



JUN 08 2016

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

May 24, 2016

TO: Scott Glenn
Interim Director, Office of Environmental Quality Control
Department of Health

FROM: Duane Y. Kashiwai
Public Works Administrator, Facilities Development Branch

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL
DM

16 MAY 26 P 3:28

RECEIVED

SUBJECT: **Final Environmental Assessment (FEA-FONSI) for
Waianae Elementary School, Administration/Student Support Center
Tax Map Key: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.),
Waianae, Oahu, Hawaii**

The State of Hawaii, Department of Education hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the Waianae Elementary School Administration/Student Support Center situated at TMK (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), in the Waianae District on the island of Oahu, for publication in the next available edition of *The Environmental Notice*.

Enclosed is a completed OEQC Publication Form, two copies of the Final EA, an Adobe Acrobat PDF file of the Final EA, and an electronic copy of the publication form in Microsoft Word.

If there are any questions, please contact Brenda Lowrey, Facilities Planner of the Facilities Development Branch, at (808) 784-5091.

DYK:jmb
Enclosures

c: Facilities Development Branch

AGENCY
PUBLICATION FORM

JUN 08 2016

Project Name:	Wai`anae Elementary School Administration/Student Support Center
Project Short Name:	
HRS §343-5 Trigger(s):	Use of State Funds and Located on State and County Lands
Island(s):	Oahu
Judicial District(s):	Wai`anae
TMK(s):	(1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.)
Permit(s)/Approval(s):	Building Permits, Sidewalk/Driveway; Grading, Grubbing, Trenching, and Stockpiling, Sewer Connection
Proposing/Determining Agency:	State of Hawai'i, Department of Education, Facilities Development Branch
Contact Name, Email, Telephone, Address	Brenda Lowrey, Brenda_Lowrey/FacilDev/HIDOE@notes.k12.hi.us (808) 377-8312, Facilities Development Branch, Planning Section, Admin Bldg. 2 nd Floor, 3633 Waialae Avenue, Honolulu, HI 96816
Accepting Authority:	(for EIS submittals only)
Contact Name, Email, Telephone, Address	
Consultant:	Group 70 International, Inc.
Contact Name, Email, Telephone, Address	Christine Mendes Ruotola, AICP, cruotola@group70int.com (808) 523-5866, Group 70 International, Inc., 925 Bethel Street, 5 th Floor, Honolulu, HI 96813

Status (select one) DEA-AFNSI**Submittal Requirements**

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.

 FEA-FONSI

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.

 FEA-EISPN

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.

 Act 172-12 EISPN
("Direct to EIS")

Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.

 DEIS

Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.

 FEIS

Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.

 FEIS Acceptance
Determination

The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.

 FEIS Statutory
Acceptance

Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.

 Supplemental EIS
Determination

The accepting authority simultaneously transmits its notice to both the proposing agency 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 or is not required; no EA is required and no comment period

ensues upon publication in the Notice.

- Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.
- Other Contact the OEQC if your action is not one of the above items.

Project Summary

The Wai`anae Elementary School Administration/Student Support Center project will provide a new administration building and student support center on the campus to support the existing school staff. The project will also include a drop off area, conversion of grass parking area to paved parking lot, and an extension of the driveway to McArthur Street.

The administration building will be built during Phase I of the project and will be located on the northwest edge of the existing open field. The new 7,824 square foot (sf) building will provide a new working space for the Administrative staff at the school. The project will also help to provide a clear entryway to the front of the school and will enable staff to maintain a visual perspective of the overall campus.

The student support center will be built during Phase II of the project and will be located to the east of the existing portables and west of the library. The 5,164 sf building will support daily and ongoing student support services for the school's students. Phase II will also include a one-way circulated parking area and extension to McArthur Street which will provide a secondary exit to the school site.



WAI'ANAE ELEMENTARY SCHOOL

Administration/Student Support Center

FINAL ENVIRONMENTAL ASSESSMENT

Proposing Agency:



State of Hawai'i
Department of Education
Facilities Development Branch
P.O. Box 2630
Honolulu, HI 96804

Prepared by:



Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813

MAY 2016

WAI'ANAE ELEMENTARY SCHOOL ADMINISTRATION/STUDENT SUPPORT CENTER

TMK (1) 8-5-1:067 (por.), (1) 8-5-9:018 (por.)
Wai'anae, O'ahu, Hawai'i

Final Environmental Assessment

This environmental document is prepared in accordance with the requirements of Chapter 343, HRS and Hawai'i Administrative Rules, Title 11, Department of Health.

Proposing Agency:

State of Hawai'i
Department of Education
Facilities Development Branch
P.O. Box 2630
Honolulu, HI 96804

Prepared by:

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925 Bethel Street, 5th Floor
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MAY 2016

TABLE OF CONTENTS

SECTION	PAGE
List of Figures.....	iii
List of Appendices.....	iii
List of Acronyms	iv
1.0 INTRODUCTION	1-1
1.1 Project Information Summary.....	1-1
1.2 Project Site	1-2
1.3 Overview of the Planned Project.....	1-2
1.4 Purpose of the Environmental Assessment	1-2
1.5 Permits and Approvals Required.....	1-3
1.6 Agencies, Organizations and Individuals Contacted During the Pre- Consultation and Draft EA Review Process	1-3
2.0 DESCRIPTION OF THE PROPOSED ACTION.....	2-1
2.1 Project Location and Characteristics.....	2-1
2.2 Purpose of the Project.....	2-1
2.3 Description of the Project.....	2-3
2.4 Project Utilities and Infrastructure	2-6
2.4.1 Water.....	2-6
2.4.2 Wastewater	2-6
2.4.3 Storm Drainage	2-6
2.4.4 Solid Waste Disposal.....	2-7
2.4.5 Other Utilities	2-7
2.4.6 Access, Roadways, and Parking.....	2-7
2.5 Construction Characteristics.....	2-7
2.5.1 Landscape Management.....	2-7
2.5.2 Excavations	2-8
2.5.3 General Construction	2-8
2.6 Summary of Projected Costs and Timeline of the Project.....	2-8
3.0 DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS AND MITIGATION MEASURES	3-1
3.1 Topography	3-1
3.2 Soils and Geologic Conditions	3-1
3.3 Climate.....	3-4
3.4 Natural Hazards	3-4
3.5 Flora and Fauna.....	3-5
3.6 Air Quality.....	3-6
3.7 Noise.....	3-7
3.8 Utilities and Infrastructure	3-7
3.8.1 Water System	3-7
3.8.2 Wastewater	3-8
3.8.3 Storm Drainage	3-9

Final Environmental Assessment

3.9	Hazardous Waste.....	3-9
3.10	Electrical and Communications	3-10
3.11	Traffic and Roadways.....	3-10
3.12	Parking.....	3-12
3.13	Socio-Economic Characteristics.....	3-12
3.14	Public Facilities and Services	3-12
	3.14.1 Educational Facilities.....	3-12
	3.14.2 Recreational Facilities.....	3-13
	3.14.2 Police	3-13
	3.14.3 Fire	3-13
	3.14.4 Emergency Medical Emergencies.....	3-14
	3.14.5 Solid Waste Management	3-14
3.15	Historic, Archaeological, and Cultural Resources	3-15
	3.15.1 Historic and Archaeological Resources	3-15
	3.15.2 Cultural Resources	3-18
3.16	Visual Resources.....	3-19
3.17	Potential Cumulative and Secondary Impacts	3-22
4.0	ALTERNATIVES TO THE PROPOSED PROJECT	4-1
4.1	Alternative A - No-Action Alternative	4-1
4.2	Alternatives B - Alternative Locations for the Proposed Project.....	4-1
4.3	Alternative C - Delaying Construction	4-1
5.0	PLANS AND POLICIES	5-1
5.1	Hawai'i State Plan.....	5-1
5.2	Hawai'i State Functional Plans	5-27
5.3	Hawai'i State Land Use District Boundaries	5-27
5.4	Hawai'i Coastal Zone Management Program	5-28
5.5	Hawai'i 2050 Sustainability Plan.....	5-28
5.6	City and County of Honolulu General Plan.....	5-29
5.7	City and County of Honolulu Wai'anae Sustainable Communities Plan.....	5-30
5.8	City and County of Honolulu Land Use Ordinance Guidelines	5-32
5.9	Special Management Area.....	5-32
6.0	FINDINGS SUPPORTING THE ANTICIPATED DETERMINATION.....	6-1
6.1	Anticipated Determination	6-1
6.2	Reasons Supporting the Anticipated Determination.....	6-1
6.3	Summary	6-3
7.0	LIST OF REFERENCES	7-1
8.0	LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS RECEIVING COPIES OF THE EA.....	8-1

LIST OF FIGURES

FIGURE	PAGE
1-1	Project Location1-4
1-2	TMK (1) 8-5-001:067 and 8-5-009:0181-5
1-3	State Land Use Designation1-6
1-4	City and County of Honolulu Zoning1-7
1-5	City and County of Honolulu, Wai'anae Sustainable Communities Plan Land Use1-8
1-6	Special Management Area1-9
1-7	FEMA Flood Zone and Tsunami Evacuation Zone1-10
2-1	Existing Site Plan2-2
2-2	Site Plan of Improvements2-4
2-3	Administration Building Floor Plan2-5
3-1	Topography.....3-2
3-2	Soils.....3-3
3-3	Map of Land Use Commission Awards in Current Project Area – Monsarrat 1870 (Keala Pono 2015).....3-16
3-4	Portion of an early map of Pōka'i Bay – Jackson 1884 (Keala Pono 2015)3-16
3-5	Portion of an early map of Wai'anae – Monsarrat 1902 (Keala Pono 2015)3-17
3-6	Site Photo Key.....3-20
3-7a	View from Plantation Road/Wai'anae Elementary looking southeast towards the Project Site.....3-21
3-7b	View from McArthur Street looking north towards the Project Site3-21
3-7c	View from McArthur Street looking northeast towards the Project Site3-22

LIST OF APPENDICES

A	Preconsultation Letter, Comment Letters, and Responses
B	Traffic Evaluation
C	Archaeological Literature Review
D	Cultural Impact Assessment

LIST OF ACRONYMS

ADA	Americans with Disabilities Act
BMP	Best Management Practices
BWS	Honolulu Board of Water Supply
CAB	Clean Air Branch
CO	Carbon Monoxide
CZM	Coastal Zone Management
DLNR	State of Hawai'i Department of Land and Natural Resources
DOE	State of Hawai'i Department of Education
DOH	State of Hawai'i Department of Health
DOT	State of Hawai'i Department of Transportation
HPD	Honolulu Police Department
DPP	City and County of Honolulu Department of Planning and Permitting
EA	Environmental Assessment
EmB	'Ewa silty clay
FONSI	Finding of No Significant Impact
GPD	Gallons Per Day
HAR	Hawai'i Administrative Rules
HFD	Honolulu Fire Department
HI-CHPS	Hawai'i Collaborative for High Performance Schools
HPD	Honolulu Police Department
HRS	Hawai'i Revised Statutes
IBC	International Building Code
LCA	Land Commission Award
LUO	Land Use Ordinance
MSL	Mean Sea Level
NO ₂	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PM _{2.5}	Particulate Matter smaller than 2.5 microns
PM ₁₀	Particulate Matter smaller than 10 microns
PsA	Pulehu clay loam
ROH	Revised Ordinances of Honolulu
SAAQS	State Ambient Air Quality Standards
SCP	Sustainable Communities Plan
SHPD	State Historic Preservation Division
SMA	Special Management Area
SO ₂	Sulfur Dioxide
SOEST	University of Hawai'i School of Ocean and Earth Science and Technology
TMK	Tax Map Key
UH	University of Hawai'i
USDA	U.S. Department of Agriculture
VC	Vitrified Clay
WCCHC	Wai'anae Coast Comprehensive Health Center

Section 1.0

INTRODUCTION

1.0 INTRODUCTION

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

1.1 PROJECT INFORMATION SUMMARY

Type of Document:	Environmental Assessment (EA)
Project Name:	Wai'anae Elementary School Administration/Student Support Center
Proposing Agency:	State of Hawai'i Department of Education Facilities Development Branch P.O. Box 2360 Honolulu, HI 96804
CH. 343, HRS Trigger:	Use of State Funds Use of State and County Lands
Project Location:	Wai'anae, O'ahu, Hawai'i (<i>Figure 1-1</i>)
Tax Map Key (TMK):	(1) 8-5-1:067 (por.) (<i>Figure 1-2</i>) (1) 8-5-9:018 (por.)
Landowner:	TMK (1) 8-5-1:067 – City and County of Honolulu State of Hawai'i TMK (1) 8-5-9:018 – State of Hawai'i City and County of Honolulu
Project Area:	2.98 acres
State Land Use District:	Urban District (<i>Figure 1-3</i>)
City & County of Honolulu Zoning:	R-5 (Residential District) (<i>Figure 1-4</i>)
Wai'anae Sustainable Communities Plan:	Rural Residential (<i>Figure 1-5</i>)
Special Design District:	None
Special Management Area:	Not within SMA (<i>Figure 1-6</i>)
Flood Zone:	X (Outside of the 0.2% Annual Chance Floodplain) XS (0.2% Annual Chance Flood) (<i>Figure 1-7</i>)
Anticipated Determination:	Finding of No Significant Impact (FONSI)

1.2 PROJECT SITE

The 2.98 acre project site is located within the Wai'anae Elementary School Campus in Wai'anae, O'ahu. The project will be situated on Residential zoned lands located along McArthur Street (*Figure 1-1*). The project site is owned by the State of Hawai'i and the City and County of Honolulu. The approximately 13.5 acre school site is situated on TMK: (1) 8-5-1:067 (City and County of Honolulu) and (1) 8-5-9:018 (State of Hawai'i) (*Figure 1-1*). The project site is bounded by Plantation Road to the north, McArthur Street to the south, and residential areas to the east and west.

1.3 OVERVIEW OF THE PLANNED PROJECT

The Wai'anae Elementary School Administration/Student Support Center project will provide a new administration building and student support center on the campus site to support the existing staff at Wai'anae Elementary School. The project will also include a new drop off area, conversion of grass parking area to paved parking lot, and extension of the driveway to McArthur Street. These improvements will be completed in two separate phases.

The administration building will be built during Phase I of the project and will be located on the northwest edge of the existing open field, opposite of the grassed parking area. The new 7,824 square foot (sf) building will provide a working space for the administrative staff at the school. Currently, the staff works in an area that is technically designated for classroom space. The project will also help to provide a clear entryway to the front of the school and will enable staff to maintain a visual perspective of the overall campus.

The student support center will be built during Phase II of the project and will be located to the east of the existing portables and west of the library. The student support center will consist of approximately 5,164 sf and will support daily and ongoing student support services for the school. Phase II will also include a new one-way circulated parking area and extension to McArthur Street which will provide a secondary exit from the school site.

1.4 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT

In accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS), a Draft EA was prepared as the proposed project utilizes State funds and State and County lands. The Draft EA was published in the Office of Environmental Quality Control Environmental Notice on April 8, 2016, which commenced a 30-day public review period.

This Final EA is presented in eight sections and includes the following: a detailed summary and project description; a list of necessary approvals; a description of the environmental setting; a section that identifies potential impacts and proposed mitigating measures on identified natural, cultural, and socioeconomic resources as well as existing infrastructure; a description of alternatives; a discussion of the project's relationship to State and County land use plans and policies; the findings supporting the anticipated determination; a list of references used in developing the EA; and a list of agencies, organizations, and individuals that participated in the pre-consultation phase and comment period of the Draft EA.

After the 30-day review period of the Draft EA concluded, public comments received were considered and addressed to the extent feasible within the project scope and evaluation. This Final EA highlights key areas of the document that were revised, updated, or modified based upon information received during the public comment period. Upon acceptance of the Final EA, a Finding of No Significant Impact (FONSI) is anticipated.

1.5 PERMITS AND APPROVALS REQUIRED

Several other approvals may will be required from the County and State to implement the proposed action, some of which will include:

- Building Permits (Buildings, Electrical, Plumbing), and Sidewalk/Driveway Work (DPP)
- Grading, Grubbing, Trenching and Stockpiling Permits (DPP)
- Sewer Connection Permits (DPP)
- National Pollutant Discharge Elimination System (NPDES) Permit – Construction Storm Water (State Department of Health)

1.6 AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONTACTED DURING THE PRE-CONSULTATION AND DRAFT EA REVIEW PROCESS

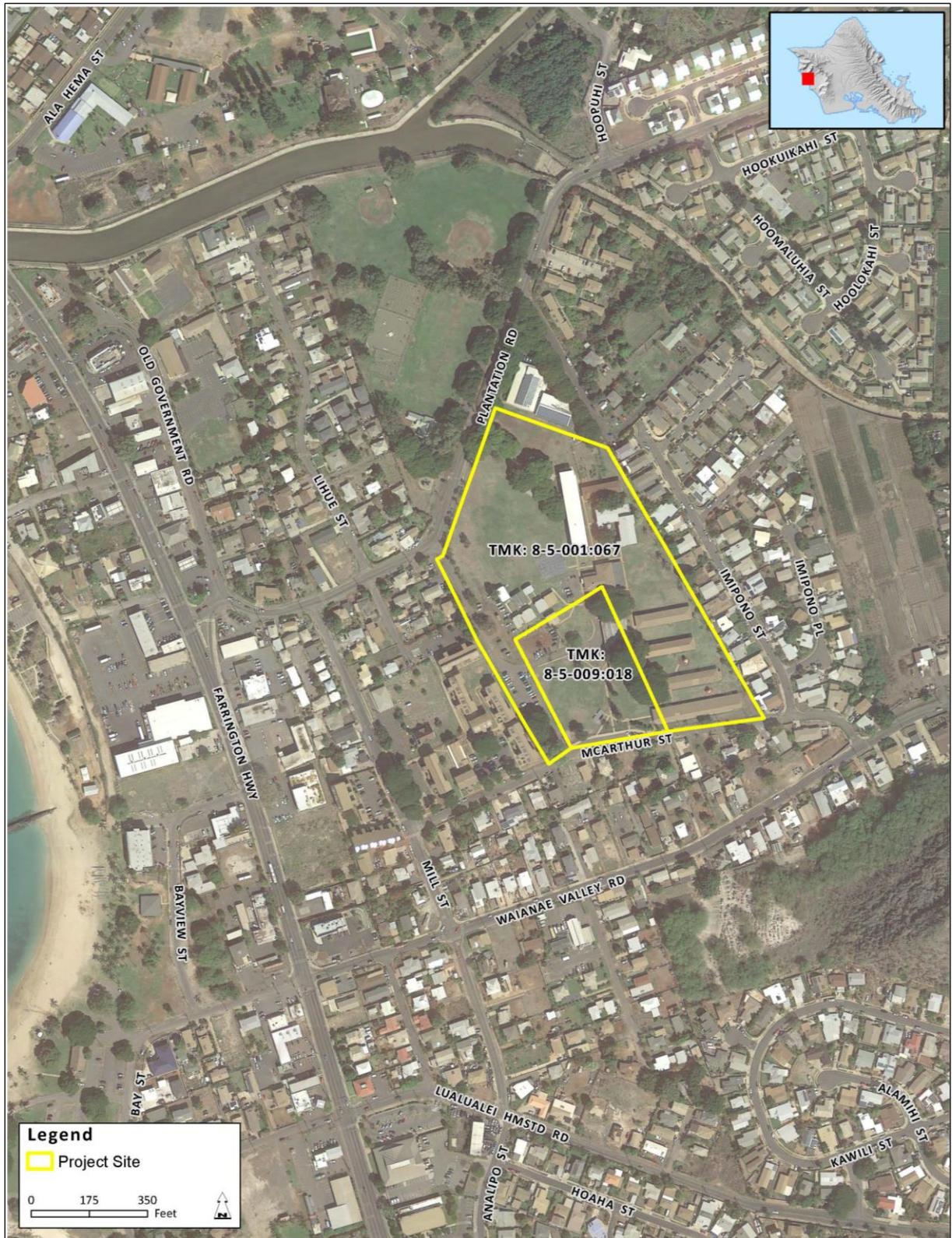
A Pre-Consultation Memo and Participant Letter were sent on November 6, 2015 to initiate the environmental review process. These are included as *Appendix A*. A list of agencies and other parties that were presented notice of the proposed project or were contacted during the pre-consultation period of the Draft EA is provided in *Section 8.0* of this document. Additionally, a listing of those agencies that were provided an opportunity to review the Draft EA is also provided in *Section 8.0*.



PROJECT LOCATION

FIGURE 1-1

WAI'ANA'E ELEMENTARY SCHOOL ADMINISTRATION/STUDENT SUPPORT CENTER
Final Environmental Assessment



TMK (1) 8-5-001:067 AND (1) 8-5-009:018

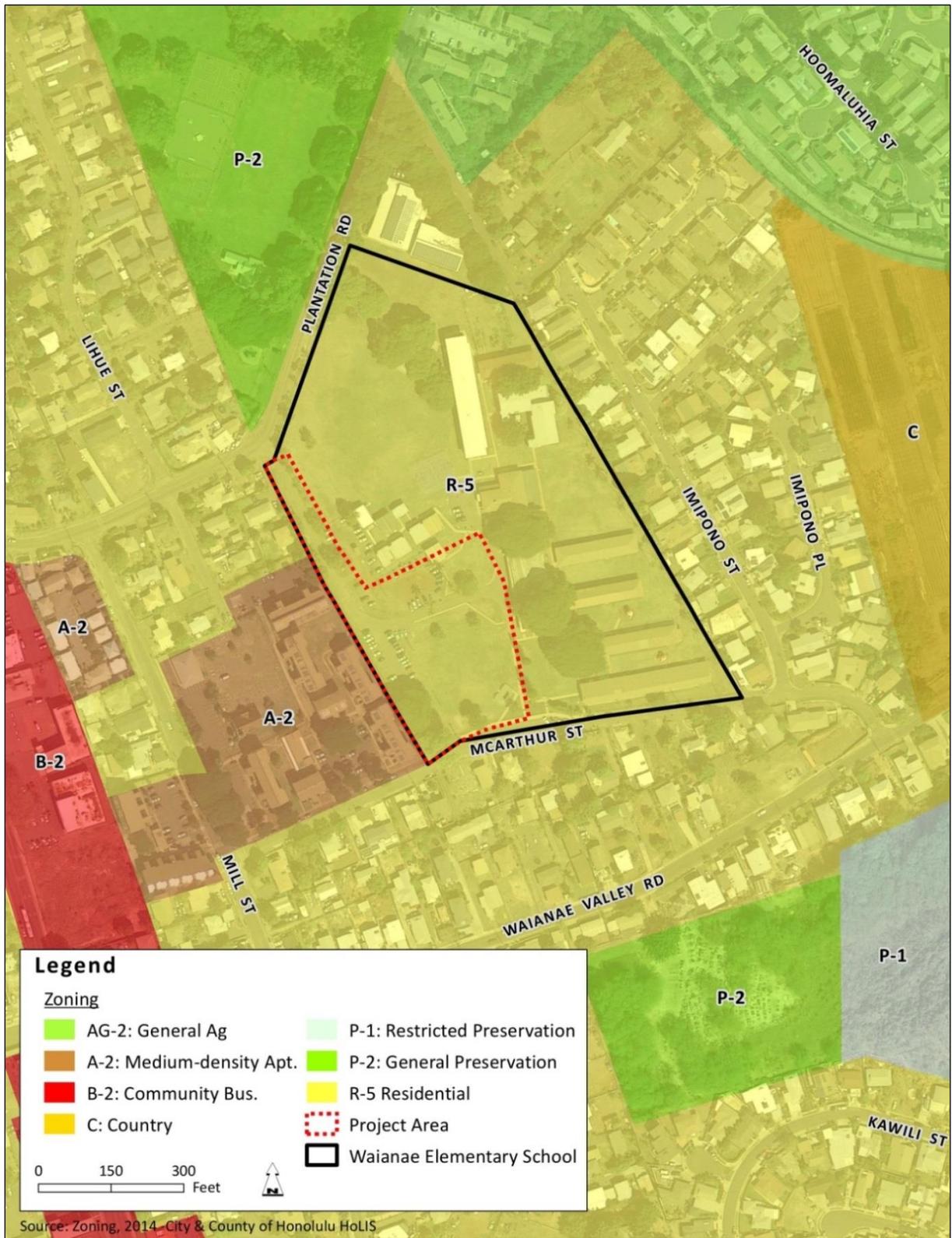
FIGURE 1-2



STATE LAND USE DESIGNATION

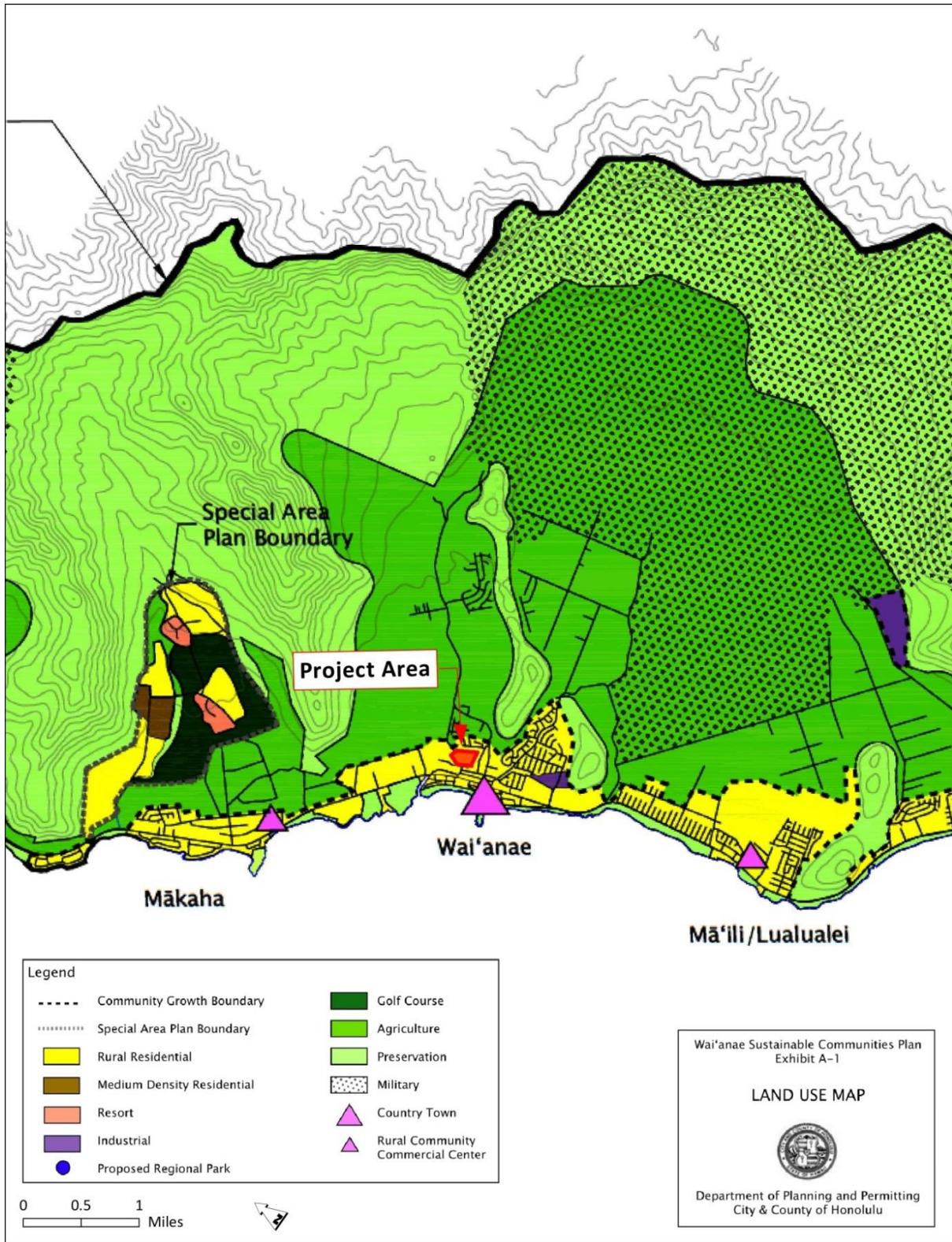
FIGURE 1-3

Final Environmental Assessment



CITY AND COUNTY OF HONOLULU ZONING

FIGURE 1-4



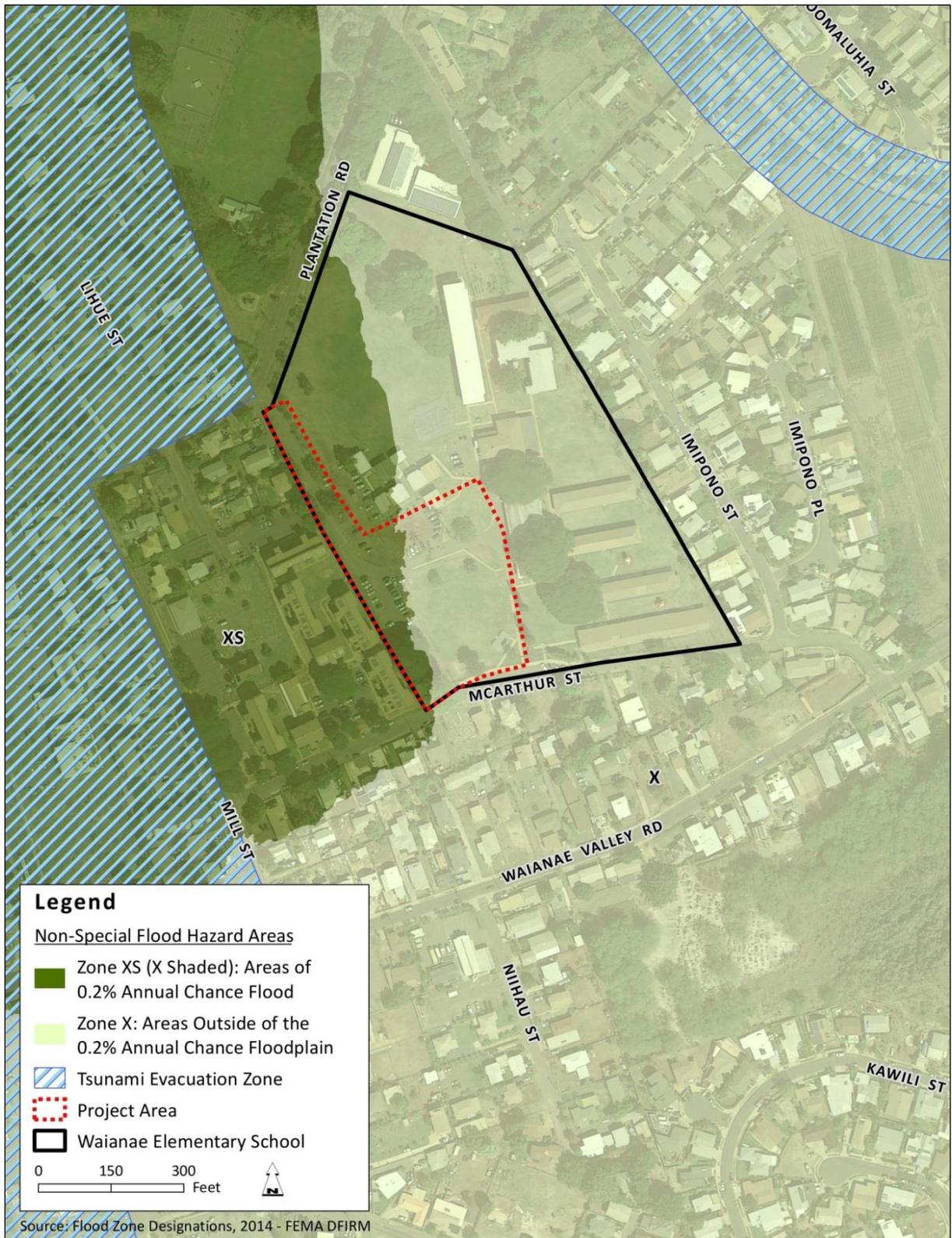
CITY AND COUNTY OF HONOLULU,
WAI'ANA'E SUSTAINABLE COMMUNITIES PLAN LAND USE

FIGURE 1-5



SPECIAL MANAGEMENT AREA

FIGURE 1-6



FEMA FLOOD ZONE AND TSUNAMI EVACUATION ZONE

FIGURE 1-7

Section 2.0

DESCRIPTION OF THE PROJECT

2.0 DESCRIPTION OF THE PROJECT

2.1 PROJECT LOCATION AND CHARACTERISTICS

Location

The Wai'anae Elementary School Administration/Student Support Center project site is located in the Wai'anae District of the island of O'ahu, Hawai'i (*Figure 1-1*). The site is within the traditional moku and ahupua'a of Wai'anae. The project area is located on portions of two parcels, TMK (1) 8-5-1:067 and 8-5-9:018, and encompasses approximately 2.98 of the 13.5 acre campus (*Figure 1-2*). The project site is bounded by residential communities to the east and west. McArthur Street bounds the project site directly to the south with residential communities located beyond. Plantation Road bounds the site directly to the north with Pilila'au Community Park located across the street.

Ownership

The project site is owned by the State of Hawai'i and the City and County of Honolulu.

- TMK (1) 8-5-1:067 – City and County of Honolulu State of Hawai'i
- TMK (1) 8-5-9:018 – State of Hawai'i City and County of Honolulu

The project will require the State Department of Land and Natural Resources (DLNR), Land Division – O'ahu District to issue an Executive Order to the State Department of Education (DOE). The DOE and the DLNR Land Division – O'ahu District will continue to coordinate on obtaining the Executive Order through the construction period of the project.

Adjacent Land Uses

Land uses adjacent to the project site include mostly residential areas immediately to the north, south, east and west. Pilila'au Community Park is located directly north of the project site.

Existing On-Site Land Uses

The project is located within the Wai'anae Elementary School campus. The existing campus consists of 22 buildings, 10 of which are portable buildings.

2.2 PURPOSE OF THE PROJECT

The Wai'anae Elementary School Administration/Student Support Center project is intended to provide additional space to support the existing administrative and student support services at the school. The administrative and student support staff currently work in Building A, an area intended for classroom space (*Figure 2-1*), thereby decreasing the amount of overall instruction space available on the campus. The new administration building will be positioned to serve as the entryway to the school and will enable staff to maintain a visual perspective of the overall campus. In addition to a dedicated administration building, a new student support center in the central area of the campus will provide much needed space for health services, student support services, and dedicated conference rooms for parent-teacher interface and community use. Parking and driveway improvements are intended to improve vehicular circulation at the campus.

Final Environmental Assessment



EXISTING SITE PLAN

Figure 2-1

2.3 DESCRIPTION OF THE PROJECT

The Wai'anae Elementary School Administration/Student Support Center project will be constructed in two phases to create new usable space for existing administrative staff, student support services, and vehicular circulation (*Figure 2-2*). A new administration building and a student support center will meet the guidelines for Hawai'i Collaborative for High Performance Schools (HI-CHPS) for designing energy efficient, healthy, sustainable schools, and will have infrastructure suitable for photovoltaic installations.

Phase I

Phase I of the project will construct a new 7,284 sf administration building on the northwest edge of the existing open field which is used for school gatherings, opposite of the grassed parking area and close to the vehicular entry from Plantation Road. The building will be located east of the main entrance driveway, to serve as a visual entry to the school and separate public uses from student areas. Its location will also provide an improved line of sight for administrative staff to many areas of the campus.

The administration building will be linearly configured to maximize the remaining open field space for school gatherings at the adjacent field (*Figure 2-3*). Entrance to the lobby will face the parking area and open to an internal courtyard. The conference room and Parent Community Networking Center will be conveniently located within the building and will be accessible to the public. The Health Services room will be located nearest the classrooms, and will also be accessible from the parking area.

Phase I of the project will also rebuild the adjacent curbside to serve as a drop off area when Phase II is implemented.

Phase II

Phase II of the project will construct the student support center, convert the existing grassed parking area into a paved parking lot, and extend the driveway to McArthur Street.

The student support center will consist of 5,164 gross sf and will be located east of the existing portable buildings, and west of the library. Situated northwest of the administration building and parking lot, the student support center will be located near classroom buildings for convenient student access.

The new paved parking area will be configured for one-way circulation and will allow drop-off/pick up along the curb fronting the administration building. The new driveway extension to McArthur Street will provide a secondary exit to improve traffic flow. Visitor/Americans with Disabilities Act (ADA) stalls will be provided near the student support center.

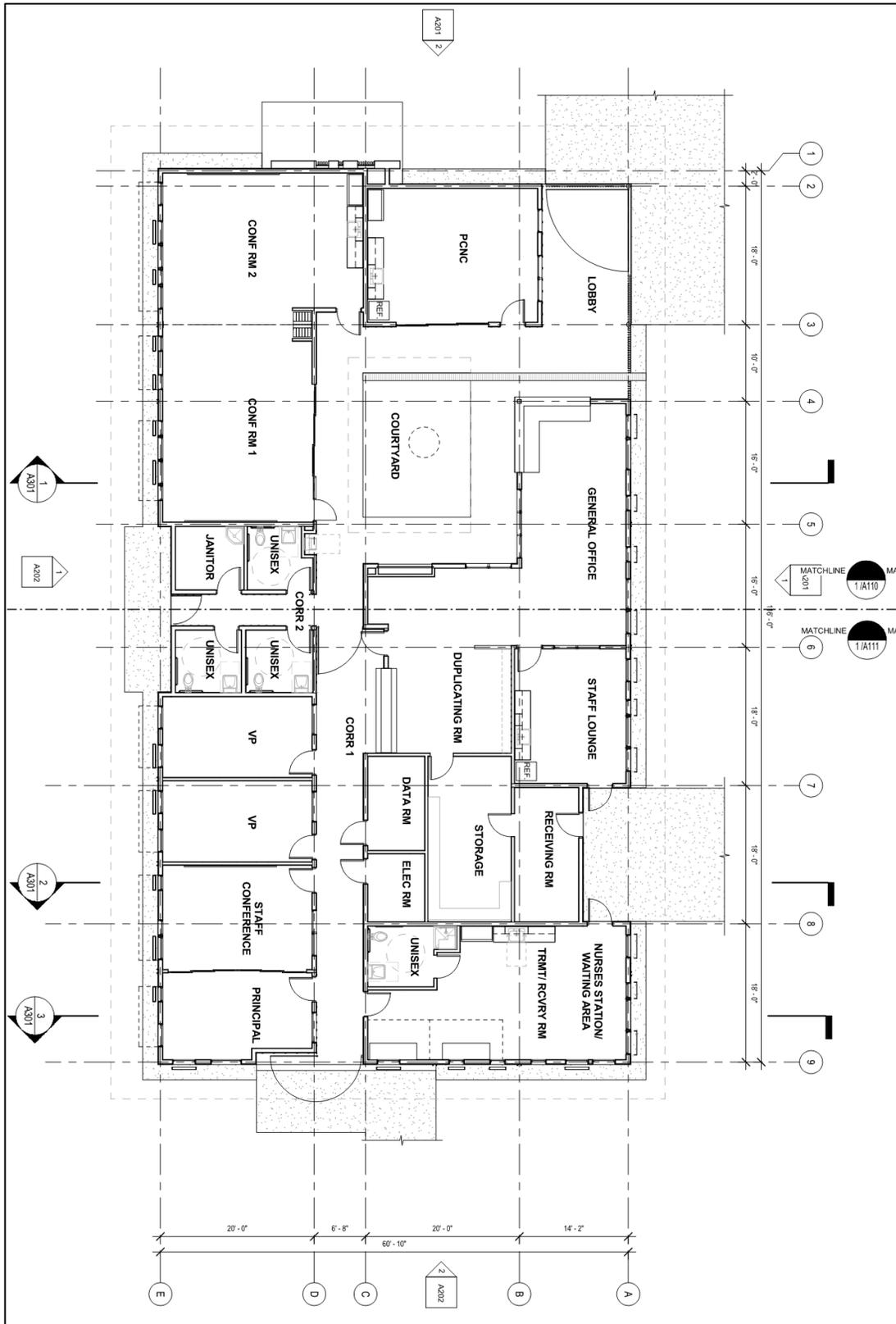
WAI'ANA'E ELEMENTARY SCHOOL ADMINISTRATION/STUDENT SUPPORT CENTER
Final Environmental Assessment



SITE PLAN OF IMPROVEMENTS

Figure 2-2

Final Environmental Assessment



ADMINISTRATION BUILDING FLOOR PLAN

Figure 2-3

2.4 PROJECT UTILITIES AND INFRASTRUCTURE

Overall existing conditions, impacts, and mitigation measures for utilities are discussed in *Section 3.0* of this document. The project site has water, electricity, wastewater, and solid waste collection services. The following section describes the physical characteristics of these site utilities with the addition of the new improvements.

2.4.1 Water

The Wai'anae Elementary School water system is comprised of an 8-inch fire protection line connected to a factory mutual (FM) meter, and a 4-inch domestic line connected to a 3-inch compound meter. Both lines run parallel just west of the existing library and administration building. Two fire hydrants are located onsite, providing hose stream coverage for most of the project area.

The new water system for the new administration building and student support center will connect to the existing 4-inch domestic lateral. Based on the fire flow test results, the water capacity and available pressure is expected to sufficiently serve the new administration building. Water capacity and pressure will be tested in the future, prior to the detailed design of Phase II. It is anticipated that the water capacity and pressure will be sufficient for the new student support center since enrollment is not expected to increase. Domestic and fire water system demands will be sized during the design phase.

An irrigation system will be connected to the existing 4-inch lateral. A backflow preventer and submeter will be installed to the irrigation line.

2.4.2 Wastewater

Municipal wastewater service to the campus is provided through an existing 8-inch vitrified clay (VC) underground line spanning the central area of the project site. The line is located along a slope of approximately 0.37% from an east to west direction.

The new sewer laterals will connect to the existing VC sewer line in Phases 1 and 2 of the project. The new buildings will be located close to the existing sewer line and the building connections are expected to face the existing sewer line to provide the shortest sewer lateral connection.

The sewer peak flow rates and sewer system sizing will be completed during the Design Development phase of the project. The sewer capacity of the existing system is sufficient for the new administration building, and no additional improvements offsite will be required. It is anticipated that sewer capacity will also be sufficient for the new student support center since enrollment will not increase as a result of the project.

2.4.3 Storm Drainage

A grass swale is situated on the west end of the project site next to the Hawai'i Public Housing Authority apartment building. No drainage pipe systems, streams, or ponds, exist onsite. The existing drainage system is located in Plantation Road.

Runoff from the project site currently drains to the onsite swale on the west side of the site and releases onto McArthur Street.

The drainage system will collect runoff from the open area, parking lots and roof drains, and surface runoff will sheet flow to the existing grass swale. No significant storm drainage impacts are anticipated.

2.4.4 Solid Waste Disposal

Solid waste from the project site will be disposed of at an approved refuse disposal site. The project will generate some solid waste during construction, however, the operation and use of the site is not likely to result in a significant increase in solid waste generation since the overall occupancy at the school will remain unchanged. Recycling programs that currently exist at the school will be maintained.

2.4.5 Other Utilities

The project will require additional electrical services to provide for lighting of the new administration building and student support center. Existing underground lines and overhead service will be demolished and new pad-mounted transformers and exterior switchboards will be provided. Electrical power will be reconnected to the existing classroom buildings. Electrical power, signal, and lighting systems will be established for the new administration building and student support center.

2.4.6 Access, Roadways, and Parking

The Wai'anae Elementary School campus is bounded by McArthur Street to the south and Plantation Road to the north. Existing vehicular access to the campus is from Plantation Road. A dedicated parking area and overflow grass parking area are provided to the southwest of the site.

The project will provide resurfacing of the existing parking area and a new exit along McArthur Street.

2.5 CONSTRUCTION CHARACTERISTICS

2.5.1 Landscape Management

Minor clearing, grubbing and grading will be needed on the project site to develop the new facility. Landscaping will be planted along the perimeter of the administration building. A landscape planting plan was prepared for the project. No significant impacts to the existing plantings and landscaping of the site are anticipated. Some of the additional landscaping and plants may include future establishment of laua'e iki (*Microsorium polypodium*), 'a'ali'i (*Dodonea viscosa*), loulou palms (*Pritchardia martii*), na'u (*Gardenia brighamii*), and thornless hala (*Pandanus laevis*).

2.5.2 Excavations

The project site is generally level as the improvements will take place in areas which are already developed. Modification to the topography for the administration building will be minimal consisting of fine adjustments to site grades to allow for concrete walkways and ADA ramps. The new student support center and paved parking lot are also expected to require minimal excavation, due to their location on previously developed areas of the campus.

2.5.3 General Construction

The construction of the project will include the formation and placement of foundations, the installation of mechanical equipment, electrical wiring equipment, drainage infrastructure, and general carpentry work, painting and many other trades and work associated with construction activities. Construction work will be performed in accordance with the Federal, State, and City approved design standards.

