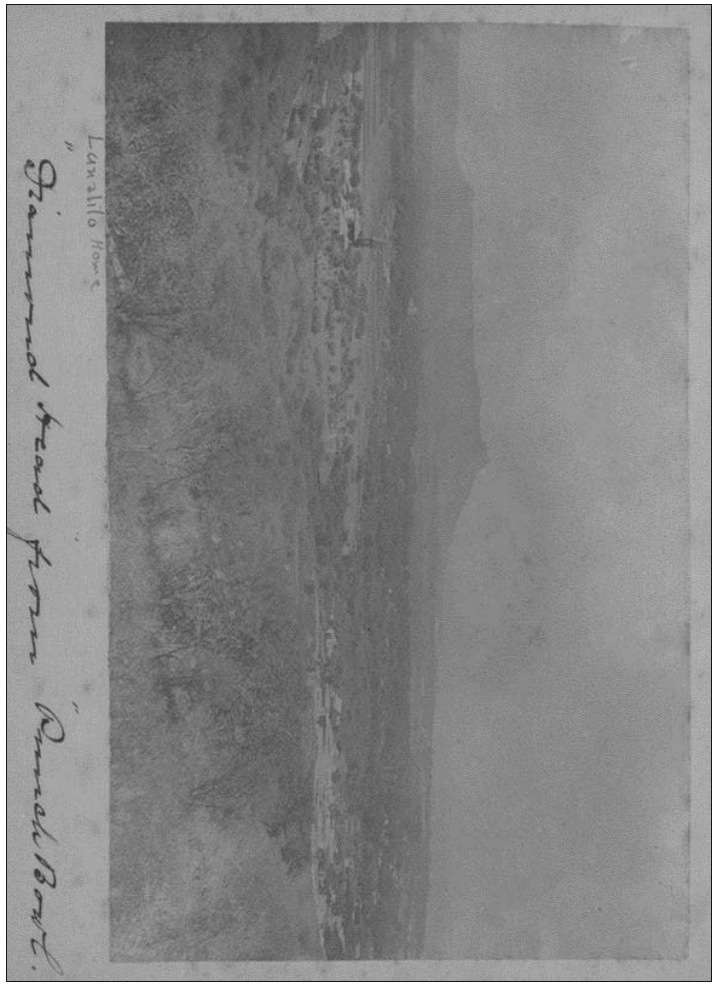

Figure 7: Photograph of Diamond Head from Punchbowl by Bertram (1900).

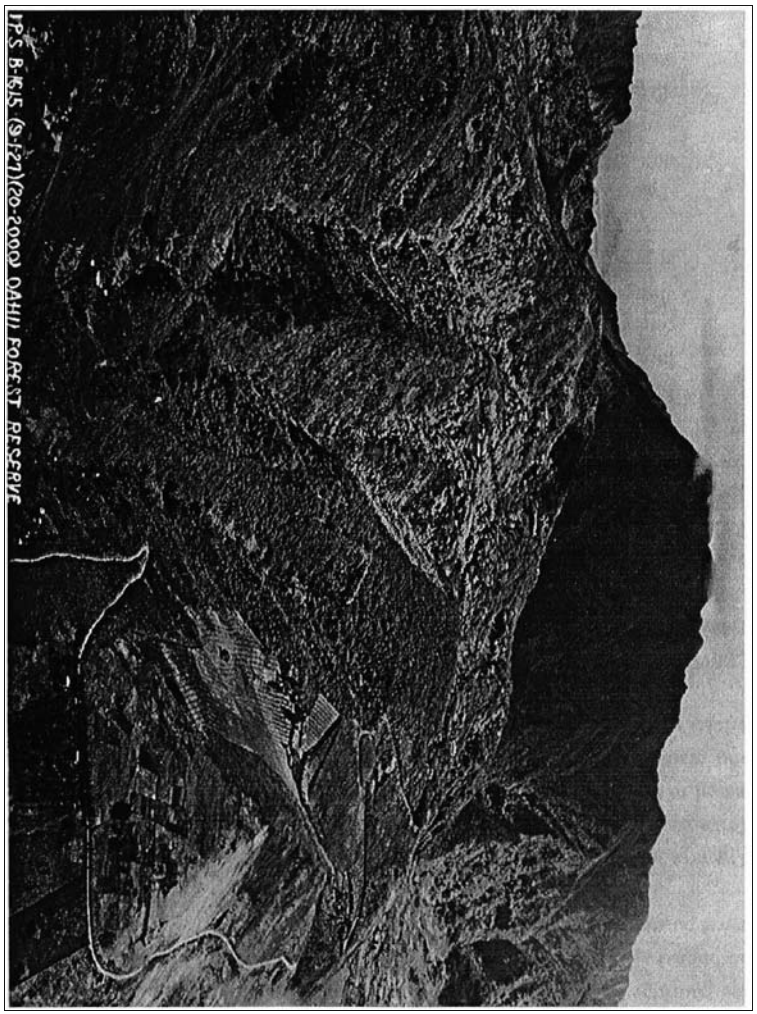

Figure 8: 1927 Aerial Photograph of Makiki Showing Forestry Division Reforestation Efforts.

PREVIOUS ARCHAEOLOGICAL STUDIES

Previous archaeological projects have been completed along the Kanealole, Moleka, and Makiki Streams within the Makiki Valley-Tantalus area (Table 1). Two systematic archaeological projects in the Makiki Valley area have been conducted. The First was conducted in 1980 by Martha Yent and Jason Ota. Five areas in Makiki Valley were surveyed. A variety of pre-contact and historic sites (see below) were documented. The second was conducted in 1994 by Martha Yent and Alan Carpenter. Four areas along Makiki Stream were surveyed. Remnant agricultural terraces were documented and radiocarbon testing was conducted.