Construction activity hours will be from 7:00 am to 6:00 pm. Construction will adhere to applicable noise regulations as per Title 11, Chapter 46, of the Honolulu Administrative Rules 11-46. Typical construction vehicles will be used on the jobsite for the development of the project. These may include D9 dozers, front-end loaders, scraper, dump trucks, water trucks, etc. A permit from DOT Highways will be obtained for transport of oversize equipment and overweight loads.

The project will comply with NPDES permit requirements for construction activity. A NPDES permit for discharge of stormwater associated with construction activities will be obtained. The requirements of the approved NPDES permit and erosion control plan will be adhered to during construction as appropriate. Construction and grading plans for the project will be submitted to appropriate agencies for review and approval.

2.6 SUMMARY OF PROJECTED COSTS AND TIMELINE OF THE PROJECT

Costs for the Wai'anae Elementary School Administration/Student Support Center project are estimated at \$8.3 million. Phase I of the project is estimated at \$5.3 million. Phase II of the project is estimated at \$3 million. The project will be funded by the State.

Planning and permitting for the project is anticipated to be completed in 2016, with site development and construction for Phase I following in Spring 2017. Phase I is expected to be completed and ready for occupancy by Summer 2018. Construction for Phase II of the project is anticipated to commence in Fall 2019 and be completed by Summer 2020.

Section 3.0

DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS AND MITIGATION MEASURES

3.0 DESCRIPTION OF THE ENVIRONMENTAL SETTING, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing environmental setting and identifies possible impacts of the proposed project. Strategies to mitigate those potential impacts are also identified.

3.1 TOPOGRAPHY

Existing Conditions

Wai'anae Elementary School is located in west O'ahu. The developed property is approximately 20 feet above mean sea level (MSL) and is generally comprised of level terrain (*Figure 3-1*). The property is generally sloped from a high point on the east side to the west towards the existing apartment building. The slopes on the property range from approximately 0.5% to 1%.

Anticipated Impacts and Mitigation Measures

No substantial changes to the site's topography will be made, although some excavation and minor grading will be required during the construction process to accommodate the new buildings. Best Management Practices (BMP) will be implemented pursuant to the required Grading Permit to mitigate any potential impacts of soil erosion and fugitive dust during any grading or excavation.

3.2 SOILS AND GEOLOGIC CONDITIONS

Existing Conditions

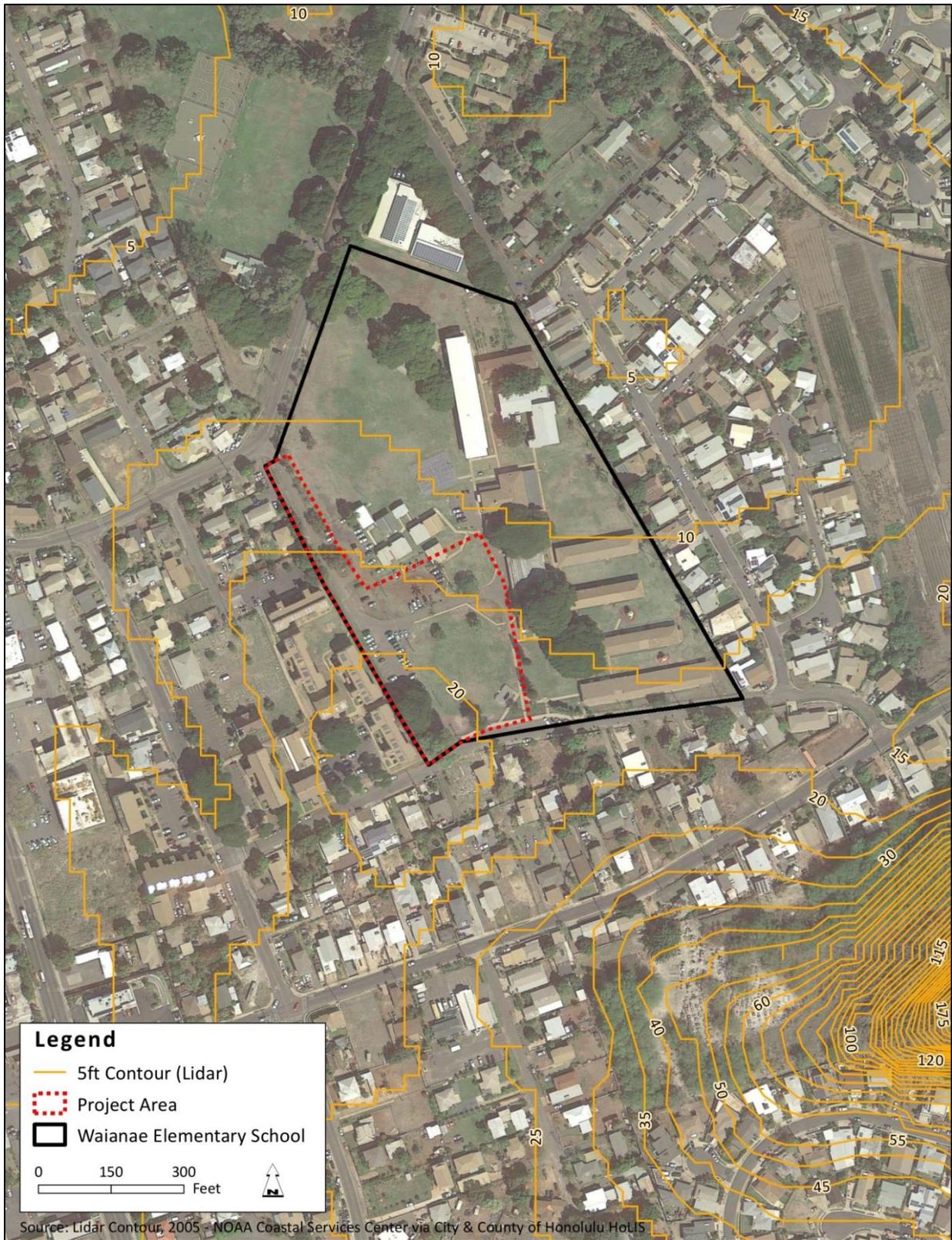
According to the *Geology of the State of Hawai'i* (1985), the site is situated within the Wai'anae Range, on the western part of the island. The Wai'anae Range is approximately 22 miles long and is characterized by rough and mountainous areas with narrow ridges and very steep slopes. The Wai'anae Range contains the highest point on the island which rises to 4,025 feet.

Soil types within the project site are identified in the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Web Soil Survey. The USDA NRCS system classifies soils by type and permeability characteristics, including run-off and erosion. As depicted in *Figure 3-2*, the site consists of Pulehu clay loam, 0 to 3 percent slopes (PsA) and 'Ewa silty clay loam, moderately shallow, 2 to 6 percent slopes (EmB). Pulehu Series soil consists of well drained soils in alluvial fans. Permeability is moderately high and runoff is slow. 'Ewa Series soil consists of well drained soils. Permeability is low to moderately low and runoff is slow.

Anticipated Impacts and Mitigation Measures

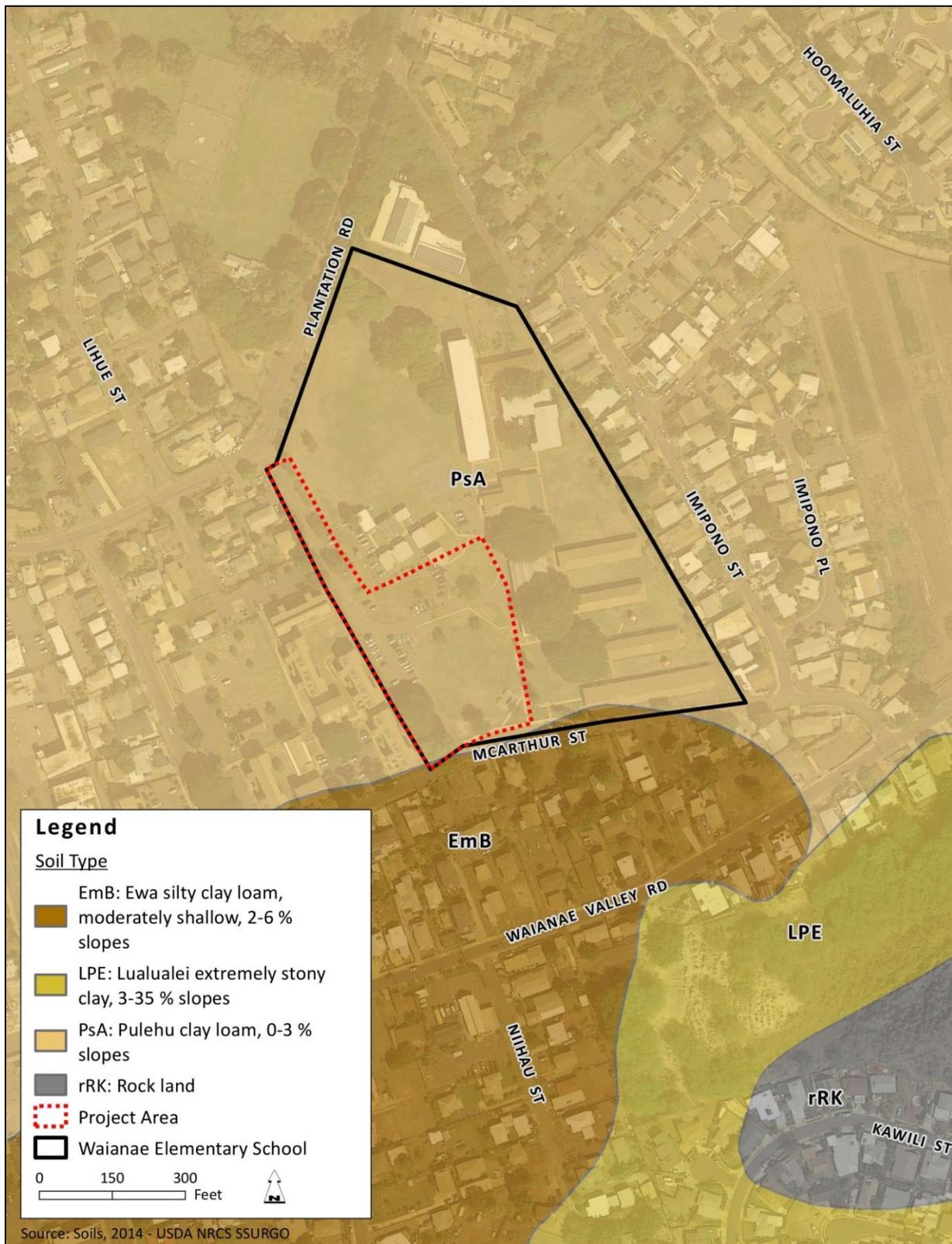
The project development will not change the overall soil composition at the site. Due to grading and leveling, soil will be disturbed. During project construction, erosion control practices will comply with County, State, and Federal regulations. BMPs will be implemented pursuant to the required Grading Permit to mitigate potential impacts of soil erosion and fugitive dust during grading or excavation. At a minimum, these practices will include: sediment traps, silt fences, dust fences, inlet protection, stabilized construction entrances and truck wash-down areas. A State DOH NPDES permit ~~may be required will be obtained~~ for the project from the State prior to construction.

WAI'ANA'E ELEMENTARY SCHOOL ADMINISTRATION/STUDENT SUPPORT CENTER
Final Environmental Assessment



TOPOGRAPHY

Figure 3-1



SOILS

Figure 3-2

3.3 CLIMATE

Existing Conditions

With an annual average temperature ranging from the high-60s to the mid-80s Fahrenheit (°F), Wai'anae has an average monthly low temperature of 65°F in January and February and average monthly high temperature of 86°F in August and September. The annual average precipitation in Wai'anae is 20.93 inches. Rainfall in the region is fairly evenly distributed throughout the year. The wettest month of the year is January with an average rainfall of 3.54 inches.

Winds from the northeast, known as trade winds, are the most predominant over the Hawaiian Islands. In the winter, there is a shift in the wind patterns characterized by the arrival of the westerly and southerly winds and frontal influences from the North Temperate Zone becoming more prevalent. Westerly winds are typically characterized by strong winds and high wave activity from the southwestern sector of the Pacific. Overall, the annual average wind speed in Wai'anae is 11 miles per hour.

Anticipated Impacts and Mitigation Measures

The project will have no effect on climatic conditions, and therefore no mitigation measures are required.

3.4 NATURAL HAZARDS

Existing Conditions

Flooding

Based on the Federal Emergency Management Agency's *Flood Insurance Rate Map*, the project site is located in Zones X and XS. Zone X is defined as, "Areas Outside of the 0.2% Annual Chance Floodplain." Zone XS is defined as "Areas of 0.2% Annual Chance Flood."

Tsunami

While tsunami inundation of low lying coastal areas is a natural phenomenon in Hawai'i, it is infrequent. The islands are exposed to the major tsunami wave generating areas of the Pacific Ocean. The project site does not fall within the County's tsunami inundation zone (*Figure 1-7*).

Seismic Activity

Per the 2006 International Building Code (IBC) seismic design maps, the entire City and County of Honolulu could experience seismic activity around 0.15 of the earth's gravitational acceleration (g-force) under a 1.0 second spectral response acceleration event. In comparison, the County of Hawai'i, with its ongoing volcanic activity, could experience ground motion anywhere from 0.30 up to 1.23 of the earth's g-force, demonstrating that the island of Hawai'i could experience severe seismic activity.

Climate Change and Sea Level Rise

Sea level rise is a primary factor driving historical shoreline changes in Hawai'i. The average annual global sea level rise over the last century was roughly two millimeters, with studies indicating that this rate is now approaching three millimeters and may accelerate in the coming decades.

Final Environmental Assessment

University of Hawai'i (UH) climate researchers predict that rising sea levels mostly caused by man-made climate change will affect coastal locations around the State of Hawai'i. The UH School of Ocean and Earth Science and Technology (SOEST) provide a sea level rise scenario for Honolulu showing a three foot (ft.) increase over the next 85 years.

According to the UH SOEST, while predicting future sea level rise is challenging because of unknown parameters, research shows that the global mean sea level may reach approximately 1 ft. by mid-century and 2.5 ft. or higher by the end of the century. An appropriate planning target would include a sea level benchmark of 1 ft. by mid-century and about 3 ft. by the end of the century.

Anticipated Impacts and Mitigation Measures

The project is not expected to be affected by flood or tsunami inundation. Since the project is located well away from the coastal area and the stream courses, the project area is secure from stream flooding, as well as coastal inundation. To prevent ponding or localized flooding resulting from stormwater run-off, new drainage infrastructure for the project site will be designed and constructed to meet applicable standards. All construction will necessarily conform to relevant building codes to mitigate the risk of wind and seismic damage.

The proposed project will not contribute to adverse impacts relating to existing climate change and sea level rise. In addition, the project is not anticipated to be affected by climate induced sea level rise. While detailed projections of sea level rise have not been completed for the West O'ahu region, the National Oceanic and Atmospheric Administration (NOAA)'s online sea level rise and flooding viewer predict that the school site will be unaffected by up to 6-foot increases in sea levels.

The project will serve existing Wai'anae students and area residents. The project is not expected to significantly contribute to existing greenhouse gas emissions and overall long-term climate changes. The buildings will be designed to meet the guidelines for the Hawai'i Collaborative for High Performance Schools (HI-CHPS) for designing energy efficient, healthy, sustainable schools, and will have infrastructure suitable for photovoltaic installations.

3.5 FLORA AND FAUNA

Existing Conditions

The project site is situated within a residential area of the Wai'anae community. The property contains a manicured lawn fringed by ornamental vegetation. Some of the existing trees and plants located on the campus include monkeypods (*Pithecellobium saman*), areca palm (*Chrysalidocarpus lutescens*), coconut (*Cocos nucifera*), Norfolk pine (*Araucaria heterophylla*), and rainbow shower trees (*Cassia javanica*). No grasses, shrubs, or trees within the project site are known to be protected under State or Federal environmental laws. Due to the site's developed nature and location within a highly urbanized area, it is unlikely that threatened or endangered species are present on the site. Birds, mammals, reptiles and amphibians that currently frequent the site are most likely introduced or indigenous species that are commonly found in urban environments (i.e. mongooses, rats, mice, cats, etc.).

Urbanized areas like the Wai'anae Elementary School campus are typically not suitable habitats for threatened, endangered, or candidate faunal species. There are no federally designated critical

habitats within the immediate vicinity of the project area. However, according to the U.S. Fish and Wildlife Service, the federally endangered Hawaiian hoary bat or ope'ape'a (*Lasiurus cinereus semotus*) and the wedge-tailed shearwater or 'ua'u kani (*Puffinus pacifics*), protected under the Migratory Bird Treaty Act, may occur within the vicinity of the project area.

Anticipated Impacts and Mitigation Measures

None of the vegetation within the project site is known to be Federal or State threatened or endangered or candidate species. The construction of the proposed project is not expected to result in significant adverse impacts to existing plant species. The project will be located in an open area within the existing school campus. The monkeypods and shower trees located along the campus fence lines will remain in place and will be protected during construction. The project may include additional landscaping around the new building such as the placement of laua'e iki (*Microsorium polypodium*), 'a'ali'i (*Dodonea viscosa*), loulu palms (*Pritchardia martii*), na'u (*Gardenia brighamii*), and thornless hala (*Pandanus laevis*).

In an effort to minimize impacts to Hawaiian hoary bats or wedge-tailed shearwaters, construction mitigation measures will be implemented. Woody plants greater than 15 feet in height will not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15). In addition, construction activities will be limited to daylight hours to avoid the use of construction work lights which may attract and disorient seabirds. Lighting for the project will be designed with shielding, and directed downward to avoid attracting seabirds.

3.6 AIR QUALITY

Existing Conditions

The State Department of Health (DOH), Clean Air Branch (CAB) has established the State Ambient Air Quality Standards (SAAQS). The DOH-CAB regularly samples ambient air quality at monitoring stations throughout the State, and annually publishes this information. On O'ahu, there are four monitoring stations. The closest station to the project site is located in Kapolei in the Kapolei Business Park, which measures SO₂, CO, NO₂, PM₁₀, and PM_{2.5}.

In general, air quality in the State of Hawai'i continues to be one of the best in the nation, and criteria pollutant levels remain well below SAAQS. According to the *Annual Summary 2014 Hawai'i Air Quality Data*, air quality monitoring data compiled by the DOH indicates that the established air quality standards for all monitored parameters are consistently met throughout the State and on the island of O'ahu. Consistent trade winds blow from a northeasterly direction, creating conditions for excellent air quality over the islands because the prevalent wind directions moves generated air pollutants on land to the southwest out to the open ocean. Present air quality in the project area is primarily affected by motor vehicles, with carbon monoxide being the most abundant of the pollutants emitted. Air quality data from the nearest monitoring stations suggest that all National and State air quality standards are currently being met, although occasional exceedances of the more stringent State standards for carbon monoxide may occur near congested roadway intersections.

Anticipated Impacts and Mitigation Measures

Construction

Two types of short-term air quality impacts that will result from the construction project at both sites: 1) fugitive dust generation dust from vehicle movement and soil excavation and 2) on-site/off-site emissions from moving construction equipment and commuting construction workers. Air quality monitoring will be implemented to ensure compliance with National and State air quality standards.

State of Hawai'i Air Pollution Control regulations prohibit visible emissions of fugitive dust from construction activities at the property line. A dust control program will be implemented to control dust from construction activities. Fugitive dust emission will be controlled through the mitigation measures such as watering active work areas, using wind screens, keeping adjacent paved roads clean, covering open-bodied trucks and limiting the area to be disturbed at any given time.

Operations

Operations at the project site will not result in outputs that will affect air quality. No odors will be generated directly from the operation of the new administration building and student support center. No adverse impacts associated with air quality, dust, and odors are anticipated to occur as a result of the project.

3.7 NOISE

Existing Conditions

Existing background ambient noise levels within the project area are largely attributed to motor vehicle traffic along streets bordering the project site and students from the school grounds. The noise levels around the project site are consistent with noise levels found in residential areas.

Anticipated Impacts and Mitigation Measures

The project is not likely to result in an increase in ambient noise levels, particularly since it will not result in an increase in students or staff on the campus. While noise will be generated during the construction period, the project is not expected to significantly impact the homes, businesses or organizations surrounding the project site. No extraordinary mitigation measures are proposed at this time since the noise generated by current and proposed activities is not expected to exceed allowable levels. Construction activities will be monitored to comply with the provisions of the regulations for community noise control. The contractor will be required to obtain a noise permit if the noise levels from construction activities are expected to exceed allowable levels. Heavy vehicles traveling to and from project sites will comply with the State's administrative rules for vehicular noise control.

3.8 UTILITIES AND INFRASTRUCTURE

3.8.1 Water System

Existing Conditions

There are a number of existing wells in the Wai'anae Aquifer system, one of which is located approximately 500 feet east in the neighboring subdivision.

The Wai'anae Elementary School campus is presently served by the Honolulu Board of Water Supply (BWS) distribution system. The water system is comprised of an 8-inch fire protection line connected to a FM meter, and a 4-inch domestic line connected to a 3-inch compound meter. Both lines run parallel to the west of the library and existing administration building.

Anticipated Impacts and Mitigation Measures

The new water system for the new administration building and student support center will connect to the existing 4-inch BWS domestic lateral. Based on the fire flow test results, the water capacity and available pressure is expected to meet the water demands of the project. The BWS flow requirements for the administration building will be approximately 2,880 gallons per day (GPD). The water needs for the building were calculated based on the following formula:

42 gallons per minute × 60 minutes/hour × 8.5 min/60 minutes (running time per hour) × 8 hours/day (hours of operation).

Water capacity and pressure will be tested in the future, prior to the detailed design of Phase II. It is anticipated that the water capacity and pressure will be sufficient for the new student support center since enrollment is not expected to increase. Domestic and fire water system demands and sizing will also be completed during the design phase.

The irrigation system for landscaping at the site will be connected to the 4-inch lateral. A backflow preventer and submeter will be installed to the irrigation line.

Both buildings will observe water conservation and efficiency measures through the installment of low flow and high efficiency plumbing fixtures.

3.8.2 Wastewater

Existing Conditions

Municipal wastewater service is provided through an existing 8-inch vitrified clay (VC) underground line spanning across the central area of the project site. The line is located along an approximate slope of 0.37% from an east to west direction.

Anticipated Impacts and Mitigation Measures

The sewer laterals will connect to the existing VC sewer line in Phases 1 and 2 of the project. The new buildings will be located close to the existing sewer line, and the building connections are expected to face the existing sewer line to provide the shortest sewer lateral connection.

The sewer peak flow rates and sewer system sizing will be completed during the Design Development phase of the project. The sewer capacity of the existing system is sufficient for the proposed project, and no additional improvements offsite will be required. It is anticipated that sewer capacity will also be sufficient for the new student support center since enrollment will not increase as a result of the project.

3.8.3 Storm Drainage

Existing Conditions

A grass swale is situated on the west end of the project site next to the Hawai'i Public Housing Authority apartment building. No drainage pipe systems, streams, or ponds, exist onsite. The existing drainage system is located in Plantation Road.

Runoff from the project site currently drains to the onsite swale on the west side of the site and releases onto McArthur Street.

The property is located outside of the 100 year flood zone (FIRM 1500 3C 0834).

Anticipated Impacts and Mitigation Measures

The drainage system will collect runoff from the open area, parking lots and roof drains. The storm surface runoff will sheetflow to the existing swale located at the west end of the site next to the apartment building. Approved Best Management Practices (BMPs) for stormwater runoff will be implemented to the extent feasible facing all drainage facilities along Plantation Road and McArthur Street.

During the construction period, erosion will be minimized through compliance with the City and County's grading ordinance and the applicable provisions of the DOH's Water Quality Standards (Title 11, Chapter 54, HAR) and Water Pollution Control requirements (Title 11, Chapter 55, HAR). Additionally, standard BMPs will be employed to minimize impacts, as detailed in subsequent construction plans. No significant storm drainage impacts are anticipated.

3.9 HAZARDOUS WASTE

Existing Conditions

Hazardous waste is defined as having a chemical composition or containing other properties that make it capable of causing illness, death, or some other harm to humans and other life forms when mismanaged or released into the environment.

Hazardous materials are currently used on the school site in relationship to ongoing building maintenance operations, such as fluorescents, ballasts, latex paint, solvents, gas, oil, lubricants. These materials are stored in appropriate designated areas on the property and disposed of in accordance with applicable regulatory controls.

Anticipated Impacts and Mitigation Measures

No significant impacts related to hazardous waste from the construction of the project are anticipated. Construction of the project will not involve disturbance of hazardous materials since there are no existing structures or facilities located on the project site that will need to be removed. Hazardous materials used in the course of construction, such as fuels and lubricants, will be managed appropriately. Other hazardous materials that may be used for building and landscaping maintenance will be used, stored and disposed of appropriately.

3.10 ELECTRICAL AND COMMUNICATIONS

Existing Conditions

Electrical, telephone and cable television services are provided to the Wai'anae Elementary School campus by Hawaiian Electric Company's underground and overhead distribution lines. Existing uses at the property generate a demand for electrical and communication services.

Anticipated Impacts and Mitigation Measures

Existing underground lines and overhead service will be demolished, and new pad-mounted transformers and exterior switchboards will be provided. Electrical power will be reconnected to the existing classroom buildings. Electrical power, signal, and lighting systems will be established for the new administration building and student support center. No mitigation is proposed.

3.11 TRAFFIC AND ROADWAYS

A traffic evaluation for the project site was prepared by Julian Ng Inc. (October 2015) and is provided as Appendix B.

Existing Conditions

Plantation Road and McArthur Street are the two primary roadways that serve Wai'anae Elementary School. Plantation Road is a two-lane minor collector 0.7 mile street, running between "Old Government Road" and Wai'anae Valley Road. The shoulder area between Plantation Road and the school's fence is used for loading/unloading and parking. A single driveway provides vehicular access into the school along its western edge from Plantation Road.

McArthur Street is a 0.3 mile two-lane residential street along the school frontage and to the east. Between 7:00 AM and 3:00 PM on school days, the entire street is operated as a one-way street in the westbound direction. Parallel parking on both sides of the street along the eastern frontage of the school reduces the street to a single lane for traffic.

Existing A.M and PM Peak Periods

Traffic count data from the State Department of Transportation, Highways Division (2009) show that Plantation Road is used by approximately 6,000 vehicles per day (total eastbound plus westbound). Traffic counts for two-way traffic in the AM Peak Hour (7:00 AM to 8:00 AM) coinciding with peak school traffic activity, was approximately 450 vehicles per hour. The PM Peak Hour of traffic (5:00 PM – 6:00 PM) recorded nearly 600 vehicles per hour.

Traffic count data was not available for McArthur Street. However, field observations indicate that volumes on McArthur Street are similar to the northbound flows of nearby Mill Street, where the City and County of Honolulu, Department of Transportation Services recorded volumes around 2,300 vehicles per day (2013). Northbound traffic along Mill Street in the AM Peak Hour recorded about 220 vehicles per hour, and 170 vehicles per hour in each direction during the peak period.

While no new field traffic counts were conducted, commonly used trip factors from the *Trip Generation Manual* by the Institute of Transportation Engineers were applied to Wai'anae Elementary School conditions. The results estimate that nearly 400 vehicle trips are made per school day in both directions, with approximately 150 vehicles per hour arriving in the morning

peak hour, and 75 vehicles per hour arriving during the after school peak hour. Based on May 2014 site observations, access to the school by students were split evenly among three areas: along Plantation Road, on-campus via drop-off or pickup from personally owned vehicles, or from McArthur Street. Walk-ins to the campus were observed only from McArthur Street.

Existing Bus Service

Bus service is provided to the project site by routes mainly along Farrington Highway, including Routes C, 40, 93, 401 and 402.

Anticipated Impacts and Mitigation Measures

The existing parking spaces will be vacated as a result of the new building improvements. A new parking lot and a new driveway connection to McArthur Street will be constructed as part of Phase II of the project.

The above noted school improvements are meant to accommodate existing uses at the school, therefore vehicular traffic is not expected to increase as a result of the project. While the project is anticipated to result in minor traffic impacts, it will not significantly alter access patterns to the school. The driveway connection to McArthur Street will provide an alternate entrance to the existing single connection to Plantation Road. The new driveway is estimated to alter the path between 15% and 20% of total traffic to or from the school, or 20 to 30 arriving vehicles and 20 to 25 departing vehicles per hour. This slight increase in traffic is not expected to significantly affect either Plantation Road or McArthur Street.

While the project is not expected to generate significant traffic impacts, the following mitigation measures are recommended for optimal traffic conditions:

- Vehicular and pedestrian access patterns should be maintained. Minimize any detours and install appropriate signs to advise users of changes. Construction activities and pedestrian walkways should be properly protected of (and from) traffic.
- Construction activities and construction material or waste should be located and stored away from pedestrian and vehicular traffic. Sight lines for drivers on the campus roadway, as well as for drivers on adjacent streets should be carefully maintained.
- Additional signs should be installed on McArthur Street to advise drivers using the new driveway connection of the one-way pattern on the street, and of any newly implemented parking restrictions.
- Trucks delivering construction material and disposing of construction waste should be scheduled at times other than when students are arriving or departing (typically from 7:00 AM to 8:00 AM, and from 1:30 PM to 2:30 PM). Truck movements should be coordinated with the school.

Entry gates will be recessed into the driveway to avoid any queuing onto public streets. In addition, damages or deficiencies that occur as a result of the project on Plantation Road and McArthur Street right-of-ways, roadways, or sidewalk areas will be corrected to City standards and accepted by the City.

3.12 PARKING

Existing Conditions

Wai'anae Elementary School currently accommodates the parking needs of all school staff. There are 38 parking stalls provided in the dedicated parking area located on the southwest portion of the campus. Overflow grass parking areas are also located in close proximity to the dedicated parking lot.

Anticipated Impacts and Mitigation Measures

The Wai'anae Elementary School project will include a new asphalt concrete parking lot north of the new administration building. The existing parking lot will be resurfaced with a new driveway leading to McArthur Street. Phase 2 of the project will provide 32 additional stalls to accommodate the new administration building and student support center.

3.13 SOCIO-ECONOMIC CHARACTERISTICS

Existing Conditions

The project site is located in Wai'anae, O'ahu. In 2010, Wai'anae had a residential population of approximately 13,177, which was approximately 1% of O'ahu's total population. Wai'anae's population compared to O'ahu is generally younger. The racial mix of the area is comprised of proportionately more Native Hawaiian and Pacific Islanders, and fewer Whites and Asians than the island as a whole. The median household income is \$64,077, and approximately 23.4% of Wai'anae's population lives below the poverty level. Residential areas near the project site consist primarily of single family homes, public housing, and a public park.

Anticipated Impacts and Mitigation Measures

The project is not expected to result in adverse socio-economics impacts. In addition, the project will not result in an increase in the overall population of the Wai'anae district. The project may create short-term economic benefits as a result of design and construction employment. Upon completion, the school improvements are expected to have beneficial long-term social impacts by providing the school with a new administration building and student support center to better serve the students and staff.

No specific socio-economic mitigation actions are recommended.

3.14 PUBLIC FACILITIES AND SERVICES

This section discusses the project's probable impact on public facilities and services of the project site and surrounding area.

3.14.1 Educational Facilities

Existing Conditions

The Wai'anae-Nānākuli Complex or Leeward District currently contains nine (9) public schools operated under the State Department of Education (DOE). There are six (6) elementary schools, one (1) intermediate, one (1) combined intermediate and high school, and one (1) high school.

Educational facilities located near the project site include:

- Adventist Malama Elementary School located at 86-072 Farrington Highway, is approximately 0.6 miles away from the project site and is the closest educational facility.
- Wai'anae Intermediate School located at 85-626 Farrington Highway, is approximately 0.9 miles away from the project site.
- Leihoku Elementary School located at 86-285 Leihoku Street, is approximately 1.0 miles away from the project site.
- Wai'anae High School located at 85-251 Farrington Highway, is approximately 1.6 miles from the project site.

Anticipated Impacts and Mitigation Measures

The project is not expected to result in impacts to existing educational facilities. The project will not result in an increase in the overall population of the Wai'anae district. The new building will help to provide additional administrative and student support space for the existing students and staff at Wai'anae Elementary School. No mitigation is proposed.

3.14.2 Recreational Facilities

Existing Conditions

Recreational facilities located in the vicinity of the Wai'anae Elementary School campus include Pilila'au Park, Pōka'i Bay Beach Park, Wai'anae Regional Park, Wai'anae Field, and Lualualei Beach Park.

Anticipated Impacts and Mitigation Measures

The proposed project is not expected to significantly impact existing recreational facilities, therefore no mitigation is proposed.

3.14.3 Police

Existing Conditions

The Wai'anae Elementary School campus is served by Honolulu Police Department (HPD) District 8 which covers the area from Ka'ena Point to 'Ewa Beach. The Wai'anae Substation is located at 85-939 Farrington Highway approximately 0.5 miles from the project site.

Anticipated Impacts and Mitigation Measures

This project should not impact the Police Department's operations or ability to provide adequate services to the surrounding community. District 8 police resources currently provide services for the existing Wai'anae Elementary School campus. No adverse impacts are anticipated and no mitigation measures are proposed.

3.14.4 Fire

Existing Conditions

The Honolulu Fire Department (HFD) has two (2) fire stations in the Wai'anae District - one (1) in Wai'anae (Fire Station 26) and the other in Nānākuli (Fire Station 28). Primary fire protection of

the project site is served by Honolulu Fire Station 26 in Wai'anae. Station 26 is located at 85-645 Farrington Highway, approximately 2.8 miles from the project site.

HFD works with the Emergency Medical Services, who dispatches the closest available unit. During an emergency, this may be either an EMS ambulance or a fire company depending on the type of emergency and location. Since there are only 16 EMS stations on O'ahu, fire companies are frequently the first responder.

Anticipated Impacts and Mitigation Measures

This project is not expected to impact the Fire Department's operations or ability to provide fire protection services to the project area and the surrounding residential neighborhood. The planned administration and student support center will be designed to meet fire and building code requirements. This will include meeting fire flow requirements for water system improvements. All Fire Department access roads will be provided such that any portion of the buildings or any portion of an exterior wall of the buildings is located not more than 150 feet from access roads as measured by an approved route around the exterior of the buildings. Civil drawings for the project will be submitted to HFD for review and approval prior to the building permit process.

3.14.5 Emergency Medical Services

Existing Conditions

Medical facilities located within the Wai'anae District include Kaiser Permanente in Mā'ili and the Wai'anae Coast Comprehensive Health Center (WCCHC). Emergency service for Kaiser Permanente is provided from Moanalua Center with ambulance service provided by the Leeward Clinic in Waipahu. WCCHC is the nearest hospital to the project, located approximately 1.6 miles from the site. Ambulance service is provided by the Wai'anae Fire Station, which transports patients to the WCCHC.

Anticipated Impacts and Mitigation Measures

The proposed project will not impact the handling of EMS or medical emergencies. The WCCHC will continue to function in its present location and will be accessible to the project site in Wai'anae. No mitigation is proposed.

3.14.6 Solid Waste Management

Existing Conditions

Solid waste collection for the project area is provided by the City and County of Honolulu. Existing uses at the project site generate a demand for solid waste disposal.

Anticipated Impacts and Mitigation Measures

The proposed project will generate some solid waste with the building and general construction of the project. While additional trash bins may be provided to accommodate the use of the space, the project will not likely result in significant new solid waste generation at the school campus. Recycling programs that currently exist at Wai'anae Elementary School will be maintained. No mitigation is proposed.

3.15 HISTORIC, ARCHAEOLOGICAL AND CULTURAL RESOURCES

3.15.1 Historic and Archaeological Resources

A Literature Review was completed by Keala Pono Archaeological Consulting LLC of Honolulu (Appendix E). The Literature Review was designed to identify historic properties as well as individuals or events associated with the district of Wai'anae or the ahupua'a of Wai'anae Kai.

Existing Conditions

The proposed improvements to Wai'anae Elementary School are classified as a "state project." As such, they are subject to a historic preservation review process under the auspices of HRS, §6E-8. Under §6E-8(a), before the commencement of any state project, it is required that the State of Hawai'i, Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD) review the effect of the project on known or potential historic properties.

History of the Project Site

Historical maps of the Wai'anae ahupua'a show house sites scattered amongst numerous lo'i. The majority of settlement was concentrated in the makai section of the valley. According to accounts from the Hawaiian historian Samuel Kamakau, the district of Wai'anae was well known for its poi and aku fish. Wai'anae is also home to a pu'uhonua, or place of refuge, along the ridgeline boundary between Mākaha and Wai'anae.

The Great Māhele enacted in 1848 altered the traditional land tenure system in Hawai'i. Two Land Commission Awards (LCAs) are present within the project area: LCA 3276 was claimed by Waimalu and LCA 10585 was claimed by Olaelae. Collectively, these two LCA sites contained house sites, stoned walls, lo'i, 'auwai, and bananas.

Following the Māhele, the region experienced major changes to its landscape with lands leased or sold for ranching and sugarcane cultivation. The Wai'anae Sugar Plantation was founded in 1878, and L.L. McCandless ranched on lands east of the valley.

In 1906, the project area was recorded as property for a school. In the decades after, sugarcane labor declined, particularly after World War II, and by 1946, sugarcane production in Wai'anae ceased and the Oahu Rail and Land Company railway was officially abandoned.

Previous Archaeological Research in the Vicinity of the Project

Information on known historic properties in the vicinity of the project site has been reported by numerous authors between 1933 and 2014. Historic artifacts and human remains have been recovered from areas near Wai'anae Elementary School. The closest finding was documented by Bush and Hammatt (2004), during a Hawaiian Electric Company project near the school, in which a portion of a human burial was identified.

Historic Wai'anae Elementary School

Wai'anae Elementary School is believed to be over 150 years old. However, it is unclear whether the school buildings have remained in the same location over time. A school fund for 'Ewa and Wai'anae were established in 1875. Historic maps from the late 19th century and early 20th century depict several structures on the existing school property (*Figure 3-3* and *Figure 3-4*).

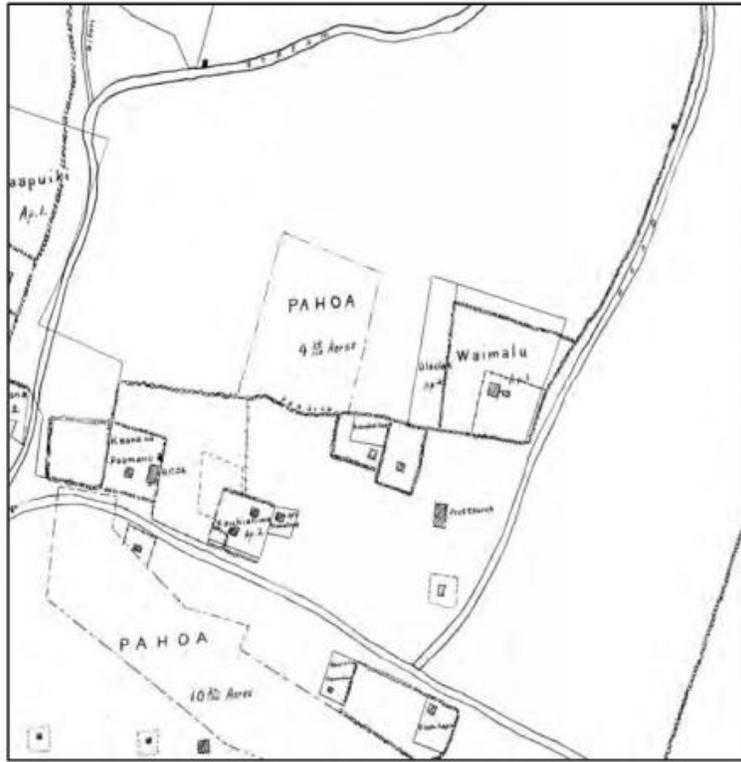


Figure 3-3: Map of Land Commission Awards in Current Project Area – Monsarrat 1870 (Keala Pono 2015)

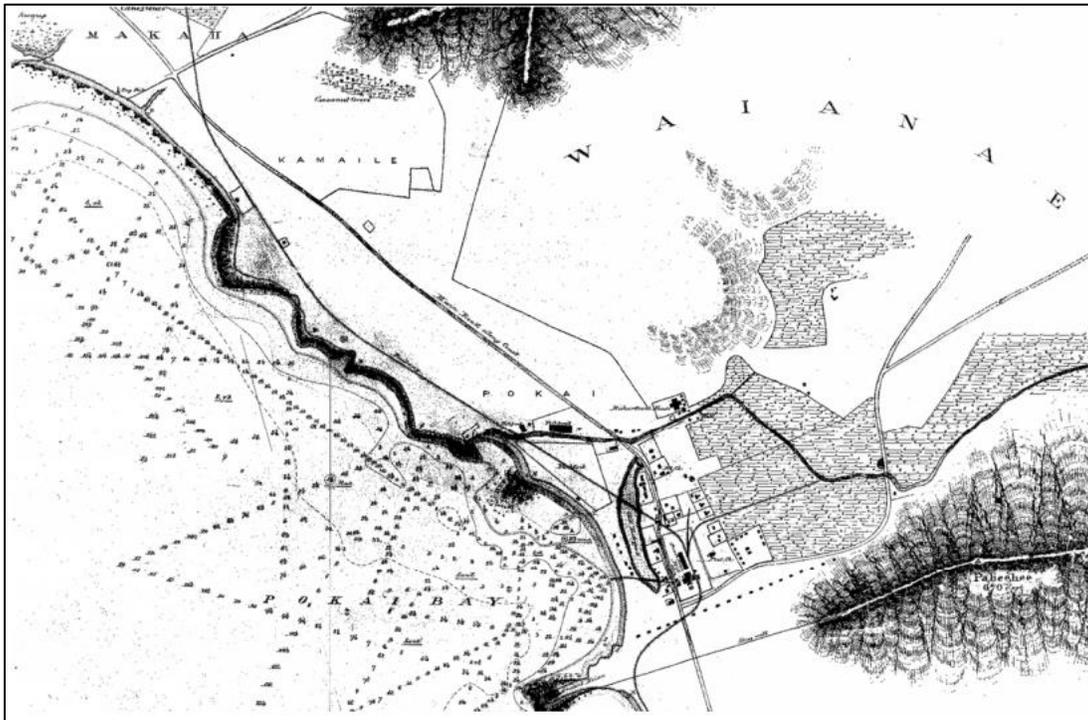


Figure 3-4: Portion of an early map of Pōka'i Bay – Jackson 1884 (Keala Pono 2015)

Figure 3-5 shows a row of what might have been plantation houses along the south and east boundary of the school property, and a larger structure in the center of the property. The first map showing a school house on the property is a Wai'anae Quadrangle, topographic map from 1928-1929 by the Department Engineer of the Territory of Hawai'i.

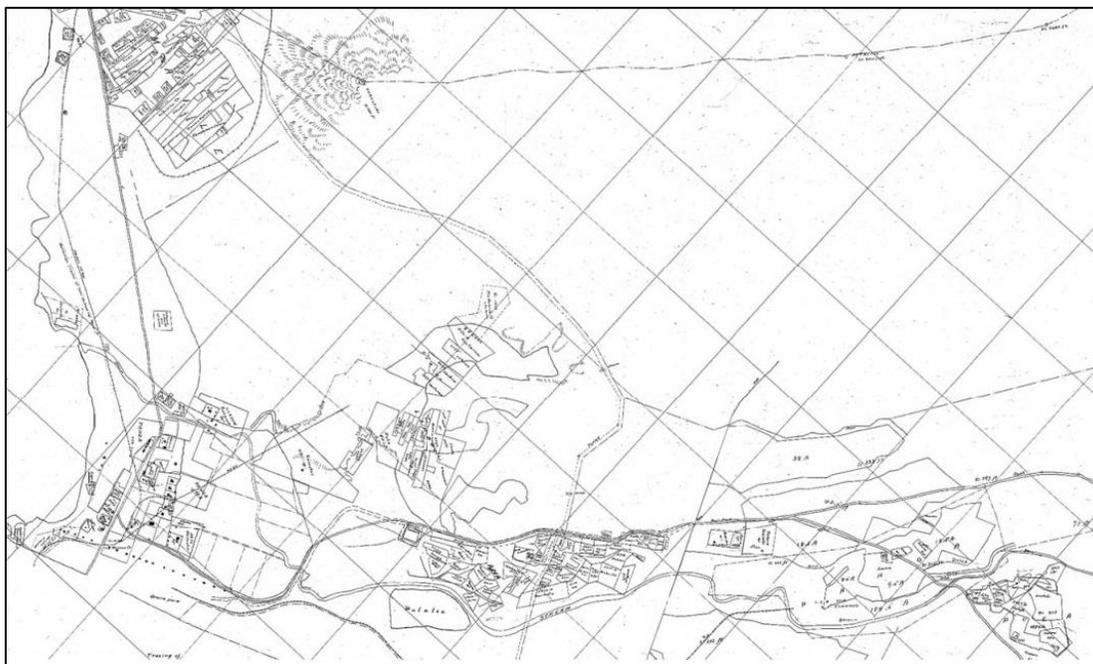


Figure 3-5: Portion of an early map of Wai'anae – Monsarrat 1902 (Keala Pono 2015)

Anticipated Impacts and Mitigation Measures

The Wai'anae Elementary School campus is potentially associated with a number of cultural and historical resources, such as subsurface cultural layers, features, and artifacts. The school itself may also contain buildings considered to be historic.

The proposed project improvements are not expected to result in significant adverse impacts to the historic nature of the four original school buildings which are located outside of the project area. An archaeological monitoring program is recommended for ground disturbing activities during construction. The archaeological monitoring plan should be accepted by SHPD. In addition, documentation of the four historic buildings should be considered as part of this project, to determine the possibility of Wai'anae Elementary School being nominated to either the State of National Registers of Historic Places.

While no effects on cultural, archaeological, or historical resources at the Wai'anae Elementary School campus are anticipated as a result of the project, SHPD provided a letter following their review of the Literature Review in March 2016 (*Appendix C*) requesting additional information be provided to determine the project's potential impacts on architectural and/or subsurface archaeological properties. Therefore, a Reconnaissance Level Survey and an Archaeological Inventory Survey will be conducted in the near future for the project. Both studies will be submitted and accepted by SHPD prior to building permit approval.

3.15.2 Cultural Resources

A Cultural Impact Assessment was completed by Keala Pono Archaeological Consulting LLC of Honolulu (Appendix D). The Cultural Impact Assessment included background research of traditional and historic accounts in the Wai'anae area, and an ethnographic survey consisting of two interviews.

Existing Conditions

Ethnographic Survey

Keala Pono contacted individuals within the community who had/has ties to the project area or vicinity; are known Hawaiian cultural resource persons; or Hawaiian traditional practitioners. These individuals were referred by Keala Pono, Group 70, or other cultural resource professionals. The results of the interviews conducted for the ethnographic survey are summarized in this section.

Eric Enos, Mākaha resident of 60 years, attended Wai'anae Elementary School from kindergarten through sixth grade. Enos helped to establish Ka'ala Farm's cultural learning center and has worked with the Wai'anae Valley community and has studied cultural sites of the area since 1976. Enos shared his knowledge regarding archaeological and culturally significant sites in the region. In particular, he noted a hōlua slide and heiau once existed near the project site. Enos also shared memories of the school and how the campus has since changed.

Glen Makakauli'i Kila, who has ancestral ties to Wai'anae that go back to the ali'i of the Manuia clan, is a knowledgeable cultural practitioner in the region. He was also a student at Wai'anae Elementary School when it was the only elementary school in the region. He recalls the student population being larger than 1,000. Kila also shared information on archaeological sites including Wai'oli spring and the Hawaiian settlements which once surrounded the elementary school site. According to Kila, the project area was once called Pāhoa, and stories reference the area as a place of heiau.

The interviewees' primary concerns were of the possibility of encountering traces of former uses of the property beneath the surface.

Collectively, the two interviews shared a range of concerns and recommendations for the Wai'anae Elementary School improvements as summarized herein.

- The royal Poinciana tree should remain on the campus, as it is part of the school's history. It was famous for the students, as it marked summer was coming.
- A cultural monitor should be on-call if any iwi or subsurface features are encountered.

Anticipated Impacts and Mitigation Measures

Background research and ethnohistoric interviews indicate that there are no known subsurface archaeological resources within the project area. However, it should be anticipated that there is a possibility iwi kūpuna or other subsurface resources may be encountered with ground disturbance work. Should burials or other cultural finds be encountered, construction should immediately cease and the appropriate agencies should be notified pursuant to applicable law.

3.16 VISUAL RESOURCES

Existing Conditions

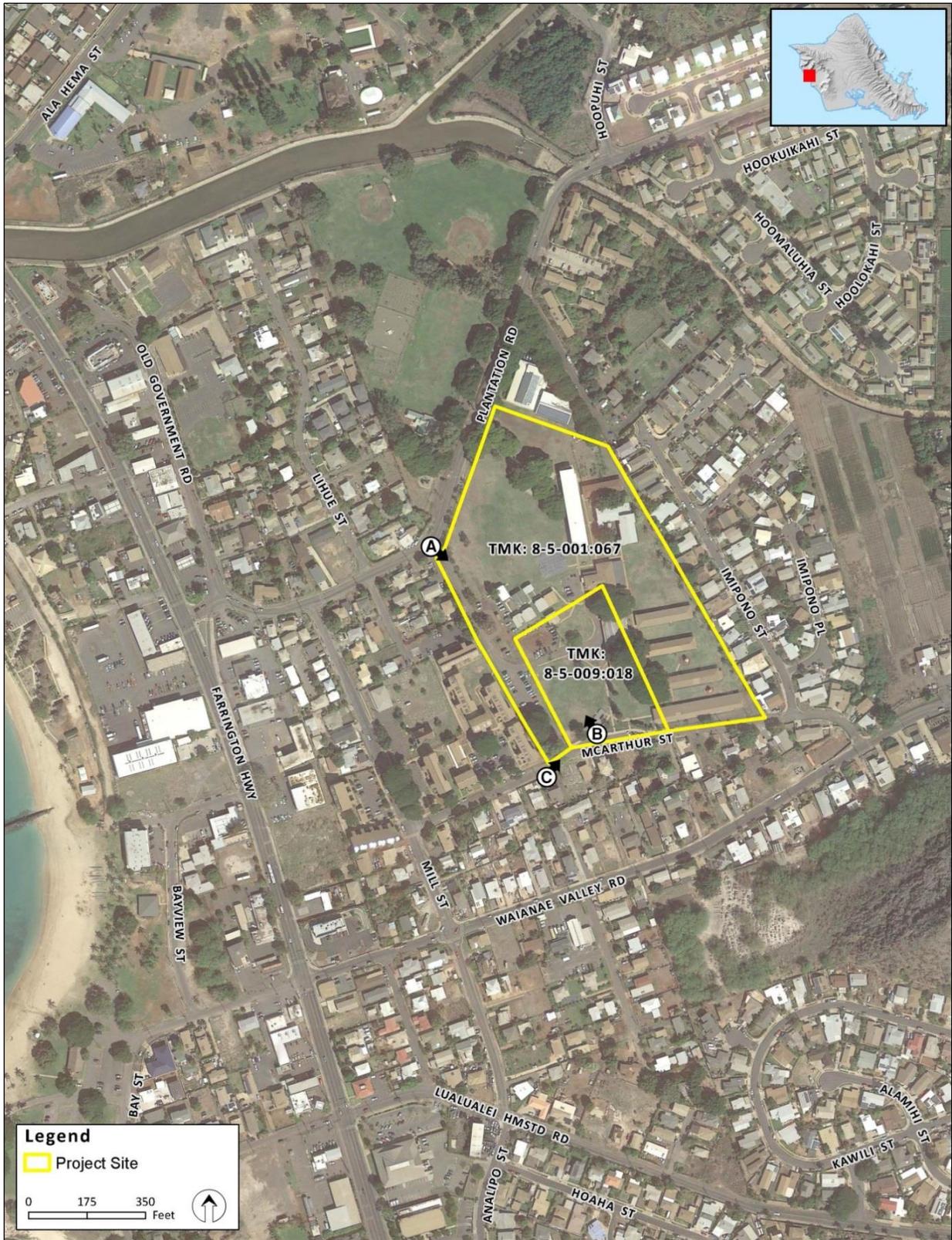
The project site is located in the Wai'anae District on the island of O'ahu. Scenic view sheds in the project area are identified in both the Sustainable Communities Plan and the City's Coastal View Study (1987). The project will not impede makai views nor will it impact any of the panoramic vistas identified in the area (Coastal View Study, 1987). The project may be visible from roadway views toward the existing campus, however it will be designed to blend with the surrounding school site and residential uses of the area.

Figure 3-6 provides an aerial perspective of the general area. The project site is bounded by residential communities to the east and west, McArthur Street directly to the south with residential communities located across the street, and Plantation Road directly to the north with Pilila'au Community Park located across the campus (*Figure 3-7a through 3-7e*). Beyond the immediate residential areas looking east are views of mountainous landscapes; looking west are coastal views of Pōka'i Bay.

Anticipated Impacts and Mitigation Measures

The project will be developed on a vacant portion of the existing Wai'anae Elementary School campus. The project will be visible from McArthur Street which borders the site on the south. The addition of the new facilities will fit with the existing campus setting. The design of the new buildings will blend with the architectural features of the campus. The project design will maintain the visual resources of the area by meeting LUO development standards, such as height and setback requirements. Additionally, landscaping will be used to improve the visual character of the constructed site. The project will blend with the surrounding uses of the area while preserving the natural beauty of the Wai'anae District. No significant adverse impacts to coastal views, scenic vistas or existing landscapes are anticipated.

WAI'ANA'E ELEMENTARY SCHOOL ADMINISTRATION/STUDENT SUPPORT CENTER
Final Environmental Assessment



SITE PHOTO KEY

Figure 3-6



View from Plantation Road/Wai'anae Elementary looking southeast towards the Project Site

(Source: Google Maps, 2011)

Figure 3-7a



View from McArthur Street looking north towards the Project Site

(Source: Google Maps, 2011)

Figure 3-7b



View from McArthur Street looking northeast towards the Project Site.

(Source: Google Maps, 2011)

Figure 3-7c

3.17 POTENTIAL CUMULATIVE AND SECONDARY IMPACTS

Cumulative effects are impacts which result from the incremental effects of an activity when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such other actions.

Improvement of the Wai'anae Elementary School campus with the new administration building, student support center, parking, and driveway will help improve the overall function of the school. The project will contribute to cumulative effects by bringing added value to the immediate property as an asset not only for Wai'anae Elementary School –particularly students who attend the school—but also for the greater Wai'anae community.

Construction activity during the proposed project will generate direct employment as well as indirect and induced employment in construction-related industries. The project is expected to cost approximately \$8.3 million which will be spent in Hawai'i. While additional employees will not be needed in the long-term, the project will help to provide an essential permanent space for administrative staff of the school which will help to support ongoing administrative and student support functions for students, their families, and staff of the school.

Short-term construction-related impacts on the environment will be generated by the project, and mitigation measures will be implemented to minimize these impacts. Construction related impacts will be temporary and will be in the immediate vicinity of the project site. Federal, State, and City environmental regulations will be met throughout the construction and operation of the project.

Section 4.0

ALTERNATIVES TO THE PROPOSED PROJECT

4.0 ALTERNATIVES TO THE PROPOSED PROJECT

This Final EA evaluates alternatives to the proposed project described in *Section 2.0*. The following provides discussion of the alternatives to the proposed project.

4.1 ALTERNATIVE A – NO-ACTION ALTERNATIVE

The “No-Action” alternative is the baseline against which all other alternatives are measured. “No-action” refers to the future site and program conditions that will likely result should the proposed project not proceed.

The No-Action Alternative would involve not proceeding with the development of a new administration building, new student support center, and parking and driveway improvements to provide additional permanent facilities on the Wai’anae Elementary School campus. This alternative will result in keeping the administrative and student support work areas in a space designated for classroom instruction. The inconveniences and constraints associated with having inadequate facilities on the campus will continue to impact students and faculty.

This alternative was eliminated because it would not properly address the current needs for a new permanent administrative facility, new student support center, and parking and circulation improvements. This alternative will continue to restrict the abilities and resources of administrative and student support staff to provide services to students and their families. Further, funds for this project have been appropriated, and taking No-Action to construct the new buildings would result in the appropriation lapsing. Due to the many potential benefits of the proposed project, the “No-Action” alternative was not considered a desirable alternative.

4.2 ALTERNATIVE B – ALTERNATIVE LOCATIONS FOR THE PROPOSED PROJECT

The project’s funding was specifically provided to carry out the Wai’anae Elementary School Administration/Student Support Center project. The location of the new administration and student support center buildings were sited on the campus to improve campus functionality and minimize disruptions of existing school facilities. Accordingly, alternative project sites were not considered because State procurement laws do not allow a transfer of these funds to other locations.

4.3 ALTERNATIVE C – DELAYING CONSTRUCTION

The Delayed Action Alternative would involve postponing construction of the new administration building and new student support center to a date in the future. As a result, the current status of the existing administrative staff using designated classroom instruction space would continue. There would continue to be inadequate space to provide appropriate administrative services for the school, staff, students and their families.

Thus, this alternative was eliminated from further consideration because the same concerns as those stated in the No-Action Alternative would persist. In addition, delaying construction to a future date would result in higher construction costs due to inflation. Further, funding for the project could be lost if improvements were not implemented at this time.

Section 5.0

APPLICABLE LAND USE PLANS AND POLICIES

5.0 PLANS AND POLICIES

In this chapter, the project's consistency with applicable land use policies set forth in the State Environmental Policy, Hawai'i State Plan, State Land Use Law, State Coastal Zone Management Program, State 2050 Sustainability Plan, and City and County of Honolulu General Plan, Wai'anae Sustainable Communities Plan, Land Use Ordinance, and Special Management Area are discussed.

5.1 HAWAI'I STATE PLAN

The Hawai'i State Plan establishes a statewide planning system that provides goals, objectives, and policies that detail priority directions and concerns of the State of Hawai'i; these will be discussed as they relate to the proposed project.

Part I. Overall Theme, Goals, Objectives and Policies

It is the goal of the State, under the Hawai'i State Planning Act (Chapter 226, HRS), to achieve the following:

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

Specific objectives and policies of the State Plan that pertain to the project are as follows:

Section 226-5 Objectives and policies for population

- (a) Planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.
- (b) To achieve the population objective, it shall be the policy of this State to:
 - (1) Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each country.
 - (2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.
 - (3) Promote increased opportunities for Hawai'i's people to pursue their socio-economic aspirations throughout the islands.
 - (4) Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population
 - (5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.

Final Environmental Assessment

- (6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.
- (7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.

Discussion The purpose of the new administration building and student support center is to alleviate classrooms currently being utilized for administration purposes instead of classroom instruction. The project is not anticipated to increase the student population at the school, and therefore the operations of the project will not increase water or resource demands to unsupported levels.

Section 226-6 Objectives and policies for the economy--in general

- (a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:
 - (1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited
 - (2) A Steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.
 - (3) Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.
 - (4) Transform and maintain Hawai'i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.
 - (5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawai'i.
 - (6) Seek broader outlets for new or expanded Hawai'i business investments.
 - (7) Expand existing markets and penetrate new markets for Hawai'i's products and services.
 - (8) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.
 - (9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.
 - (10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small scale producers, manufacturers, and distributors.
 - (11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.
 - (12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawai'i.
 - (13) Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.
 - (14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.
 - (15) Maintain acceptable working conditions and standards for Hawai'i's workers.

Final Environmental Assessment

- (16) Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.
- (17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.
- (18) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy, particularly with respect to emerging industries in science and technology.
- (19) Promote and protect intangible resources in Hawai'i, such as scenic beauty and aloha spirit, which are vital to a healthy economy.
- (20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.
- (21) Foster a business climate in Hawai'i – including attitudes, tax and regulatory policies, and financial and technical assistance programs –that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to planning for the State's economy in general is not applicable to the proposed project.

Section 226-7 Objectives and policies for the economy--agriculture

- (a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:
 - (1) Viability of Hawai'i's sugar and pineapple industries.
 - (2) Growth and development of diversified agriculture throughout the State
 - (3) An agriculture industry that continues to constitute a dynamic and essential component of Hawai'i's strategic, economic, and social well-being.
- (b) To achieve the agriculture objectives, it shall be the policy of this State to:
 - (1) Establish a clear direction for Hawai'i's agriculture through stakeholder commitment and advocacy.
 - (2) Encourage agriculture by making the best use of natural resources.
 - (3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.
 - (4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.
 - (5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai'i's economy.
 - (6) Seek the enactment and retention of federal and state legislation that benefits Hawai'i's agricultural industries.
 - (7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai'i's food producers and consumers in the State, nation, and world.
 - (8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.

Final Environmental Assessment

- (9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.
- (10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.
- (11) Increase the attractiveness and opportunities for an agricultural education and livelihood.
- (12) In addition to the State's priority on food, expand Hawai'i's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.
- (13) Promote economically competitive activities that increase Hawai'i's agricultural self-sufficiency, including the increased purchase and use of Hawai'i-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.
- (14) Promote and assist in the establishment of sound financial programs for diversified agriculture.
- (15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.
- (16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.
- (17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i'a, māla, and irrigated lo'i, and growth of traditional Hawaiian crops, such as kalo, 'uala, and 'ulu.
- (18) Increase and develop small-scale farms.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to planning for the State's economy with regard to agriculture is not applicable to the proposed project.

Section 226-8 Objectives and policies for the economy--visitor industry

- (a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai'i's economy.
 - (1) Support and assist the promotion of Hawai'i's visitor attractions and facilities.
 - (2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people.
 - (3) Improve the quality of existing visitor destination areas by utilizing Hawai'i's strengths in science and technology.
 - (4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.
 - (5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai'i's people.
 - (6) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the visitor industry.
 - (7) Foster a recognition of the contribution of the visitor industry to Hawai'i's economy and the need to perpetuate the aloha spirit.

Final Environmental Assessment

- (8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai'i's cultures and values.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to planning for the State's economy with regard to the visitor industry is not applicable to the project.

Section 226-9 Objectives and policies for the economy--federal expenditures

- (a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy.
- (b) To achieve the federal expenditures objective, it shall be the policy of this State to:
 - (1) Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment.
 - (2) Promote Hawai'i's supportive role in national defense, in a manner consistent with Hawai'i's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawai'i's economy.
 - (3) Promote the development of federally supported activities in Hawai'i that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai'i's environment.
 - (4) Increase opportunities for entry and advancement of Hawai'i's people into federal government service.
 - (5) Promote federal use of local commodities, services, and facilities available in Hawai'i.
 - (6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i.
 - (7) Pursue the return of federal controlled lands in Hawai'i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.

Discussion The project will be funded by the State of Hawai'i Department of Education. This objective is not applicable to the proposed project.

Section 226-10 Objectives and policies for the economy--potential growth and innovative activities

- (a) Planning for the state's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversity Hawai'i's economic base.
- (b) To achieve the potential growth and innovative activity objective, it shall be the policy of this State to:
 - (1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversity Hawai'i's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors.

Final Environmental Assessment

- (2) Facilitate investment in innovative activity that may pose risks or be less labor intensive than other traditional business activity, but if successful, will generate revenue in Hawai'i through the export of services or products or substitution of imported services or products.
- (3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements.
- (4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable and equipped with the attitude necessary to undertake innovative activity.
- (5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus.
- (6) Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people.
- (7) Enhance and promote Hawai'i's roles as a center for international relations, trade, finance, services, technology, education, culture, and the arts.
- (8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste.
- (9) Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new or innovative economic activities to the State.
- (10) Provide public incentives and encourage private initiative to attract new or innovative industries that best support Hawai'i's social, economic, physical, and environmental objectives.
- (11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;
- (12) Develop, promote, and support research and educational training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i; Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawai'i;
- (13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawai'i.
- (14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawai'i's social, economic, physical, and environmental objectives.
- (15) Increase research and development of businesses and services in the telecommunications and information industries.
- (16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation.
- (17) Recognize and promote health care and health care information technology as growth industries.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to planning for the State's economy with regard to innovative activities is not applicable to the proposed project.

Section 226-10.5 Objectives and policies for the economy--information industry.

- (a) Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawai'i as a leader in broadband and wireless communications and applications in the Pacific Region.
- (b) To achieve the information industry objective, it shall be the policy of this State to:
 - (1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawai'i and between Hawai'i and the world, and make high speed communication available to all residents and businesses in Hawai'i.
 - (2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth and innovation in Hawai'i's economy.
 - (3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawai'i.
 - (4) Encourage mainland- and foreign- based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawai'i, using technology to communicate with their headquarters, offices, or customers located out-of-state.
 - (5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry.
 - (6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people.
 - (7) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the information industry.
 - (8) Foster a recognition of the contribution of the information industry to Hawai'i's economy.
 - (9) Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to planning for the State's economy with regard to the information industry is not applicable to the proposed project.

Section 226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.

- (a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:
 - (1) Prudent use of Hawai'i's land-based, shoreline, and marine resources.
 - (2) Effective protection of Hawai'i's unique and fragile environmental resources.
- (b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:
 - (1) Practice an overall conservation ethic in using Hawai'i's natural resources.

Final Environmental Assessment

- (2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.
- (3) Take into account the physical attributes of areas when planning and designing activities and facilities.
- (4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.
- (5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.
- (6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.
- (7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.
- (8) Pursue compatible relationships among activities, facilities, and natural resources.
- (9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Discussion

The project will use lands within the existing Wai'anae Elementary School campus. The project's use of this area is consistent with State and City land use districts and zoning designations. The project will be designed to include environmental preservation and energy conservation measures to the extent practicable. No endangered plant species, animal species, or habitats are present on the campus. The project is not anticipated to pose threats to Native Hawaiian endangered plant or animal species and habitats. In addition, the project site is not located along the shoreline and will not result in substantial impacts to environmental and marine resources.

Section 226-12 Objectives and policies for the physical environment--scenic, natural beauty, and historic resources.

- (a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources:
- (b) To achieve the scenic, natural beauty, and historic resources objectives, it shall be the policy of this State to:
 - (1) Promote the preservation and restoration of significant natural and historic resources.
 - (2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.
 - (3) Promote the preservation of views and vistas to enhance the landscapes, and other natural features.
 - (4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.
 - (5) Encourage the design of developments and activities that complement the natural beauty of the islands.

Discussion

The project will not impact existing scenic assets or cultural/historical resources at the project site since there are no scenic view sheds identified in the area or cultural/historic resources identified at the school campus. The new administration building and student support center will visually

Final Environmental Assessment

blend with the school's built environment, and will add to the overall natural beauty of the campus and surrounding area.

A Cultural Impact Assessment and Archaeological Literature Review were conducted for the project. Both studies indicated that no effects on cultural, archaeological, or historical resources are anticipated for the project. SHPD provided a letter following their review of the Literature Review in March 2016 (Appendix C), requesting additional information be provided to determine the project's potential impacts on architectural and/or subsurface archaeological properties. Therefore, a Reconnaissance Level Survey and an Archaeological Inventory Survey will be conducted in the near future for the project. Both studies will be submitted and accepted by SHPD prior to building permit approval. An archaeological monitoring program is recommended during construction to mitigate any potential finds.

Section 226-13 Objectives and policies for the physical environment--land, air, and water quality.

- (a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:
 - (1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.
 - (2) Greater public awareness and appreciation of Hawai'i's environmental resources.
- (b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:
 - (1) Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.
 - (2) Promote the proper management of Hawai'i's land and water resources.
 - (3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground, and coastal waters.
 - (4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.
 - (5) Reduce the threat of life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.
 - (6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.
 - (7) Encourage urban developments in close proximity to existing services and facilities.
 - (8) Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.

Discussion

Built on the existing Wai'anae Elementary School campus, the project will maintain Hawai'i's natural and scenic resources by building on existing urban lands. The project design will achieve the proper management of Hawai'i's land and water resources. The project site is not located along the shoreline and will not impact coastal resources. Further, stormwater best management practices will be implemented to reduce impacts to surface water quality. Mitigation measures will be carried out to address potential impacts to the physical environment – land, air, and water – that may occur as a result of the project.

Final Environmental Assessment

Section 226-14 Objective and policies for facility systems--in general

- (a) Planning for the State's facility systems in general shall be directed towards the achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.
- (b) To achieve the general facility systems objective, it shall be the policy of this State to:
 - (1) Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.
 - (2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.
 - (3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.
 - (4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.

Discussion The project supports the objectives and policies for facility systems in Hawai'i. The new administration building and student support center are necessary infrastructure improvements for the Wai'anae Elementary School campus. The campus currently does not have dedicated and appropriate spaces for administrative and student support staff that do not infringe on dedicated classroom spaces. This project will enable the staff to better serve the needs of the school's students and broader community.

Section 226-15 Objectives and policies for facility systems--solid and liquid wastes

- (a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:
 - (1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes
 - (2) Provision of adequate sewerage facilities for physical and economic activities
- (b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:
 - (1) Encourage adequate development of sewerage facilities that complement planned growth.
 - (2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.
 - (3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.

Discussion The project supports the objectives and policies for solid and liquid waste facility systems. As stated in Section 3.8.2, the project will not result in additional wastewater generation since enrollment will not increase as a result of the project. The project will generate some solid waste during construction; however during operations no new solid waste generation is anticipated. The project will maintain basic public health and sanitation standards in treating and disposing solid and liquid wastes. In addition, as noted in Section 3.14 it is anticipated that the sewer capacity of the existing system is sufficient to serve the proposed project.

Section 226-16 Objectives and policies for facility systems--water

- (a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate

Final Environmental Assessment

domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.

- (b) To achieve the facility systems water objective, it shall be the policy of this State to:
 - (1) Coordinate development of land use activities with existing and potential water supply.
 - (2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.
 - (3) Reclaim and encourage the productive use of runoff water and wastewater discharges.
 - (4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.
 - (5) Support water supply services to areas experiencing critical water problems.
 - (6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.

Discussion The project supports the objectives and policies for water as the new buildings will be supported by existing water supplies. As discussed in Section 3.8.1 of this document, the new administration building and student support center will be served by a new water system which will connect to the existing 4-inch BWS domestic lateral. Based on fire flow test results, the water capacity and available pressure for the campus is expected to meet the added water demands of the project. Both of the new buildings will observe water conservation and efficiency measures through use of low flow and high efficiency plumbing fixtures.

Section 226-17 Objectives and policies for facility systems--transportation

- (a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:
 - (1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.
 - (2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.
- (b) To achieve the transportation objectives, it shall be the policy of this State to:
 - (1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter.
 - (2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives.
 - (3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.
 - (4) Provide for improved accessibility to shipping, docking, and storage facilities.
 - (5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs.
 - (6) Encourage transportation systems that serve to accommodate present and future development needs of communities.
 - (7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods.
 - (8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs.
 - (9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification.

Final Environmental Assessment

- (10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment.
- (11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation.
- (12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives.
- (13) Encourage the diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.

Discussion The project supports the objectives and policies for transportation and was thoughtfully sited to minimize adverse effects to existing traffic patterns. The land use for this project on the existing Wai'anae Elementary School campus is also in accordance with transportation planning activities.

Section 226-18 Objectives and policies for facility systems--energy

- (a) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:
 - (1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;
 - (2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawai'i's dependence on imported fuels for electrical generation and ground transportation
 - (3) Greater diversification of energy generation in the face of threats to Hawai'i's energy supplies and systems;
 - (4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and
 - (5) Utility models that make the social and financial interests of Hawai'i's utility customers a priority.
- (b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand.
- (c) To further achieve the energy objectives, it shall be the policy of this State to:
 - (1) Support research and development as well as promote the use of renewable energy sources.
 - (2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth.
 - (3) Base decisions of least-cost supply-side and demand-side energy resources options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits.
 - (4) Promote all cost effective conservation of power and fuel supplies through measures, including:
 - (A) Development of cost-effective demand-side management programs
 - (B) Education
 - (C) Adoption of energy-efficient practices and technologies
 - (D) Increasing energy efficiency and decreasing energy use in public infrastructure

Final Environmental Assessment

- (5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies.
- (6) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth.
- (7) Promote alternate fuels and transportation energy efficiency.
- (8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications.
- (9) Support actions that reduce, avoid, or sequester Hawai'i's greenhouse gas emissions through agriculture and forestry initiatives.
- (10) Provide priority handling and processing for all state and county permits required for renewable energy projects.
- (11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources.
- (12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawai'i.

Discussion The new administration building and student support center supports the objectives and policies for energy through the promotion of alternative energy production and reduction of imported fuels for electrical generation. The project will meet the guidelines for HI-CHPS for designing energy efficient and sustainable schools and will support infrastructure suitable for photovoltaic installations.

Section 226-18.5 Objectives and policies for facility systems--telecommunications

- (a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.
- (b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.
- (c) To further achieve the telecommunications objective, it shall be the policy of this State to:
 - (1) Facilitate research and development of telecommunications systems and resources.
 - (2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning.
 - (3) Promote efficient management and use of existing telecommunications systems and services.
 - (4) Facilitate the development of education and training of telecommunications personnel.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to the State's telecommunications facility systems is not applicable to the proposed project.

Section 226-19 Objectives and policies for socio-cultural advancement--housing

- (a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:

Final Environmental Assessment

- (1) Greater opportunities for Hawai'i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawai'i's population.
- (2) The orderly development of residential areas sensitive to community needs and other land uses.
- (3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawai'i's people.
- (b) To achieve the housing objectives, it shall be the policy of this State to:
 - (1) Effectively accommodate the housing needs of Hawai'i's people.
 - (2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.
 - (3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.
 - (4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.
 - (5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.
 - (6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.
 - (7) Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.
 - (8) Promote research and development of methods to reduce the cost of housing construction in Hawai'i.

Discussion The project is meant to alleviate the classroom space needs and accommodate administrative and student support services at Wai'anae Elementary School. This objective relating to the State's socio-cultural advancement with regard to housing is not applicable to the proposed project.

Section 226-20 Objectives and policies for socio-cultural advancement--health

- (a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:
 - (1) Fulfillment of basic individual health needs of the general public
 - (2) Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities
 - (3) Elimination of health disparities by identifying and addressing social determinants of health.
- (b) To achieve the health objectives, it shall be the policy of this State to:
 - (1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems including substance abuse.
 - (2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.
 - (3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.

Final Environmental Assessment

- (4) Foster an awareness of the need for personal health maintenance and preventative health care through education and other measures.
- (5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.
- (6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.
- (7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.

Discussion The project supports the objectives and policies advancing health through the fulfillment of basic individual health needs, maintaining sanitary and environmentally healthful conditions on campus, and fostering awareness of the need for personal health maintenance and preventative health care. The new administration building will house the school's Health Services room to meet the healthcare needs of the Wai'anae Elementary School students.

Section 226-21 Objectives and policies for socio-cultural advancement--education

- (a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.
- (b) To achieve the education objective, it shall be the policy of this State to:
 - (1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.
 - (2) Ensure the provisions of adequate and accessible educational services and facilities that are designed to meet individual and community needs.
 - (3) Provide appropriate educational opportunities for groups with special needs.
 - (4) Promote educational programs which enhance understanding of Hawai'i's cultural heritage.
 - (5) Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.
 - (6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.
 - (7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.
 - (8) Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.
 - (9) Support research programs and activities that enhance the education programs of the State.

Discussion

The project will support Hawai'i's educational programs and activities by providing essential administrative support space for Wai'anae Elementary School's administrative staff, student support staff, and free up classroom space currently used for administrative and student support activities.

Section 226-22 Objectives and policies for socio-cultural advancement--social services

- (a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.
- (b) To achieve the social service objective, it shall be the policy of the State to:
 - (1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.
 - (2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.
 - (3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawai'i's communities.
 - (4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.
 - (5) Support public and private efforts to prevent domestic abused and child molestation, and assist victims of abuse and neglect.
 - (6) Promote programs which assist people in need of family planning services to enable them to meet their needs.

Discussion The project supports the objectives and policies for social services through the construction of a new student support center on campus. The new building will provide dedicated rooms and offices for counseling and student support services to assist students in need of counseling and other social services.

Section 226-23 Objectives and policies for socio-cultural advancement--leisure

- (a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.
- (b) To achieve the leisure objective, it shall be the policy of this State to:
 - (1) Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.
 - (2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.
 - (3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.
 - (4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.

Final Environmental Assessment

- (5) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.
- (6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.
- (7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai'i's people.
- (8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.
- (9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.
- (10) Assure adequate access to significant natural and cultural resources in public ownership.

Discussion The project is meant to alleviate the classroom space needs and accommodate student support services at Wai'anae Elementary School. This objective relating to the State's socio-cultural advancement with regard to leisure is not applicable to the proposed project.

Section 226-24 Objectives and policies for socio-cultural advancement--individual rights and personal well-being

- (a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.
- (b) To achieve the individual rights and personal well-being objective, it shall be the policy of this State to:
 - (1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.
 - (2) Uphold and protect the national and state constitutional rights of every individual.
 - (3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.
 - (4) Ensure equal opportunities for individual participation in society.

Discussion The project supports the objectives and policies for individual rights and personal well-being through the expansion of the campus with a new administration building and student support center. The new buildings will allow for more efficient and effective delivery of educational and social services for Wai'anae Elementary School students.

Section 226-25 Objectives and policies for socio-cultural advancement--culture

- (a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people.
- (b) To achieve the culture objective, it shall be the policy of this State to:
 - (1) Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.
 - (2) Support activities and conditions that promote cultural values, customs, and the arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.

Final Environmental Assessment

- (3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.
- (4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors.

Discussion The project is meant to alleviate the classroom space needs and accommodate student support services at Wai'anae Elementary School. This objective relating to the State's socio-cultural advancement with regard to culture is not applicable to the proposed project.

Section 226-26 Objectives and policies for socio-cultural advancement--public safety

- (a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:
 - (1) Assurance of public safety and adequate protection of life and property for all people.
 - (2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.
 - (3) Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's people
- (b) To achieve the public safety objectives, it shall be the policy of this State to:
 - (1) Ensure that public safety programs are effective and responsive to community needs.
 - (2) Encourage increased community awareness and participation in public safety programs.
- (c) To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:
 - (1) Support criminal justice programs aimed at preventing and curtailing criminal activities.
 - (2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.
 - (3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.
- (d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:
 - (1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.
 - (2) Enhance the coordination between emergency management programs throughout the State.

Discussion The project is meant to alleviate the classroom space needs and accommodate student support services at Wai'anae Elementary School. This objective relating to the State's socio-cultural advancement with regard to public safety is not applicable to the proposed project.

Section 226-27 Objectives and policies for socio-cultural advancement--government

- (a) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:
 - (1) Efficient, effective, and responsive government services at all levels in the State.

Final Environmental Assessment

(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.

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

- (1) Provide for necessary public goods and services not assumed by the private sector.
- (2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.
- (3) Minimize the size of government to that necessary to be effective.
- (4) Stimulate the responsibility in citizens to productively participate in government for a better Hawai'i.
- (5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.
- (6) Provide for a balanced fiscal budget.
- (7) Improve the fiscal budgeting and management system of the State.
- (8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.

Discussion The project supports the objectives and policies of government. The new administration building and student support center will be funded by the State, in response to the school's need for dedicated spaces for the administrative and student support staff. This provision of public buildings on the Wai'anae Elementary School campus will provide the necessary public infrastructure for Department of Education students in the Wai'anae region.

Part III Priority Guidelines

Overall priority guidelines were established to address areas of statewide concern. It is the goal of the State to strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: Economic development, population growth and land resource management, affordable housing crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.

Section 226-103 Economic priority guidelines

(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai'i's people and achieve a stable and diversified economy:

(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

(A) Encourage investments which:

- (i) Reflect long term commitments to the State;
- (ii) Rely on economic linkages within the local economy;
- (iii) Diversify the economy;
- (iv) Reinvest in the local economy;
- (v) Are sensitive to community needs and priorities;
- (vi) Demonstrate a commitment to provide management opportunities to Hawai'i residents.

(B) Encourage investments in innovative activities that have a nexus to the State, such as:

Final Environmental Assessment

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

Final Environmental Assessment

- (E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities.
- (F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.
- (b) Priority guidelines to promote the economic health and quality of the visitor industry:
 - (1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawai'i's residents and visitors.
 - (2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.
 - (3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.
 - (4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai'i's significant natural, scenic, historic, and cultural resources.
 - (5) Develop and maintain career opportunities in the visitor industry for Hawai'i's people, with emphasis on managerial positions.
 - (6) Support and coordinate tourism promotion abroad to enhance Hawai'i's share of existing and potential visitor markets.
 - (7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.
 - (8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.
 - (9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.
- (c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:
 - (1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.
 - (2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai'i.
 - (3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.
- (d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:
 - (1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.
 - (2) Assist in providing adequate, reasonably priced water for agricultural activities.
 - (3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.
 - (4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.
 - (5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai'i's agricultural community.
 - (6) Seek favorable freight rates for Hawai'i's agricultural products from interisland and overseas transportation operators.

Final Environmental Assessment

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

Discussion The economic priority guidelines are not applicable to the proposed project.

Section 226-104 Population growth and land resources priority guidelines

- (a) Priority guidelines to effect desired statewide growth and distribution:
 - (1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.
 - (2) Manage a growth rate for Hawai'i's economy that will parallel future employment needs for Hawai'i's people.
 - (3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.
 - (4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.
 - (5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.
 - (6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.
 - (7) Support the development of high technology parks on the neighbor islands.
- (b) Priority guidelines for regional growth distribution and land resource utilization:
 - (1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.
 - (2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.
 - (3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.
 - (4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.
 - (5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.
 - (6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.
 - (7) Pursue rehabilitation of appropriate urban areas.
 - (8) Support the redevelopment of Kaka'ako into a viable residential, industrial, and commercial community.
 - (9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.
 - (10) Identify critical environmental areas in Hawai'i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.

Final Environmental Assessment

- (11) Identify all areas where priority should be given to preserving rural character and lifestyle.
- (12) Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.
- (13) Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.

Discussion The project supports the population growth and land resources priority guidelines by providing appropriate facilities to accommodate the existing Wai'anae Elementary School faculty and students. Additionally, the new buildings will be State funded and located within a pre-developed site on the school campus.

Section 226-105 Crime and criminal justice

Priority guidelines in the area of crime and criminal justice:

- (1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.
- (2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.
- (3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.
- (4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.
- (5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.
- (6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.

Discussion The priority guidelines in the area of crime and criminal justice are not applicable to the proposed project.

Section 226-106 Affordable housing

Priority guidelines for the provision of affordable housing:

- (1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.
- (2) Encourage the use of alternative construction and development methods as a means of reducing production costs.
- (3) Improve information and analysis relative to land availability and suitability for housing.
- (4) Create incentives for development which would increase home ownership and rental opportunities for Hawai'i's low- and moderate-income households, gap-group households, and residents with special needs.
- (5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawai'i's people for the purchase of initial owner-occupied housing.
- (6) Encourage public and private sector cooperation in the development of rental housing alternatives.

Final Environmental Assessment

- (7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.
- (8) Give higher priority to the provision of quality housing that is affordable for Hawai'i's residents and less priority to development of housing intended primarily for individuals outside of Hawai'i.

Discussion The priority guidelines for the provision of affordable housing are not applicable to the proposed project.

Section 226-107 Quality education

Priority guidelines to promote quality education:

- (1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement.
- (2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs.
- (3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force
- (4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decisionmaking responsibilities.
- (5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:
 - (A) The electronic exchange of information
 - (B) Statewide electronic mail
 - (C) Access to the Internet

Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives

- (6) Pursue the establishment of Hawai'i's public and private universities and colleges as research and training centers of the Pacific.
- (7) Develop resources and programs for early childhood education.
- (8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education.
- (9) Strengthen and expand educational programs and services for students with special needs.

Discussion The project promotes the priority guidelines for quality education. The new administration building and student support center will allow Wai'anae Elementary School to properly provide its students with a quality primary school education, by freeing up necessary classroom space for effective teacher instruction. In addition, the newly dedicated spaces for administrative and student support staff will provide students with the appropriate programs, services, and social environment to learn.

Section 226-108 Sustainability

Priority guidelines and principles to promote sustainability shall include:

- (1) Encouraging balanced economic, social, community, and environmental priorities.
- (2) Encouraging planning that respects and promotes living within the natural resources and limits of the State.
- (3) Promoting a diversified and dynamic economy.
- (4) Encouraging respect for the host culture.

Final Environmental Assessment

- (5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations.
- (6) Encourage planning that respects and promotes living within the natural resources and limits of the State
- (7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i.

Discussion The new administration building and student support center supports the State's priority guidelines for sustainability through thoughtful site planning on the existing Wai'anae Elementary School campus. The new buildings will meet the guidelines for Hawai'i Collaborative for High Performance Schools (HI-CHPS), which promotes healthy and sustainable school learning environments. The buildings will also be suitable for photovoltaic installations to offset the school's use of fossil fuels for electricity.

Section 226-109 Climate change adaptation priority guidelines

Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment; such as housing, recreation, transportation; and the economy shall:

- (1) Ensure that Hawai'i's people are educated, informed, and aware of the impacts climate change may have on their communities.
- (2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies.
- (3) Invest in continued monitoring and research of Hawai'i's climate and the impacts of climate change on the State.
- (4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change.
- (5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change.
- (6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments.
- (7) Promote sector resilience in areas such as water, roads, airports, and public health by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options.
- (8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities.
- (9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans.
- (10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.

Discussion The project supports the priority guidelines for climate change and is not expected to significantly contribute to existing greenhouse gas emissions. The new buildings will be suitable

for photovoltaic installations to offset the school's use of fossil fuels for electricity. As discussed in Section 3.4 of this document, the project is not expected to be affected by flood or tsunami inundation due to its distance from the coastal area and stream courses. To prevent ponding or localized flooding resulting from stormwater run-off, new drainage infrastructure for the project site will be designed and constructed to meet applicable standards. All construction will necessarily conform to relevant building codes to mitigate the risk of wind and seismic damage. In addition, the project is not anticipated to be affected by climate induced sea level rise. While detailed projections of sea level rise have not been completed for the West O'ahu region, NOAA's online sea level rise and flooding viewer predict that the school site will be unaffected by up to 6-foot increases in sea levels.

5.2 HAWAI'I STATE FUNCTIONAL PLANS

The Hawai'i State Functional Plans serve to guide the implementation of policies, guidelines, and priorities of the State Plan within specific fields of activity. The following provides a discussion on the Functional Plans applicable to the project.

Education State Functional Plan

The Education State Functional Plan was produced in 1989 by the Department of Education through a participatory process and seeks to carry forth the goals and objectives of the State Plan. The Education Functional Plan identifies three clusters of goals. Cluster A provides policies related to four basic educational needs: academic excellence, basic skills, education workforce, and facilities and services. The implementing actions are identified for educational services and facilities as related to the project:

Objective A(4): Services and Facilities

Policy: Ensure the provisions of adequate and accessible educational services and facilities that are designed to meet individual community needs.

- (a) Secure the resources necessary to implement and carry out a program to provide for safe and secure campus environments.

Discussion

The project supports the Education State Functional Plan. The provision of the new facility will enable the campus administration to operate more efficiently and to provide the appropriate services for the students and parents of Wai'anae Elementary School.

5.3 HAWAI'I STATE LAND USE DISTRICT BOUNDARIES

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

The Urban District generally includes lands characterized by “city-like” concentrations of people, structures and services. This District also includes vacant areas for future development. Jurisdiction of this district lies primarily with the respective counties. Generally, lot sizes and uses permitted in the district area are established by the respective County through ordinances or rules.

Discussion

As classified by the State of Hawai'i LUC, the project site is situated within the State Urban District (*Figure 1-3*). The proposed use within the property is consistent with permitted uses for the Urban District, and will not require district reclassification or boundary amendments.

5.4 HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM

The Coastal Zone Management Act of 1972 (16 USC Section 1451), as amended through Public Law 104-150, created the coastal management program and the National Estuarine Research Reserve system. The coastal states are authorized to develop and implement a state coastal zone management program. Hawai'i Coastal Zone Management (CZM) Program received federal approval in the late 1970's. The objectives and policies of the State's Hawai'i Coastal Zone Management (CZM) Program, Section 205A-2, HRS, are to protect valuable and vulnerable coastal resources including the following: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, marine resources, and beaches. The objectives of the program are also to reduce coastal hazards, stimulate public participation in coastal management, and to improve the review process for activities proposed within the coastal zone. The Coastal Zone Management area is defined in Section 205A-1 as “all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the United States territorial sea.” Each county is responsible for designating a Special Management Area (SMA) that extends inland from the shoreline. Development within this SMA is subject to County approval to ensure the proposal is consistent with the policies and objectives of the Hawai'i CZM Program

Discussion

The project supports the Hawai'i CZM Program by identifying and analyzing historic resources in the project area and identifying and preserving existing public views to and along the shoreline. The existing recreational resources in the area will not be adversely affected by the new administration building and student support center. The project also concentrates development in an appropriately zoned and pre-developed area to ensure minimal adverse environmental effects to the coastal region of Wai'anae. The entire project site is not within the SMA as delineated by the City and County of Honolulu and as such does not require an additional review under State CZM and County SMA rules (*Figure 1-6*).

5.5 HAWAI'I 2050 SUSTAINABILITY PLAN

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

The 2050 Plan delineates five goals toward a sustainable Hawai'i accompanied by strategic actions for implementation and indicators to measure success or failure. The goals and strategic

actions that are pertinent to the Wai'anae Elementary School Administration/Student Support Center project are as follows.

Goal Four: Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need.