Yent and Ota (1980) conducted an Archaeological Field Survey of the Makiki Valley access hiking trails in upper Makiki Valley, along Kanealole and Moleka Streams in TMK: (1) 2-5-019 and 020. The project area is part of the Makiki State Recreation Area and the larger Makiki-Tantalus State Park. In addition to describing an historic house site (Herrings settlement), carriage road, and retaining walls, Yent and Ota also recorded agricultural terraces and *`auwai* (traditional irrigation ditches), rock shelters, walled enclosures, one (1) platform, One (1) rock lined pit, and dump site. Recommendations for these features involve further mapping and testing to determine significance and interpretative value more accurately.

Martha Yent (1982) conducted an Archaeological Inspection of a Short Nature Trail for the Makiki Environmental Education Center, along Kanealole Stream in TMK: (1) 2-5-019:008. An old carriage road, associated retaining wall, a 1950s pig pen, and a historic series of terraces and planting holes associated with a former residence were noted. These sites were previously identified during the Archaeological Field Survey in the area known as Survey Area 3 by (Yent and Ota 1980). Further testing of Survey Area 3 was recommended.

The State Historic Preservation Division (Kawachi 1988) conducted a Field Check at 2182 Round Top Drive in TMK: (1) 2-5-006:014. Terrace facings/retaining walls in a hairpin turn of Round Top Drive were noted. The terrace facings/retaining walls demonstrated evidence of modern modifications and were not deemed significant.

Alan Carpenter (1993) conducted an informal Survey and Archaeological Testing within the Makiki State Recreation Area on the eastern slope of Moleka Stream in TMK: (1) 2-5-019:003. The survey including mapping and testing of a rock shelter, designated as State Site 50-80-14-4668, situated above an agricultural field system near Moleka Stream.

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

Reference	Location of Study	Nature of Study	Findings	State Site 50-80-14-
McCoy 1971	TMK: (1) 2-5-019:008	Memo: Makiki Valley Burial Shelter	Burial Shelter with Flexed, Historic Burial	2297
Sinoto 1979	TMK: (1) 2-4-022:001	Memo: Burial Report	Two (2) early Historic Burials	2298
Yent & Ota 1980	TMK: (1) 2-5-019, 020	Archaeological Field Survey	Herrings Settlement, Carriage Road, and Retaining Walls, Agricultural Terraces and *`auwai* (Traditional Irrigation Ditches), Rock Shelters, Walled Enclosures, One (1) Platform, One (1) Rock Lined Pit, and Dump Site	3985
Yent 1982	TMK: (1) 2-5-020	Archaeological Inspection	Old Carriage Road Associated Retaining Wall and a 1950s Pig Pen, and a Historic series of Terraces and Planting Holes Associated with a Former Residence (see Yet & Ota 1980)	0000*
Bath & Smith 1988	TMK: (1) 2-5-007:043	Burial Removal	One (1) pre-Contact Disturbed Burial	3743
Bath 1989	TMK: (1) 2-5-007:007	Burial Call	Two (2) to Three (3) pre-Contact Burials	4134
Kawachi 1988	TMK: (1) 2-5-006:014	Field Check	Site Deemed Insignificant	
Kawachi 1991	TMK: (1) 2-5-007:039	Inadvertent Discovery of Human Skeletal Remains	One (1) Burial, Left *in situ*	1603

Reference	Location of Study	Nature of Study	Findings	State Site 50-80-14-
Kawachi 1992a; Pietrusewsky 1992a	TMK: (1) 2-5-004:044	Inadvertent Discovery of Human Skeletal Remains and Osteology Report	One (1) pre-Contact Burial	4529
Kawachi 1992b; Pietrusewsky 1992b	TMK: (1) 2-5-005:008	Inadvertent Discovery of Human Skeletal Remains and Osteology Report	One (1) pre-Contact Burial	4530
Pietrusewsky 1992c	TMK: (1) 2-5-024:024	Osteology Report	One (1) Burial	4648
Carpenter 1993	TMK: (1) 2-5-019:003	Survey and Archaeological Testing	(1) Rock Shelter	4668
Kolb *et al.* 1993	TMK: (1) 2-4-034:008	Archaeological Inventory Survey	Three (3) Poorly Constructed Terraces, One (1) Oval Shaped Paved Area with Alignment, One (1) Modern Dump, and One (1) Terrace	4434 and 4443 through 4446
Dagher 1993	TMK: (1) 2-5-003:0014	Inadvertent Discovery of Human Skeletal Remains	One (1) Burial	4666
Yent & Carpenter 1994	TMK: (1) 2-5-019:003 (por.), 004, 008 (por.) and 2-5-020:004 (por.), 005	Archaeological Survey	One (1) Rock Shelter (see Carpenter 1993) and Series of Large Terraces	4668 and 4866
Jourdane 1997	TMK: (1) 2-5-004:010	Inadvertent Discovery of Human Skeletal Remains	One (1) Burial, Over Fifty (50) Years Old	5497