Strategic Actions:

- *Strengthen public education.*

Discussion

The project will include a new administration building and a new student support center on the Wai'anae Elementary School campus. The project will provide essential administrative space and student support offices for staff to support the needs of Wai'anae Elementary School students, and free up classroom space currently used for administrative and student support services.

5.6 CITY AND COUNTY OF HONOLULU GENERAL PLAN

Adopted by resolution in 1977, the 1992 revised edition of the General Plan for the City and County of Honolulu sets forth the long-range objectives for the general welfare and prosperity of the people of O'ahu and broad policies to attain those objectives. The Draft 2035 O'ahu General Plan Update was published in November 2012. It is currently in the public review phase. The General Plan Update provides objectives and policies intended to guide and coordinate City land use planning and regulation, and budgeting for operations and capital improvements.

The Wai'anae Elementary School Administration/Student Support Center project is consistent with the applicable objectives and policies of the City and County of Honolulu Draft 2035 O'ahu General Plan Update described below.

Natural Environment

Objective A: To protect and preserve the natural environment.

- *Policy 1: Protect O'ahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.*
- *Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.*
- *Policy 8: Protect plants, birds, and other animals that are unique to the State of Hawai'i and the Island of O'ahu.*

Physical Development and Urban Design

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

- *Policy 2: Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and other public facilities and services.*
- *Policy 5: Provide for more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.*

Health and Education

Objective B: To provide a wide range of educational opportunities for the people of O'ahu to.

- *Policy 1: Support educational programs that encourage the development of employable skills.*
- *Policy 4: Encourage the construction of school facilities that are designed for flexibility and high levels of use.*

Discussion

The project supports the objectives of the General Plan. Development of the project will provide additional administrative and student support space, enabling the school staff to better support educational opportunities for students at the school. The new administration building, new student support center, paved parking lot will both be built within the existing campus, which is located away from the shoreline, thereby providing a more compact development and intensive use of urban lands. In addition, since the new buildings will be built within the campus, existing utilities such as water supply, sewage treatment, drainage, transportation and other services are available near the project site. Construction BMPs will help to mitigate potential temporary impacts to air, water, and soil quality.

5.7 CITY AND COUNTY OF HONOLULU WAI'ANAЕ SUSTAINABLE COMMUNITIES PLAN

The Island of O'ahu is divided into eight Development Plan areas; the plans for six of these areas have been designated as Sustainable Communities Plans (SCP). Each plan implements the objectives and policies of the General Plan and serves as a guide for public policy, investment, and decision-making within each respective region. Together with the General Plan, they guide population and land use growth over a 20- to 25-year time span.

The project site is located within the region encompassed by the Wai'anae SCP. The Wai'anae SCP by the County DPP was last revised in 2012. The Plan's vision and implementing policies are oriented to maintaining and enhancing the region's ability to sustain its unique character, current population, growing facilities, rural lifestyle, and economic livelihood, all of which contribute to the region's vitality and future potential.

The project is consistent in supporting the applicable objectives and policies of the Wai'anae SCP described below.

Section 3.8.2 Policies Pertaining to Residential Lands

Section 3.8.2.1 Do Not Increase Lands Designated "Residential"

For the foreseeable future, there should be no increase in lands designated for Sustainable Communities Plan "Residential" in the Wa'ianae District. Existing undeveloped lands within the Community Growth Boundary should be sufficient to accommodate infill housing development that may be needed over the next 25+ years.

Section 3.8.4 Relation to Land Use Map

Residential lands are part of the Rural Residential lands illustrated on the Land Use Map. These development lands are bounded by the Community Growth Boundary, and include existing residential uses, small-scale commercial and industrial uses, institutional uses, and undeveloped residentially-zoned lands suitable for "infill" development. Also included in this land use designation are as yet undeveloped Residentially-zoned lands in Makaha Valley. The Makaha

Special Area Plan recommends that these parcels be developed at a lower density than their current zoning allows.

Section 4.7.2 Policies Pertaining to Civic, Public Safety, and Educational Facilities

Section 4.7.2.1 Improve Quality of Facilities and Adequacy of Staffing

There is a need for improvements in both the quality of public facilities and the level of staffing for some of these facilities. Specifically, the Wai'anae Satellite City Hall needs to be improved in terms of staffing, programs, equipment, and maintenance. The Wai'anae Police Station needs more manpower. Adequate police services are critical to the safety and welfare of Wai'anae's people.

Section 4.7.2.3 Consider Multi-Purpose Function of Schools

School planners should consider the multipurpose role of schools in the community. Thus, in addition to classroom education, schools in many communities throughout the State provide other functions and facilities that are important to the community, including after school programs, meeting places for adult education and special programs, meeting places for community groups and health and fitness classes. Schools are also the primary emergency shelters during hurricanes, tsunami, or other large-scale emergency events. Recognizing these diverse functions of public schools, new schools should be sited in centralized locations that are easily accessible to a large number of residents.

Section 4.7.3 Guidelines for Civic, Public Safety and Educational Facilities

Section 4.7.3.1 Design Standards

Public buildings, whether designed and constructed by federal, state, or city agencies or by other quasi-public entities, should be designed to be both functionally efficient and aesthetically pleasing. Too many public buildings on O'ahu, including police stations, fire stations, and schools, have been designed with insufficient attention to sound design principals, which should include:

- *The use of building forms and materials that reflect Hawai'i's diverse cultural and architectural heritage.*
- *The predominantly residential scale of the built environment of the Wai'anae District. Massive building forms would not be compatible with this residential scale.*
- *The hot, dry climate of the coastal plain zone of the Wai'anae District. Public buildings should therefore incorporate "natural" cooling devices including lanais, wide roof overhangs, natural air circulation, strategically placed shade trees, and cooler colors for exterior walls.*
- *Related open areas including front yard areas, parking lots, playgrounds, and garden spaces should be generously planted with colorful trees, shrubs, and groundcovers. Drought-tolerant native plant species should be favored.*
- *Sea level rise should be taken into account when choosing the location of a public building, especially emergency facilities.*
- *Design new public buildings, such as schools and recreation centers, to serve a secondary function as an emergency shelter.*

Discussion

The project site is designated as an elementary school in Rural Residential lands on the Wai'anae SCP Land Use Map (*Figure 1-5*). The Rural Residential designation includes single family homes, town homes, small two-story apartment buildings, and various relatively low density community support facilities that are permitted, including schools and churches. The project is located within the designated Community Growth Boundary and will not increase lands designated as "residential." The new buildings will be located within the existing Wai'anae Elementary School campus, and will be consistent with the existing developments bounded by the Community Growth Boundary as an institutional use.

The administration building will include conference rooms and a Parent-Community Network Center, and the student support center will also provide conference rooms that will be multi-purpose in their function. However, neither building will be suitable for an emergency shelter since their primary purpose is for administration and student support and therefore will house private offices and confidential student files.

The new facilities will meet applicable development standards established in the LUO and additional design standards noted in Section 4.7.2.1 of the Wai'anae SCP. The designs of the administration building and student support center will fit with the character of Wai'anae Elementary School and will include appropriate architectural building forms and materials, such as earthy tones and palm trees, that reflect Hawai'i's diverse cultural and architectural heritage. The buildings will also incorporate generous overhangs and clerestory jalousies to keep internal building temperatures cool in Wai'anae's hot, dry climate. Landscaping will be incorporated to improve the visual character of the constructed site and area and may include the placement of species such as laua'e iki, 'a'ali'i, loulou palms, na'u, and thornless hala.

5.8 CITY AND COUNTY OF HONOLULU LAND USE ORDINANCE GUIDELINES

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

Discussion

The subject property is designated as R-5 Residential by the City and County of Honolulu's LUO (*Figure 1-4*). The intent of R-5 zoning district is to provide areas for urban residential development. Pursuant to Section 21-3.70-1 of the LUO, the use of this zoning district for Elementary School is permitted subject to approval of a CUP-minor application by the DPP.

5.9 SPECIAL MANAGEMENT AREA

The project area is not located within the Special Management Area (SMA) (*Figure 1-6*), which was established to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai'i. Special controls on development within the SMA are necessary to avoid permanent loss of valuable resources and foreclosure of management options. The review

Final Environmental Assessment

guidelines of Section 25-3.2 of the Revised Ordinances of Honolulu (ROH) are used by the Department of Planning and Permitting and the City Council for the review of developments proposed in the SMA. These guidelines are derived from Section 205A-26 HRS.

Discussion

The entire Wai'anae Elementary School Administration/Student Support Center project area is not within the SMA as delineated by the City and County of Honolulu, and as such does not require an additional review under State CZM and County SMA rules (*Figure 1-6*).

Section 6.0

FINDINGS SUPPORTING THE ANTICIPATED
DETERMINATION

6.0 FINDINGS SUPPORTING THE ANTICIPATED DETERMINATION

6.1 ANTICIPATED DETERMINATION

After reviewing the significance criteria outlined in Chapter 343, HRS, and Section 11-200-12, State Administrative Rules, Contents of EA, the project has been determined to not result in significant adverse effects on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated.

6.2 REASONS SUPPORTING THE ANTICIPATED DETERMINATION

The potential impacts of the Wai'anae Elementary School Administration/Student Support Center project have been fully examined and discussed in this EA. As stated earlier, there are no significant environmental impacts expected to result from the project. This determination is based on the assessments as presented below for criterion (1) to (13).

(1) Involve an irrevocable loss or destruction of any natural or cultural resources.

The archaeological and cultural landscapes have been documented in studies conducted specifically for the project area. As detailed in *Section 3.15* of this report, the project does not involve any known loss or destruction of existing natural, cultural, archeological or historical resources. The only specific area of concern is the unknown potential for the inadvertent discovery of subsurface historical or cultural resources, including the unknown possibility of iwi kūpuna (ancestral remains). A Literature Review was submitted to SHPD in October 2015 (Appendix C). In April 2016, SHPD requested additional information be provided to determine the project's potential impacts on architectural and/or subsurface archaeological properties. Therefore, a Reconnaissance Level Survey and an Archaeological Inventory Survey will be conducted in the near future for the project. Both studies will be submitted and accepted by SHPD prior to building permit approval.

If any cultural or archaeological resources are unearthed or ancestral remains are inadvertently discovered during construction of the project, the DLNR, SHPD, the O'ahu Island Burial Council representative and participating interests from lineal descendants and individuals will be notified. The treatment of these resources will be conducted in strict compliance with the applicable historic preservation and burial laws.

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

The project activities will not curtail the range of beneficial uses of the environment. Existing uses conform to existing land use designations. The project would actually increase beneficial uses of the area, by providing new facilities for administrative and student support staff to use which is appropriate for their needs. In addition, the new buildings will help to return instruction space which is currently being utilized as the school's administrative space.

Final Environmental Assessment

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

The project does not conflict 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.

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

The project will result in short-term economic benefits during construction that include direct, indirect, and induced employment opportunities and multiplier effects, but not at a level that would generate significant economic expansion. The project will also provide two new facilities on the campus that will improve the existing public educational service for Wai'anae students, their families, and the staff at the school.

- (5) *Substantially affects public health.*

The project is consistent with existing land uses and is not expected to affect public health. However, there will be temporary short-term impacts to air quality emanating from possible dust emissions and temporary degradation of the acoustic environment in the immediate vicinity resulting from construction equipment. The project will comply with State and City regulations during the construction period and best management practices will be used to minimize temporary impacts. Since the project will include the construction of two buildings at the school site, arrangements will be made to minimize the effects to surrounding areas on the campus.

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

The project will provide a new administration building, new student support center, and parking and circulation improvements on the Wai'anae Elementary School campus for existing students and staff at the school. The approval of the project will not have substantial secondary impacts, such as population changes or effects on public facilities.

- (7) *Involves a substantial degradation of environmental quality.*

The project will not involve a substantial degradation of environmental quality. Long-term impacts to air and water quality, noise, and natural resources would be minimal. The use of standard construction and erosion control BMPs will minimize the anticipated construction-related short-term impacts.

- (8) *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.*

The project is a small part of the overall Wai'anae Elementary School campus. Developing the facilities will not have a considerable effect upon the environment, and will not involve a precursor for other future actions.

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

The project area does not contain identified rare, threatened, or endangered species or habitat. No impact is anticipated.

(10) *Detrimentially affects air or water quality or ambient noise levels.*

General temporary impacts associated with construction are identified in Section 3.0 of this EA. Mitigation measures which are outlined in this EA will be applied during the on-going construction activity. No detrimental long-term impacts to air, water, or acoustic quality are anticipated with the project improvements. The improvements are not anticipated to detrimentally affect air or water quality or ambient noise levels.

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

The entire project site lies within Zones X (0.2% Annual Chance Flood) and XS (Outside of the 0.2% Annual Chance Floodplain) and lies outside of the designated tsunami zone (*Figure 1-7*). The project site is not located in an environmentally sensitive area, such as a flood plain, beach, erosion-prone area, geologically-hazardous land, estuary, fresh water or coastal water. The project improvements will comply with necessary requirements and codes. No impact is anticipated.

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

The project will be located on the existing Wai'anae Elementary School campus. While the sites of the new buildings are currently undeveloped, the addition of the new facilities will fit with the existing campus setting. The designs of the new buildings will blend with the historic architectural features of the campus. Landscaping will also be used to improve the visual character of the constructed site and area. There are no scenic vistas and view-planes identified in City or State plans within the project vicinity. No significant adverse impacts are anticipated.

(13) *Require substantial energy consumption.*

Construction of the project will not require substantial energy consumption relative to other similar projects. After the project is completed, energy will be conserved by the use of modern energy efficient equipment and fixtures, and sustainable design concepts.

6.3 SUMMARY

Based on the above findings, further consideration of the project's impacts through the preparation of an Environmental Impact Statement is not warranted. The EA recommends mitigation measures to alleviate impacts when such impacts are identified. A Finding of No Significant Impact (FONSI) is anticipated for this project.

Final Environmental Assessment

The project is consistent with the Hawai'i State Land Use District Boundaries; the Hawai'i State Plan and Functional Plans; the 2050 Sustainable Plan, the Hawai'i Coastal Zone Management Plan, the City's General Plan and Sustainable Communities Plan; the City's Zoning Ordinance, and the Special Management Area.

The project will have beneficial effects on the students, faculty, and staff of Wai'anae Elementary School by providing new administrative and student support facilities to better facilitate ongoing operations. Overall, the project will provide a public benefit while resulting in minimal impacts to the surrounding environment.

Section 7.0

LIST OF REFERENCES

7.0 LIST OF REFERENCES

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Section 8.0

LIST OF AGENCIES, ORGANIZATIONS AND
INDIVIDUALS RECEIVING COPIES OF THE EA

Final Environmental Assessment

8.0 LIST OF AGENCIES, ORGANIZATIONS AND INDIVIDUALS RECEIVING COPIES OF THE EA

Respondents and Distribution	Pre-Consultation	Pre-Consultation Comments Received	Receiving Draft EA	Comments Received	Receiving Final EA/ FONSI
Federal Agencies					
U.S. Fish and Wildlife Service	X	X	X		X
U.S. National Marine Fisheries Service			X		X
U.S. National Resources Conservation Service			X		X
State of Hawai'i Agencies					
Department of Accounting and General Services	X	X	X	X	X
Department of Agriculture	X		X		X
Department of Business, Economic Development & Tourism (DBEDT)	X		X		X
DBEDT, Energy Division	X		X		X
DBEDT, Strategic Industries Division			X		X
DBEDT, Office of Planning	X	X	X	X	X
Department of Education	X		X		X
Department of Hawaiian Home Lands	X		X		X
Department of Health (DOH)	X		X		X
DOH, Environmental Planning Office	X	X	X	X	X
Department of Human Services	X		X	X	X
Department of Land and Natural Resources (DLNR), Land Division	X	X	X	X	X
DLNR, Commission on Water Resources Management	X	X	X		X
DLNR, Engineering Division	X	X	X	X	X
DLNR, Land Division – O'ahu District	X	X	X	X	X
Department of Labor and Industrial Relations	X		X		X
DLNR, State Historic Preservation Division	X		X		X
Department of Transportation	X	X	X		X
Hawai'i Housing Finance and Development Corporation	X		X	X	X
Office of Hawaiian Affairs	X		X	X	X

WAI'ANA'E ELEMENTARY SCHOOL ADMINISTRATION/STUDENT SUPPORT CENTER

Final Environmental Assessment

Respondents and Distribution	Pre-Consultation	Pre-Consultation Comments Received	Receiving Draft EA	Comments Received	Receiving Final EA/ FONSI
City and County of Honolulu Agencies					
Board of Water Supply	X	X	X	X	X
Department of Community Services	X	X	X		X
Department of Design and Construction	X	X	X	X	X
Department of Environmental Services	X		X		X
Department of Facility Maintenance	X		X	X	X
Department of Planning and Permitting	X	X	X	X	X
Department of Parks and Recreation	X	X	X	X	
Department of Transportation Services	X		X	X	X
Fire Department	X	X	X	X	X
Police Department	X		X	X	X
Elected Officials					
Senator Maile Shimabukuro – State Senate District 21	X		X		X
Representative Jo Jordan – State House District 44	X		X		X
Councilmember Kymberly Marcos Pine – Honolulu City Council District 1	X		X		X
Libraries					
Hawai'i State Library, Hawai'i Documents Center	X		X		X
Wai'anae Public Library	X		X		X
Organizations, Individuals & Consulted Parties					
Hawaiian Electric Company	X	X	X		X
Wai'anae Coast Neighborhood Board No. 24	X		X		X

Appendix A

PRECONSULTATION LETTER, COMMENT LETTERS,
AND RESPONSES

Preconsultation Comments and Responses



November 6, 2015

Subject: Pre-Consultation for Chapter 343, HRS Environmental Assessment
Wai'anae Elementary School
TMK: (1) 8-5-001:067 and 8-5-009:018
(Wai'anae, O'ahu, Hawai'i)

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OF COUNSEL

Ralph E. Portmore
FAICP

Dear Participant:

On behalf of the State Department of Education, Group 70 International is currently undertaking the preparation of an Environmental Assessment pursuant to Chapter 343, Hawai'i Revised Statutes (HRS), for the proposed Wai'anae Elementary School project, located in Wai'anae, O'ahu, Hawai'i. A pre-consultation process is being conducted to engage agencies and interested parties in the environmental review process. Enclosed, for your review and comment, is a project information summary and overview of the proposed action.

Please provide comments via telephone, email, fax, or U.S. Mail regarding the scope of this environmental assessment. We would like to receive these comments no later than December 7, 2015. Comments received subsequent to this deadline will still be considered.

Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, HI 96813-4307
Attn: Christine Mendes Ruotola
Tel: (808) 523-5866 Ext. 121
Fax: (808) 523-5874

Thank you for your participation in the pre-consultation for this environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED AP
Principal

Enclosed: Pre-Consultation Handout

PROJECT INFORMATION SUMMARY

Project Name:	Wai'anae Elementary School Administration/ Student Support Center
Petitioner:	State of Hawai'i, Department of Education
Accepting Authority Ch. 343, HRS:	State of Hawai'i, Department of Education
Class of Action Ch 343, HRS:	The project will receive State funds and will be located on State and County lands
Project Location:	Wai'anae, O'ahu, Hawai'i
Tax Map Key:	(1) 8-5-001:067 and 8-5-009:018
Landowner:	State of Hawai'i and City and County of Honolulu
Project Area:	Approximately 2.6 acres within the 13.85-acre school campus
State Land Use District:	Urban District
Wai'anae Sustainable Communities Plan:	Institutional
City & County of Honolulu Zoning:	R-5 (Residential District)
Special Design District:	None
Special Management Area (SMA):	Not within the SMA
Anticipated Determination Ch. 343, HRS:	Finding of No Significant Impact (FONSI)

PROJECT SITE

The State Department of Education (DOE), is proposing two new buildings within the Wai'anae Elementary School Campus located in Wai'anae, O'ahu, Hawai'i. The project will be situated on Residential zoned lands located along McArthur Street (*Figure 1*). The school land is owned by the State of Hawaii and the City and County of Honolulu. The approximately 13.85-acre school campus is situated on TMK: (1) 8-5-1:067 and (1) 8-5-9:018 (*Figure 1-1*). The school is bounded directly by Plantation Road to the north, McArthur Street to the south and residential areas to the east and west.

OVERVIEW OF PLANNED PROJECT

The Waianae Elementary School project will provide a new administration building and student support center on the campus site to support the existing staff at Wai'anae Elementary School. The project will also include a drop off area, conversion of grass parking area to paved parking lot, and extension of the driveway to McArthur Street. These improvements will be completed in two separate phases.

The administration building will be built during phase I of the project and will be located on the northwest edge of the existing open field, opposite of the grassed parking area. The 8,000 square foot (sf) new building will provide a new working space for the Administrative staff at the school. Currently, the staff is working in an area that is technically designated for classroom space. The project will also help to provide a clear entryway to the front of the school and will enable staff to maintain a visual perspective of the overall campus.

The student support center will be built during phase II of the project and will be located to the east of the existing portables and west of the library. The student support center will consist of approximately 5,000 sf and will support daily and ongoing counseling and student support services. Phase II will also include a new one-way circulated parking area and an extension to McArthur Street which will provide a secondary exit for the school site.

PURPOSE OF ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) is being prepared pursuant to State laws. The EA will comply with Hawai'i's Environmental Review Process, Hawai'i Revised Statutes (HRS), Chapter 343, which requires that any program or project that uses State funds and State or County lands must undergo an environmental review. The EA examines the potential environmental impacts of the project and seeks agency and public comment on subject areas that should be addressed.



Project Location
WAI'ANAE ELEMENTARY SCHOOL



United States Department of the Interior



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

In Reply Refer To:
01EPIF00-2016-TA-0043

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, HI 96813-4307

DEC 09 2015

Subject: Technical Assistance for the Proposed Waianae Elementary School
Administration and Student Support Center Project, Waianae, O'ahu

Dear Ms. Mendes Ruotola:

The U.S. Fish and Wildlife Service received your letter on November 9, 2015, requesting our comments on the proposed Waianae Elementary School Administration and Student Support Center Project located on the island of O'ahu [TMKs: (1) 8-5-001:067 and 8-5-009:018]. We understand Group 70 International, Inc., on behalf of the State of Hawaii Department of Education, will be preparing the Draft Environmental Assessment in accordance with Chapter 343, Hawai'i Revised Statutes for the proposed project. The proposed project consists of constructing two new buildings for administration and student support, constructing a drop off area, converting a grass parking area to paved parking, and extending the driveway to McArthur Street. These improvements will be completed in two separate phases.

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawai'i Biodiversity and Mapping Program as it pertains to listed species and designated critical habitat in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). There is no federally designated critical habitat within the immediate vicinity of the proposed project. Our data indicate the federally endangered Hawaiian hoary bat or ope'ape'a (*Lasiurus cinereus semotus*) and the wedge-tailed shearwater or 'ua'u kani (*Puffinus pacificus*), a seabird protected under the Migratory Bird Treaty Act [16 U.S.C. 703-712] (MBTA), may occur within the vicinity of the proposed project. We offer the following comments for your consideration.

Hawaiian hoary bat

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and, while foraging, will leave young unattended in "nursery" trees and shrubs when they forage. If trees or shrubs suitable for bat roosting are cleared during the breeding season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. To minimize impacts to the endangered Hawaiian hoary bat, woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed during the bat birthing and pup

rearing season (June 1 through September 15). Site clearing should be timed to avoid disturbance to Hawaiian hoary bats in the project area.

Wedge-tailed shearwater

Outdoor lighting, such as street lights and night-time work, can adversely impact listed and migratory seabird species found in the vicinity of the proposed project. Seabirds fly at night and are attracted to artificially lighted areas which can result in disorientation and subsequent fallout due to exhaustion or collision with objects such as utility lines, guy wires, and towers that protrude above the vegetation layer. Once grounded, they are vulnerable to predators or often struck by vehicles along roadways. Wedge-tailed shearwater nesting colonies are located on offshore islets and several locations on Oahu and every year many young shearwaters are downed and struck along O'ahu roadways. Any increase in the use of night-time lighting, particularly during each year's peak fallout period (September 15 through December 15), could result in additional seabird injury or mortality.

If night-time work is proposed for your project, impacts to seabirds can be minimized by shielding outdoor lights to the maximum extent possible, eliminating night-time construction, and providing all project staff with information about seabird fallout. All lights, including street lights, should be shielded so the bulb can only be seen from below and use the lowest wattage bulbs possible. The project should address all potential impacts to seabirds and outline conservation measures to minimize these impacts.

If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance.

We appreciate your efforts to conserve listed species. If you have questions about our comments, please contact Leila Gibson, Fish and Wildlife Biologist (phone: 808-792-9400, email: leila_gibson@fws.gov).

Sincerely,



Aaron Nadig
Island Team Manager
O'ahu, Kaua'i, North Western Hawaiian Islands,
and American Samoa



March 29, 2016

Mr. Aaron Nadig
Island Team Manager
US Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

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Ralph E. Portmore
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Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anāe Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anāe, O'ahu

Dear Mr. Nadig:

Thank you for your comment letter received on December 9, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anāe Elementary School's improvements. The following responses are offered to your comments:

- 1) We acknowledge that there is no federally designated critical habitat within the immediate vicinity of the proposed project.
- 2) To minimize impacts to the endangered Hawaiian hoary bat, which may occur within the vicinity of the project, woody plants greater than 15 feet tall will not be disturbed, removed, or trimmed during the bath birthing and pup rearing season from June 1 – September 15.
- 3) In an effort to minimize potential impacts to wedge-tailed shearwaters, lighting for the project will be shielded. Construction activities will be limited to daylight hours. A discussion on lighting will be included in Section 3.5 *Flora and Fauna* of the Draft EA.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR



DOUGLAS MURDOCK
Comptroller

AUDREY HIDANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

DEC 22 2015



(P)1323.5

Ms. Christine Mendes Ruotola, AICP, LEED AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Mendes Ruotola:

Subject: Pre-Consultation for Environmental Assessment for
Waianae Elementary School
Waianae, Oahu, Hawaii
TMK: (1) 8-5-001: 067 and 8-5-005: 018

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, your staff may contact Ms. Gayle Takasaki of the Planning Branch at 586-0584.

Sincerely,

A handwritten signature in blue ink that reads "James K. Kurata".

JAMES K. KURATA
Public Works Administrator

GT:lmn



March 29, 2016

Mr. James K. Kurata
Public Works Administrator
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
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AIA, ASID, LEED AP

Hitoshi Hida
AIA

Roy H. Nihei
AIA, CSI, LEED AP

James I. Nishimoto
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Stephen Yuen
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Linda C. Miki
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AIA, LEED AP

Katherine M. MacNeil
AIA, LEED AP

Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anāe Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anāe, O'ahu

Dear Mr. Kurata:

Thank you for your comment letter dated December 22, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anāe Elementary School's improvements.

We acknowledge that the Department of Accounting and General Services has no comments to offer at this time.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII



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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

December 7, 2015

Group 70 International, Inc.
Attention: Ms. Christine Mendes Ruotola
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

via email: cruotola@group70int.com

Dear Ms. Mendes Ruotola:

SUBJECT: Pre-Consultation for Chapter 343, HRS Environmental Assessment,
Wai'anae Elementary School

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 the (a) Engineering Division, (b) Land Division – Oahu District, and (c) Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files



March 29, 2016

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

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

Norman G.Y. Hong
AIA

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RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anāe Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anāe, O'ahu

Dear Mr. Tsuji:

Thank you for your comment letter dated December 7, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anāe Elementary School's improvements.

Thank you for distributing the Pre-Consultation and providing comments from the O'ahu District, Engineering Division, and Commission on Water Resource Management. We have individually responded to the comments offered by each division. Responses will be sent directly to each division.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 13, 2015

MEMORANDUM

RECEIVED
LAND DIVISION
DEC 01
2015 NOV 31 AM 10:45
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

TO:

DLNR Agencies:

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

FR:

TO:

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Pre-Consultation for Chapter 343, HRS Environmental Assessment, Wai'anae Elementary School

LOCATION: TMK: (1) 8-5-001:067 and 8-5-009:018 (Wai'anae, O'ahu, Hawai'i)

APPLICANT: State Department of Education by its consultant Group 70 International, Inc.

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

Please submit any comments by December 4, 2015. 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: /s/ Jeffrey T. Pearson, P.E.

Print Name: Deputy Director

Date: November 30, 2015

FILE ID: BFD. A284.3

DOC ID: 135094



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

November 30, 2015

REF: RFD.4284.3

TO: Mr. Russell Tsuji, Administrator
Land Division Oahu, DLNR-LD

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

SUBJECT: Pre-Consultation for Chapter 343, HRS Environmental Assessment, Waianae Elementary School

FILE NO.: RFD.4284.3
TMK NO.: (1) 8-5-001:067 and 8-5-009:018

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

Our comments related to water resources are checked off below.

1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the 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.
- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER: The DEA should include a discussion of the potential impacts on water resources, as well as any impacts on cultural practices that are dependent on the water resources, that may arise if this project is pursued; any existing wells or other water sources located within the project area; projected water requirements for the project, both potable and non-potable, and the calculations used to derive the projected water needs; water conservation and efficiency measures that will be implemented; the proposed water sources, including any alternative sources of water that may be available to meet nonpotable needs; and BMPs for stormwater management.

If you have any questions, please contact Lenore Ohye of the Commission staff at 587-0216.



March 29, 2016

Mr. Jeffrey T. Pearson, P.E.
Land Administrator
State of Hawai'i
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

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Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Pearson:

Thank you for your comment letter dated November 30, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

1. We appreciate the resources and recommendations you have provided relating to LEED certification. The project will incorporate water efficient fixtures as appropriate.
2. We appreciate the resources you have provided relating to alternative water sourcing and Best Management Practices (BMP) for stormwater and CWRM recommended BMPs for stormwater management as regulated by the State Department of Health Clean Water Branch.
3. The project will use alternative water resources wherever practicable.
4. Section 3.6 of the Draft EA evaluates the project's potential impacts on water resources. In addition, an evaluation of the project's water system and storm drainage are included in Section 3.9.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 13, 2015

MEMORANDUM

To:

DLNR Agencies:

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

From:

RECEIVED
LAND DIVISION
2015 NOV 23 AM 6:15
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

To:

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Pre-Consultation for Chapter 343, HRS Environmental Assessment, Wai'anae Elementary School

LOCATION: TMK: (1) 8-5-001:067 and 8-5-009:018 (Wai'anae, O'ahu, Hawai'i)

APPLICANT: State Department of Education by its consultant Group 70 International, Inc.

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

Please submit any comments by **December 4, 2015**. 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: 11/20/15

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/ Russell Y. Tsuji

**REF: Pre-Consultation for HRS Chapter 343 EA for Wai'anae Elementary School
Oahu.077**

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 Zones XS and X. The National Flood Insurance Program regulates developments within Zone XS as indicated in bold letters below, but not Zone X.**
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ____.
- (X) **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.**

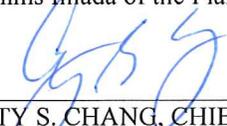
Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable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

- (X) **Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.**
- () Mr. Carter Romero (Acting) at (808) 961-8943 of the County of Hawaii, Department of Public Works.
- () Mr. Carolyn Cortez at (808) 270-7253 of the County of Maui, Department of Planning.
- () Mr. Stanford Iwamoto at (808) 241-4896 of the County of Kauai, Department of Public Works.
- (X) **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.**
- (X) **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: 11/20/15



Flood Hazard Assessment Report

www.hawaiiinfp.org

Property Information

COUNTY: HONOLULU
 TMK NO: (1) 8-5-001:067
 WATERSHED: KAUPUNI
 PARCEL ADDRESS: UNKNOWN ADDRESS
 WAIANAE, HI 96792

Notes:

Flood Hazard Information

FIRM INDEX DATE: JANUARY 19, 2011
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL: 15003C0183H
 PANEL EFFECTIVE DATE: NOVEMBER 05, 2014

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://dlnreng.hawaii.gov/dam/>



Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND (Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs 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 apply, but coverage is available in participating communities.
--	--



BASEMAP: FIRM BASEMAP



Flood Hazard Assessment Report

www.hawaiiinfip.org

Property Information

COUNTY: HONOLULU
 TMK NO: (1) 8-5-009:018
 WATERSHED: KAUPUNI
 PARCEL ADDRESS: 85-220 MCARTHUR ST
 WAIANAE, HI 96792

Notes:

Flood Hazard Information

FIRM INDEX DATE: JANUARY 19, 2011
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL: 15003C0183H
 PANEL EFFECTIVE DATE: NOVEMBER 05, 2014

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://dlnreng.hawaii.gov/dam/>



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FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND

(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs 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 apply, but coverage is available in participating communities.
--	---



March 29, 2016

Mr. Carty S. Chang
Chief Engineer
State of Hawai'i
Department of Land and Natural Resources
Engineering Division
1151 Punchbowl Street, Room 221
Honolulu, HI 96813

PRINCIPALS

Francis S. Oda, Arch.D.,
FAIA, AICP, LEED AP

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Ma Ry Kim
RIBA, ARB

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Chang:

Thank you for your comment letter dated November 20, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments.

1. We acknowledge that the project site is located in Zones XS and X. Zone XS is an area that has moderate flood hazard and is outside the Special Flood Hazard Area between the limits of the base flood and the 0.2 percent annual chance flood.
2. We note that development of the project must comply with the rules and regulations of the National Flood Insurance Program.
3. The Draft EA will include water demands and necessary infrastructure requirements. We acknowledge that any State-sponsored project requiring water service from the Honolulu Board of Water Supply must obtain water allocation credits from the Engineering Division before receiving a building permit and/or water meter.
4. Water demands and calculations will be provided to the Engineering Division for inclusion in the State Water Projects Plan Update.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

OF COUNSEL

Ralph E. Portmore
FAICP



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

November 13, 2015

MEMORANDUM

From: DO

DLNR Agencies:

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

to: FRM:

SUBJECT:

Russell Y. Tsuji, Land Administrator
Pre-Consultation for Chapter 343, HRS Environmental Assessment, Wai'anae Elementary School

LOCATION:

TMK: (1) 8-5-001:067 and 8-5-009:018 (Wai'anae, O'ahu, Hawai'i)

APPLICANT:

State Department of Education by its consultant Group 70 International, Inc.

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

Please submit any comments by **December 4, 2015**. 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:

WE UNDERSTAND THAT THERE IS NO EXECUTIVE ORDER ISSUED OVER THE STATE LAND PORTION, AND WE WILL WORK WITH DOE IN SECURING A PROPER LAND DISPOSITION OVER THE STATE LANDS. WE HAVE NO OTHER COMMENTS.

Signed: *T. Chee*
Print Name: *Tina Chee*
Date: *Nov 24, '15*



March 29, 2016

Mr. Timothy Chee
Land Administrator
State of Hawai'i
Department of Land and Natural Resources
Land Division – O'ahu District
1151 Punchbowl Street, Room 220
Honolulu, HI 96813

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PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Chee:

Thank you for your comment letter dated November 24, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements.

We note that the Land Division – O'ahu District will work with the Department of Education in securing a proper land disposition over the State-owned portion of the property.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

EPO 15-289

November 13, 2015

RECEIVED

Ms. Christine Mendes Ruotola
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

NOV 18 2015

GROUP 70 INTL

Dear Ms. Mendes Ruotola:

SUBJECT: Pre-Consultation (PC) for Waianae Elementary School
TMK: (1) 8-5-001:067 and 8-5-005:018

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PC to our office on November 12, 2015. Thank you for allowing us to review and comment on the proposed project. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: <http://health.hawaii.gov/epo/landuse>. Projects are required to adhere to all applicable standard comments.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: <https://eha-cloud.doh.hawaii.gov>

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

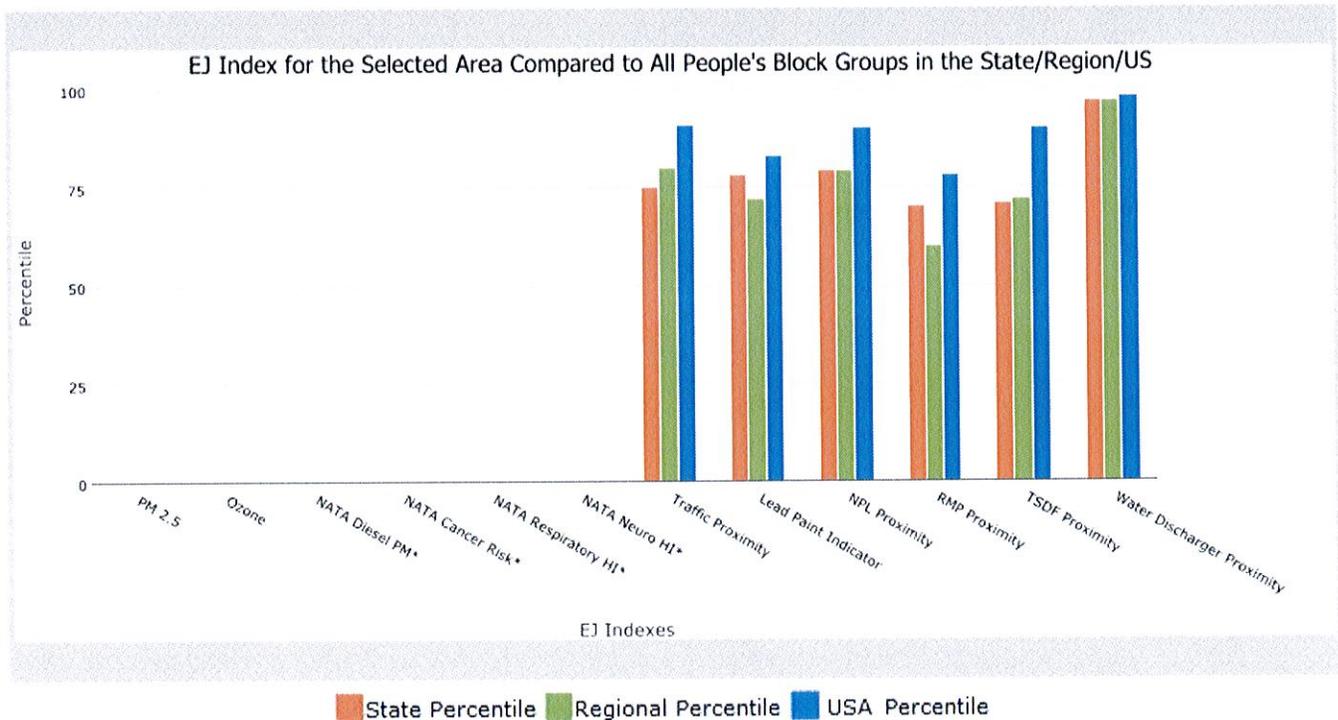
LM:nn

Attachment: U.S. EPA EJSCREEN Map 3 page report - <http://www2.epa.gov/ejscreen>

for 1 mile Ring Centered at 21.446309,-158.185137, HAWAII, EPA Region 9

Approximate Population: 8852

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	75	80	91
EJ Index for Lead Paint Indicator	78	72	83
EJ Index for Proximity to NPL sites	79	79	90
EJ Index for Proximity to RMP sites	70	60	78
EJ Index for Proximity to TSDFs	71	72	90
EJ Index for Proximity to Major Direct Dischargers	97	97	98



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report

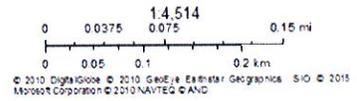


for 1 mile Ring Centered at 21.446309,-158.185137, HAWAII, EPA Region 9

Approximate Population: 8852



November 13, 2015
+ Digitized Point



EJSCREEN Report



for 1 mile Ring Centered at 21.446309,-158.185137, HAWAII, EPA Region 9

Approximate Population: 8852

Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	46.1	N/A
NATA Diesel PM ($\mu\text{g}/\text{m}^3$) [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million) [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index [*]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	120	280	60	190	60	110	77
Lead Paint Indicator (% Pre-1960 Housing)	0.16	0.17	58	0.25	51	0.3	43
NPL Proximity (site count/km distance)	0.078	0.092	67	0.11	62	0.096	66
RMP Proximity (facility count/km distance)	0.084	0.18	42	0.41	17	0.31	28
TSDF Proximity (facility count/km distance)	0.053	0.092	42	0.12	45	0.054	74
Water Discharger Proximity (facility count/km distance)	0.88	0.33	93	0.19	97	0.25	94
Demographic Indicators							
Demographic Index	65%	51%	89	46%	77	35%	86
Minority Population	92%	77%	78	57%	85	36%	92
Low Income Population	38%	25%	80	35%	60	34%	62
Linguistically Isolated Population	6%	6%	64	9%	48	5%	73
Population With Less Than High School Education	18%	10%	85	18%	59	14%	70
Population Under 5 years of age	8%	6%	75	7%	66	7%	71
Population over 64 years of age	11%	14%	34	12%	56	13%	45

* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <http://www.epa.gov/ttn/atw/natamain/index.html>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.



March 29, 2016

Ms. Laura Leialoha Phillips McIntyre, AICP
Program Manager
State of Hawai'i
Department of Health, Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801

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OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Ms. McIntyre:

Thank you for your comment letter dated November 13, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

1. We have reviewed the applicable standard comments and strategies from your office. The project will take appropriate measures prior to and during project construction to control fugitive dust emissions; possibly seeking approval of "no further action" by the Hazard Evaluation and Emergency Response Office; and comply with regulatory standards and approvals for noise emission, safe drinking water; solid waste management, and wastewater management.
2. We have also reviewed the data provided in the Environmental Health Portal, Water Quality Standards Maps, and other various sources and recommended strategies to support the sustainable and healthy design of communities and buildings. We have reviewed the resources provided to verify our environmental impact analysis and mitigation recommendations in the EA.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR



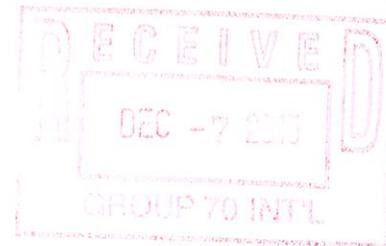
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:
STP 8.1901

November 25, 2015



Ms. Christine Mendes Ruotola, AICP, LEED, AP
Principal
Group 70 International
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

Subject: Waianae Elementary School Expansion
Pre-Assessment Consultation for Environmental Assessment
Waianae, Hawaii
TMK: (1) 8-5-001:067 and 8-5-009:018

The Draft Environmental Assessment (DEA) should discuss and evaluate the project's contribution to the cumulative traffic impacts on State highways facilities in the area.

If there are any questions, please contact Mr. Norren Kato of the DOT Statewide Transportation Planning Office at telephone number (808) 831-7976.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ford N. Fuchigami".

FORD N. FUCHIGAMI
Director of Transportation



March 29, 2016

Mr. Ford N. Fuchigami
Director
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

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RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anāe Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anāe, O'ahu

Dear Mr. Fuchigami:

Thank you for your comment letter dated November 25, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anāe Elementary School's improvements.

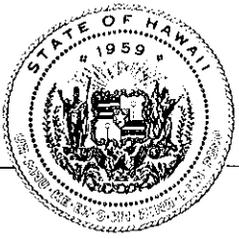
Section 3.12 of the Draft EA provides a discussion of existing traffic in the project area, as well as an evaluation of the potential impacts the project may have on State Highway facilities in the area.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal



OFFICE OF PLANNING STATE OF HAWAII

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

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
ACTING DIRECTOR
OFFICE OF PLANNING

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

Ref. No. P-14961

November 25, 2015

Ms. Christine Mendes Ruotola, AICP LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

Subject: Pre-Assessment Consultation for the Waianae Elementary School
Administration / Student Support Center; TMK: (1) 8-5-001:067 and (1)
8-5-009:018

Thank you for the opportunity to provide comments on the pre-assessment consultation request for the Waianae Elementary School Administration Building and Student Support Service Center project. The pre-consultation review material was transmitted to our office by letter dated November 6, 2015.

It is our understanding that this project will provide Waianae Elementary School with a new administration building and a student support center. The new facilities will include a new drop off area, conversion of a grass parking area to a paved one, and create an extension of the driveway to McArthur Street.

The first phase of the project involves the development of the administration building. This will be located on the northwest edge of the campus on the existing grass field. This new 8,000 square foot building will provide new working space for administrative staff, affords a clear entryway to the school, and enables school staff a greater view of visitors and students on campus.

The student support center will be built in the second phase of the project. The center will be located to the east of the existing portables and west of the library. This will be a 5,000 square foot building and will house counseling and support services. During this phase, a new one-way circulating parking area and extension to McArthur Street will also be built, which will provide a secondary exit to the campus.

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

1. Pursuant to the Hawaii Administrative Rules (HAR) § 11-200-10(4) – general description of the action’s technical, economic, social, and environmental characteristics; this project must demonstrate that it is consistent with a number of state environmental, social, and economic goals and policies for land-use and housing development. OP provides technical assistance to state and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Plan provides goals, objectives, policies, and priority guidelines for growth, development, and the allocation of resources throughout the State in areas of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, climate change adaptation, and sustainability.

The Draft Environmental Assessment (Draft EA) should include an analysis that addresses whether the proposed project conforms or is in conflict with the goals, objectives, policies, and priority guidelines listed in the Hawaii State Plan.

2. The coastal zone management area is defined as “all lands of the State and the area extending seaward from the shoreline to the limit of the State’s police power and management authority, including the U.S. territorial sea” see HRS § 205A-1 (definition of "coastal zone management area").

HRS Chapter 205A requires all State and county agencies to enforce the coastal zone management (CZM) objectives and policies. The Draft EA should include an assessment as to how the proposed project conforms to the CZM objectives and its supporting policies set forth in HRS § 205A-2. The assessment on compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343. These objectives and policies include recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

3. Pursuant to HAR § 11-200-10(6) – identification and summary of impacts and alternatives considered; in order to ensure that the coastal resources of the Leeward coastline of Oahu remain protected, the negative effects of stormwater inundation ensuing from development activities should be evaluated in the Draft EA. Typically, drainage canals, as well as rain gutters built within roadways, serve to transport rain inundation offsite to collection areas. These drainage systems ultimately connect to the ocean. During heavy storm events, stormwater can transport sediment, land-based

pollutants, toxicant-load contributions to storm drain canals and ultimately into nearshore waters.

The Draft EA should examine potential benefits and/or negative impacts resulting from this project on coastal and marine resources. Issues that may be examined in the Draft EA include, but are not limited to, project site characteristics in relation to erosion controls on flood prone areas, undeveloped open spaces, and the absorption characteristics of the soil. Furthermore, it should differentiate between the existing permeable surfaces versus hardened surfaces in the area. These items, as well as the marine water quality classification, should be considered when developing mitigation measures to protect the coastal ecosystem.

The enclosed map of this project, as well as resources available to us, indicate that this project is located approximately 1/3 of a mile from Pokai Bay and 900 feet from Kaupanui Stream. The campus is located in an urban/residential setting, that has a mixture of residential homes, commercial areas, mixed-light industrial uses, and numerous roadways that run throughout the area. It appears that the area has limited drain gutters along the adjacent roadways, and it is unclear what drainage infrastructure is present on the school campus.

The Draft EA should examine the cumulative impact on coastal resources from land-based polluted runoff and sediment loss. It should take into account any of the natural features in the area, the nearby Piliaau Park, undeveloped open spaces, down-sloping topography, hardened non-permeable surfaces that have a cumulative effect on the volume and speed of storm runoff, and any existing drainage infrastructure that may directly connect the school campus to the coastline.

Furthermore, since this project involves the creation of a parking lot on an area that is currently a grassed area, please consider the use of permeable surfaces, vegetated filter strips, rain gardens, and landscaping to treat the water in place, rather than allow the rainfall to flow into storm drains or pond on the proposed driveway or parking lot. Permeable parking lot materials, such as porous concrete pavers, will allow rainfall to be filtered on site, rather than to sheet flow offsite and ultimately inundate the marine resources of Pokai Bay and the rest of the Leeward Coastline.

OP has a number of resources available to assist in the development of projects which ensure sediment and stormwater control on land, thus protecting the nearshore environment. OP recommends consulting these guidance documents and stormwater evaluative tools when developing strategies to address polluted runoff. They offer

Ms. Christine Mendes Ruotola, AICP LEED AP
Principal
November 25, 2015
Page 4

useful techniques to keep land-based pollutants and sediment in place and prevent contaminating nearshore waters, while considering the practices best suited for this project. These three evaluative tools that should be used during the design process include:

- Hawaii Watershed Guidance provides direction on mitigation strategies in urban areas that will safeguard Hawaii's watersheds and implement watershed plans http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/Hi_Watershed_Guidance_Final.pdf
- Stormwater Impact Assessments can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff, as well as consider secondary and cumulative impacts to the area
http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_imapct/final_storm_water_impact_assessments_guidance.pdf
- Low Impact Development (LID), A Practitioners Guide covers a range of structural best management practices (BMP's) for stormwater control management, roadway development, and urban layout that minimizes negative environmental impacts
http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

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

Sincerely,



Leo R. Asuncion
Acting Director



March 29, 2016

Mr. Leo R. Asuncion
Acting Director
State of Hawai'i
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

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Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Asuncion:

Thank you for your comment letter dated November 25, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

- 1) Section 5.1 of the Draft EA includes an analysis of the project's conformance with HRS Chapter 225, the Hawai'i State Plan.
- 2) The Draft EA includes an assessment of the project's conformance with Coastal Zone Management objectives and policies, and the project's potential impacts on coastal and marine resources in Section 5.4 *Hawai'i Coastal Zone Management Program*.
- 3) We appreciate the recommendations you have provided in regards to permeable surfaces and low impact development strategies for the proposed parking lot. The project will implement these strategies to the extent feasible.
- 4) We appreciate the online guidance documents and resources you have provided related to watershed guidance, stormwater impact assessments, and Low Impact Development strategies. The Wai'anae Elementary School improvements will employ Best Management Practices where feasible.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

OF COUNSEL

Ralph E. Portmore
FAICP

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



November 27, 2015

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair
ADAM C. WONG, Vice Chair
DAVID C. HULIHEE
KAPUA SPROAT
BRYAN P. ANDAYA

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

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

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

Ms. Christine Mendes Ruotola
Group 70 International
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813

Dear Ms. Ruotola:

Subject: Your Letter Dated November 6, 2015 Requesting Pre-Consultation Comments on the Draft Environmental Assessment for the Proposed Waianae Elementary School Project in Waianae – Tax Map Keys: (1) 8-5-001: 067 and 8-5-005: 018

Thank you for your letter regarding the proposed project at Wai'anae Elementary School.

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

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

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



March 29, 2016

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

PRINCIPALS

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Hitoshi Hida
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Katherine M. MacNeil
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Tom Young, MBA
AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Lau:

Thank you for your comment letter dated November 27, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements.

We note that the existing water system is adequate to accommodate the proposed development. We also acknowledge that when water is made available, the Department of Education will be required to pay the Water System Facilities Charges for resource development, transmission, and daily storage at the project site.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

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



GARY K. NAKATA
DIRECTOR

BARBARA YAMASHITA
DEPUTY DIRECTOR

December 1, 2015



Ms. Christine Mendes Ruotola
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

SUBJECT: Pre-consultation for Chapter 343, HRS Environmental Assessment
Waianae Elementary School
TMK: (1) 8-5-001:067 and 8-5-005:018
Waianae, Oahu, Hawaii

We have reviewed your letter dated November 6, 2015, and the enclosed pre-consultation handout.

Our review of the documents provided indicates the proposed project 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,


Gary K. Nakata
Director

GKN:jc



March 29, 2016

Mr. Gary K. Nakata
Director
City and County of Honolulu
Department of Community Services
715 South King Street, Suite 311
Honolulu, HI 96813

PRINCIPALS

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Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Nakata:

Thank you for your comment letter dated December 1, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements.

We acknowledge that the project will have no adverse impacts on any of the Department of Community Services' activities or projects.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR



ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

December 3, 2015



Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Attn: Christine Mendes Ruotola, AICP, LEED AP

Dear Ms. Ruotola:

Subject: Pre-Consultation for Environmental Assessment
Waianae Elementary School
Tax Map Key: (1) 8-5-001:067 and 8-5-005:018

The Department of Design and Construction does not have comments to offer on the pre-consultation.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Kroning".

Robert J. Kroning, P.E.
Director

RJK: cf (631712)



March 29, 2016

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

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Tom Young, MBA
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Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Kroning:

Thank you for your comment letter dated December 3, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements.

We acknowledge that the Department of Design and Construction has no comments to offer on the project.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

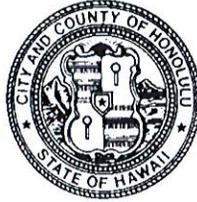
Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

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

KIRK CALDWELL
MAYOR



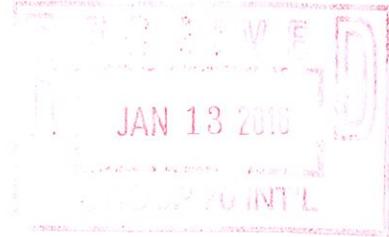
ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 15-937

January 11, 2016

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307



Dear Ms. Ruotola:

SUBJECT: Pre-Consultation for Chapter 343, HRS Environmental Assessment
Wai'anae Elementary School
TMK: (1) 8-5-001:067 and 8-5-005:018
(Wai'anae, O'ahu, Hawai'i)

Thank you for the opportunity to review and provide our input regarding your letter dated November 6, 2015, on the above-subject project.

Our comments are as follows:

- Once construction phase commences, install approved Best Management Practices (BMPs) fronting all drainage facilities, such as drainage inlets along Plantation Road and McArthur Street.
- During construction and upon completion of the project, any damages/deficiencies to Plantation Road and McArthur Street right-of-ways shall be corrected to City standards and accepted by the City.
- The contractor shall be responsible for clearing storm drain facilities to mitigate flooding during construction and removing BMPs upon completion of the project.

If you have any questions, please contact Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

A handwritten signature in black ink, appearing to read "Ross S. Sasamura".

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



March 29, 2016

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

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Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Sasamura:

Thank you for your comment letter dated January 11, 2016 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

1. Once the project is under construction, Best Management Practices (BMPs) fronting all drainage facilities, such as drainage inlets along Plantation Road and McArthur Street will be installed.
2. We note that any damages or deficiencies to Plantation Road and McArthur Street right-of-ways shall be corrected to City Standards and accepted by the City.
3. We acknowledge that the contractor is responsible for clearing storm drain facilities to mitigate flooding during construction and removing BMPs once the project is completed.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

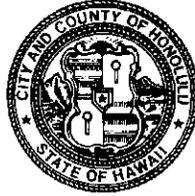
A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
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KIRK CALDWELL
MAYOR



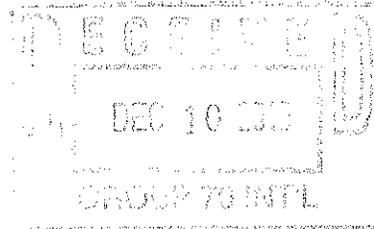
GEORGE I ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2015/ELOG-2413 (TB)

December 8, 2015

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813



Dear Ms. Ruotola:

Thank you for your letter dated November 6, 2015, regarding pre-assessment consultation in preparation of a Draft Environmental Assessment (DEA) for Waianae Elementary School. Our office has the following comments:

1. The DEA should include a discussion of the consistency of the project with the Oahu General Plan and the Waianae Sustainable Communities Plan.
2. The DEA should list all permits required from the City and County.
3. The DEA should address drainage and storm water quality impacts.
4. A Sewer Connection Application is required for the project. Sewage capacity reservation is contingent on submittal and approval of a Site Development Division Master Application Form for Sewer Connection. This project may be liable for payment of the Wastewater System Facility Charge.
5. A traffic assessment should be prepared and an analysis should be conducted such that all drop-off and pick-up activities can be contained within the school site and not queue or stage on public streets. The new drop-off area and extension of the driveway to McArthur Street should be designed to accommodate all school-related activities within the school property.

Should you have any questions, please contact Thomas Blair at 768-8030.

Very truly yours,


George I. Atta, FAICP
Director

GIA:kms



March 29, 2016

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

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Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Atta:

Thank you for your comment letter dated December 8, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

- 1) Section 5.0 of the Draft EA provides a discussion of the project's consistency with various plans and policies, including the O'ahu General Plan and the Wai'anae Sustainable Communities Plan.
- 2) The Draft EA lists all permits required from the City and County as well as the State of Hawai'i in *Section 1.5 Permits and Approvals Required*.
- 3) Drainage and storm water quality impacts as a result of the project are evaluated and discussed in *Section 3.8 Utilities and Infrastructure*.
- 4) We acknowledge that a Sewer Connection Application is required for the project. We also note that the project may be liable for Wastewater System Facility Charges.
- 5) A traffic evaluation was prepared for the project, and is included in Appendix B of the Draft EA. Section 3.11 *Traffic and Roadways* provides an analysis of the project's anticipated impacts to McArthur Street and Plantation Road and recommended mitigation measures to optimize traffic flow in the neighborhood.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR



MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

November 16, 2015

RECEIVED

NOV 20 2015

GROUP 70 INTL

Ms. Christine Mendes Ruotola
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Ms Ruotola:

SUBJECT: Environmental Assessment Pre-consultation
Waianae Elementary School Administration/Student Support
Center, Waianae Elementary School
TAX Map Key: (1) 8-5-001:067 and 8-5-009:018

Thank you for the opportunity to review and comment at the pre-stage of the Consultation on the Environmental Assessment for the proposed Waianae Elementary School Administration/Student Support Center.

The Department of Parks and Recreation has no comment. As the proposed project will have no impact on any of our programs or facilities, 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,

A handwritten signature in black ink that reads "Michele K. Nekota". The signature is written in a cursive style.

Michele K. Nekota
Director

MKN:jr
(631738)



March 29, 2016

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

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AIA

Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Ms. Nekota:

Thank you for your comment letter dated November 16, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements.

We acknowledge that the Department of Parks and Recreation has no comments to offer on the project. As requested, we will also remove the Department of Parks and Recreation as a consulted party for this EA.

Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, THIRD 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

TP11/15-631695R

November 25, 2015

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

SUBJECT: Pre-Consultation for Environmental Assessment (EA), Waianae
Elementary School, Waianae, Oahu, Hawaii

In response to your letter dated November 6, 2015, we have the following comments:

1. The EA should evaluate whether improvements and facilities are needed to aid vehicular, pedestrian, bicycle and public transportation circulation by implementing complete streets principles.
2. The EA should discuss traffic and parking impacts which the project may have on the surrounding streets, including short-term impacts during construction, and necessary measures to mitigate these impacts.
3. Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.), but not during school dismissal periods for the safety of the students and to minimize any possible disruption to the local streets.
4. All access driveways to the project site should be designed with the highest pedestrian and bicycle safety measures.
5. The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheBus), etc., should be kept apprised of the details of the proposed

Ms. Christine Mendes Ruotola, AICP, LEED AP
November 25, 2015
Page 2

project and the impacts to the local streets during construction, such as travel delays related to bus operations and drop off/pick up of children.

6. A street usage permit from the City's Department of Transportation Services should be obtained for any construction-related work that may require the temporary closure of any traffic lane on a City street.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,


Ses Michael D. Formby
Director



March 29, 2016

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

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Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Formby:

Thank you for your comment letter dated November 25, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

- 1) The project will include new buildings within the existing campus of the school. Proposed parking and driveway improvements at the campus are shown in conceptual plans of Section 2 of the Draft EA. Complete streets principles will be considered for Phase II of the project.
- 2) Section 3.11 *Traffic and Roadways* and 3.12 *Parking* of the Draft EA will include discussion on existing traffic and parking as well as expected impacts and proposed mitigation measures.
- 3) Restrictions on the movement of construction materials and equipment to off-peak hours (and avoidance of the dismissal periods) will be included in the project construction plans and specifications.
- 4) Access driveways to the project site will be designed to meet current standards, including pedestrian and bicycle safety measures, and will be submitted to the City for review and approval.
- 5) While significant traffic-related impacts during construction are not expected, the Neighborhood Board, area residents, businesses, emergency responders, and others will be kept apprised of the project.
- 6) The project will obtain a street usage permit from the Department of Transportation Services for construction related work that may require the temporary closure of any part of a city street.

Letter to Mr. Michael Formby, Director
Department of Transportation Services
March 11, 2016
Page 2 of 2

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

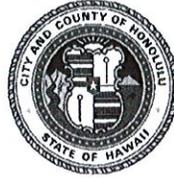
A handwritten signature in black ink that reads "Christine Mendes Ruotola". The signature is written in a cursive, flowing style.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

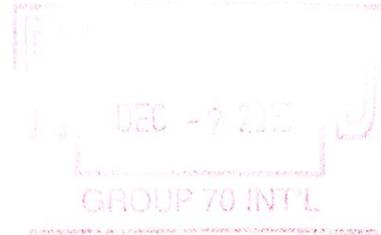
KIRK CALDWELL
MAYOR



MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

December 2, 2015



Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

Subject: Preconsultation for Chapter 343, Hawaii Revised Statutes Environmental
Assessment
Waianae Elementary School
Tax Map Keys: 8-5-001: 067 and 8-5-005: 018

In response to your letter dated November 6, 2015, 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]TM, 2006 Edition, Section 18.2.3.2.2.)

A fire department access road shall extend to within 50 feet (15 m) of at least one exterior door that can be opened from the outside and provides access to the interior of the building. (NFPA 1, UFCTM, 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

Ms. Christine Mendes Ruotola, AICP, LEED AP
Page 2
December 2, 2015

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 contact Battalion Chief Terry Seelig of our Fire Prevention Bureau at 723-7151 or tseelig@honolulu.gov.

Sincerely,



SOCRATES D. BRATAKOS
Assistant Chief

SDB/SY:bh



March 29, 2016

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

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Tom Young, MBA
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Paul T. Matsuda
PE, LEED AP

Ma Ry Kim
RIBA, ARB

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Chief Bratakos:

Thank you for your comment letter dated December 2, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements. The following responses are offered to your comments:

- 1) Fire department access roads will be provided for the project per the 2006 Edition of the National Fire Protection Association Uniform Fire Code.
- 2) A water supply approved by the County, will be provided to all premises. When any portion of the facility or building is in excess of 150 feet from a water supply on a fire apparatus access road, on-site fire hydrants and mains will be provided.
- 3) Civil drawings will be submitted to HFD for review and approval.

We will provide your office with a copy of the Draft EA for your review. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

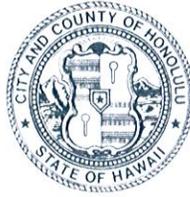
Christine Mendes Ruotola, AICP, LEED-AP
Principal

OF COUNSEL

Ralph E. Portmore
FAICP

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
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KIRK CALDWELL
MAYOR

LOUIS M. KEALOHA
CHIEF

MARIE A. McCAULEY
CARY OKIMOTO
DEPUTY CHIEFS

OUR REFERENCE MT-DK

November 17, 2015

RECEIVED

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

NOV 20 2015

GROUP 70 INTL

Dear Ms. Ruotola:

This is in response to your letter dated November 6, 2015 requesting comments on the Pre-consultation for an Environmental Assessment for the Waianae Elementary School project.

Based on the information provided, this project should have no significant impact on the services or operations of the Honolulu Police Department at this time.

If there are any questions, please call Major Kurt Kendro of District 8 (Kapolei) at 723-8403.

Thank you for the opportunity to review this project.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By 
MARK TSUYEMURA,
Management Analyst VI
Office of the Chief



March 29, 2016

Mr. Louis M. Kealoha
Chief of Police
City and County of Honolulu
Police Department
801 South Beretania Street
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OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anāe Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anāe, O'ahu

Dear Chief Kealoha:

Thank you for your comment letter dated November 17, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anāe Elementary School's improvements.

We acknowledge that the project should have no significant impact on the Honolulu Police Department's services or operations.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

From: Liu, Rouen [<mailto:rouen.liu@hawaiianelectric.com>]
Sent: Tuesday, December 08, 2015 5:54 PM
To: GROUP 70 INT MAIL
Cc: Kuwaye, Kristen
Subject: Waianae Elementary School- pre assessment consultation Draft EA

Dear Ms. Christine Mendes Ruotola,

Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should HECO have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities.

We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Waianae Elementary School Project comes to fruition, please continue to keep us informed. Further along in the design, we will be better able to evaluate the effects on our system facilities.

If you have any questions, please call me at 543-7245.

Sincerely,
Rouen Q. W. Liu
Permits Engineer
Tel: (808) 543-7245
Email: Rouen.liu@hawaiianelectric.com



March 29, 2016

Mr. Rouen Q.W. Liu
Permits Engineer
Hawaiian Electric Company
rouen.liu@hawaiianelectric.com

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OF COUNSEL

Ralph E. Portmore
FAICP

Subject: Chapter 343, HRS Environmental Assessment (EA)
Response to Pre-Consultation Comment Letter
Wai'anae Elementary School Campus Improvements
TMK: (1) 8-5-001:067 and 8-5-005:018, Wai'anae, O'ahu

Dear Mr. Liu:

Thank you for your email sent December 8, 2015 concerning the Pre-Consultation for Chapter 343, Hawai'i Revised Statutes (HRS) Environmental Assessment (EA) for Wai'anae Elementary School's improvements.

We acknowledge that Hawaiian Electric Company has no objection to the project. Should HECO have existing easements and facilities on the property, access for maintenance will continue to be provided.

We will provide your office with a copy of the Draft EA for your review. Per the requirements under the State environmental review process, the Draft EA will undergo a 30-day public review period. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

Draft EA Comments and Responses

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



May 5, 2016

KIRK CALDWELL, MAYOR

DUANE R. MIYASHIRO, Chair
ADAM C. WONG, Vice Chair
DAVID C. HULIHEE
KAPUA SPROAT
BRYAN P. ANDAYA

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

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

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

Ms. Christine Mendes Ruotola, AICP, LEED, AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813



Dear Ms. Ruotola:

Subject: Your Letter Dated April 6, 2016 Requesting Comments on the Draft Environmental Assessment for Waianae Elementary School Administration and Student Support Center - TMK: 8-5-001: 067 and 8-5-009: 018

Thank you for the opportunity to comment on the proposed project.

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

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

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



May 31, 2016

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

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OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Lau:

Thank you for your comment letter dated May 5, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. We acknowledge that based upon current data, the existing water system is adequate to accommodate the proposed development, and that the BWS reserves the right to change any position or information stated until the final approval of the building permit application. We understand that the final decision on the availability of water will be confirmed when the building permit application is submitted for approval.
2. The applicant, the Department of Education, will pay the Water System Facilities Charges for resource development, transmission and daily storage.

We will provide you with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR



April 21, 2016



Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, HI 96813-4307

Attn: Christine Mendes Ruotolo, AICP LEED AP

Dear Ms. Ruotolo:

Subject: Chapter 343 Draft Environmental Assessment
Waianae Elementary School Administration/Student Support Center
Waianae, Oahu, Hawaii (1) 8-5-1:067(por.) and (1) 8-5-9:018

The Department of Design and Construction has no comments at this time.

Thank you for the opportunity to review and comment. Should you have any comments, please call me at 768-8480.

Sincerely,

A handwritten signature in black ink that reads "Mr. R. J. Kroning". The signature is written in a cursive style.

Robert J. Kroning, P.E.
Director

RJK: ms (648850)



May 31, 2016

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

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OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Kroning:

Thank you for your comment letter dated April 21, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project.

We acknowledge that the Department of Design and Construction has no comments at this time.

We will provide you a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Ulu'ohia Street, Suite 215, Kapolei, Hawaii 96707
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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 16-357

April 28, 2016

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4398



Dear Ms. Ruotola:

SUBJECT: Chapter 343, HRS Draft Environmental Assessment (EA)
Wai'anae Elementary School Administration/Student Support Center
Wai'anae, O'ahu, Hawai'i
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.)

Thank you for the opportunity to review and provide our input regarding your letter dated April 6, 2016, on the above-subject project.

Our comments are as follows:

- Once construction phase commences, install approved Best Management Practices (BMPs) fronting all drainage facilities, such as drainage inlets along Plantation Road and McArthur Street.
- During construction and upon completion of the project, any damages/deficiencies to Plantation Road and McArthur Street right-of-ways shall be corrected to City standards and accepted by the City.
- The contractor shall be responsible for clearing storm drain facilities to mitigate flooding during construction and removing BMPs upon completion of the project.

If you have any questions, please contact Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

A handwritten signature in black ink, appearing to read "Ross S. Sasamura".

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



May 31, 2016

Mr. Ross S. Sasamura, P.E.
City and County of Honolulu
Department of Facility Maintenance
1000 Uluohia Street, Suite 215
Honolulu, HI 96707

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Ma Ry Kim
RIBA, ARB

Craig Takahata
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Sasamura:

Thank you for your comment letter dated April 28, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. Approved Best Management Practices (BMP) for stormwater runoff will be implemented to the extent feasible facing all drainage facilities along Plantation Road and McArthur Street.
2. Any damages/deficiencies to Plantation Road and McArthur Street right-of-ways will be corrected to City standards and accepted by the City. This has been clarified in Section 3.11 of the Final EA
3. We acknowledge that the contractor shall be responsible for clearing storm drain facilities to mitigate flooding during construction and removing BMPs upon completion of the project.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

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KIRK CALDWELL
MAYOR



GEORGE I. ATTA, FAICP
DIRECTOR

ARTHUR D. CHALLACOMBE
DEPUTY DIRECTOR

2016/ELOG-893 (TB)

May 16, 2016

Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4398



Dear Ms. Ruotola:

Thank you for your letter dated April 6, 2016, requesting a review and comment on the attached Draft Environmental Assessment (EA) for the Wai'anae Elementary School Administration/Student Support Center. We have reviewed the project and have the following comments:

- 1) Section 4.7.3 should be revised to discuss either the project's consistency or inconsistency with the Wai'anae Sustainable Communities Plan points referenced. Will the proposed facility be designed to serve a secondary function as an emergency shelter?
- 2) The project shall comply with the prevailing storm water quality requirements at the time construction/grading plans are submitted for review and approval.
- 3) A timeline or phasing plan of the anticipated dates to obtain major building permit(s) for construction work on the Administration Building (Phase I) and the Student Support Center (Phase II), including the projected date of occupancy or opening, shall be prepared by the Applicant. The timeline should identify when the construction management plan (CMP) will be submitted for review and approval in relation to when approvals for construction plans, building, and occupancy permits will be necessary. Typically, the CMP should be submitted for review and approval prior to the issuance of building permits for major construction work.

- 4) A new traffic evaluation may be required if there is a significant change to the scope or timing of the major work items contained in the initial report.
- 5) The CMP shall identify the type, frequency, and routing of heavy trucks and construction related vehicles. Every effort shall be made to minimize impacts from these vehicles and related construction activities. The CMP should identify and limit vehicular activity related to construction to periods outside of the peak periods of traffic, utilizing alternate routes for heavy trucks, provisions for either on-site or off-site staging areas for construction workers and vehicles to limit the use of on-street parking around the project site and other mitigation measures related to traffic and potential neighborhood impacts. Preliminary or conceptual traffic control plans should also be included in the CMP.
- 6) The recommendations contained in the mitigation measures, including the installation of additional signs at the driveway on McArthur Street, should be included in the design plans.
- 7) Entry gates and ticket dispensers should be recessed as far into the driveway as necessary to avoid any queuing onto public streets.

Should you have any questions, please contact Thomas Blair of our staff at 768-8030 or Thomas.blair@honolulu.gov.

Very truly yours,


George I. Atta, FAICP
Director



May 31, 2016

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

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PE, LEED AP

Ma Ry Kim
RIBA, ARB

Craig Takahata
AIA

OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Atta:

Thank you for your comment letter dated May 16, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments.

1. Section 5.7.3 has been revised to discuss the project's consistency with the Wai'anae Sustainable Communities Plan points referenced. The proposed design of the proposed facility will not serve a secondary function as an emergency shelter.
2. We acknowledge that the project will be required to comply with the prevailing storm water quality requirements at the time construction/grading plans are submitted for review and approval.
3. A general timeline of the anticipated dates for major building permits for construction work on Phase I and Phase II of the project are included in Section 2.6 the Final EA. A more detailed timeline will be provided at the appropriate time.
4. We acknowledge that a new traffic evaluation may be required if there is a significant change to the scope or timing of the major work items contained in the initial report.
5. We acknowledge that the CMP will require detailed information on the type, frequency, and routing of heavy trucks and construction related vehicles. Every effort will be made to minimize impacts from construction related vehicles and related construction activities. The CMP shall also identify and limit vehicular activities related to construction to periods outside of the peak periods of traffic. Conceptual traffic control plans will be included in the CMP.
6. The recommendations contained in the mitigation measures of the Final EA, including installation of additional signs at the driveway on McArthur Street, will be included in the project's design plans.

Letter to Mr. George I. Atta, FAICP
Department of Planning and Permitting
May 31, 2016
Page 2 of 2

7. Entry gates and ticket dispensers, where applicable, will be recessed as far into the driveway as necessary to avoid any queuing onto public streets.

We will provide you a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.



Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU

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KIRK CALDWELL
MAYOR



MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

April 19, 2016



Ms. Christine Mendes Ruotola, AICP, LEED, AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4398

Dear Ms. Mendes Ruotola:

SUBJECT: Draft Environmental Assessment
Waianae Elementary School Administration/Student Support Center
Waianae, Oahu, Hawaii
Tax Map Key: (1) 8-5-1:67 (por.) and (1) 8-5-9:18 (por.)

Thank you for the opportunity to review and comment on the Draft Environmental Assessment.

The Department of Parks and Recreation has no comment as the proposed project will have no impact on any of our programs and facilities. You may remove us as a consulted party to the balance of the EIS process.

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

Sincerely,

A handwritten signature in black ink that reads "Michele K. Nekota".

Michele K. Nekota
Director

MKN:jr
(648867)



May 31, 2016

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

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OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Ms. Nekota:

Thank you for your comment letter dated April 19, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project.

We acknowledge that the Department of Parks and Recreation has no comment on the project as it will have no impact on the Department's programs or facilities. Per your request, we will remove you as a consulted party for the remainder of the EA process.

Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, THIRD 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

TP4/16-649434R

May 4, 2016



Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

SUBJECT: Draft Environmental Assessment, Waianae Elementary School
Administration/Student Support Center, Waianae, Oahu, Hawaii

In response to your letter dated April 6, 2016, we have the following comments:

1. Section 2.4.6 Access, Roadways, and Parking, Page 2-7, the existing vehicular access to the campus is from Plantation Road, not McArthur Street.
2. The Traffic Evaluation report references traffic volume counts that are seven years old. The report should be updated with current counts along Plantation Road and McArthur Street, not Mill Street.
3. The discussion regarding the p.m. peak traffic hours from 5 p.m. to 6 p.m. should also include after school dismissal hours since the volume of traffic accessing the school is heavy at this time.
4. The Traffic Evaluation report should discuss existing safety and traffic operational impacts in the vicinity of the school and corresponding measures to mitigate these impacts.
5. Any damage to the existing roadway and sidewalk area caused by the project should be restored to its original or better condition.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,


Michael D. Formby
Director



May 31, 2016

Mr. Michael D. Formby
City and County of Honolulu
Department of Transportation Services
650 South King Street, Third Floor
Honolulu, HI 96813

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Ralph E. Portmore
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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Formby:

Thank you for your comment letter dated May 4, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. We appreciate your correction on the location of the vehicular access point to the campus. Section 2.4.6 of the Final EA has been revised to state vehicular access to Wai'anae Elementary School is from Plantation Road.
2. The traffic evaluation report showed available traffic data in the vicinity of the project. With a lack of any new development in the area in the last seven years, the traffic volumes are not expected to have changed significantly. The expectation that existing volumes are similar to those shown in the count data is noted in the report.
3. The discussion regarding the p.m. peak hour volumes occurring from 5 p.m. to 6 p.m. is for Plantation Road. Traffic volumes for Plantation Road in the early afternoon (school dismissal hours) were similar to those of the morning peak hour, with higher traffic volumes recorded in the 5 p.m. to 6 p.m. hour. The discussion of traffic volumes on McArthur Street identified volumes during school dismissal hours as well as after school dismissal hours later in the afternoon, which recorded lower volumes of traffic in each direction.
4. No existing safety or traffic operational concerns were identified. The proposed project is not expected to adversely affect traffic operations and measures to mitigate any new conflicts between vehicular traffic and other modes of travel will be included in the Traffic Evaluation Report for the Final EA.
5. Any damage to the existing roadway and sidewalk area caused by the project will be restored to City standards.

Letter to Mr. Michael D. Formby
Department of Transportation Services
May 31, 2016
Page 2 of 2

We will provide you a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola". The signature is written in a cursive, flowing style.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR



MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

April 27, 2016



Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4398

Dear Ms. Ruotola:

Subject: Chapter 343, Hawaii Revised Statutes Draft Environmental Assessment
Waianae Elementary School Administration/Student Support Center
Waianae, Oahu, Hawaii
Tax Map Keys: 8-5-001: 067 and 8-5-009: 018

In response to your letter dated April 6, 2016, 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]TM, 2006 Edition, Section 18.2.3.2.2.)

A fire department access road shall extend to within 50 feet (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; UFCTM, 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

Ms. Christine Mendes Ruotola, AICP, LEED AP
Page 2
April 27, 2016

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 contact Battalion Chief Terry Seelig of our Fire Prevention Bureau at 723-7151 or tseelig@honolulu.gov.

Sincerely,



SOCRATES D. BRATAKOS
Assistant Chief

SDB/DO:bh



May 31, 2016

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

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OF COUNSEL

Ralph E. Portmore
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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Bratakos:

Thank you for your comment letter dated April 27, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. We acknowledge that fire access roads shall be provided such that any portion of the facility is located not more than 150 feet from fire department access roads as measured by an approved route around the exterior of the facility. A fire department access road will extend to within 50 feet of at least one exterior door that can be opened from the outside and that provides access to the interior of the building. Compliance with the National Fire Protection Association (NFPA) 1 Uniform Fire Code requirements will be clarified in the Final EA.
2. The project will not impact the existing water supply, capable of supplying required fire flow for fire protection. In addition, the project will meet the requirements of the NFPA 1 Uniform Fire Code.
3. Civil drawings will be submitted to the Honolulu Fire Department for review and approval at the appropriate time.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

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



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LOUIS M. KEALOHA
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MARIE A. McCAULEY
CARY OKIMOTO
DEPUTY CHIEFS

OUR REFERENCE MT-DK

April 12, 2016



Ms. Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

This is in response to your letter dated April 6, 2016, requesting comments on the Draft Environmental Assessment (EA) for the Waianae Elementary School Administration/ Student Support Center project.

Based on the information provided, this project should have no significant impact on the services or operations of the Honolulu Police Department at this time.

If there are any questions, please call Major Kurt Kendro of District 8 (Kapolei) at 723-8403.

Thank you for the opportunity to review this project.

Sincerely,

LOUIS M. KEALOHA
Chief of Police

By


MARK TSUYEMURA,
Management Analyst VI
Office of the Chief



May 31, 2016

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

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Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anāe Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anāe, O'ahu

Dear Chief Kealoha:

Thank you for your comment letter dated April 12, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anāe Elementary School Administration/Student Support Center project.

We acknowledge that the project should have no significant impact on the services or operations of the Honolulu Police Department.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR



DOUGLAS MURDOCK
COMPTROLLER
AUDREY HIDANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1083.6

MAY 2 2016



Ms. Christine Mendes Ruotola
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

Subject: Draft Environmental Assessment (EA) for
Waianae Elementary School Administration/Student Support Center
Waianae, Oahu, Hawaii
TMK: (1) 8-5-001: 067 and 8-5-009: 018

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

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

Sincerely,

A handwritten signature in blue ink that reads "J.K. Kurata".

JAMES K. KURATA
Public Works Administrator

GT:mo



May 31, 2016

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

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OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anāe Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anāe, O'ahu

Dear Mr. Kurata:

Thank you for your comment letter dated April 20, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anāe Elementary School Administration/Student Support Center project.

We acknowledge that the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII



VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
File:

May 18, 2016



05035PGH.16

Ms. Christine Mendes Ruotola
Group 70 International Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Mendes Ruotola:

**SUBJECT: Comments on Draft Environmental Assessment (DEA) for
Waianae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 and (1) 8-5-9:018(por)
Waianae, Island of Oahu, Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated April 6, 2016, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for a NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
 - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project

planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g. minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at: <http://health.hawaii.gov/cwb/>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,


ALEC WONG, P.E., CHIEF
Clean Water Branch

GH:ak

c: DOH-EPO #16-130 [via e-mail Noella.Narimatsu@doh.hawaii.gov only]



May 31, 2016

Mr. Alec Wong, P.E.
State of Hawai'i
Department of Health, Clean Water Branch
P.O. Box 3378
Honolulu, HI 96801

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OF COUNSEL

Ralph E. Portmore
FAICP

Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Wong:

Thank you for your comment letter dated May 18, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. We acknowledge that the project must comply with HAR, Section 11-54 (Water Quality Standards) and its applicable policies, use allowances, and water quality criteria. We note this among other requirements that must be taken into consideration during the detailed design phase of the water system leading to actual construction.
2. Currently, the construction area for the new buildings amount to less than one acre and would not require an NPDES permit. An NPDES permit application may be submitted in conjunction with other land development permits if the construction footprint increases to an area larger than one acre.
3. The project area does not involve work in, over, or under waters of the U.S., and therefore will not require permitting through the Army Corps of Engineers Regulatory Branch.
4. All discharges, regardless of the need for NPDES permit coverage, will comply with State Water Quality Standards and/or permitting requirements.
5. We appreciate the recommendations and guidelines you have provided for the project's water resource planning, which will take place after the Final EA is issued a FONSI. The project is planning to integrate stormwater best management practices, low impact development concepts, and green building practices into the design of the two new facilities to reduce its impact and preserve the integrity of State waters.

Letter to Mr. Alec Wong, P.E.
Department of Health, Clean Water Branch
May 31, 2016
Page 2 of 2

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola". The signature is written in a cursive style with a large initial 'C'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal



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

In reply, please refer to:
File:

EPO 16-130

April 13, 2016

Ms. Christine Mendes Ruotola
AICP LEED AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307
Email: cruotola@group70int.com

Dear Ms. Mendes Ruotola:

**SUBJECT: Draft Environmental Assessment (DEA) for Waianae Elementary School
Administration/Student Support Center, Waianae, Oahu
TMK: (1) 8-5-1:067 (por) and (1) 8-5-9:018 (por)**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your DEA to our office via the OEQC link:

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Oahu/2010s/2016-04-08-OA-5B-DEA-Waianae-Elementary-School-Admin-Center.pdf

EPO strongly recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: <http://health.hawaii.gov/epo/landuse>. Projects are required to adhere to all applicable standard comments. EPO has recently updated the environmental Geographic Information System (GIS) website page. It now compiles various maps and viewers from our environmental health programs. The eGIS website page will be continually updated so please visit it regularly at: <http://health.hawaii.gov/epo/egis>. EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: <https://eha-cloud.doh.hawaii.gov>. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

We suggest you review the requirements for the National Pollutant Discharge Elimination System (NPDES) permit. We recommend contacting the Clean Water Branch at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov after relevant information is reviewed at:

1. <http://health.hawaii.gov/cwb>
2. <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/standard-npdes-permit-conditions>
3. <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/forms>

EPO also suggests that the Hazard Evaluation and Emergency Response (HEER) Office's Site Discovery and Response (SDAR) Section be contacted. The SDAR section protects human health and the environment by identifying, investigating, and remediating sites contaminated with hazardous substances (non-emergency site investigations and cleanup). The HEER Office's SDAR Section can be contacted at: (808) 586-4249. For historical maps on lands where sugarcane was grown see: <http://health.hawaii.gov/epo/egis/sugarcane>

Ms. Christine Mendes Ruotola
Page 2
April 13, 2016

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: <http://eha-web.doh.hawaii.gov/oeqc-viewer>. This viewer geographically shows where some previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

In order to better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: <http://www2.epa.gov/ejscreen>.

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

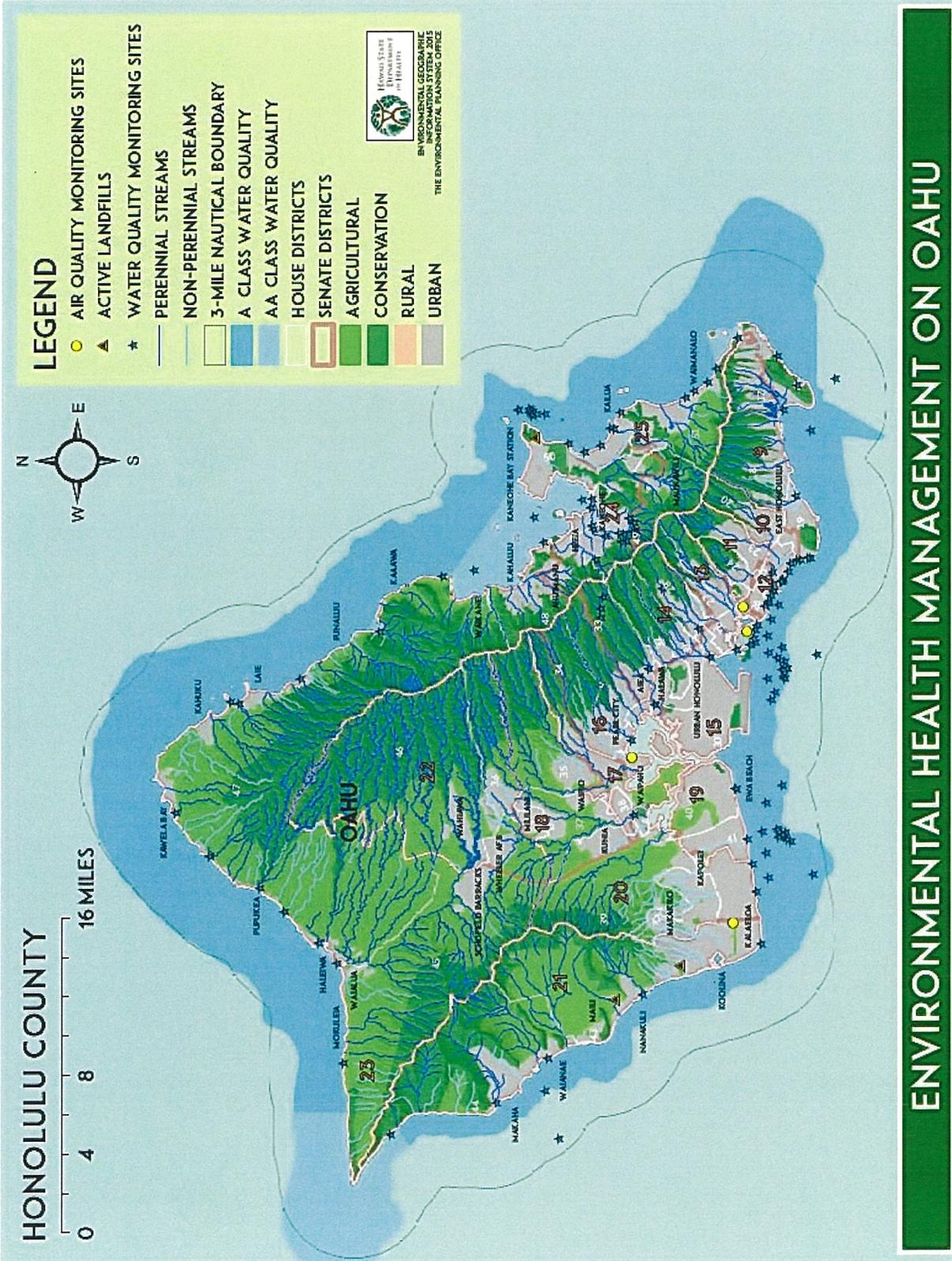


Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

LM:nn

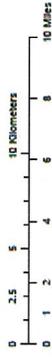
- Attachment 1: EPO Draft Environmental Health Management Map
- Attachment 2: CWB: Water Quality Standards Map
- Attachment 3: WWB: Recycled Water Use Map
- Attachment 4: Historic Sugarcane Map
- Attachment 5: OEQC Viewer Map of Project Area
- Attachment 6: U.S. EPA EJSCREEN Report for Project Area

c: Brenda Lowrey, DOE {via email: Brenda_Lowrey/FacilDev/HIDOE@notes.k12.hi.us}
DOH: CWB, HEER {via email only}



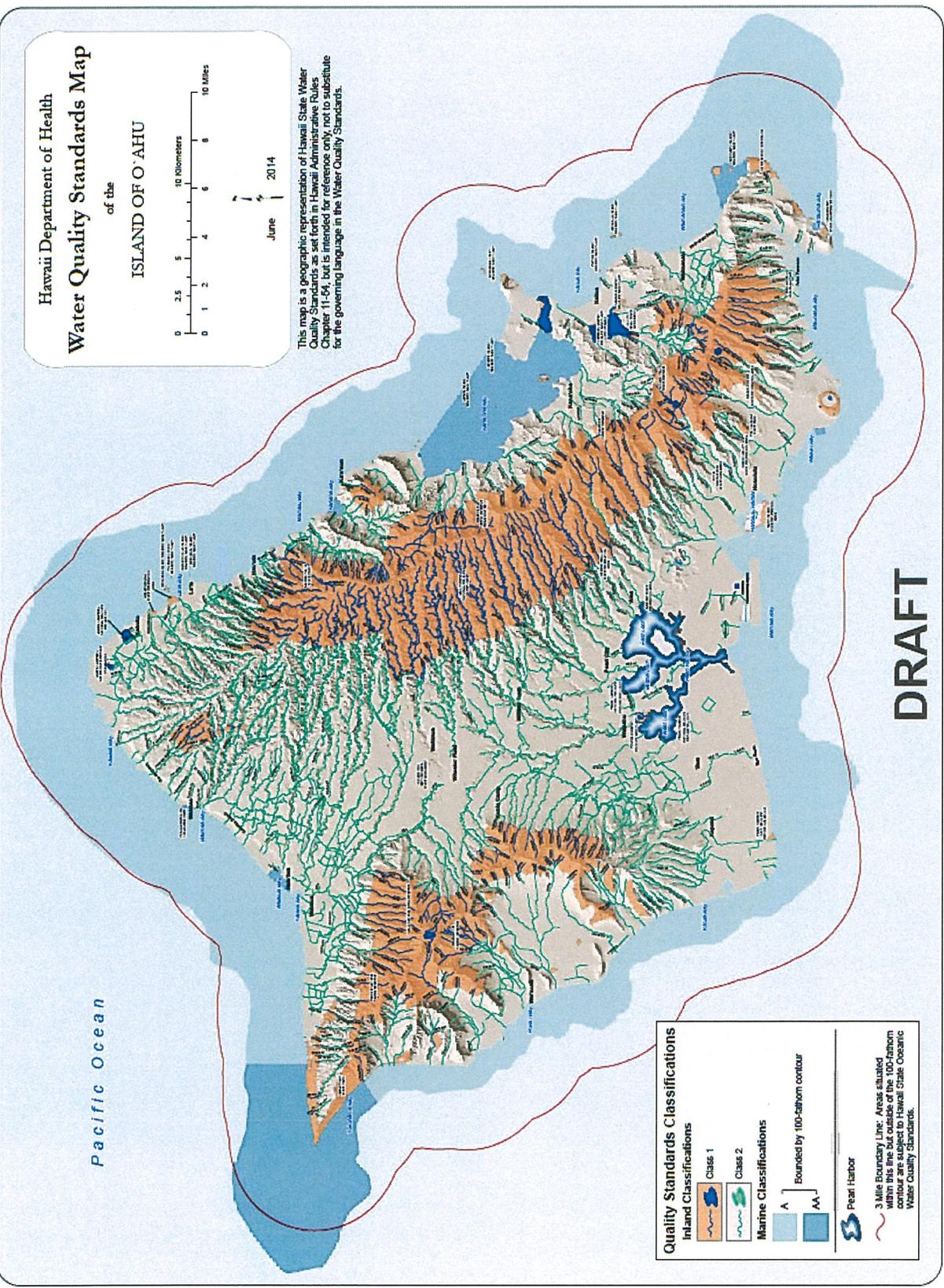
Hawai'i Department of Health
Water Quality Standards Map

of the
ISLAND OF O'AHU



June 2014

This map is a geographic representation of Hawai'i State Water Quality Standards as set forth in Hawai'i Administrative Rules Chapter 11-54, but is intended for reference only, not to substitute for the governing language in the Water Quality Standards.