Reference	Location of Study	Nature of Study	Findings	State Site 50-80-14-
Masterson & Hammatt 1999	TMK: (1) 2-4-043:082 and 090 (por.); (1) 2-4-032:001 and 002; (1) 2-4-014, 017, 018, 030, and 032; (1) 2-1-039	Archaeological Inventory Survey	Boulder Wall with Three (3) Segments	5732
Cleghorn 1999	Kalāwahine Stream	New Site Report	Newly Discovered Cave in Kalāwahine Stream; Contained Historic Material; Possibly of Burial Deposits. Cave was Sealed No Site # Assigned	
Nagata 1999	TMK: (1) 2-5-019:008	Evaluation	Old Carriage Road (see Yent 1982) with Bridge Segments	5759
Hammatt *et al*. 2002	TMK: (1) 2-5-019	Archaeological Assessment	No Significant Artifacts, Features, or sites were Observed	
Rohrer *et al.* 2003	TMK: (1) 2-2-005:035	Archaeological Assessment	Historic Road Alignment and House Foundation	6529
Cordy & Hammatt 2006		Archaeological Monitoring	No Cultural Subsurface Features or Deposits were Documented	
Collins *et al.* 2007	TMK: (1) 2-5-019:008	An Addendum to an Archaeological Monitoring Plan	Two (2) Burials, Over Fifty (50) Years Old (see Clark *et al*. 2008)	6864 and 6865
Cark *et al.* 2008	TMK: (1) 2-5-024:014, 030, 031, and 32; (1) 2-5-019:008	Archaeological Monitoring	One (1) Burials, Over Fifty (50) Years Old (see Collins *et al.* 2007)	6865
Collins *et al*. 2008a	TMK: (1) 2-5-018: 001	Burial Recovery Report	One (1) Burial, Over Fifty (50) Years Old	6917

Reference	Location of Study	Nature of Study	Findings	State Site 50-80-14-
Collins *et al.* 2008b	TMK: (1) 2-9-020:002	Burial Recovery Report	Two (2) Burials, Over Fifty (50) Years Old	6961
Loynaz *et al.* 2009	TMK: (1) 2-5-007, 020 and 024	Archaeological Monitoring	Only a Small Amount of Historic Trash (Mostly Modern) was Observed.	
Park *et al.* 2009	TMK: (1) 2-5-024:14,030,031 and 032; (1) 2-5-019:008	Archaeological Monitoring	No Subsurface Cultural Artifacts or Datable Materials were Encountered	
Hazlett et al. 2011	TMK: (1) 2-5-012:014 and (1) 2-5-019:005	Historic Preservation Literature Review and Field Inspection	Tantalus Drive listed on the Hawai`i Register of Historic Places	9019
*No site # listed in report but listed as 50-80-14-000 in SHPD database				

Kolb *et al*. (1993) conducted an Archaeological Inventory Survey of Kalāwahine *`ili* on the lower slopes of Tantalus Ridge, between Tantalus Drive and Kalāwahine Place in TMK: (1) 2-4-034:008. Five (5) sites (State Sites 50-80-14-4434 and -4443 through -4446), comprised of 38 features were documented. State Site 50-80-14-4434 consisted of a terrace cluster with multiple features. State Site 50-80-14-4443 consisted of a double-faced terrace. State Site 50-80-14-4444 consisted of a paved oval area. State Site 50-80-14-4445 consisted of a modern dump site. State Site 50-80-14-4446 consisted of a historic terrace.

Alan Carpenter and Martha Yent (1994) conducted an Archaeological Survey of Proposed State Park Areas in Makiki Valley and Pu`u `Ualaka`a in TMK: (1) 2-5-019:003 (por.), 004, 008 (por.) and 2-5-020:004 (por.), 005 (Figure 9). Archaeological testing was conducted in the area along the west side of Makiki Stream between the park entrance and the forestry baseyard. The rockshelter (State Site 50-80-14-4668) identified by Carpenter (1993) and the remnant agricultural terraces (State Site 50-80-14-4866) were tested to determine the presence or absence of archaeological deposits and to determine their significance and age. Radiocarbon results suggest that lower Makiki Valley was developed for irrigated agriculture by the twelfth century AD. Radiocarbon dates from State Site- 4668 (rockshelter) indicate that it was being utilized from as early as the fifteenth century. State Site -4866 (terraces) relatively early dates, indicates it is a significant site which still contains valuable research potential (Carpenter and Yent 1994:A-1).

Masterson and Hammatt (1999) conducted an Archaeological Inventory Survey of the Kaliiwahine Reservoir Site on the hillside east of the dry streambed known as Kahawai o ka Po `opo `o in TMK: (1) 2-4-043:082 and 090 (por.); (1) 2-4-032:001 and 002; (1) 2-4-014, 017, 018, 030, and 032; (1) 2-1-039. State Site 50-8014-5732 (retaining wall) of 20th century construction was identified. This site is associated with historic used of agriculture and erosion control.

Cleghorn (1999) reported a newly discovered cave at the Kalāwahine Stream side project. This cave contained Historic material, possibly of burial deposits. The cave was sealed. No site number was assigned. (Cleghorn 1999) report was not available in the SHPD library when this report went into production.

Ralston Nagata (1999) conducted an Evaluation of Carriage Road Remnant within Honolulu Watershed Forest Reserve near the Makiki Valley State Recreation Area and Kanealole Stream in TMK: (1) 2-5-019:008. The historic cart road (State Site 50-80-14-5759)

and associated features were related to a coffee plantation established by J. M. Herring between 1864 and 1876.

Hammatt *et al*. (2002) conducted an Archaeological Assessment in Support of the Kala`i`ōpua Place Road Improvements Project just below the summit of Tantalus in TMK: (1) 2-5-019. No significant artifacts, features, or sites were observed.

Rohrer *et al.* (2003) conducted an Archaeological Assessment of the proposed Honolulu Board of Water Supply Makiki-Punchbowl Reservoir Parcel E. in TMK: (1) 2-2-005:035. No significant historic or traditional sites were documented. One archaeological site, designated State Site 50-80-14-6529 consisting of remnants of an old road bed, associated retaining wall features, and foundation mounds from the early 20th century was evaluated to be of no particular historic significance.

Cordy *et al*. (2006) conducted Archaeological Monitoring for the Board of Water Supply Punchbowl Water System Improvements Project. No cultural subsurface features or deposits were documented. Most of the soil excavated for the sewer improvements consisted of fill material. (Cordy and Hammatt 2006) report was not available in the SHPD library when this report went into production.

Clark *et al.* (2008) conducted Archaeological Monitoring during slope stabilization along a portion of Round Top Drive in TMK: (1) 2-5-024:014, 030, 031, and 32; (1) 2-5-019:008. One (1) inadvertent burial (State Site 50-80-14-6864) was identified prior to the commencement of the monitoring program. A second inadvertent burial (State Site 50-80-14-6865) was discovered during the monitoring program. Both burials were documented in (Collins *et al*. 2007). No evidence of cultural layer or cultural materials was observed in association with the burials.

Park *et al*. (2009) conducted Archaeological Monitoring in Support of Emergency Roadway Improvements at Round Top Drive in TMK: (1) 2-5-024:14,030,031 and 032; (1) 2-5-019:008. No subsurface cultural artifacts or datable materials were encountered.

Loynaz *et al.* (2009) conducted an Archaeological Monitoring for the Board of Water Supply Makiki Heights and Maunalaha Home Sites Water System Improvements Project in TMK: (1) 2-5-007:020 and 024. One feature, consisting of one (1) dog burial (Feature A) and one (1) concentration of previously disturbed historical rubbish (feature B) were observed. No significant cultural artifacts were recovered.

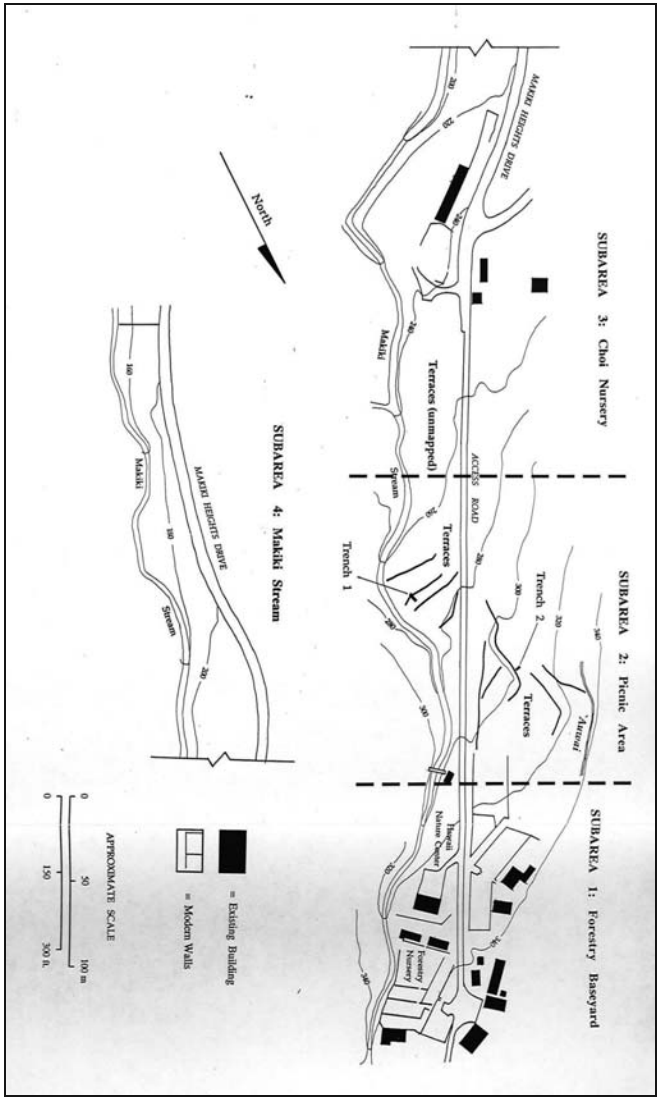

Figure 9: Carpenter and Yent (1994) Makiki Valley Survey Areas. Adapted from Topographic Survey Map: Makiki-Tantalus State Park (Park Engineering 1977).

Hazlett *et al.* (2011) conducted a Historic Preservation Literature Review and Field Inspection of for the Highway Improvements and Roadway Repair Vicinity of 3798 Tantalus Drive (Tantalus Crib Wall Repair) Project. Tantalus Drive is listed on the Hawai`i Register of Historic Places (State Site 50-80-14-9019). It is not currently listed on the National Register of Historic Places.

The Makiki Valley has also yielded a relatively large number of burials, mostly consisting of single individuals inadvertently discovered, or exposed, by recent activities and erosion (see Table 1).

CONSULTATION

Consultation was conducted via telephone, e-mail, personal interviews, and the U.S. Postal Service. Consultation was sought from Dr. Kamana`opono M. Crabbe, Chief Executive Officer Office of Hawaiian Affairs; Kawika Farm, State Historic Preservation Division, Burial Sites Program; Hinaleimoana K.K. Wong-Kalu, Chair, O`ahu Island Burial Council; William Ho`ohuli; Coco Needham, community member; Malia Nobrega, President, Waikīkī Hawaiian Civic Club; and Joslyn Kaawa, community member.