Pacific Ocean

DRAFT

Quality Standards Classifications

Inland Classifications

- Class 1
- Class 2

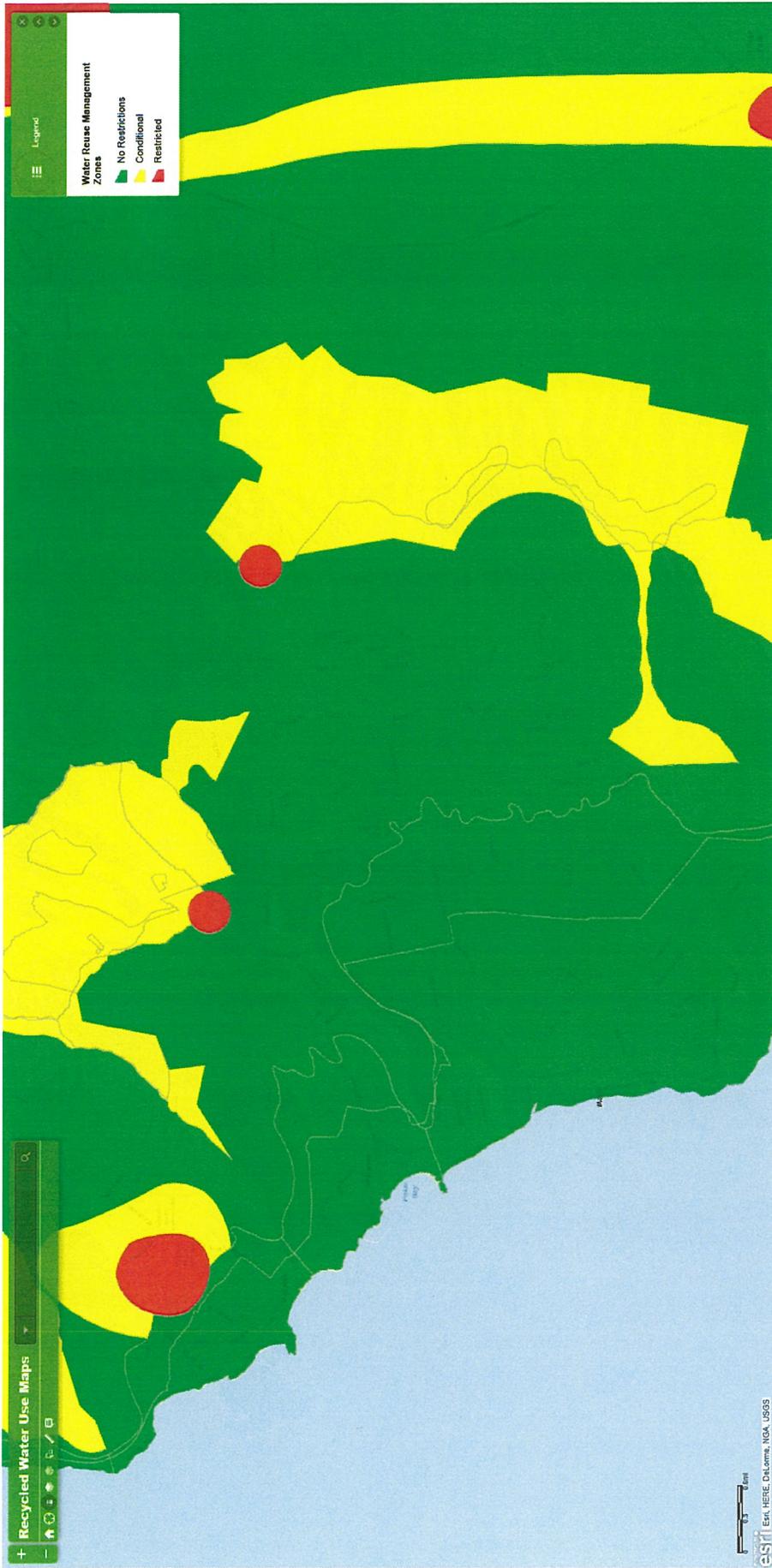
Marine Classifications

- A
- AA

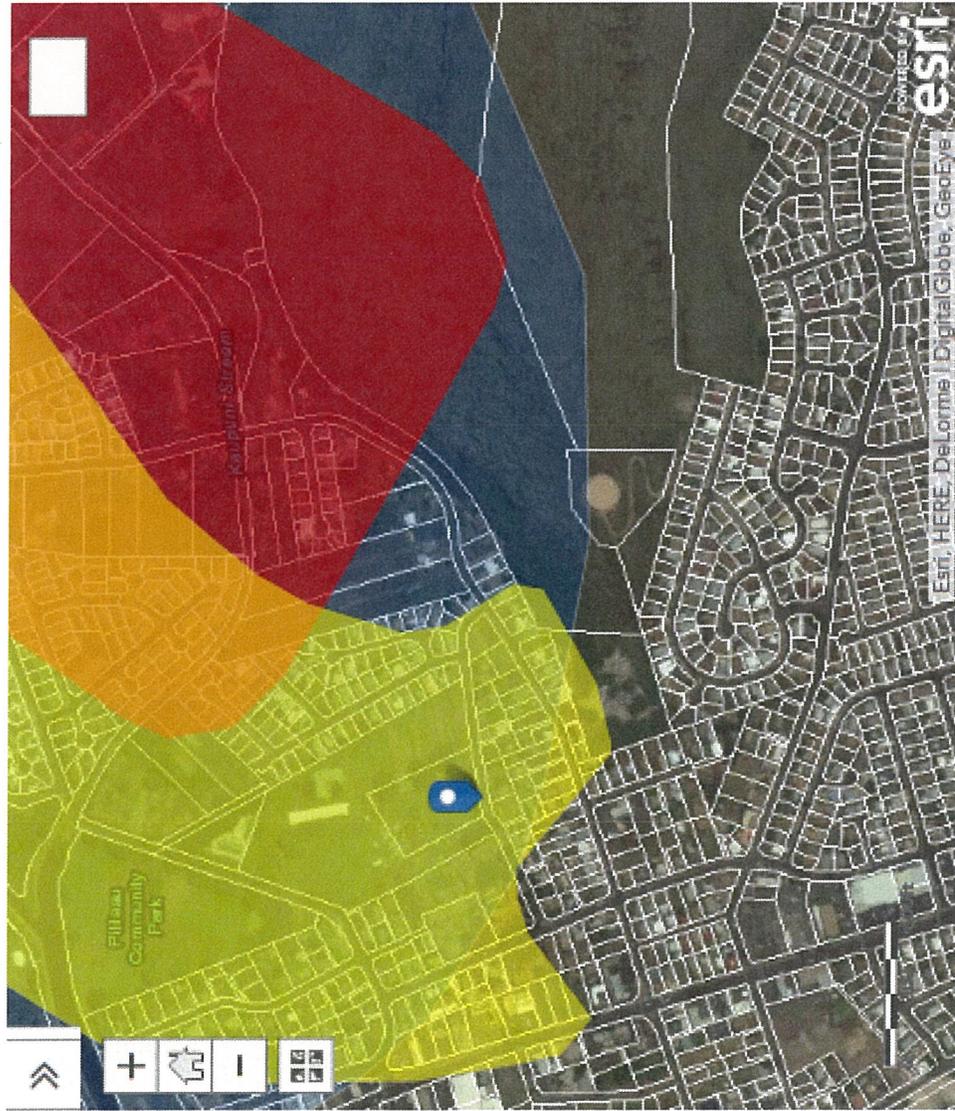
Bounded by 100-fathom contour

Pearl Harbor

3 Mile Boundary Line: Areas situated within this line but outside of the 100-fathom contour are subject to Hawai'i State Oceanic Water Quality Standards.



HISTORIC SUGARCANE LANDS MAP VIEWER



Legend Details

Sugarcane - Sugarcane_1937



Sugarcane - Sugarcane_1920



Sugarcane - Sugarcane_1900



Statewide TMK NAD43

State TMK

welantse elementary school
0 sites found

Results Filter

Show sites with no location



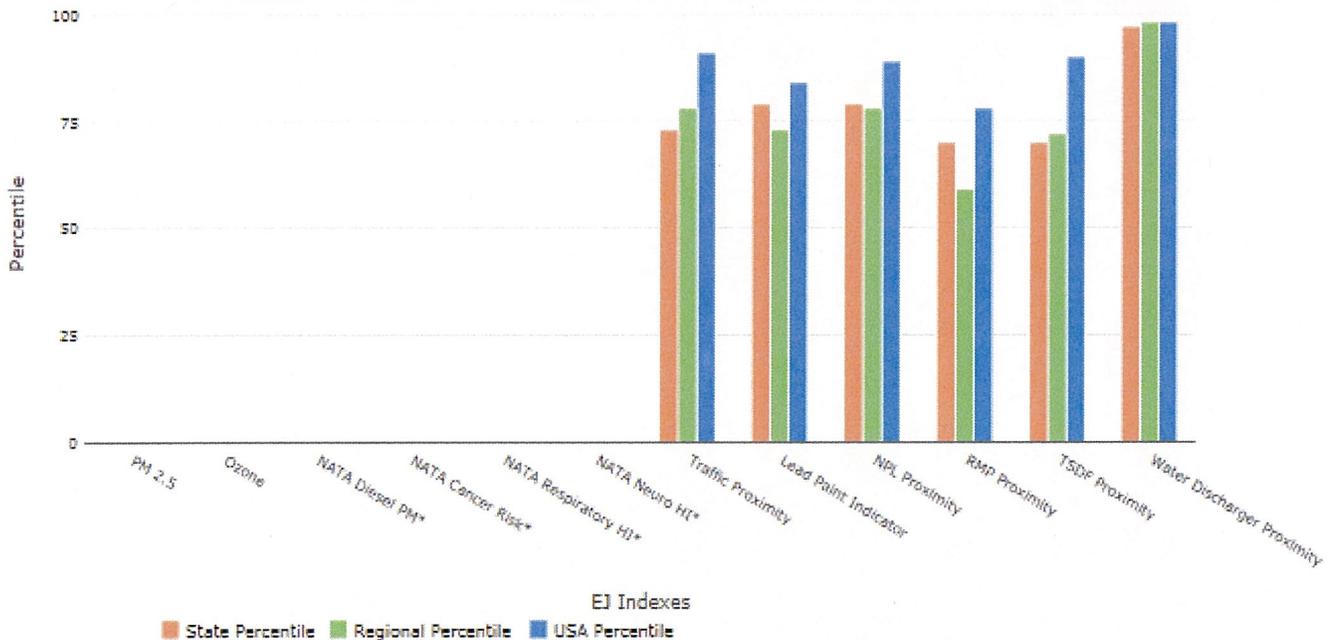


**1 mile Ring Centered at 21.444666,-158.184550
HAWAII, EPA Region 9
Approximate Population: 8342**



Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	73	78	91
EJ Index for Lead Paint Indicator	79	73	84
EJ Index for NPL Proximity	79	78	89
EJ Index for RMP Proximity	70	59	78
EJ Index for TSDf Proximity	70	72	90
EJ Index for Water Discharger Proximity	97	98	98

EJ Index for the Selected Area Compared to All People's Block Groups in the State/Region/US



This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSscreen documentation for discussion of these issues before using reports.



April 12, 2016

+ Digitized Point



Selected Variables	Raw data	State Average	%ile in State	EPA Region Average	%ile in EPA Region	USA Average	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A	9.95	N/A	9.78	N/A
Ozone (ppb)	N/A	N/A	N/A	49.7	N/A	48.1	N/A
NATA Diesel PM ($\mu\text{g}/\text{m}^3$)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Air Toxics Cancer Risk (risk per MM)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	110	280	58	190	57	110	75
Lead Paint Indicator (% pre-1960s housing)	0.17	0.17	59	0.25	52	0.3	44
NPL Proximity (site count/km distance)	0.078	0.092	68	0.11	62	0.098	67
RMP Proximity (facility count/km distance)	0.084	0.18	42	0.41	17	0.31	28
TSDF Proximity (facility count/km distance)	0.053	0.092	42	0.12	45	0.054	74
Water Discharger Proximity (count/km)	0.91	0.33	94	0.19	97	0.25	95
Demographic Indicators							
Demographic Index	65%	51%	88	46%	76	35%	86
Minority Population	93%	77%	78	57%	86	36%	92
Low Income Population	38%	25%	79	35%	58	34%	61
Linguistically Isolated Population	6%	6%	65	9%	48	5%	74
Population with Less Than High School Education	18%	10%	85	18%	59	14%	69
Population under Age 5	8%	6%	74	7%	66	7%	70
Population over Age 64	11%	14%	34	12%	56	13%	45

*The National-Scale Air Toxics Assessment (NATA) environmental indicators and EJ Indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.



May 31, 2016

Ms. Laura Leialoha Phillips McIntyre, AICP
State of Hawai'i
Department of Health, Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801

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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Ms. McIntyre:

Thank you for your comment letter dated April 13, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. We have reviewed the applicable standard comments and strategies from your office. The project will take appropriate measures prior to and during project construction to control fugitive dust emissions, and comply with regulatory standards and approvals for noise emission, indoor air quality, safe drinking water, solid waste management, and wastewater management.
2. We appreciate you providing us with the Environmental Health Portal, Water Quality Standards Maps, and various other resources and strategies to support the sustainable and healthy design of communities and buildings. We have reviewed the information provided to verify our analysis and mitigation recommendations in the Final EA. To be noted, the project supports sustainable design and will meet the guidelines for Hawai'i Collaborative for High Performance Schools (HI-CHPS), which aims to design and construct energy efficient, healthy, high performance sustainable schools.
3. Currently, the construction area for the new buildings amount to less than one acre and would not require an NPDES permit. An NPDES permit application may be submitted in conjunction with other land development permits if the construction footprint increases to an area larger than one acre.
4. We have reviewed the historical map of the project area and verified that it was once cultivated for sugarcane. We will contact the Hazard Evaluation and Emergency Response Office's Site Discovery and Response Section to confirm the site's status on hazardous substances.

Letter to Ms. Laura Leialoha Phillips McIntyre, AICP
Department of Health, Environmental Planning Office
May 31, 2016
Page 2 of 2

5. Thank you for providing us with the link to the EPA EJSCREEN tool for data on environmental and demographic information for the project area. Applicable data will be crosschecked and incorporated into the analysis of our Final EA, where feasible.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.



Christine Mendes Ruotola, AICP, LEED-AP
Principal

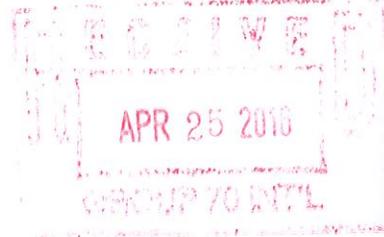


STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment & Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawaii 96813

April 20, 2016

Re: 16-0203

Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307



Attn: Christine Mendes Ruotala,
AICP LEED AP

Subject: Chapter 343, HRS Draft Environmental Assessment (EA)
Waianae Elementary School Administration/Student Support Center
Waianae, Oahu, Hawaii, TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.)

Dear Ms. Ruotala:

This is in response to your letter dated April 6, 2016 requesting the Department of Human Services (DHS) review and comment on the proposed Waianae Elementary School Project.

The DHS has reviewed the Draft Environmental Assessment for Waianae Elementary School. A check of DHS' internal computer system as well as Google Maps has found a DHS licensed Group Child Care facility as well as a registered Family Child Care home in the near vicinity of Waianae Elementary School that may be affected during the construction phase of the School Administration and Student Support Center.

If you have any questions or need further information, please contact Ms. Jill Arizumi, Child Care Program Specialist, at (808) 586-5240.

Sincerely,

A handwritten signature in blue ink that reads "Scott Nakasone".

Scott Nakasone
Assistant Division Administrator



May 31, 2016

Mr. Scott Nakasone
State of Hawai'i
Department of Human Services
820 Mililani Street, Suite 606
Honolulu, HI 96813

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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Nakasone:

Thank you for your comment letter dated April 20, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project.

Thank you for informing us that a DHS licensed Group Child Care facility and a DHS registered Family Child Care home are located in the vicinity of the project area. The project will ensure that construction related impacts related to air, noise, and traffic are minimized through the implementation of Best Management Practices, as described in Section 3 of the Final EA.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII



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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 13, 2016

Group 70 International, Inc.
Attention: Ms. Christine Mendes Ruotola
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

via email: cruotola@group70int.com

Dear Ms. Ruotola:

SUBJECT: Waianae Elementary School Administration/Student Support Center

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 the Land Division – Oahu District on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII



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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 16, 2016

Group 70 International, Inc.
Attention: Ms. Christine Mendes Ruotola
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

via email: cruotola@group70int.com

Dear Ms. Ruotola:

SUBJECT: Waianae Elementary School Administration/Student Support Center

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on May 13, 2016, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Lydia Morikawa at 587-0410. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files



May 31, 2016

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

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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Tsuji:

Thank you for your comment letters dated May 13, 2016 and May 16, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project.

We appreciate you distributing the Draft EA to the DLNR Divisions for their review and comments. We will directly respond to the comments received from the Land Division – O'ahu District and the Engineering Division.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 11, 2016

MEMORANDUM

TO: *PK*

DLNR Agencies:

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

RECEIVED
 LAND DIVISION
 ENGINEERING
 2016 APR 20 AM 11:02
 DEPT. OF LAND &
 NATURAL RESOURCES
 STATE OF HAWAII

TO:

FROM: *PK* Russell Y. Tsuji, Land Administrator

SUBJECT: *PK* Waianae Elementary School Administration/Student Support Center

LOCATION: Waianae; Island of Oahu; TMK No. (1) 8-5-001:067 (por.) & 8-5-009:018 (por.)

APPLICANT: Department of Education, Facilities Development Branch

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **May 5, 2016**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on the Current Environmental Notice under Quick Links on the right.)

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

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: *Carty S. Chang*

Print Name: Carty S. Chang, Chief Engineer

Date: 4/12/16

cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

To: Land Division/ Russell Y. Tsuji

Ref: Waianae Elementary School Administration/Student Support Center, Oahu

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a designated Flood Hazard.

The owner or the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zone designations can be found using the Flood Insurance Rate Map (FIRM), which can be accessed through the Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

National Flood Insurance Program establishes the rules and regulations of the NFIP - Title 44 of the Code of Federal Regulations (44CFR). The NFIP Zone X is a designation where there is no perceived flood impact. Therefore, the NFIP does not regulate any development within a Zone X designation.

Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may take precedence over the NFIP standards as local designations prove to be more restrictive. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

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

The applicant should include water demands and infrastructure required to meet project needs. Please note that the projects within State lands requiring water service from 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 is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

Date: 4/18/14



May 31, 2016

Mr. Carty S. Chang
State of Hawai'i
Department of Land and Natural Resources, Engineering Division
1151 Punchbowl Street, Room 221
Honolulu, HI 96813

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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anāe Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anāe, O'ahu

Dear Mr. Chang:

Thank you for your comments letter dated April 18, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anāe Elementary School Administration/Student Support Center project. The following responses are offered to your comments.

1. We acknowledge that the rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Federal Regulations, are in effect for the project as it falls within a designated Flood Hazard. The Flood Zone designations for the project area are identified in Section 3.4 of the Final EA as Zones X (Outside of 0.2% Annual Chance Floodplain) and XS (0.2% Annual Chance Flood).
2. Water demands for the proposed administration building are included in Section 3.8.1 of the Final EA. It is anticipated that the water capacity and pressure will be sufficient for the new student support center in Phase II of the project since enrollment is not expected to increase.
3. Water demands and calculations will be provided to the Engineering Division for inclusion in the State Water Projects Plan Update projections.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

Christine Mendes Ruotola, AICP, LEED-AP
Principal



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 11, 2016

MEMORANDUM

RECEIVED
LAND DIVISION
2016 MAY -5 PM 2:35
DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

FROM: NO:

DLNR Agencies:

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

TO: FROM: Russell Y. Tsuji, Land Administrator
 SUBJECT: Waianae Elementary School Administration/Student Support Center
 LOCATION: Waianae; Island of Oahu; TMK No. (1) 8-5-001:067 (por.) & 8-5-009:018 (por.)
 APPLICANT: Department of Education, Facilities Development Branch

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **May 5, 2016**.

The DEA can be found on-line at: <http://health.hawaii.gov/oeqc/> (Click on the Current Environmental Notice under Quick Links on the right.)

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

Attachments

The issuance of an EO to DOE setting aside a portion of TMK: (1) 8-5-009:018 for school purposes is required.

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

Signed: T. Che
 Print Name: Tracy Chey
 Date: 5/5/16

BL

cc: Central Files



May 31, 2016

Mr. Timothy Chee
State of Hawai'i
Department of Land and Natural Resources, Land Division – O'ahu District
1151 Punchbowl Street, Room 220
Honolulu, HI 96813

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Ralph E. Portmore
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Hitoshi Hida
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Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Chee:

Thank you for your comment letter dated May 5, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project.

We acknowledge that the issuance of an Executive Order to the Department of Education (DOE) is required to set aside a portion of TMK (1)8-5-9:018 (State of Hawai'i) for school purposes.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal

From: Takahashi, Janice N [<mailto:janice.n.takahashi@hawaii.gov>]
Sent: Tuesday, May 10, 2016 2:32 PM
To: Christine Ruotola
Subject: Draft EA for Waianae Elementary School Administration/Student Support Center

Christine,
Thank you for sending a replacement disc containing the draft EA.

We reviewed the draft EA and have no housing related comments to offer. Thank you for consulting with us.

Janice Takahashi
Chief Planner
Hawaii Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813
Phone: 808-587-0639 Fax: 808-587-0600
Email: Janice.N.Takahashi@hawaii.gov

NOTICE: This information and attachments are intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged and/or confidential. If the reader of this message is not the intended recipient, any dissemination, distribution or copying of this communication is strictly prohibited and may be punishable under state and federal law. If you have received this communication and/or attachments in error, please notify the sender via email immediately and destroy all electronic and paper copies.



May 31, 2016

Ms. Janice Takahashi
State of Hawai'i
Hawai'i Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, HI 96813

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Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anāe Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anāe, O'ahu

Dear Ms. Takahashi:

Thank you for your email dated May 10, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anāe Elementary School Administration/Student Support Center project.

We acknowledge the Hawai'i Housing Finance and Development Corporation has no housing related comments to offer on the project.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
560 N. NIMITZ HWY., SUITE 200
HONOLULU, HAWAII 96817



HRD 16-7680B

April 12, 2016

Christine Mendes Ruotola, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawai'i 96813-4307

Re: Chapter 343, HRS Draft Environmental Assessment (EA)
Wai'anae Elementary School Administration/Student Support Center
Wai'anae Ahupua'a, Wai'anae Moku, O'ahu Mokupuni
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.)

Aloha Ms. Ruotola:

The Office of Hawaiian Affairs (OHA) received your letter dated April 6, 2016, on the above-titled project. Given the project descriptions provided, our agency has no comments at this time. Should you have any questions, please contact Everett Ohta at 594-0231 or everetto@oha.org.

'O wau iho nō me ka 'oia 'i'o,

A handwritten signature in black ink that reads "Kamana'opono Crabbe".

Kamana'opono M. Crabbe, Ph.D.
Ka Pouhana, Chief Executive Officer

KC:acm

**Please address replies and similar, future correspondence to our agency:*

*Dr. Kamana'opono Crabbe
Attn: OHA Compliance Enforcement
560 N. Nimitz Hwy., Ste. 200
Honolulu, Hawai'i 96817*



May 31, 2016

Mr. Kamana'opono M. Crabbe, Ph.D.
State of Hawai'i
Office of Hawaiian Affairs
560 N. Nimitz Highway, Suite 200
Honolulu, HI 96817

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OF COUNSEL

Ralph E. Portmore
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Hitoshi Hida
AIA

Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Dr. Crabbe:

Thank you for your comment letter dated April 12, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project.

We acknowledge that the Office of Hawaiian Affairs has no comments at this time.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads "Christine Mendes Ruotola".

Christine Mendes Ruotola, AICP, LEED-AP
Principal



OFFICE OF PLANNING STATE OF HAWAII

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

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

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Ref. No. P-15123

April 26, 2016



Ms. Christine Mendes Ruotola, AICP LEED AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

Dear Ms. Ruotola:

Subject: Chapter 343, HRS Draft Environmental Assessment – Waianae Elementary School Administration/Student Support Center, Waianae, Oahu;
Tax Map Key: (1) 8-5-001:067 (por) and (1) 8-5-009:018 (por)

Thank you for the opportunity to provide comments on the Draft Environmental Assessment (Draft EA) for the proposed Waianae Elementary School Administration and Student Support Center project. The Draft EA review material was transmitted to our office via letter, dated April 13, 2016.

It is our understanding that this project proposes the construction of a new administration building, as well as a student support center on the Waianae Elementary School campus. The project will also include a new drop off area, conversion of a grass parking area to a paved parking lot, and extension of an access driveway from the elementary school campus to McArthur Street.

These improvements will be completed in two separate phases. The administration building will be built during Phase I of the project and will be located on the northwest edge of the existing open field. The student support center will be built during Phase II, and will be located to the east of the existing portable classrooms and west of the library.

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

1. The Draft EA addresses a number of our comments made in a previous pre-consultation letter dated November 25, 2015 (Reference Number P-14961). The Draft EA examines coastal erosion/sediment loss issues; will utilize best management practices such as sediment traps, silt fences, dust fences, inlet protection, and stabilized construction entrances; has considered stormwater runoff management practices; and utilizes existing grass swales to mitigate runoff induced coastal pollution.

2. The Draft EA lists the applicable objectives and policies of the Hawaii State Plan, as listed in Hawaii Revised Statutes (HRS) Chapter 226. These stated themes include:
 - a. Section 226-11 – the objectives and policies for the physical environment--land-based, shoreline, and marine resources;
 - b. Section 226-12 – the objectives and policies for the physical environment—scenic, natural beauty, and historic resources;
 - c. Section 226-13 – the objectives and policies for the physical environment--land, air, and water quality;
 - d. Section 226-21 – the objectives and policies for socio-cultural advancement-education; and
 - e. The State Functional Plan on Education, Objective A (4): Services and Facilities.

Furthermore, Section 3.4.1 (Natural Hazards), pages 3-4 and 3-5 of the Draft EA examines the project's exposure to the threat of sea-level rise and lists drainage strategies to safeguard the school campus. This examination is relevant to the priority guidelines on climate change adaptation, HRS § 226-109(6) and (7).

The Final Environmental Assessment (Final EA) should list all of the objectives, policies, and priority guidelines of the Hawaii State Plan. If any of these themes, objectives, policies, or priority guidelines are not applicable to this project, the Final EA should list them as "not applicable." Itemizing these themes in tabular form is often the most efficient way to address them.

3. The Draft EA does not contain a complete analysis on the project's conformity with the Coastal Zone Management (CZM) objectives and policies found in HRS § 205A-2. Section 5.4, page 5-4 incorrectly states that since the project is not within the Special Management Area (SMA), it does not require an additional review under State CZM and County SMA rules.

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

The objectives and policies listed in HRS § 205A-2 include: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

Ms. Christine Mendes Ruotola, AICP LEED AP
Group 70 International, Inc.
April 26, 2016
Page 3

The Final EA must contain a more in-depth analysis as to how this proposed project conforms to or is in conflict with these CZM objectives and its supporting policies set forth in HRS § 205A-2. Where a conflict or inconsistency exists, the analysis must describe the extent to which the applicant has reconciled its proposed action with this statute.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Asuncion', with a stylized flourish at the end.

Leo R. Asuncion
Director



May 31, 2016

Mr. Leo R. Asuncion
Director
State of Hawai'i
Office of Planning
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

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Subject: Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment (DEA) – Response to Draft EA Comment Letter
Wai'anae Elementary School Administration/Student Support Center
TMK: (1) 8-5-1:067 (por.) and (1) 8-5-9:018 (por.), Wai'anae, O'ahu

Dear Mr. Asuncion:

Thank you for your comment letter dated April 26, 2016 concerning the Chapter 343, Hawai'i Revised Statutes (HRS) Draft Environmental Assessment for the Wai'anae Elementary School Administration/Student Support Center project. The following responses are offered to your comments:

1. Section 5.1 of the Final EA has been expanded to list all of the objectives, policies, and priority guidelines of the Hawai'i State Plan.
2. Section 5.4 of the Final EA has been expanded to provide a more in-depth analysis of the project's conformity to Coastal Zone Management objectives and supporting policies, as set forth in Hawai'i Revised Statutes 205A-2.

We will provide your office with a copy of the Final EA. Thank you for your participation in the environmental review process.

Sincerely,
GROUP 70 INTERNATIONAL, INC.

A handwritten signature in black ink that reads 'Christine Mendes Ruotola'.

Christine Mendes Ruotola, AICP, LEED-AP
Principal

Appendix B
TRAFFIC EVALUATION

Traffic Evaluation - Proposed Administration Building, Waianae Elementary School

Existing Conditions

The proposed project is located on the campus of the existing Waianae Elementary School. The campus is on two lots that total about 13.5 acres and is five-sided in shape including street frontage on Plantation Road (northwest) and McArthur Street (south). The site of the Boys' and Girls' Club of Hawaii facility borders the school on the northeast side, and residential uses border the east and west sides.

Plantation Road is a two-lane minor collector street that runs between "Old Government Road" near Farrington Highway and Waianae Valley Road, a distance of approximately 0.7 mile, and serves as one of two roadways providing access into Waianae Valley. The roadway is uncurbed, generally with an asphalt sidewalk only on one side. The shoulder area between Plantation Road and the school's fence is used for loading/unloading and parking. Small parking areas for the community park are located across (north of) Plantation Road and there is a marked midblock crosswalk between the park and the school site. A single driveway provides vehicular access into the school site along its western edge from Plantation Road.

Traffic count data from the State of Hawaii Department of Transportation Highways Division (24-hour count taken February 3-4, 2009) show that Plantation Road carries approximately 6,000 vehicles per day (total eastbound plus westbound). Two-way volume in the AM Peak Hour (7:00 am to 8:00 am), which coincides with the peak school traffic activity, was about 450 vehicles per hour. A similar volume was recorded during the early afternoon hour when school lets out; the PM Peak Hour, however, occurred later (5:00 pm – 6:00 pm) with total volume of nearly 600 vehicles per hour.

No traffic count data were available for McArthur Street. However, field observations indicate that volumes on that street were similar to the northbound flow on Mill Street near McArthur Street, where a count taken by the City and County of Honolulu, Department of Transportation Services (24-hour count taken April 10-11, 2013) show volumes of approximately 2,300 vehicles per day (southbound traffic was recorded to be slightly higher). Northbound volume on Mill Street in the AM Peak Hour (7:00 am to 8:00 am, which coincides with the peak school traffic activity) was about 220 vehicles per hour. Early afternoon traffic was about 200 vehicles per hour when school lets out; later in the afternoon, the peak volume was lower, with volumes of 170 vehicles per hour recorded in each direction.

McArthur Street is a local residential street that is two lanes wide along the school frontage and to the east, with a section similar to Plantation Road; at a loading area and west of the school, the north side of the street is curbed and a concrete sidewalk is provided. On school days, between 7:00 AM and 3:00 PM, the entire 0.3-mile length of McArthur Street is operated as a one-way street in the westbound direction. Parallel parking on both sides of the street along the eastern 350 feet of frontage of the school reduces the pavement to a single lane for traffic. Additional pavement width is provided on the street at a loading area located along the 250-foot frontage near the southwest corner of the school property. The one-way vehicular traffic pattern affects approximately 95 single family lots on McArthur Street, Imipono Street,

Imipono Place, Alohiki Street, and Kohai Place, along with any traffic to and from a parking lot that serves part of the adjacent multi-family property.

While no field traffic counts were taken, application¹ of the commonly used trip factors from the *Trip Generation Manual* published by the Institute of Transportation Engineers result in the school traffic being almost 400 vehicle trips per school day in each direction, with about 150 vehicles per hour arriving (and 120 vehicles per hour departing) in the morning peak hour and 75 vehicles per hour arriving (and 90 vehicles per hour departing) during the after school peak hour. Based on site observations made in May 2015 about access to the school by students were split about evenly among three areas: along Plantation Road, on-campus via drop-off or pickup from a personally owned vehicles (POV), or from the McArthur Street side. Walk-ins to the campus were observed only from McArthur Street.

On Plantation Road, many of the morning drop-offs appear to be from vehicles making linked trips, with more than half of the vehicles turning onto the shoulder of the eastbound lane from the far side (westbound lane) to drop off one or more students, then continuing back across the street in a westbound direction. About a third of the vehicles arrived from the westbound lane and returned in an eastbound direction; some of these executed a U-turn to the shoulder, others turned onto the shoulder and stopped perpendicular or at a diagonal to the roadway. Very few vehicles approached from the eastbound lane, and most of those exited to the west. In the afternoon, approximately 15 vehicles were parked perpendicular to the roadway before the school bell; several vehicles parked across the street near the park also appeared to be waiting for students.

Drivers using the campus, including several small school vans, did not encounter any substantial delays on exiting from the site driveway onto Plantation Road.

A large school bus uses the loading area on McArthur Street, parking parallel to the curb to unload and load passengers. An adult was observed during both the morning and afternoons assisting with the unloading and loading of students. POVs were parked parallel behind the bus, often just waiting rather than actively loading or unloading. After the school bus departed, POV parking evolved from parallel (to the curb) to diagonal. Often just before the start of the school day or soon after the end of the school day, unloading or loading of passengers occurred in the through lane on McArthur Street due to vehicles parked in the designated loading area.

City bus service is available on Farrington Highway, approximately 1,200 feet west of the campus, where TheBus Route 40 provides service (two buses per hour in each direction) between Makaha Valley and Ala Moana Center in central Honolulu. A circulator route (Route 401) connecting the Waianae Transit Center and Waianae Valley also runs on a once an hour service, using Waianae Valley Road eastbound into the valley and Plantation Road westbound out of the valley. A bus stop is located across the school on Plantation Road. No bus use by students or other school personnel was observed.

¹ Traffic estimates were developed by applying techniques commonly used in traffic studies to forecast future traffic volumes for proposed development. These techniques include use of factors from the *Trip Generation Manual (9th Edition)* published by the Institute of Transportation Engineers (2012). The computed traffic is based on an enrollment of 590 students.

Project Impact

The proposed project will construct new buildings for administrative offices within the existing campus. Spaces that are now used will be vacated and there are no plans for reuse that would result in added traffic. The project may include changes to on-site vehicular circulation and additional on-site parking areas may be provided since the new building will affect some of the yard areas currently used for parking. A new parking lot with a new driveway connection to McArthur Street is also part of the project.

The project upon completion is not expected to significantly alter access patterns, resulting in, at most, only minor traffic impacts. The proposed driveway connection to McArthur Street will provide an alternative to the existing single connection to Plantation Road. The estimated impact of the new driveway, if it were used during peak hours, would be altering the path of between 15% and 20% of the total traffic to or from the school, or 20 to 30 arriving vehicles and 20 to 25 departing vehicles per hour, which would not be significant traffic impacts² on either Plantation Road or McArthur Street.

Mitigation Measures

While the project is not expected to have significant traffic impacts, several mitigation measures are recommended:

- a) Existing vehicular and pedestrian access patterns should be maintained. Any detours should be minimized and appropriate signing to advise users of any changes should be posted. The proper protection of (and from) traffic should be provided for the construction activities and safe pedestrian walkways should be maintained.
- b) Construction activities and any storage of construction material or waste should be away from pedestrian and vehicular traffic. Care should be taken that sight lines for drivers on the campus roadway, as well as for drivers on adjacent streets, be maintained.
- c) Additional signs needed on McArthur Street to advise drivers using the new driveway connection of the one-way pattern on the street and any signs to implement new parking restrictions, if such restrictions are determined to be needed, should be installed as part of the construction project.
- d) Truck movements for the delivery of construction material and disposal of construction waste should be scheduled at times other than when students are arriving or departing (typically 7:00 am to 8:00 am and 1:30 pm to 2:30 pm, may vary). Truck movements should be coordinated with the school.

³ Table 2-1 of the *Transportation Impact Analysis for Site Development* report published by the Institute of Transportation Engineers (2005) suggests an impact of 100 added vehicle trips during the peak hour as a threshold for the need for a traffic study.

Appendix C

ARCHAEOLOGICAL LITERATURE REVIEW

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

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

KEKO A KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON
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

March 27, 2016

Windy McElroy, PhD
Keala Pono Archaeological Consulting, LLC
47-724D Ahuimanu Loop
Kaneohe, HI 96744

Log No. 2015.02309
Doc. No. 1603KM21
Archaeology
Architecture

Dear Dr. McElroy,

**SUBJECT: Chapter 6E-8 Historic Preservation Review –
Request for Historic Properties Determination and Draft Archaeological Literature
Review and Field Inspection Report for Wai‘anae Elementary
Wai‘anae Ahupua‘a, Wai‘anae District, Island of O‘ahu
TMK: (1) 8-5-001:067 and 8-5-009:018**

Thank you for the opportunity to address your request for a historic properties determination for the Wai‘anae Elementary School Improvements project based on the information provided in your draft report titled *Literature Review for Wai‘anae Elementary School Improvements, Wai‘anae Ahupua‘a, Wai‘anae District, Island of O‘ahu, Hawai‘i* (Graves et al., October 2015). The proposed project involves improvement to existing Wai‘anae Elementary School buildings as well as the addition of two new buildings. An environmental assessment is also being prepared in support of the proposed project. We received this submittal on October 15, 2015; we thank you for your patience.

This archaeological literature review and field inspection was prepared at the request of Group 70 International, in support of the proposed improvements to the Wai‘anae Elementary School. The project involves two of the three parcels comprising the school property; the project area totals approximately 13.5 acres. Parcel 018 is owned by the City and County of Honolulu, and Parcel 067 is owned by the State of Hawai‘i. The proposed project includes improvements to existing structures on the school grounds and the addition of two new buildings on an open field area. The new buildings would be single-story and be approximately 7,000 sq. feet and 5,000 sq. feet, respectively. A new access road would also be created from MacArthur Street. Ground disturbing activities include excavation for building footings and foundations, installation of utility lines, and grading for the new access road and parking areas.

The report provides a summary of the area’s history and provides an overview of archaeological studies conducted within the vicinity of the project area. Although no archaeological inventory survey has been conducted for the project area, a number of archaeological studies have been conducted in the vicinity and have documented numerous historic properties. Immediately adjacent to the project area, two inadvertent burial finds were encountered (Kapeliera 1997, Bush and Hammatt 2004). The school itself may have been established in the early 20th century and retains several historic buildings as part of its current campus. The report indicates at least four of the original school buildings (ca. 1916-1926) are still extant on the school grounds.

The report indicates that surface [archaeological] historic properties are unlikely but that potential exists for subsurface archaeological historic properties. Subsurface historic properties may include pre- and post-Contact deposits such as trash deposits, historic artifact caches or other features, structural remnants, agricultural deposits, habitation layers or features, or human burials. Additionally, deposits may be associated with the historic Wai‘anae Elementary School and its continued use and development over the last century. To mitigate effects to potential historic properties, the report recommends archaeological monitoring be conducted for project related ground disturbing activities and additional documentation of the historic school buildings.

The report is well written, and although this document does not fulfill the requirements of an archaeological inventory survey as specified in Hawai'i Administrative Rules (HAR) §13-276, it serves to facilitate project planning and supports the historic preservation review process. **Please revise to reflect the following SHPD requests.**

Based on the information provided, SHPD has insufficient information to determine potential impacts by the project to architectural and/or subsurface archaeological historic properties (including human burials, given identification of burials near project boundary). Pursuant to Hawaii Administration Rules (HAR) §13-275, **SHPD requests the following:**

- (1) A Reconnaissance Level Survey (RLS) be conducted for the school buildings to determine if any qualify as historic properties and, if so, whether they are eligible for historic register status. The report indicates the original school buildings date between 1916 and 1926 and are similar to school buildings on Kauai that are listed on the National Register of Historic Places;
- (2) An archaeological inventory survey (AIS) be conducted by a qualified archaeologist in order to adequately determine the potential impacts of this project on archaeological historic properties, and to ensure that appropriate mitigation is implemented, if needed. Please refer to the SHPD website for a listing of archaeological firms; and
- (3) The selected archaeological firm consult with SHPD regarding their proposed AIS subsurface testing strategy prior to initiation of the AIS.

SHPD looks forward to receiving and reviewing the RLS documentation and an AIS report meeting the requirements of HAR §13-276-5, as well as any subsequent mitigation plans, as appropriate. SHPD will notify you when the required documents have been reviewed and accepted.

Please contact Anna Broverman, Architectural Historian, at (808) 692-8028 or at Anna.E.Broverman@hawaii.gov for questions concerning architectural resources and the requested RLS. Please contact Kimi Matsushima, Oahu Archaeologist, at (808) 692-8027 or at Kimi.R.Matsushima@hawaii.gov if you have any questions regarding this letter.

Aloha,



Susan A. Lebo, PhD
Archaeology Branch Chief

FINAL—Literature Review for Wai‘anae Elementary School Improvements, Wai‘anae Ahupua‘a, Wai‘anae District, Island of O‘ahu, Hawai‘i

TMK: (1) 8-5-001:059 and (1) 8-5-009:018



Prepared For:

Group 70 International
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813



March 2016

Keala Pono 

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**FINAL— Literature Review for Wai‘anae Elementary School
Improvements, Wai‘anae Ahupua‘a, Wai‘anae District, Island
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March 2016



MANAGEMENT SUMMARY

Keala Pono Archaeological Consulting prepared a cultural and historical resources literature review for the proposed additions to the Wai‘anae Elementary School. The purpose of this review was to identify the range of archaeological, historical, and traditional cultural properties, as well as associated individuals or events, linked to the district of Wai‘anae or the *ahupua‘a* of Wai‘anae Kai. Many previous archaeological studies have been conducted in Wai‘anae Kai and a variety of resources and properties have been identified for this area and in the general vicinity of the proposed project.