In addition, a Cultural Impact Assessment Notice was published on August 11, 14, and 15, 2013 in *The Honolulu Star-Advertise*r and in the September 2013 issue of the OHA newspaper, *Ka Wai Ola* (see Appendix B). These notices requested information of cultural resources or activities in the area of the proposed project, stated the Tax Map Key (TMK) number, and where to respond with pertinent information. Based on the responses, an assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

CULTURAL IMPACT ASSESSMENT INQUIRY RESPONSES

Analysis of the potential effect of the project on cultural resources, practices or beliefs, the potential to isolate cultural resources, maintain practices or beliefs in their original setting, and the potential of the project to introduce elements that may alter the setting in which cultural practices take place is a requirement of the OEQC (2012:13). As stated earlier, this includes the cultural resources of the different groups comprising the multi-ethnic community of Hawai`i. During the consultation process, one response was received from a community member who did not authorize the use of these comments in this document. However, the comments indicated

that the proposed undertaking would not have an impact on traditional cultural practices currently being conducted in the area.

SUMMARY

The "level of effort undertaken" to identify potential effect by a project to cultural resources, places or beliefs (OEQC 2012) has not been officially defined and is left up to the investigator. A good faith effort can mean contacting agencies by letter, interviewing people who may be affected by the project or who know its history, research identifying sensitive areas and previous land use, holding meetings in which the public is invited to testify, notifying the community through the media, and other appropriate strategies based on the type of project being proposed and its impact potential. Sending inquiring letters to organizations concerning development of a piece of property that has already been totally impacted by previous activity and is located in an already developed industrial area may be a "good faith effort". However, when many factors need to be considered, such as in coastal or mountain development, a good faith effort might mean an entirely different level of research activity.

In the case of the current undertaking, letters of inquiry were sent to individuals and organizations, via the U.S. Postal Service and e-mail, that may have knowledge or information pertaining to the collection of cultural resources and/or practices currently, or previously conducted in close proximity to the proposed Hālau Kū Māna Charter School, Makiki Ahupua`a, Honolulu (Kona) District O`ahu Island, Hawai`i [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004 (por.), 005, and 008].

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of the report. Such scholars as Samuel Kamakau, Martha Beckwith, Jon J. Chinen, Lilikalā Kame`eleihiwa, R. S. Kuykendall, Marion Kelly, E. S. C. Handy and E.G. Handy, Elspeth P. Sterling, and Mary Kawena Puku`i and Samuel H. Elbert and continue to contribute to our knowledge and understanding of Hawai`i, past and present. The works of these and other authors were consulted and incorporated in the report where appropriate. Land use document research was supplied by the Waihona `Aina Database (2013).

CULTURAL ASSESSMENT AND RECOMMENDATIONS

Analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of

the project to introduce elements which may alter the setting in which cultural practices take place is also a suggested guideline of the OEQC (2012). Based on historical research, and no additional suggestions from contacts, analysis of the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place is a requirement of the OEQC (2012). The project area is currently being used for traditional cultural purposes. However, based on historical research and absence of additional of responses from the individual and organizations contacted, it is reasonable to conclude that Hawaiian rights related to gathering, access or other customary activities within the project area will not be affected and there will be no adverse effect upon cultural practices or beliefs.

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APPENDIX A: EXAMPLE LETTER OF INQUIRY

In compliance with the State of Hawai‘i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law, and in accordance with the State of Hawai`i Department of Health’s Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai`i on November 19, 1997, Scientific Consultant Services, Inc. (SCS) is in the process of preparing a Cultural Impact Assessment (CIA) pertaining to the proposed Hālau Kū Māna Charter School, Makiki Ahupua`a, Honolulu (Kona) District O`ahu Island, Hawai`i [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004 (por.), 005, and 008] (Figures 1 through 3).

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs…The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs…

We are asking you for any information that you or other individuals have which might contribute to the knowledge of traditional cultural activities that were, or are currently, conducted in the vicinity of the proposed charter school. We are also asking for any information pertaining to traditional cultural activities or traditional rights which may be impacted by the proposed charter school. We are also asking for any information pertaining to traditional cultural activities or traditional rights which may be impacted by the proposed charter school. The results of the cultural impact assessment are dependent on the response and contributions made by organizations, such as the Waikīkī Hawaiian Civic Club.

Enclosed are maps showing the proposed project area. Please contact me at the Scientific Consultant Services, Honolulu, office at (808) 597-1182 or via e-mail (cathy@scshawaii.com) with any information or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

Cathleen Dagher
Senior Archaeologist
Enclosures (3)

Cc:

APPENDIX B: LEGAL NOTICE

Information requested by Scientific Consultant Services, Inc. (SCS) on cultural resources and traditional or on-going cultural activities conducted, on or near the proposed Halau Ku Mana Charter School, Makiki Ahupua`a, Honolulu (Kona) District O`ahu Island, Hawai`i [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004, 005 (por.), and 008]. Please respond within 30 days to Cathleen Dagher at (808) 597-1182.

1442

AFFIDAVIT OF PUBLICATION

IN THE MATTER OF
SCS Proj 1442 Legal Notice

STATE OF HAWAII)
) SS.
City and County of Honolulu)

Doc. Date: AUG 15 2013 # Pages: 1
Notary Name: Patricia K. Reese First Judicial Circuit
Doc. Description: Affidavit of Publication
Notary Signature AUG 15 2013 Date

PATRICIA K. REESE NOTARY PUBLIC Comm. No. 08-467 STATE OF HAWAII

Information requested by Scientific Consultant Services, Inc. (SCS) on cultural resources and traditional or on-going cultural activities conducted, on or near the proposed Halau Ku Mana Charter School, Makiki Ahupua`a, Honolulu (Kona) District O`ahu Island, Hawai`i. [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004, 005 (por.), and 008]. Please respond within 30 days to Cathleen Dagher at (808) 597-1182.
(SA547087 8/11, 8/14, 8/15/13)

Julie Clark being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser and MidWeek, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

Honolulu Star-Advertiser 3 times on:
08/11, 08/14, 08/15/2013

Midweek Wed. 0 times on:

_____ times on:

And that affiant is not a party to or in any way interested in the above entitled matter.