Many of the historic properties in Wai‘anae no longer exist as surface features or complexes due to the extensive modification of the area by sugarcane cultivation, livestock ranching, housing developments, military installations, and infrastructure construction. However, as a number of previous archaeological studies have documented, there are substantial subsurface deposits, including buried agricultural soils, remnants of agricultural and other domestic features, and human burials located in Wai‘anae Kai and in the vicinity of the project area. Furthermore, the Wai‘anae Elementary School buildings and the property on which it is located are likely eligible for the State Register of Historic Places, since the property has been designated as a school lot in the beginning of the 20th century and the several of the school buildings were constructed more than 80 years ago.

It is therefore recommended that there be further architectural and historical documentation of the Elementary School buildings and that there be archaeological monitoring when subsurface excavations begin for this proposed undertaking. An archaeological monitoring plan should be accepted by the State Historic Preservation Division before construction commences.

CONTENTS

MANAGEMENT SUMMARY	i
FIGURES	iv
TABLES	iv
INTRODUCTION	1
Project Location and Description	1
Physical Environment.....	1
LITERATURE REVIEW	6
Traditional Land Use.....	6
<i>Mo‘olelo</i> of Wai‘anae.....	7
Olopana.....	8
Kawelo.....	8
Halemano	8
Kūali‘i.....	9
‘ <i>Ōlelo No‘eau</i>	10
Historic Events and Land Use	11
Māhele Records	11
Post-Māhele History	12
Previous Archaeology and Historical Materials	13
Historic Maps	20
Historic Wai‘anae Elementary School.....	24
Coastal Southeast Wai‘anae, including Pōka‘ī Bay.....	32
Coastal Northwest Wai‘anae to Kawiwi Stream	33
Lower or <i>Makai</i> Wai‘anae Valley	35
Upper or <i>Mauka</i> Wai‘anae Valley	36
Settlement Patterns	38
Summary of Background Information.....	38
ASSESSMENT AND RECOMMENDATIONS.....	40
Results of Land Commission Awards Search	40
Results of Recent Historical Research	40
Knowledge from Previous Archaeological Studies.....	40
Insights on Previous Land Use	41
Summary and Recommendations	41
GLOSSARY	42
REFERENCES	44

FIGURES

Figure 1. The project area (in red) on a 7.5 minute USGS Waianae Quadrangle map.....	2
Figure 2. Portion of TMK plat (1) 8-5-001, showing the project area in red.	3
Figure 3. Soils in the vicinity of the project area.....	5
Figure 4. Portion of a map depicting the location of Waimalu’s Land Commission Award.....	13
Figure 5. Portion of an early map of Pōka‘ī Bay (Jackson 1884).....	14
Figure 6. Portion of an early map of Wai‘anae (Monsarrat 1902).	15
Figure 7. Previous archaeological projects in Wai‘anae.	16
Figure 8. Early map of Wai‘anae showing the several ‘ <i>ili</i> names and locations (Kahena 1860). ...	22
Figure 9. Early map of Wai‘anae showing ‘ <i>ili lele</i> of Pahoa (Pease 1860).	23
Figure 10. Monsarrat’s earliest map of Wai‘anae Kai Ahupua‘a (1870).	25
Figure 11. Early map of Wai‘anae Valley, showing Forest Reserve area (Monsarrat 1906).	26
Figure 12. Map of Wai‘anae House Lots (Aiu 1924).....	27
Figure 13. Historic map of Pōka‘ī Bay (Aiu 1927).	28
Figure 14. Wai‘anae Kai Map showing school lot property (Sorenson 1906).	29
Figure 15. Portion of an early Waianae Quadrangle Map (Department Engineer 1936).	30
Figure 16. Portion of a mid-20 th century Waianae Quadrangle Map (Geological Survey 1954). ...	30
Figure 17. Portion of a more recent Waianae Quadrangle Map (Geological Survey 1998).....	31
Figure 18. Photograph of the main classroom buildings at Wai‘anae Elementary School.....	31
Figure 19. Ku‘iliioa Heiau, Wai‘anae.	33
Figure 20. Probable dryland fields between Punana‘ula and Kūmaipō Streams.	37
Figure 21. Aerial view of Punana‘ula Heiau, Wai‘anae.	37

TABLES

Table 1. Previous Archaeology in Wai‘anae Ahupua‘a	17
Table 2. Listing of Historical Maps for Wai‘anae.....	21

INTRODUCTION

At the request of Group 70 International, Keala Pono Archaeological Consulting conducted a literature review for improvements to Wai‘anae Elementary School in Wai‘anae Ahupua‘a, Wai‘anae District, on the island of O‘ahu. Two new buildings are planned for the school grounds. This work was designed to identify any historic properties that may be located on the parcels in anticipation of the proposed construction. It consisted entirely of a literature review, with no archaeological fieldwork conducted.

This report is drafted to meet the requirements and standards of state historic preservation law. It will be included in an Environmental Assessment (EA) that is being prepared in accordance with the requirements of Chapter 343, HRS, Hawai‘i Administrative Rules, Title 11, Department of Health.

The report begins with a description of the project area and a historical overview of land use and archaeology in the area. Results of the literature review are summarized and recommendations are made in the final section. Hawaiian words, flora and fauna, and technical terms are defined in a glossary at the end of the document.

Project Location and Description

The Wai‘anae Elementary School project is located in Wai‘anae Ahupua‘a, Wai‘anae District, on the west side of O‘ahu. The Elementary School property covers three parcels, two of which include the proposed project. The project area is located *mauka* (to the north) about 850 ft. (260 m) from Farrington Highway, on the west side of Wai‘anae Valley, on the leeward coast of O‘ahu, north of Poka‘i Bay, in Wai‘anae Kai Ahupua‘a (Figure 1). The two Wai‘anae Elementary School properties together are roughly trapezoidal in shape and the project boundaries encompass an area of 3.06 ac. (1.24 ha).

The two parcels are shown in Figure 2. TMK: (1) 8-5-009:018 is a 2.85 ac. (1.15 ha) property owned by the City and County of Honolulu. In some records this is listed as TMK: (1) 8-5-001059. This property is surrounded on three sides (south, east, and north) by TMK (1) 8-5-001-067 and is fronted on the west side by McArthur Street. TMK: (1) 8-5-001:067 is a 10.65 ac. (4.31 ha) parcel owned by the State of Hawai‘i. This larger property encloses the first parcel on three sides and is bounded by McArthur Street to the west, Plantation Road to the east, and Imipono Street to the north. This property is immediately adjacent to the north of the Wai‘anae Protestant Church property leased to Hawai‘i Public Housing Authority and the east boundary is bordered by Pilila‘au Park.

The project will provide two new buildings on open field areas on the Wai‘anae Elementary School campus. The larger building is approximately 7,000 sq. ft. and the other is 5,000 sq. ft., and both are one story tall. Some trenching will be needed for utilities and the parking area will be repaved and restriped. There will also be a new access point from MacArthur street.

Physical Environment

The project area is relatively flat and has been cleared of all native vegetation. Elevation ranges from approximately 10–20 ft. (3–6 m) above mean sea level (amsl). The project lands rest on alluvium deposited by Kaupuni Stream to the east and would be on the north edge of the Wai‘anae Valley coastal plain. Beneath this and on both sides of the stream is an emerged fossil limestone reef rock formed by uplifted coral reefs.

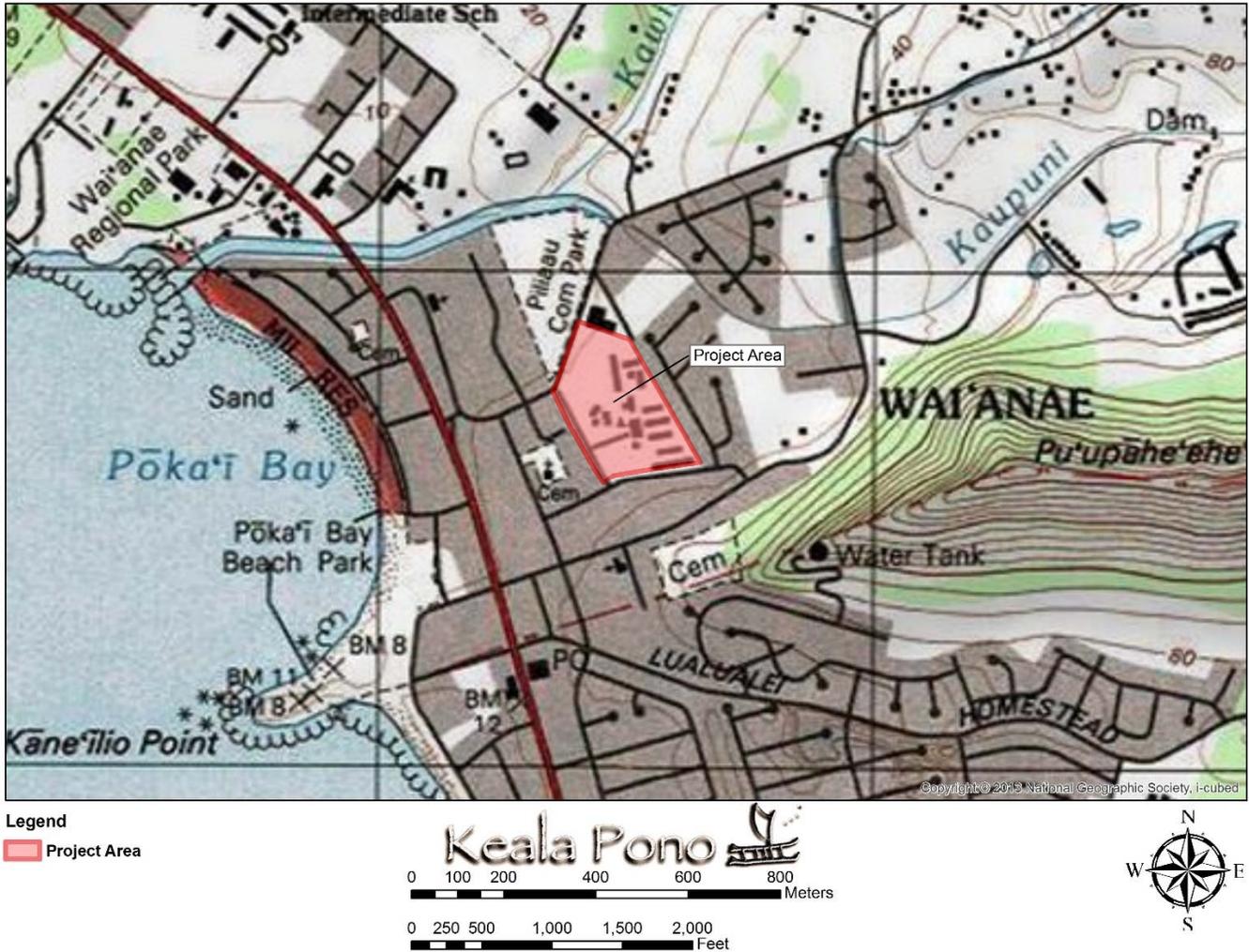


Figure 1. The project area (in red) on a 7.5 minute USGS Waianae Quadrangle map with TMK overlay.

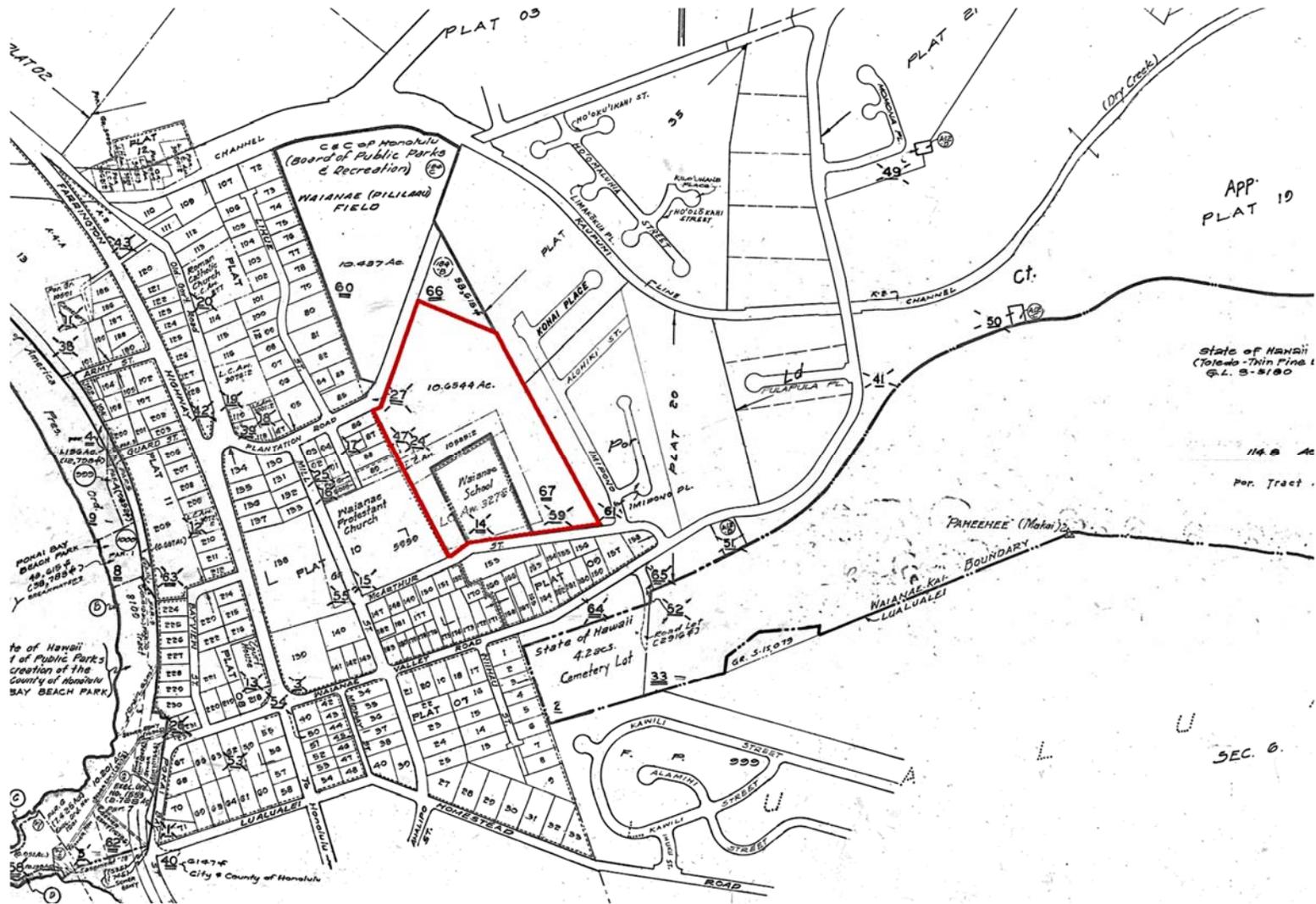


Figure 2. Portion of TMK plat (1) 8-5-001, dated December 1933, showing the project area in red.

According to Foote et al. (1972:6, 84–85), the soils on the property are classified as part of the Lualualei Series (Lualualei-Fill Land-Ewa association) consisting of well-drained soils on the coastal plains. These soils developed in alluvium and colluvium and are deposited and develop on nearly level or gently slopes. Typically Lualualei soils are dark grayish-brown, very sticky and plastic, underlain by coral gravel, sand, or clay below a depth of about 40 in. (102 cm). Specifically, soils in the project area consist entirely of PsA, or Pulehu clay loam, 0–3% slopes (Foote et al. 1972) (Figure 3).

The project area lies in a belt of warm, dry northeasterly trade winds which persist throughout much of the year. Due to the Wai‘anae Mountain Range to the east and its proximity to Pōka‘ī Bay and the coast, the region is also semi-arid (Foote et al. 1972), and rainfall ranges from 10–25 in. (25–64 cm) per annum (Giambelucā et al. 2013).

Wai‘anae Valley is drained by Kaupuni Stream and its ten tributaries with a total watershed of 9.2 sq. mi. (23.9 km²). The project area is located within the coastal flood zone of Kaupuni, which is a perennial stream whose tributaries and headwaters extend to the back of the valley and the surrounding Waianae Mountains. Although many streams in leeward O‘ahu do not flow year round, historical accounts suggest that Kaupuni carried flow throughout the year, and fed at least one large fishpond on the inland side of Pōka‘ī Bay.

Native and Polynesian introduced plants have been removed in the project area with the exception of coconut, or *niu* (*Cocos nucifera*). Grasses are the dominant vegetation with the exception of a number of large, introduced monkeypod trees (*Samanea saman*), *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena leucocephala*).

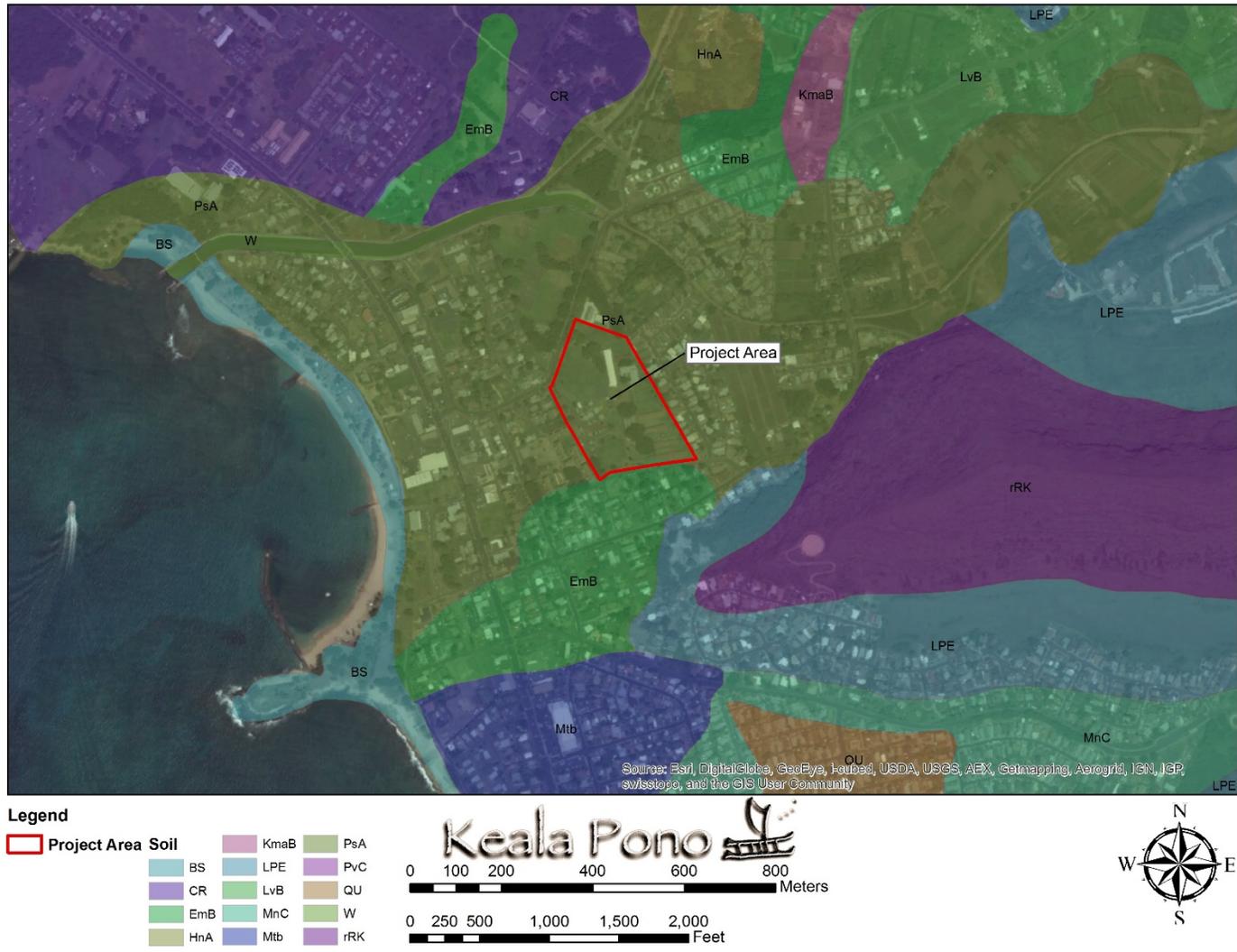


Figure 3. Soils in the vicinity of the project area.

LITERATURE REVIEW

This section of the report presents background information as a means to provide a context through which one can examine the cultural and historical significance of the project lands. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., *mo'olelo*, *'ōlelo no'eau*) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawai'i State Library, the University of Hawai'i at Mānoa libraries, the SHPD library, and online on the Waihona 'Aina database and the State of Hawai'i Department of Accounting and General Services (DAGS) website. Historical maps, archaeological reports, Māhele data, and historical reference books were among the materials examined.

Wai'anae (or more accurately Wai'anae Kai) is one of nine *ahupua'a* identified for the Wai'anae Moku, situated in western O'ahu. As the largest, most centrally located of the *ahupua'a* and one that takes its name from the *moku*, Wai'anae—both the *ahupua'a* and *moku*—played an important role in the history of leeward O'ahu. The *ahupua'a* is bounded by Mākaha and Lualualei Ahupua'a to the northwest and southeast, respectively. The boundaries of Wai'anae originally extended across the ridge tops of the Wai'anae Mountains and to the east and north it reached the ridgeline of the Ko'olau Mountains. It would have been bordered by Kamananui Ahupua'a in Waialua and Waipi'o and Waikele Ahupua'a in the *moku* of 'Ewa. This upland region was known as Wai'anae Uka. The northern boundary is now the ridgeline of the Wai'anae Mountains.

When speaking of land use terms and concepts regarding O'ahu, it is important to note that some of O'ahu's ancient traditions are unique and have continued to survive. *Kupuna* Glen Kila shares, "In Wai'anae, we do not use the term [*ahupua'a*], at that time before Kamehameha, we used the term *'ili*. *'Ili* was an *ahupua'a* in our vocabulary" (McElroy et al. 2013:102). Furthermore, *Kupuna* Kila explains that prior to the *ahupua'a* system coming to the O'ahu kingdom, there was a traditional O'ahu resource management system called "*ka'ananiau*" (McElroy et al. 2013) which can be loosely translated as "managing the beauty of the environment over time."

Traditional Land Use

Place names often shed light on traditional views of an area and can provide important contextual information. The name of the Wai'anae district and *ahupua'a* is translated as "mullet water" (Pukui et al. 1974:220), referring to the area's richness in mullet, a prized eating fish. The district might have been named for a large fishpond called Puehu, located on the northwest side of Keaupuni Stream (Handy et al. 1991:468). Pōka'i Bay is named for a chief from Kahiki who planted the coconut grove along the banks of Keaupuni Stream (Thrum in Sterling and Sterling and Summers 1978). Pāhoa includes three sections of land, possibly an *'ili kūpono*; one section is located near the coast on Pōka'i Bay. A second plot of land identified with Pāhoa includes the section of land adjacent to the Wai'anae Elementary School. The term translates as "shark dagger or stone" (Pukui et al. 1974:301). This may be in reference to the location where Olopana attempted to slay Kamapua'a (see *Mo'olelo* section).

The ridge and the mountain tops that surround Wai'anae were also named. These include the following: Kamaile'unu, Kepauala, Kawiwi, Ka'ala, Kaua'ōpu'u, Kuwale, Pāhe'ehe'e Mauka, and Pāhe'ehe'e Makai. Mt. Ka'ala is the highest mountain peak of O'ahu and sits at the head of Wai'anae. It is mentioned in numerous chants and prayers, in part because it was visible from a distance. It is associated with Kāne, a deity in the pantheon of Hawaiian gods. Place names that define the coastal boundaries of Wai'anae are Kāne'īlio on the south, and Laukīnui (now Lahilahi) to the north. Several of the ridge and mountain places are noted in oral traditions and other Hawaiian sources.

Wai‘anae was one of three dry or leeward *moku* on the Island of O‘ahu (Handy et al. 1991). Although Handy (1940:156) identifies its staple crop as sweet potato, or ‘uala (*Ipomoea batatas*), he is likely referring to one of the other *ahupua‘a* (possibly Mākaha) within the *moku* of Wai‘anae. In Wai‘anae Ahupua‘a there were a number of relatively large *lo‘i* and house complexes along the streams that drained the valley beginning inland from the coastline and extending more than 2 km (1.2 mi.) up the valley. This is supported by Handy (1940:84) who describes an “extensive system of terraces along its various streams...” He notes at least 14 different names for these complexes, probably referring to their associated ‘*ili ‘āina*. *Kalo*, or taro (*Colocasia esculenta*), would have been the primary crop in these *lo‘i*. The ‘*ili* of Kamaile on the west side of Wai‘anae was almost 40 ha (98 ac.) in size and much of it would have been devoted to irrigated agriculture. The three contiguous ‘*ili* of Ana, Kaho‘olanakio, and Lehanonui (Monsarrat 1870) adjacent to Keaupuni Stream covered nearly 25 ha (61 ac.), again much of it devoted to irrigated agriculture. Based on a map by Monsarrat (1906) that depicts *lo‘i* above the confluence of Keaupuni and Kawaopuu, Honua, and Kūmaipō Streams there are more than 111 ha (275 ac.) of irrigated plots. Although these estimates are suggested by Cordy (2012) to include dryland terraces, they are evidence of the substantial conversion of lands in Wai‘anae for agricultural purposes. Smaller *lo‘i* were likely located farther inland where streams diverged and the land became more dissected at least to an elevation of 275 m (900 ft.) above sea level (Holt et al. 2002). Handy (1940:75) also includes Wai‘anae Uka, the section of the *ahupua‘a* extending from the Wai‘anae to the Ko‘olau Mountains as a location where terraces were present. Clearly, Wai‘anae was a major area for the production of *kalo* and other cultivated plants, the largest in Wai‘anae Moku (Green 1980) and similar to the valley *ahupua‘a* on the windward side of O‘ahu.

Much of the settlement of Wai‘anae would have been concentrated in the *makai* or lower section of the valley. Not only do the numerous irrigated agricultural complexes within this zone suggest such a pattern, but historical maps of Wai‘anae show house sites scattered in or adjacent to *lo‘i*. Few houses would have been clustered into coastal villages. This is supported by Vancouver’s description of the Wai‘anae area in March 1793 on his second exploration voyage to Hawai‘i. His accounts describe a village near Mauna Lahilahi on the west end of the valley, with only scattered huts and a coconut grove in other parts of the leeward coast (Handy et al. 1991:275, 468).

Kamakau offers a poetic description of Wai‘anae that mentions its reputation for *poi* and fish:

... Wai‘anae of the gentle Kaiālulu wind, the sweet waters of ‘Eku, the thick poi of Pā‘hoa, the stringy poi of Lehano and Kūāiwa, the rich poi of Kamaile, and the *aku* fish “tidbits” of Wai‘anae —in Wai‘anae, land beloved of the sun. (1991:106)

Lastly, Wai‘anae is the location of a *pu‘uhonua* or place of refuge and safety. It was reported to be a stronghold used during a time of war and was situated at a place named Kawiwi, nearly 915 m (3,000 ft.) above sea level, along the ridgeline that serves as a boundary between Mākaha and Wai‘anae (Thrum 1909:152). A major battle, involving a beleaguered O‘ahu chief, took place at this location during the time of Kahekili, a paramount chief from Maui.

Mo‘olelo of Wai‘anae

There are many accounts from oral traditions that mention the location of Wai‘anae without much further detail. Several of these associate named individuals with Wai‘anae —both the *ahupua‘a* and *moku*. Cordy (2001) provides an overview of the oral traditions and named individuals associated with the *moku* of Wai‘anae, with much of the emphasis on Wai‘anae Ahupua‘a. These accounts range over a considerable time period, beginning with Olopana who may have lived and served as a chief nearly 20 generations (see Cachola-Abad 2000) before the advent of Kamehameha I. Kūali‘i, who was a notable O‘ahu chief is associated with Wai‘anae during his lifetime about five generations

before Kamehameha. Here we describe the accounts linked to four chiefs: 1. The death of the *ali'i* Olopana at the hands of Kamapua'a; 2. The life of the *ali'i* Helemano, 3. The rise to power of the *ali'i* Kawelo, and 4. The life of Kūali'i, one of the most important *ali'i* in O'ahu's history.

Olopana

The first *ali'i* associated with Wai'anae is Olopana, one of the first paramount chiefs of the Ko'olau Moku on the windward side of O'ahu, and whose efforts to sacrifice Kamapua'a in Wai'anae are summarized here (from Fornander 1918–1919:314–326).

Olopana was an early paramount chief of O'ahu whose history is linked to Kamapua'a, a demigod who could appear either as a human or a pig. Kamapua'a was known for his appetite, particularly for chickens. Olopana summoned his priest from Kaua'i to Wai'anae to assist him in dealing with the trepidations of Kamapua'a. The *kahuna*, Malae, warned Olopana that he would not be able to kill Kamapua'a outright. Instead he suggested Olopana offer him various plants and animals to make him weak and vulnerable. After presenting this offering to Kamapua'a, Olopana's men bound and dragged him to Pāhoa, a section near the coast of Wai'anae Ahupua'a. There Kamapua'a was tightly bound, placed on a *heiau* and prepared for sacrifice (including making several cuts into his skin). The *heiau* is thought to have been Kane Heiau. At this same time a second priest, who was also opposed to Olopana heard of these plans and prepared to intervene to save Kamapua'a. (Fornander 1918–1919). Subsequently, Olopana was killed by Kamapua'a, along with his followers on O'ahu.

Kawelo

Linked by association with Kākuhihewa (a paramount chief of O'ahu who ruled at about the same time as 'Umi on Hawai'i Island), when Kawelo was born on Kaua'i it was foretold that he would be a great soldier and eventually a leader. Early in his life his family moved from Kaua'i to O'ahu where he met 'Aikanaka, an *ali'i* who later would vie to become the chief of Kaua'i. Kawelo bested one of the soldiers of Kākuhihewa in his youth and went on to become proficient in fighting and warfare. When his family was forced off their lands in Kaua'i by 'Aikanaka, Kawelo promised his support to those opposing him. Prior to traveling to Kaua'i, however, he and his followers landed in Wai'anae where they built a *heiau* (Fornander 1918–1919:28). Here Kawelo prayed for success to his god Kane-i-ka-pualena and to the idol of the god Ka-lani-hehu that had been sent from Kaua'i. Kawelo traveled with his warriors to Kaua'i and in a number of battles defeated the soldiers of 'Aikanaka and eventually bested 'Aikanaka, who had gathered his followers for a final stand against this warrior-chief. After defeating 'Aikanaka Kawelo then assumed the role of paramount chief of all of Kaua'i (Cachola-Abad 2000). Once victorious on Kaua'i, Kawelo distributed its lands to his ranking warriors.

Halemano

The story of Halemano shares some of the same elements as both Olopana and Kūali'i although in this case his history is bound up with his wife, Kamalalawalu, who betrays him, not once but twice. In one of the final accounts of Halemano he has been summoned to a game of *kilu* by a Kohala chief (in whose district he was living at the time). This game involves skill in hitting a target and between turns the chiefs recited chants. On the third and fourth rounds of this game Halemano, who has seen his wife watching his performance, chants the following that includes naming the main bay and the mountains of Wai'anae:

My lover from the Kalihi rain, where the clothes are bundled up,
Where in the back is the only sheltered spot;
It is being pressed by the Waahila (rain),
The rain of my land where women are led away secretly.

Search is made to the top of **Kaala**,
 The lower end of **Pokai** is plainly seen.
 Love looks in from Honouliuli,
 The dew comes creeping, it is like the wind of Lihue,
 Like a false gleaming of the sun at Kaena,
 For it is being destroyed by the Unulau wind from below,
 Causing coldness within, made so by love of thee,
 For I love thee, my companion of that parched plain. (Fornander 1916–1917:252, emphasis
 ours)

Halemano wins this game in the 15th round and his former wife steps up to claim him once more. But she is rejected because Halemano has a new wife. Afterwards he and his new wife return to O‘ahu where he eventually meets his first wife, Kamalalawalu again. Once more their union could not endure and she went to live with a chief in Waiāhole. In the meantime, the chief from Hilo learned of Kamalalawalu’s presence and he had previously been promised her hand. He and his warriors traveled to O‘ahu, defeated the Waiāhole chief, and returned to Hawai‘i Island with Kamalalawalu.

Kūali‘i

Kūali‘i is identified as a “usuper” king by Beckwith (1940), one who by dint of his strength and courage vanquished his foes and became one of the most recognized chiefs in Hawaiian history. His history is recounted in Fornander (1916–1917:364–402). Born in Kailua on O‘ahu, Kūali‘i, was recognized for his strength at an early age, and in his training was encouraged to challenge chiefs who were oppressive. Cachola-Abad (2001) places him in the 20th generation of paramount chiefs on O‘ahu; Kirch (2011) suggests he ruled in the late 17th century. He does so by a variety of means: usurping their roles in rituals performed at *heiau*, winning battles, marrying a high ranked chiefess, and taking on critical allies. He was said to win battles even when outnumbered and first was elevated as a paramount chief of the Kona Moku of O‘ahu, whereupon he became proficient in warfare and conquest. He traveled to Kaua‘i where again with few warriors he defeated a larger force and subdued all or part of the island. He also served as an ally to help win Moloka‘i and Lāna‘i, and aided a chief in Maui. He then went to Hawai‘i and routed a chief named Ha‘alilo, but returned to O‘ahu to repel a revolt of the Wai‘anae chiefs at Kalena.

Kūali‘i also composed a *mele* to himself and this was sung at one of his battles by his son. Among the more than 600 verses is this one that mentions several locations in Wai‘anae Ahupua‘a:

100 Hawaii of high mountains;
 Towering unto heaven is Kauiki;
 Down at the base of the islands
 Where the sea holds it fast.
 105 Kauiki the mountain,
 Like the sea-gull flapping its wings when about to fall
 Kauai,
 Great Kauai inherited from ancestors
 Sitting the calm of **Waianae**
 110 Kaena is a point
 Kahuku is hala-wreathed
 Covered with dew is the back of **Kaala**
 There below doth Waialua sit,
 That is Waialua

This verse identified Kamaile, both an *'ili* of Wai'anae and the location of a major *heiau*.

400 The koaie of Kauai;
The sea grass has been stripped by Ku—
The waving [grass] of **Kamaile**;
The towering surf of Mahiwa,
Which dammed up the water of Halapo

And these verses recognize Ka'ala and Kawiwi, two prominent landmarks of Wai'anae.

500 The moss that hangs on wood,
The red crab on the top of **Kaala**
Not like unto these are thou, Ku
Not like the kukui
The rough-barked kukui

510 The fragrant poholua tree,
Nor the maile that grows on Maoi,
Nor the kaluhea of **Kawiwi**
Not like these are thou, Ku.
Not like the kawuu

Is the kalia standing in the open (Fornander 1916–1917:364–402, emphasis ours)

The *mele* valorizes Kūali'i, linking him not only to numerous places in O'ahu and elsewhere in Hawai'i but also Tahiti (or Kahiki). The prominent role that Wai'anae place names play in this *mele* are a sign of the region's visible importance to Kūali'i's political ambitions.

'Ōlelo No'eau

Wai'anae, both the *moku* and *ahupua'a*, are mentioned in Hawaiian proverbs (Pukui 1983). They provide further insight to traditional beliefs and practices of these lands:

E nui ke aho, e ku'u keiki, a moe i ke kai, no ke kai la ho'i ka 'āina.

Take a deep breath, my son, and lay yourself in the sea, for then the land shall belong to the sea.

Uttered by the priest Ka'opulupulu at Wai'anae. Weary with the cruelty and injustice of Kahāhana, chief of O'ahu, Ka'opulupulu walked with his son to Wai'anae, where he told his son to throw himself into the sea. The boy obeyed, and there he died. Ka'opulupulu was later slain and taken to Waikīkī where he was laid on the sacrificial altar at Helumoa. (Pukui 1983:44)

Ka malu niu o Pōkā'i.

The coco-palm shade of Pōkā'i.

Refers to Wai'anae, on O'ahu. At Pōkā'i was the largest and best-known coconut grove on O'ahu, famed in chants and songs. (Pukui 1983:160)

Kapakahi ka lāma Wai'anae.

Lopsided is the sun at Wai'anae.

Used to refer to anything lopsided, crooked, or not right. First uttered by Hi'iaka in a rebuke to Lohi'au and Wahine'ōma'o for talking when she warned them not to. (Pukui 1983:164)

Malolo kai e! Malolo kai e!

Tide is not high! Tide is not high!

Said of threatening disaster. Robbers once lived at a place in Wai‘anae now known as Malolo-kai. Their spies watched for travelers to kill and rob. When there were only a few that could be easily overcome, the spies cried, “Low tide!” Which meant disaster for the travelers. But if there were too many to attack, the cry was “High tide!” (Pukui 1983 232–233)

Ola o Waianae i ka makani Kaiāulu

Wai‘anae is made comfortable by the Kaiāulu breeze.

Chanted by Hi‘iaka at Ka‘ena, O‘ahu, after her return from Kaua‘i. (Pukui 1983:273)

The Kaiāulu has been described as a “pleasant, gentle trade wind” (Nakuina 2005:123).

Historic Events and Land Use

The history of Wai‘anae is closely tied to the larger history of its *moku* and the Island of O‘ahu. Political dynamics among *ali‘i* on O‘ahu had been mostly confined to the island with occasional incursions from the chiefs of other islands. For the most part, the kingdom of O‘ahu had developed into a peaceful and prosperous kingdom. In 1783 this changed with invasion of O‘ahu by Kahekili, the paramount chief of Maui. At the time of Kahekili’s attack, Kahahana was the ruler of the O‘ahu kingdom and would be the last sovereign to rule over an independent O‘ahu. When Kahekili invaded, not only did he take the island but Kahekili killed virtually all of O‘ahu’s royal heirs and descendants of the Nanaulu line of chiefs. By 1795, Kamehameha the Great from Hawai‘i Island had taken over Maui’s rule of O‘ahu by ousting Kalanikūpule, the son of Kahekili and with that unified all of the main Hawaiian Islands, save Kaua‘i. On the leeward side of O‘ahu, control of Wai‘anae was passed to a series of Kamehameha’s retainers and family. Kamehameha’s ally, Boki was named governor of O‘ahu in 1816 and after Kamehameha’s death was the unrivaled leader of the Island. Boki was granted Wai‘anae Ahupua‘a at this time, while the *moku* of Wai‘anae was controlled by the Crown.

Māhele Records

The change in the traditional land tenure system in Hawai‘i began with the appointment of the Board of Commissioners to Quiet Land Titles by Kamehameha III in 1845. The Great Māhele took place during the first few months of 1848 when Kamehameha III and more than 240 of his chiefs worked out their interests in the lands of the Kingdom. This division of land was recorded in the Māhele Book. The King retained roughly a million acres as his own as Crown Lands, while approximately a million and a half acres were designated as Government Lands. The Konohiki Awards amounted to about a million and a half acres, however title was not awarded until the *konohiki* presented the claim before the Land Commission.

In the fall of 1850 legislation was passed allowing citizens to present claims before the Land Commission for parcels that they were cultivating within the Crown, Government, or Konohiki lands. By 1855 the Land Commission had made visits to all of the islands and had received testimony for about 12,000 land claims. This testimony is recorded in 50 volumes that have since been rendered on microfilm. Ultimately between 9,000 and 11,000 *kuleana* land claims were awarded to *kama‘āina* totaling only about 30,000 acres and recorded in ten large volumes

During the 1848 Māhele land division the entire Wai‘anae District, aside from Mākaha, was first designated as Crown Land. In the original government act that established fee simple land ownership all of Wai‘anae Ahupua‘a is identified as part of the Crown Lands (Kingdom of Hawai‘i 1846:26). A chief from Wai‘anae known as Pāhoa was given half of the *‘ili* of Kalena in Wai‘anae Uka but

this was later rescinded. Pāhoa was also the original awardee for Land Commission Award (LCA) 7713; again this was later rescinded. The lands were later awarded to Victoria Kamāmalu as part of a claim that included property on several islands.

Later there were a large number of (i.e., more than 160) successful LCAs in Wai‘anae Ahupua‘a (see Commissioner of Public Lands 1929:845–852). These awards are associated with (and assigned to) one of the more than 15 *‘ili ‘āina* that have been identified in the *ahupua‘a*: Ana, Ka‘akoa, Ka‘api, Kahaniki, Kaho‘olanakio, Kamaile, Keaunui, Keekee, Kuaiwa, Kumaipo, Lehanoiki, Lehanonui, Leleakoa, Pāhoa, and Puea.

The Wai‘anae Elementary School sits on the property that was claimed by Waimalu as LCA 3276, as well as an *‘āpana* section claimed by Olaelae as part of LCA 10585. Waimalu’s portion, totaling 3.57 ac. (1.44 ha) had two linked house sites and was surrounded on all four sides by a stone wall. In testimony provided by Waimalu he claimed 13 *lo‘i*, an *‘auwai*, and a *kula* plot. Olaelae’s portion, totaling 1.26 ac. (0.51 ha) was bounded on two sides by a stone wall. In testimony provided by Olaelae he claimed three *lo‘i*, an *‘auwai*, and bananas.

These two properties (Waimalu, Olaelae) have been assigned to the *‘ili ‘āina* of Wailele as well as Pāhoa. They are located *mauka* (north) of the main road. A second section of Pāhoa extended into Wailele just west of Waimalu’s property. Figure 4 shows this property as first mapped by Monsarrat in 1870. The larger enclosure, encompassing the three parcels, is roughly square measuring about 360–400 ft. (110–122 m) on each side. It was enclosed by stone walls that defined its boundaries. Much of the property, and likely the *‘ili*, was given over to the cultivation of *kalo* in a number of *lo‘i* irrigated by an *‘auwai* from Keaupuni Stream.

On Jackson’s (1884) map, he shows a large section of *lo‘i* just west of Keaupuni Stream and north of the *‘ili ‘āina* boundary wall separating Wailele and Pāhoa (Figure 5). This property on which the Elementary School sits today was part of a much larger section, again defined by a stone wall. This may demarcate the boundary of the entire *‘ili ‘āina* of Wailele. It extended northeast more than 2,000 ft. (610 m) with the boundary crossing Keaupuni Stream. It then angles to the southwest, extending 1,300 ft. (396 m). The total area encompassed by the *‘ili* was approximately 94 ac. (38 ha). And although the claimant testimony does not identify it as such, there is a house site represented on two of Monsarrat’s (1870, 1902) maps. By 1902 this property also supported eight homes, likely for the plantation workers for the Waianae Company (Figure 6).

Post-Māhele History

After the Māhele, large tracts of land in the upper valley were leased or purchased as grants for ranching, initiating a series of landscape changes in the region. The Waianae Sugar Plantation was founded in 1878 by H.A. Widemann; its cultivated lands encompassed much of *makai* Wai‘anae both east and west of Keaupuni Stream. Ranching occurred in the uplands as L.L. McCandless acquired several large leases on the east side of the valley. With this the Wai‘anae community grew substantially. By 1906 the Waimalu parcel is recorded as property for a school—presumably the precursor to the current Wai‘anae Elementary School. By 1884, Wai‘anae was listed in the Hawaiian Directory as one of the largest settlements on O‘ahu, second only to Honolulu.

During the 1890s the Oahu Railway and Land Co. (OR&L) railroad was constructed to bring crops and animals from the Leeward Coast to Pearl Harbor. This railway would eventually run through all of the Wai‘anae District and around Ka‘ena Point to Kahuku. Vestiges of the old rail line can still be seen along Farrington Highway. Two sections of this railway extended into Wai‘anae Valley to transport sugarcane harvested on Waianae Company lands. The eastern extension of the railway was located about 30 m (100 ft.) south of the Waimalu property.