Julie Clark

Subscribed to and sworn before me this 15th day
of August A.D. 20 13

Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii

My commission expires: Oct 07 2014

PATRICIA K. REESE NOTARY PUBLIC Comm. No. 08-467 STATE OF HAWAII

Ad # 0000547087

LN:_____

APPENDIX C: EXAMPLE OF FOLLOW-UP LETTER

This is our follow-up letter to our August 6, 2013 letter which was in compliance with the statutory requirements of the State of Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law, and in accordance with the State of Hawai`i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai`i, on November 19, 1997.

Scientific Consultant Services, Inc. (SCS) is in the process of preparing a Cultural Impact Assessment (CIA) pertaining to the proposed Hālau Kū Māna Charter School, Makiki Ahupua`a, Honolulu (Kona) District O`ahu Island, Hawai`i [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004 (por.), 005, and 008].

According to the *Guidelines for Assessing Cultural Impacts* (Office of Environmental Quality Control, Nov. 1997):

> The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs…The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural which support such cultural beliefs…

We are asking you for any information that you or other individuals have which might contribute to the knowledge of traditional cultural activities that were, or are currently, conducted in the vicinity of the proposed development. We are also asking for any information pertaining to traditional cultural activities or traditional rights which may be impacted by the proposed charter school. We are also asking for any information pertaining to traditional cultural activities or traditional rights which may be impacted by the proposed charter school. The results of the cultural impact assessment are dependent on the response and contributions made by individuals, such as yourself.

Please contact me at the Scientific Consultant Services, Honolulu, office at (808) 597-1182 or via e-mail (cathy@scshawaii.com) with any information or recommendations concerning this Cultural Impact Assessment.

Sincerely yours,

Cathleen Dagher
Senior Archaeologist

Cc: Dr. Kamana`opono M. Crabbe, Chief Executive Officer Office of Hawaiian Affairs; Kawika Farm, State Historic Preservation Division, Burial Sites Program; Hinaleimoana K.K. Wong-Kalu, Chair, O`ahu Island Burial Council; William Ho`ohuli; Joslyn Kaawa, community member; Waikīkī Hawaiian Civic Club; Coco Needham, community member

APPENDIX D: EXAMPLE INFORMATION RELEASE FORM

EXAMPLE INFORMATION RELEASE FORM

I, the undersigned participated in an interview with Scientific Consultant Services, Inc. on January 9, of the year 2014. Scientific Consultant Services, Inc., Senior Archaeologist, Cathleen Dagher conducted the interview via telephone.

I understand that the information I have provided to Scientific Consultant Services, Inc., shall be submitted as part of a Cultural Impact Assessment report on proposed improvements at Hālau Kū Māna Charter School, Makiki Ahupua`a, Honolulu (Kona) District, O`ahu Island, Hawai`i [TMK: (1) 2-5-019:008 (por.); 2-5-020: 003, 004 (por.), 005, and 008].

I have read the summary of the interview and the information is true and accurate to the best of my knowledge. By signing this release form, I am providing my approval for the release of the information to Scientific Consultant Services, Inc., for the purpose outlined above.

Print Name: _____

Signature: _____

Release Dated: _____

APPENDIX E: LAND COMMISSION AWARDS (ADAPTED FROM CARPENTER AND YENT (1994)

L.C.A. #	11MA (Mahele Award)	R.P. #	6715
Location:	*`ili* of Poloke		
Awardee:	Keawehano		
Pcs (*Apana*):	2		
Acreage:	119.99		
Notes:	No description of this claim found.		

L.C.A. #	19MA (Mahele Award)	R.P. #	5584
Location:	Kahaumakaawe, Waikiki, Oahu		
Awardee:	Kanehiwa		
Pcs (*Apana*):	1		
Acreage:	3.25		
Notes:	Award is for half of Kahaumakaawe *`ili*. The other half was government land, located just south of the summit of Pu`u Kakea.		

L.C.A #	24MA (Mahele Award)	R.P. #	none
Location:	Kaiwiokaihu, Waikiki, Oahu [2 parcels - 1 along upper Maunalaha Stream, other along Makiki Stream]		
Awardee:	Kauliokamoa		
Pcs (*Apana*):	2		
Acreage:	unknown		
Notes:	No description of this claim found.		

L.C.A. #	95	R.P. #	6305
Location:	Makiki, Kona, Oahu		
Awardee:	Hannah Jones		

Pcs (*Apana*): 2
Acreage: 8.02
Notes: *Kula* land received from John L. Jones, who received it in turn from Kalaimoku circa 1825.

L.C.A. # 591 R.P # 2387
Location: Kaaihee, Waikiki, Oahu [at corner of Makiki Street and Wilder Ave.]
Awardee: Capt. John Meek
Pcs (*Apana*): 1
Acreage: 1.73
Notes: Houselot received from Boki in 1817. The area was enclosed by a stone wall and contained 2 houses, built in 1826.

L.C.A. # 1447 R.P. # 4432
Location: Hamohamo, Waikiki, Kona, Oahu [lower Makiki - surrounded by Keeaumoku, Kamehameha (Beretania), Punahou & King Streets.]
Awardee: Kahue
Pcs (*Apana*): 2
Acreage: .39
Notes: Claim for a small houselot and one *lo`i*, received from Kane in 1843.

L.C.A. # 2900 R.P. # 4310
Location: Pawaa, Waikiki, Oahu [adjacent to Makiki Street just below Wilder Ave.]
Awardee: T. Kaoi
Pcs (*Apana*): 1
Acreage: .42
Notes: Claim for a houselot.

L.C.A. # 3135 R.P. # 6924
Location: Pawaa, Waikiki, Oahu [Surrounded by Young, Punahou, King & Keeaumoku Streets.]
Awardee: James Walker
Pcs (*Apana*): 1
Acreage: 1.15
Notes: *Kula* land received in 1828 from Manuia, containing three houses.

L.C.A. # 3746B R.P. # 3863
Location: Kupahee, Makiki, Oahu [Maunalaha Stream]
Awardee: Nahina
Pcs (*Apana*): 1
Acreage: .66
Notes: Claim for a *moo`aina* [Agricultural lot] called Kupahee, received from Ii in the time of Kinau.

L.C.A. # 4263B R.P. # none
Location: Makiki, Kona, Oahu [Kanealole Stream]
Awardee: Kaaiahua
Pcs (*Apana*): 1
Acreage: .61
Notes: Claim was for the entire valley of Kanealole, from Pu`u `Ohi`a to a waterfall called Ohialolo (location unknown), received from Ii in the time of Kinau. Obviously only a small portion of this claim was awarded, as evidenced by the size of the award. The exact location of the award is unknown.

L.C.A. # 4279B R.P. #5463
Location: Pawaa, Waikiki, Kona, Oahu [along Kanealole Stream]
Awardee: Ia
Pcs (*Apana*): 1
Acreage: .40
Notes: No testimony found.

L.C.A. # 4283C R.P. #7410
Location: Poohukini, Makiki, Kona, Oahu
Awardee: Moo
Pcs (*Apana*): 1
Acreage: .56
Notes: No testimony found. The location of this award is unknown.

L.C.A. # 4285B R.P. # 3830
Location: Manu, Makiki, Kona, Oahu [Lower Moleka Stream]
Awardee: Mokuhanui

Pcs (*Apana*): 1
Acreage: .67
Notes: Claim for houselot and taro land, received from Ii in the time of Kinau.

L.C.A. # 6489 R.P. # 4519
Location: Kauhikio, Makiki, Kona, Oahu
Awardee: Kaihiwa
Pcs (*Apana*): 4
Acreage: 73.80
Notes: Claim for a houselot and land at Kauhikio, an *`ili kupono*. Land received from the *Mo`i* [King].

L.C.A. # 8241 R.P. # 5699
Location: Kalawahine
Awardee: John Ii
Pcs (*Apana*): 1
Acreage: .77
Notes: Claim for three *lo`i* and *kula* land. Exact location of this award is unknown.

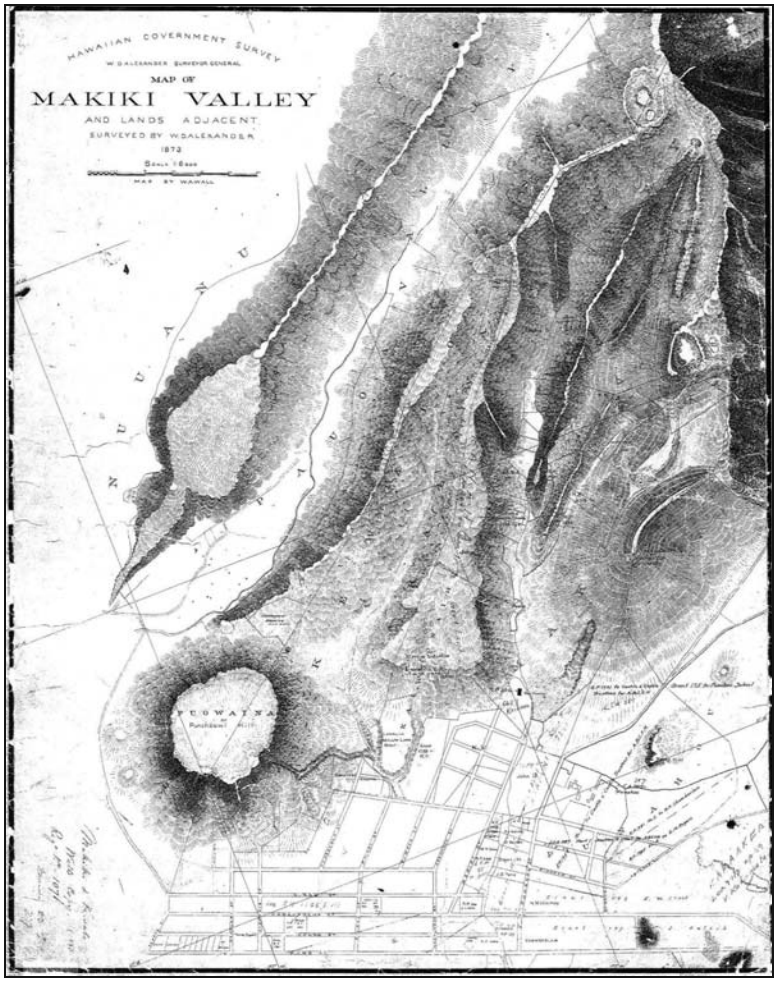
L.C.A. # 8241 R.P. # none
Location: Pawaa
Awardee: John Ii
Pcs (*Apana*): 1
Acreage: 2.59
Notes: Exact location unknown. Possibly combined with below award.

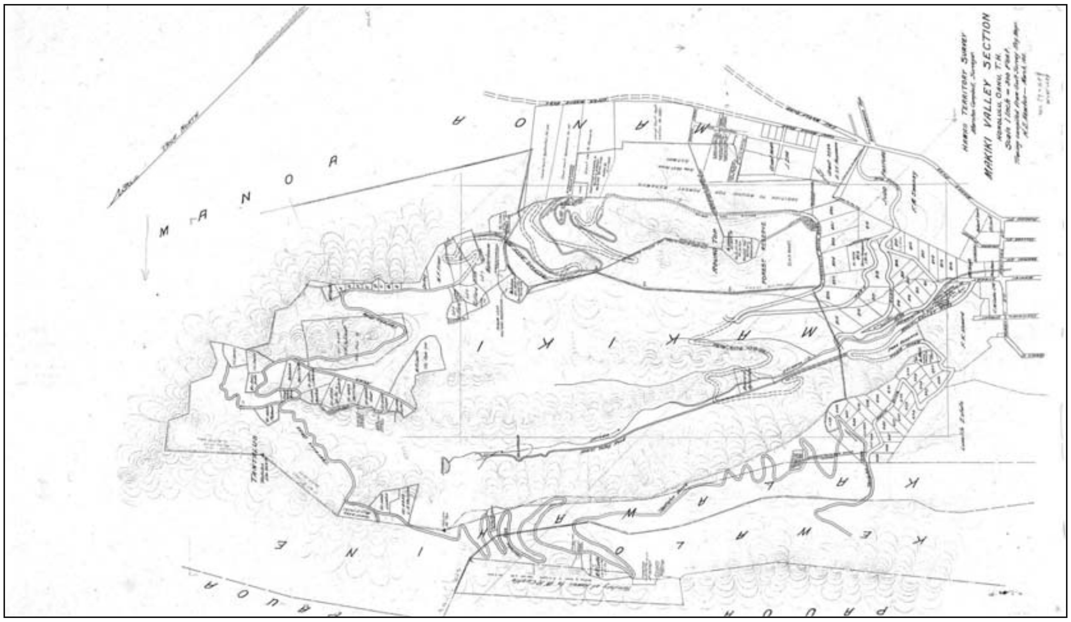
L.C.A. # 8241 R.P. # 5704
Location: Pawaa
Awardee: John Ii
Pcs (*Apana*): 5
Acreage: 250.80
Notes: Claim for the *`ili* of Pawaa, received from Kamehameha I after the battle of Nuuanu. At the time of the claim 14 families were living on this land with Ii`s permission.

L.C.A. # 10162 R.P. # 2270
Location: Makiki, Waikiki, Oahu [at intersection of Wilder and Punahou Streets]
Awardee: Moku
Pcs (*Apana*): 1
Acreage: .56
Notes: Claim for a houselot, taro land and a *kula*.

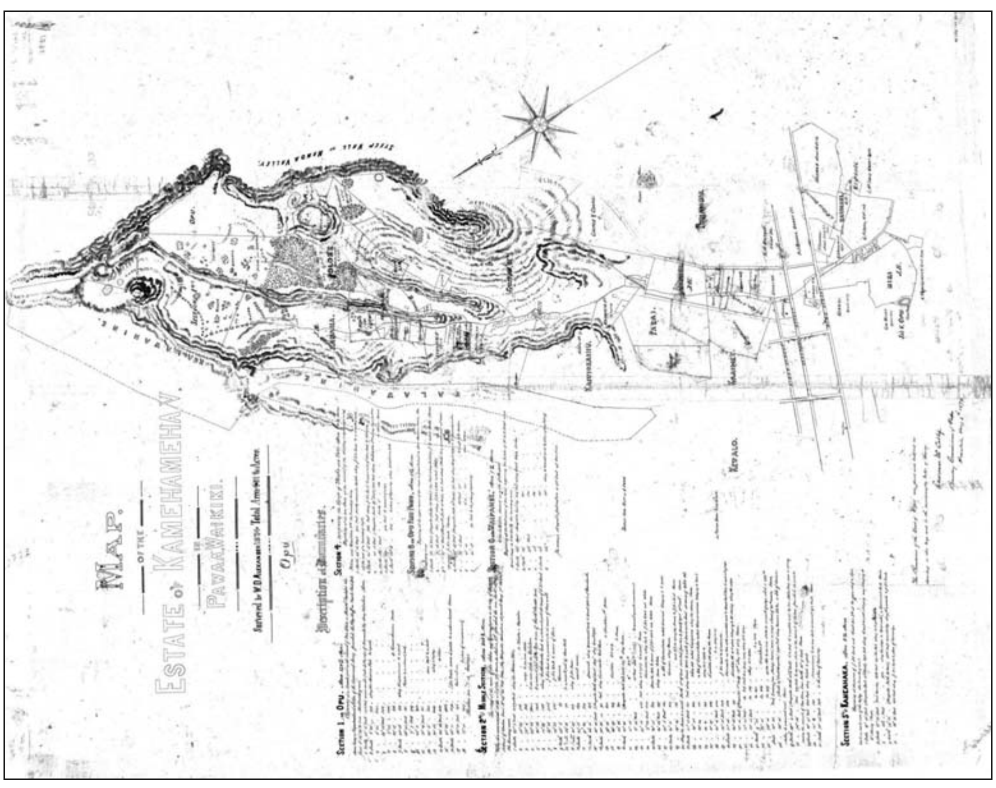
L.C.A. # 11018 R.P. # 3690
Location: Pawaa, Waikiki, Oahu [adjacent to Makiki Street just below Wilder Ave.]
Awardee: Wahine
Pcs (*Apana*): 1
Acreage: .42
Notes: Claim for a houselot containing two houses, received from M. Kekuanaoa in the time of Kaomi's disturbance.

APPENDIX F: HISTORIC MAPS AND PHOTOGRAPHS OF MAKIKI




MAKIKI VALLEY SECTION
MANOA
MAKIKI

E3


MAP
ESTATE OF KAMEHAMEHA V

F2