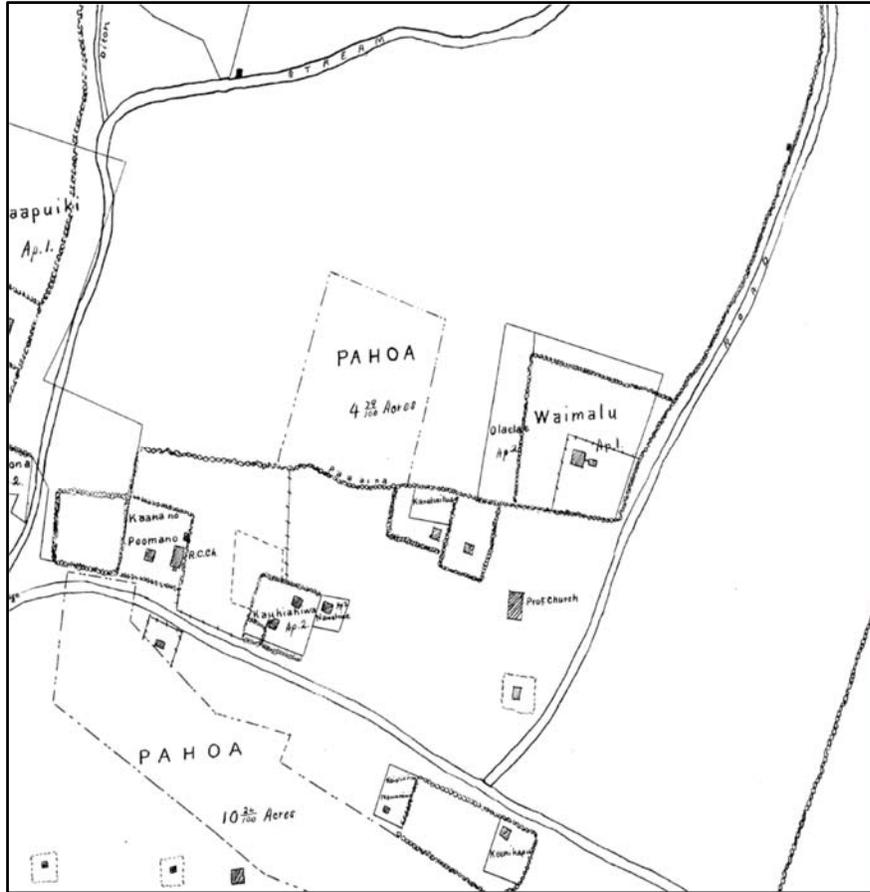


Figure 4. Portion of a map depicting the location of Waimalu’s Land Commission Award (Monsarrat 1870) (see Figure 10 for the full map). This property largely defines the boundaries of the Wai’anae Elementary School.

Sugarcane production and military activity dominated the first half of the 20th century on the Leeward Coast. Much of Pōka‘ī Bay was acquired by the military through an Executive Order as a staging area for its troops (see Aiu 1928). World War II was devastating for the Waianae Sugar Plantation as high paying defense jobs created a labor shortage. All sugarcane production in the Wai’anae District was eliminated at this time due to labor shortages, water shortages, military procurement of land, and other more productive agricultural regions taking over. The OR&L railway was officially abandoned in 1946.

Previous Archaeology and Historical Materials

A wealth of archaeological and ethno-historical studies have been undertaken in the *ahupua‘a* of Wai’anae (Figure 7 and Table 1). The following is a summary of archaeological publications found in the SHPD library that report on work carried out in the vicinity of the Wai’anae Elementary School and the larger area of Wai’anae Ahupua‘a. Cordy’s *An Ancient History of Wai’anae* (2002) remains the major overview of the prehistory of Wa’ianae District. Despite the number of archaeological studies, the prehistory of Wai’anae Ahupua‘a remains relatively unknown. This is partly due to the extensive historical (and on-going) modifications from sugarcane cultivation, as well as the

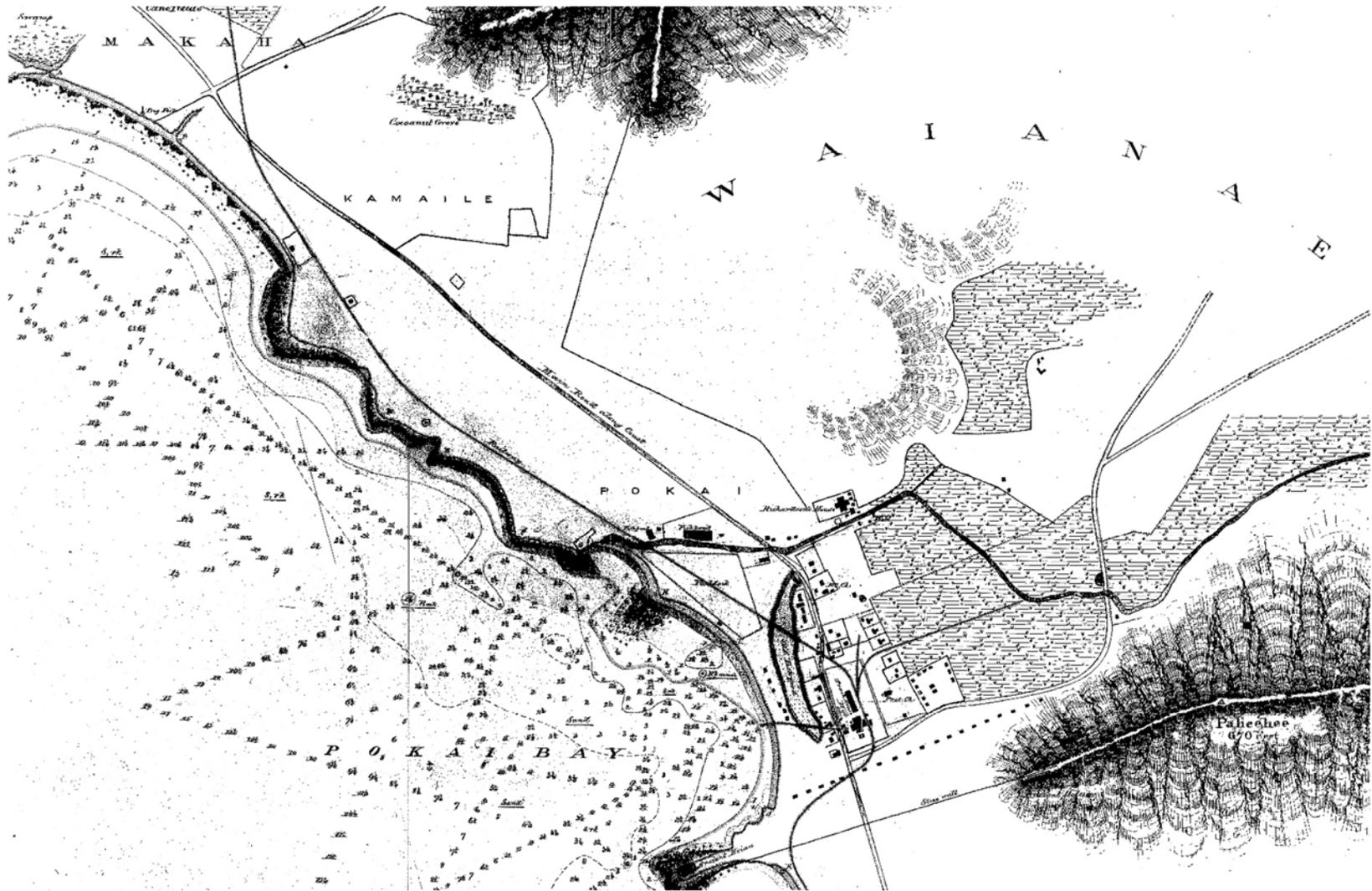


Figure 5. Portion of an early map of Pōkaʻī Bay (Jackson 1884).

Table 1. Previous Archaeology in Wai‘anae Ahupua‘a

Author and Year	Location	Work Completed	Findings
McAllister 1933	Nine site locations in Wai‘anae	Island-wide Survey	Described ten <i>heiau</i> , one rockshelter, one fishpond, several house sites, refuge site.
Sinoto 1975	Wai‘anae Regional Park	Reconnaissance	Identified five dry-laid masonry structures or features, including three enclosures, an L-shaped wall, and an isolated wall.
Hommon 1978	Kamaile Heiau	Survey and Mapping	Mapped the <i>heiau</i> , described habitation cave and terraces below.
Tao 1978	Ku‘iliola Heiau, Pōka‘ī Bay, Wai‘anae	Archival Research	Planned to restore the <i>heiau</i> .
Abe and Kelly 1979	Ku‘iliola Heiau, Pōka‘ī Bay, Wai‘anae	Survey and Mapping	Identified eight construction features for Ku‘iliola Heiau.
Sinoto 1979	Western Coastline, Wai‘anae Kai	Reconnaissance	Documented irrigated terraces.
Ahlo 1980	Wai‘anae Agricultural Park, Wai‘anae Kai	Reconnaissance	Identified 24 archaeological features used for dryland agriculture or habitation.
Ota 1981	Upper Wai‘anae Valley, Honua Stream	Reconnaissance	Documented irrigated and dryland agricultural terraces.
Rosendahl 1981	Wai‘anae Valley Road Improvements	Survey	No artifacts or features located.
Kam and Ota 1984	Wai‘anae Army Recreational Area, Pōka‘ī Bay	Inadvertent Burial, Burial Recovery	Recorded two human burials, historic artifacts, hearths or fire pits.
Riford 1984	Pōka‘ī Bay	Monitoring	Human remains.
Hammatt et al. 1985	Pōka‘ī Bay	Test Excavation and Monitoring	Recorded prehistoric and historic cultural features (fire pits, human burials) and layers, human remains, and significant number of traditional artifacts including volcanic glass, adze fragments, worked calcite, faunal remains.
Shapiro and Rosendahl 1988	Lower Wai‘anae Valley, north of Keaupuni Stream	Surface Survey, Subsurface Testing and Significance Assessment	Recorded 34 sites with 45 features, most associated with historic dairying. Traditional features included dry laid masonry walls, ditches, coral and basalt lithic scatter, and a terrace. Subsurface trenching identified buried pondfield soils in seven locations where LCAs were claimed.
Bordner 1989	Upper Wai‘anae Valley, Hui Stream	Reconnaissance	Identified dryland agricultural features.
Kawachi 1990	Mauna Lahilahi, Coastal Wai‘anae	Inadvertent Burial, Burial Recovery	Recorded a human burial.
Kawachi 1992	Wai‘anae Regional Park	Burial Report	Recorded a human burial.

Table 1 (Cont.)

Author and Year	Location	Work Completed	Findings
Denham et al. 1992	Wai‘anae Regional Park	Survey and Subsurface Testing	Recovered one volcanic glass flake, possible basalt abrader, shellfish, and faunal remains; no cultural deposits.
Flood et al. 1994	East of Wai‘anae Intermediate School	Survey	Identified 24 features including 14 unmodified sinkholes, four modified sinkholes, a wall, a historic artifact scatter, a trash mound, an alignment, a platform dog burial, and a terrace.
Cordy 1997	Upper Wai‘anae Valley, Punana‘ula and Kūmaipō Streams	Reconnaissance Survey	Relocated Punana‘ula Heiau, and documented the occurrence of <i>lo‘i</i> complexes associated with the two streams. Identified dryland agricultural fields in their lower reaches. One complex with 20 features mapped, including an animal pen, house site, dryland field walls, <i>lo‘i</i> terraces and <i>‘auwai</i> .
Kapeliela 1997	Lihue Street and Plantation Road, Wai‘anae	Inadvertent Discovery of Human Remains, Burial Recovery	Documented human remains.
Borthwick et al. 1999	Pōka‘ī Beach Park, Pōka‘ī Bay, Wai‘anae	Subsurface Survey	Noted a possible pre-contact cultural layer.
McGuire and Hammatt 2001	‘Ili of Kamaile and Wai‘anae Ahupua‘a	Traditional and Historical Assessment	Identified known references to Kamaile and Wai‘anae and interviewed residents on the history of the sugar plantation.
Magnusen 2001	Kamaile Elementary School, Wai‘anae	Reconnaissance	No archaeological features or remains encountered.
Shun and Shaw 2002	Pōka‘ī Bay, Wai‘anae	Monitoring	Recorded a disturbed charcoal layer, fire-cracked rock, possible <i>‘ili‘ili</i> paving stones.
Holt et al. 2002	Site 5803, Upper Wai‘anae Valley	Surface Survey and Excavation	Documented three, possibly four structural, dry-laid masonry foundations (including a shrine), two features (fire pits), basalt flakes, and adze preform.
Clark et al. 2004	Wai‘anae Regional Park	Survey, Subsurface Testing	Recorded three dry-laid masonry structures, three sinkholes used as gardening areas, including subsurface cultural deposits. Recovered volcanic glass, basalt flakes, faunal materials, historic bottle glass, <i>kukui</i> , pearl shell fishhook, wood charcoal, bird bone, pig bone, large variety of shellfish, and invertebrates.
Bush and Hammatt 2004	Near Wai‘anae Elementary School, Hawaiian Electric Company	Inadvertent Discovery of Human Remains, Burial Recovery	Identified a portion of one human burial.

Table 1. (Cont.)

Author and Year	Location	Work Completed	Findings
Kalilihiwa and Cleghorn 2005	Pōkaʻī Bay, Waiʻanae	Monitoring	No findings, only modern materials identified.
Hammatt and Shideler 2006	Leeward Coast Emergency Homeless Shelter, Waiʻanae	Survey	Documented one human burial.
Desilets 2007	Dept. of Transportation Waiʻanae Baseyard	Assessment and Geophysical Survey	No findings.
Dye and Jourdane 2007	Chen Farm, Waiʻanae Valley Road	Assessment	No findings.
Jones et al. 2008	Waiʻanae Valley Road, Board of Water Supply	Monitoring	Recorded former <i>loʻi</i> soils, red brick.
Shefcheck and Spear 2007	Waiʻanae Regional Park, Pōkaʻī Bay	Archaeological Assessment	Possible subsurface cultural deposits
Nakamura et al. 2008	Waiʻanae Water System, McArthur and Kawili Streets, Waiʻanae Kai	Monitoring	Recovered 19 th –20 th century historic artifacts (bottle glass, ceramics). Project area linked to pre-contact foot trail.
Shefcheck and Spear 2008	Waiʻanae Regional Park, Pōkaʻī Bay	Archaeological Assessment	Found no cultural materials; noted possible subsurface cultural deposits.
McElroy 2009	Farrington Highway Fiber Optic Line, Lualuae, Waiʻanae, and Mākaha	Monitoring	Collected a 20 th century glass bottle.
Shefcheck and Spear 2009	Waiʻanae Kai, Hawaii Coalition of Christian Churches	Monitoring	Identified a grinding stone mortar.
Cordy 2012	Waiʻanae Valley Ranch, Ranch headquarters and western, upper portion of Kawiki, Punanaʻula, Kumaipu streams, Waiʻanae Kai	Reconnaissance	Recorded 116 sites located in the upper valley mostly used for dryland and irrigated agriculture, including irrigation canals. One rockshelter used for habitation, a number of house sites, several possible shrines, small platforms that may be locations for human burials. Historic era dry laid masonry walls also identified.
Stine et al. 2014	Lualualei and Waiʻanae Ahupuaʻa	Monitoring	Identified three sites: Puehu Fishpond, the Old Government Road, and the Waianae Sugar Plantation railway.

construction of a roadway and then a railway through the area. Relatively few reports provide chronometric dates and those that do, generally do not describe the reliability of these dates (e.g., if the samples were identified as short lived taxa). Few of the archaeological studies have included any synthesis (but see Flood et al. 1994 for an extended summary of archaeological studies done prior to 1990). Project summaries here are presented for four areas within Wai‘anae: 1. Coastal Southern Section, including Pōka‘ī Bay, to Keaupuni Stream, 2. Coastal Western Section of Wai‘anae including the Kamaile ‘*ili* ‘*āina*, 3. Lower or Makai Wai‘anae Valley, above Keaupuni-Kawiwi Streams, and 4. Upper or Mauka Wai‘anae Valley above Punana‘ula Stream. Several historical maps for Wai‘anae were also used in this overview. They are listed in Table 2 and can be found on the Department of Accounting and General Services website. These maps depict various aspects of land use, as well, as including “archaeological” features and structures (e.g., fishponds and *heiau*).

One measure of the cultural and ritual significance of Wai‘anae is the large number of *heiau* identified there. McAllister (1933:112–116) names nine *heiau* in Wai‘anae Valley: Pu‘upahe‘ehe‘e (Site 152), Kū‘īlioloa (Site 153), Keaupuni (or Keopuni) (Site 155), Kamohoali‘i (Site 156, also known as Haua [Sterling and Summers 1978:71], Malaeha‘akoa (Site 157), Kikahi (Site 158), Kalamaluna (Site 159), Kane (Site 160), Kamaile (Site 161), and Punana‘ula (Site 161), many more than he identified in either Mākaha or Lualualei. Some of these *heiau* have been destroyed, some may be partially intact (e.g., Malaeha‘akoa) while a few may be fully intact. Cordy (1997; Holt et al. 2002) relocated Punana‘ula Heiau in the upper reaches of Punanua‘ula Stream. Keaupuni Heiau, located along the west bank of Keaupuni Stream near its mouth in Pōka‘ī Bay, was identified by Flood et al. (1994:29) as the structure mapped by Monsarrat (1870, 1902). It has been leveled. They also identify the likely location and structure associated with Kamohoali‘i Heiau, located about 300 m (1,000 ft.) inland from Pōka‘ī Bay, in the ‘*ili* of Leohano-iki. It was mapped by Monsarrat (1870, 1902) by which time it apparently had houses constructed on its foundation. Pu‘upahe‘ehe‘e Heiau, on the eastern ridgeline separating Wai‘anae from Lualualei, was destroyed when a cemetery was enlarged. It was identified by Thrum (1916) as a *luakini* class *heiau*. Kū‘īlioloa Heiau is the only known *heiau* on O‘ahu to be surrounded by water on three sides. McAllister (1933) speculates its use may be related to the sea and fishing. It is located on Kāne‘īlio Point at the eastern end of Pōka‘ī Bay (1933:11). It has been partly restored and its history and archaeology described by Tao (1979) and Abe and Kelly (1979). Kamaile Heiau is relatively well preserved on the ridgeline and *ahupua‘a* boundary separating Wai‘anae and Mākaha. It was mapped by McAllister (1933) and again by Hommon (1978).

While none of these *heiau* have been adequately documented or studied, they do illustrate how the locations of such structures were organized: there are two *heiau* on the coastal points on both the east and west *ahupua‘a* boundaries. Similarly there were two *heiau* constructed on the ridgelines above the coast, again situated on the east and west *ahupua‘a* boundaries. Both Kamaile and Pu‘upahe‘ehe‘e Heiau were likely of the *luakini* class, as were possibly Kamohoali‘i and Kane Heiau (where Kamapua‘a was supposedly held).

Historic Maps

One of the earliest maps for Wai‘anae was prepared in 1860 for the Waimalu Lease (Figure 8). It is not a final map—many names are written in long hand. It does show a number of ‘*ili* ‘*āina* that are noted on later maps. There are also several other names that are probably ‘*ili* ‘*āina* names as well. The property of Waimalu, where the Elementary School is located, is shown on this map. There are apparently other place names or named individuals labeled but these could not be deciphered.

Another map of part of Wai‘anae Kai, also dated 1860, does not provide much detail (Figure 9). It depicts the locations of the *lele* (separate properties) of the ‘*ili* *kūpono* named Pāhoa. The large coastal fishpond on Pōka‘ī Bay is represented; it shows a section of it as belonging to the “king.”

Table 2. Listing of Historical Maps for Wai‘anae

Author and Year	Location	Mapped Objects
Pease 1860	Wai‘anae Ahupua‘a	Coastline, streams, <i>ahupua‘a</i> boundaries, named landholdings, road, place names, fishpond.
Kahena 1860	Wai‘anae Ahupua‘a	Place names, named landholdings, stream, coastline.
Jackson 1884	<i>Makai</i> Wai‘anae	Coastline, major topographic features, streams, roads, houses, churches, railway, agricultural complexes, fishponds.
Monsarrat 1870	<i>Makai</i> Wai‘anae	Coastline, <i>ahupua‘a</i> boundaries, streams, land awards (LCA, Grants), named landholdings, roads, houses, churches, agricultural complexes, irrigation ditches, fishponds, stone walls, <i>heiau</i> .
Monsarrat 1902	Wai‘anae Ahupua‘a	Coastline, major topographic features, streams, reservoirs, land awards (LCA, Grants), named landholdings, leased lands, roads, houses, churches, railway, agricultural complexes, fishpond, <i>heiau</i> .
Monsarrat 1906	<i>Makai</i> and <i>Mauka</i> Wai‘anae	Major topographic features, streams, swamps, reservoirs, land awards (LCA, Grants), named landholdings, homestead plots, former taro cultivation lands, leased lands, roads, trails, houses, churches, railway, agricultural complexes or locations, irrigation ditches, tunnels, springs.
Sorenson 1906	<i>Makai</i> Wai‘anae	Coastline, <i>ahupua‘a</i> boundaries, streams, land awards (LCA, Grants), named landholdings, roads, railway, houses, cemetery, Wai‘anae Elementary School plot.
Aiu 1924	<i>Makai</i> Wai‘anae	Three LCA plots, stone walls, and irrigation ditches.
Aiu 1927	Pōka‘ī Bay, <i>Makai</i> Wai‘anae	Coastline, <i>ahupua‘a</i> boundaries, streams, land awards (LCA, Grants), named landholdings, roads, railway, houses, cemetery, <i>heiau</i> .



Figure 9. Early map of Wai'anae showing 'ili lele of Pahoia including a large fishpond (Pease 1860).

Monsarrat produced the most complete maps of Wai‘anae, three of which were consulted. The first of these appears undated (Figure 10) although Cordy (2012) identifies the date of its completion as 1878. When the map was created, there were no sugarcane fields yet established in the valley. A single house is shown, along with the stone walls surrounding the Waimalu property and the larger area of the LCA (No. 3276) on which it occurred. Several other features are presented that are not represented on later maps, such as the second channel from Keaupuni Stream to the coast, which was identified as a “ditch.” Both *ahupua‘a* boundaries are included and represented as stone walls, with gates. This map has the most inclusive set of ‘*ili ‘āina* names but only shows the walled boundaries of these places, likely representing the extent of *lo‘i* still in use at the time the map was completed.

A map by Jackson (1884) of *makai* Wai‘anae also depicts the Pāhoa fishpond, suggesting it was still in use at this time (see Figure 5). It shows the locations of a number of houses along the coast, the new housing for sugarcane workers, and the railway. Just inland from the lower Pāhoa property there are large agricultural areas depicted with fence lines drawn in. These would have been areas under sugarcane cultivation. The Waimalu property is shown with additional houses placed on it that are likely those for sugarcane workers.

The latest Monsarrat map from 1906 includes the upper part of Wai‘anae Kai (Figure 11). This map was prepared to identify the new Forest Reserve area within Wai‘anae, as well as to show lease and homestead properties. The lease properties were either under sugarcane cultivation or used for ranching. This map depicts a number of areas “formerly in taro.” It is unclear if these were originally recorded by Monsarrat but not previously incorporated into his earlier maps.

The map by Aiu (1924) shows a small section of land in what was likely the upper *lele* of Pāhoa (Figure 12). This map shows three LCA plots along with several stone walls that bounded the plots and ditches, some of which match Monsarrat’s earlier map from 1902 (see Figure 6). Taro was still under cultivation and watered by a traditional ditch. A later map (Aiu 1928) shows the location and surrounding features of the military reservation in Pōka‘ī Bay (Figure 13).

Historic Wai‘anae Elementary School

The Wai‘anae Elementary School is said to be more than 150 years old (Anonymous 2012), although it is not clear if the school buildings have been in the same location over this period of time. Public education was established by law in 1840 under the Kingdom of Hawaii (Wist 1940), and the Reorganization Act of 1865 established the Bureau of Public Instruction (Hunt 1969:295). The establishment of commercial sugar companies, including the Wai‘anae Sugar Company in 1879, often expanded educational opportunities with the creation of local schools. A school fund for both ‘Ewa and Wai‘anae had been previously established in 1875 (Hawai‘i State Archives 2003:C-77). Until the early 20th century, there was just one public secondary school in Hawai‘i; the rest were elementary schools only (Forbes 1988:9).

Historic maps by Jackson (1884) and Monsarrat (1902) show several structures on what was to become the school lot property (see Figures 5 and 6). The 1902 map depicts a row of what appear to be plantation houses along the south and east boundary of the school’s property, plus a larger structure set in the center of the parcel. Sorenson’s (1906) map includes all of the coastline of Wai‘anae Kai and labeled as “school lot” a 2.85 acre property that had been awarded to Waimalu (Figure 14). No structures or buildings are depicted on Sorenson’s map.



Figure 10. Monsarrat's earliest map of Wai'anae Kai Ahupua'a (1870).

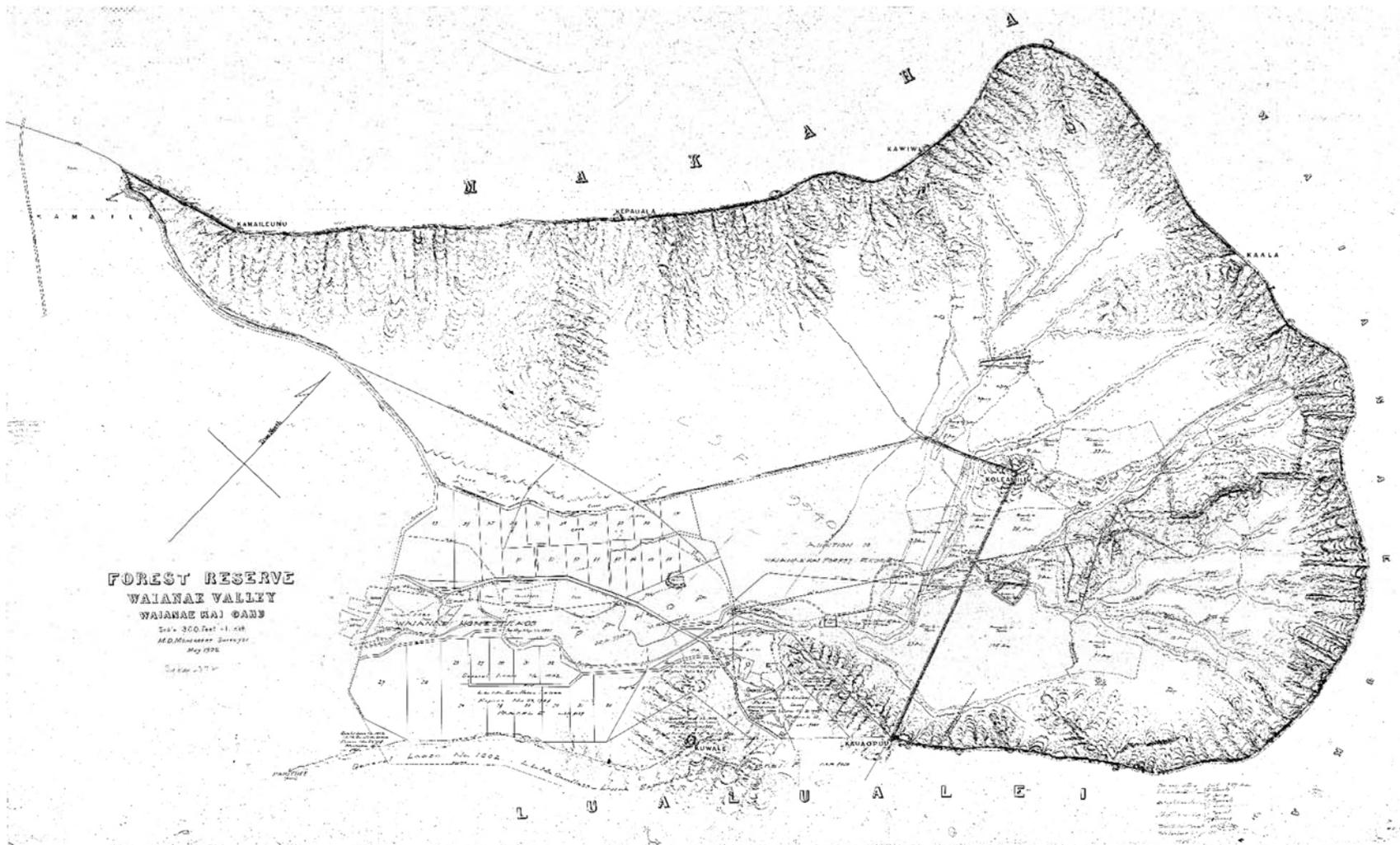


Figure 11. Early map of Wai'anae Valley, showing Forest Reserve area (Monsarrat 1906).

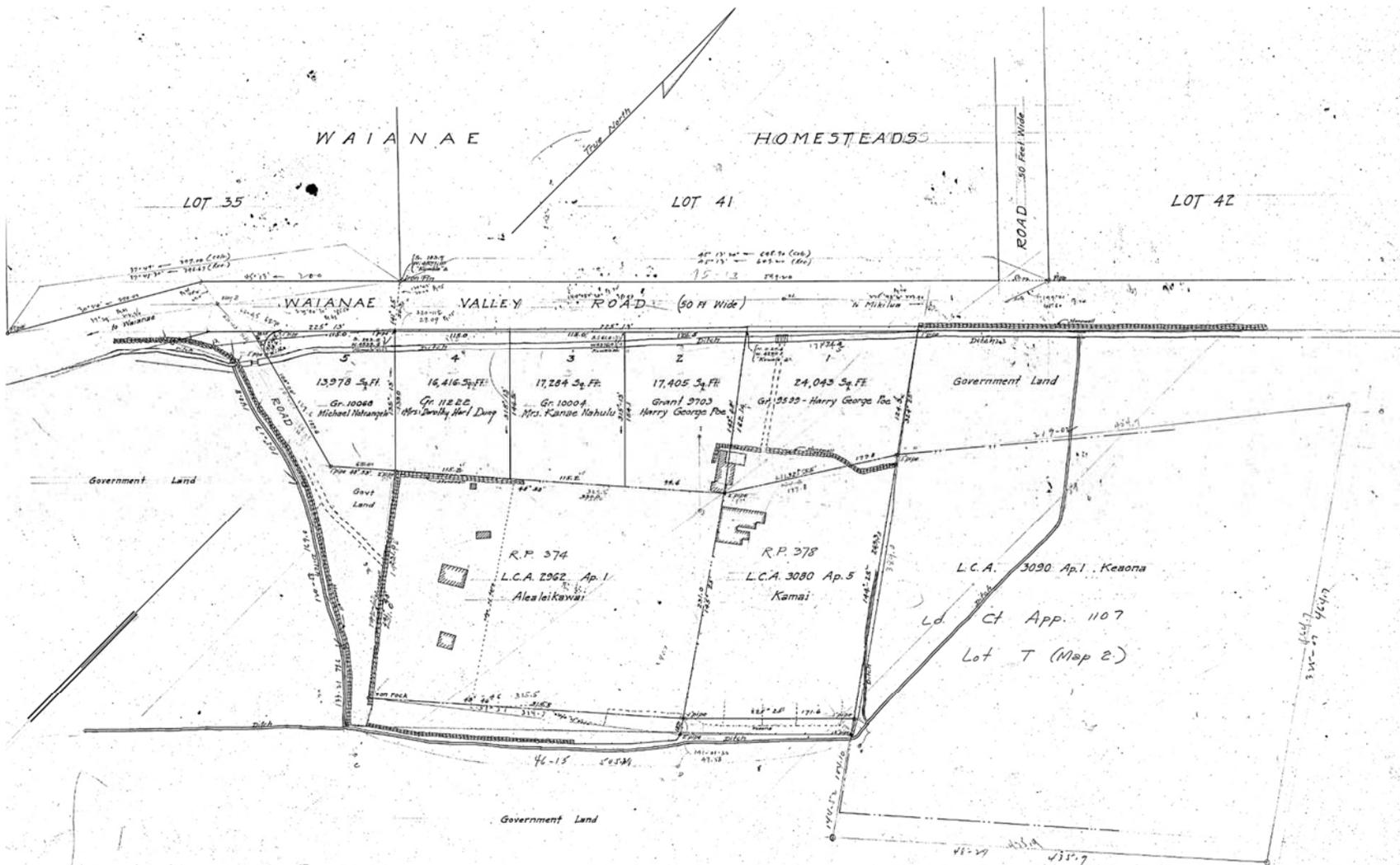


Figure 12. Map of Wai'anae House Lots (Aiu 1924).

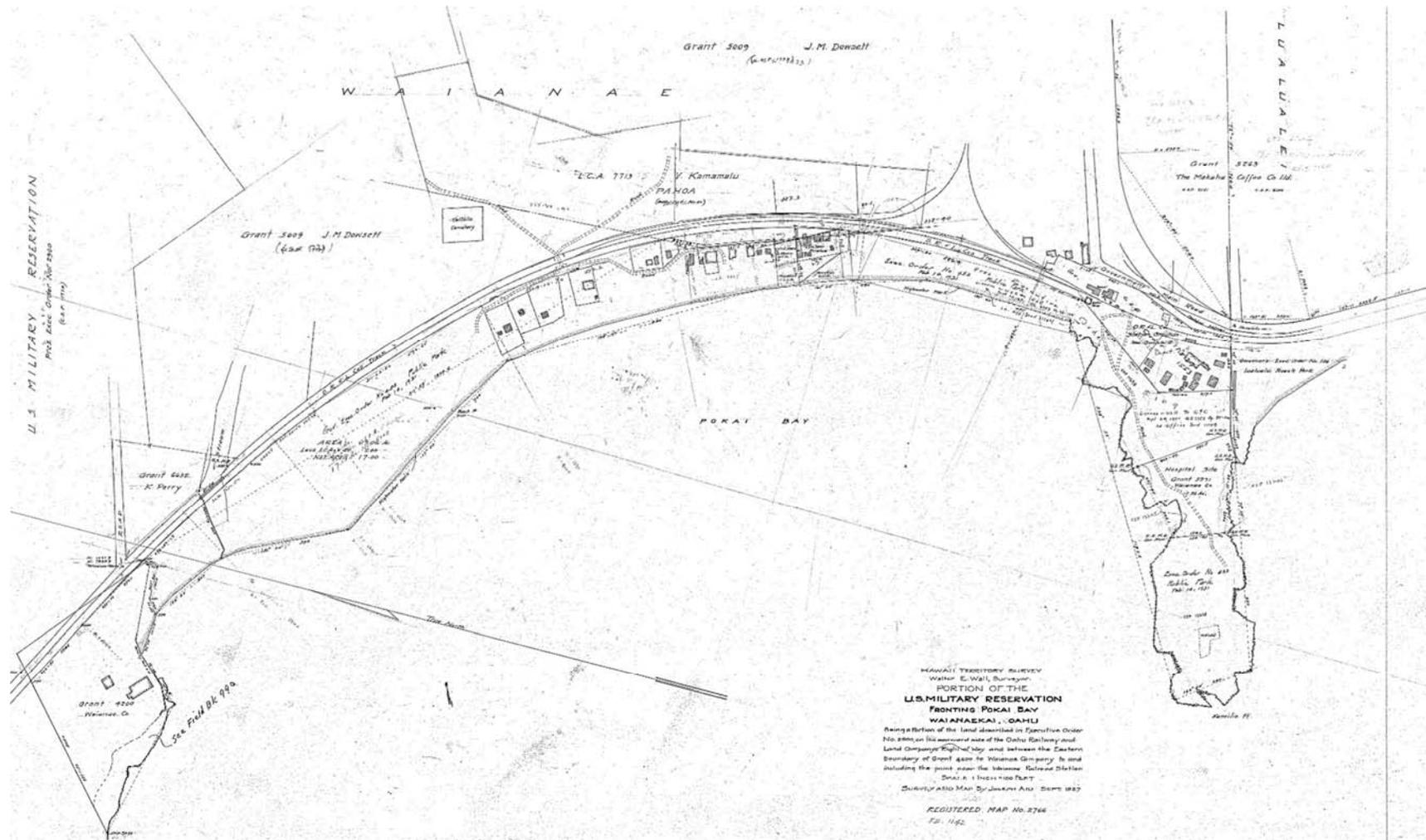


Figure 13. Historic map of Pōka'i Bay (Aiu 1927).

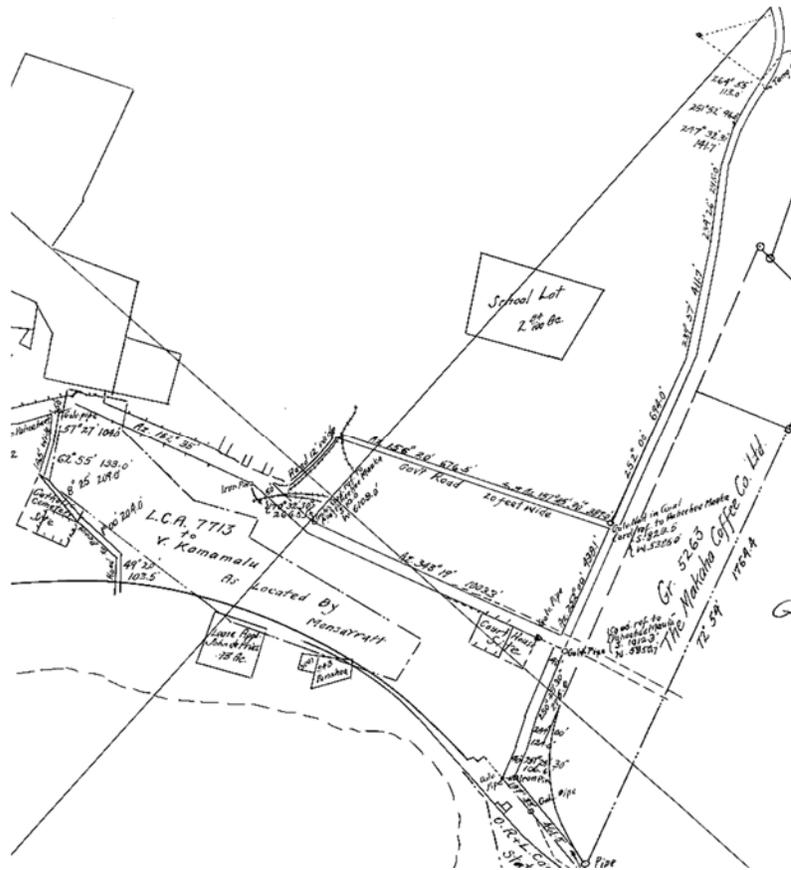


Figure 14. Wai'anae Kai Map showing the school lot property (Sorenson 1906).

The first map that depicts a school house on the Wai'anae Elementary School parcel is a Waianae Quadrangle, topographic map that was prepared in 1928–1929 by the Department Engineer, Territory of Hawaii under the sponsorship of the Coast and Geodetic Survey and Corps of Engineers, U.S. Army, War Department but printed later (Department Engineer 1936) (Figure 15). The school can be discerned by the flag atop one of the buildings shown on the parcel. The series of school buildings on the north edge of the property represented on the 1936 map are still in place today. There are two small houses located on the east edge of the property that may be same as those on Monsarrat's 1902 map.

The map from 1936 was followed up by a 1954 revised quadrangle map (Figure 16) that again depicts the Wai'anae Elementary School buildings on the north perimeter of the campus. They are distinguishable as long structures set perpendicular to the property's border. A number of other buildings, generally small, possibly houses, along the south portion of the property are shown, several of which reappear on later maps. The 1983 Waianae Quadrangle map largely replicates the 1954 version (Geological Survey 1983). The most recent version of the Waianae Quadrangle (Figure 17) printed in 1998 depicts all of the current school buildings that are also shown on the project area map: along the north edge of the property there are now only five of the original six long buildings and a number of smaller buildings located west of the open area on the southwest section of the parcel. The library and cafeteria buildings are shown on the 1998 map along with a series of portable buildings, six of which are placed in the locations where several of the original plantation houses were located on the 1954 Quadrangle.

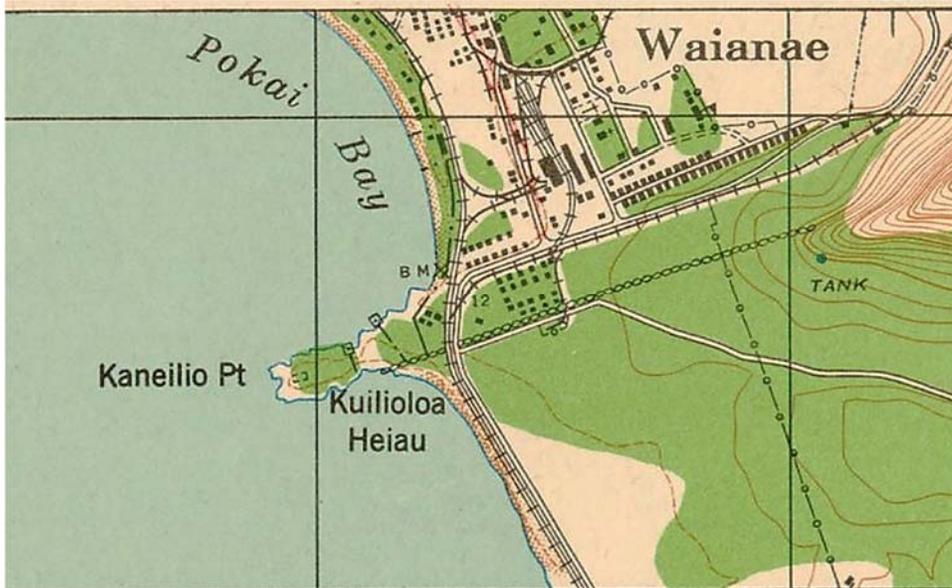


Figure 15. Portion of an early Waianae Quadrangle Map (Department Engineer 1936).

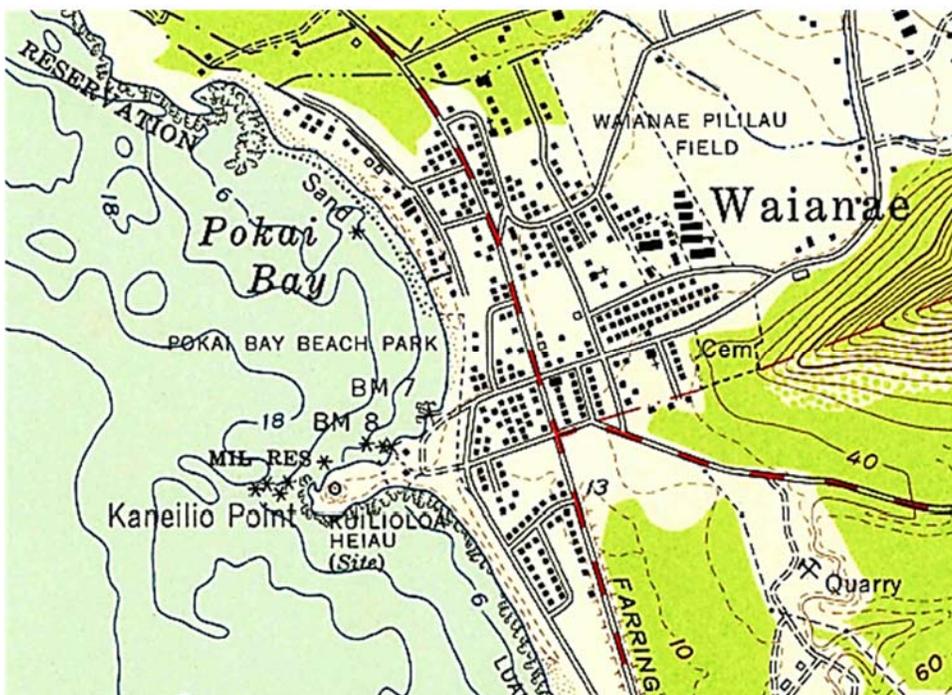


Figure 16. Portion of a mid-20th century Waianae Quadrangle Map (Geological Survey 1954).

Coastal Southeast Wai‘anae, including Pōka‘ī Bay

Lower Keaupuni Stream (below its confluence with Kawiwi Stream), Pōka‘ī Bay and Kāne‘īlio Point define the major natural features along the southeast coastal section of Wai‘anae. This area had the best access to the ocean as well as to fresh water from the stream. It would have been a prized area for habitation. Later both a roadway and railway were established along the inland section of the bay.

McAllister’s early archaeological survey identified a number of sites in Wai‘anae Ahupua‘a near or on the coast (1933). Site 153 is Kū‘ilioloa Heiau, located on the *makai* end of Kāne‘īlio Point (McAllister 1933:112) (Figure 19). Ten *heiau* were named by McAllister: Pu‘upahe‘ehe‘e, Kū‘ilioloa, Keaupuni, Kamohoali‘i (or Kahoalii), Malaeha‘akoa (or Malaihakoa), Kikiahi, Kalamalama, Kane, Pu‘uana‘ula, and Kamaile. Pu‘upahe‘ehe‘e and Kamaile likely were located on their respective *ahupua‘a* boundaries—Pu‘upahe‘ehe‘e with Lualualei, and Kamaile with Mākaha. Two of the *heiau* were situated in the valley itself: Malaeha‘akoa and Pu‘uana‘ula. Kū‘ilioloa Heiau had three main, stepped terraces and platforms and evidence of additional terracing on the *mauka* end. The highest platform is at the tip of the point (McAllister 1933:112). Abe and Kelly (1979) conducted a condition assessment of the *heiau*, identifying as many as eight construction features, one with walls at least 2.5 m (8 ft.) in height. This *heiau* is identified on at least two historical maps (Jackson 1884; Aiu 1927) where it is associated with what appears to be the *ahupua‘a* boundary wall separating Wai‘anae and Lualualei Ahupua‘a (see Monsarrat 1870, 1902). A section of this boundary wall apparently also served as a *hōlua* ramp (Jackson 1884). Pukui et al. note that Kū‘ilioloa was dedicated to and named after a giant dog-man (1974:84), likely a variant of the deity, Kū.

Site 154 is Puehu Fishpond, once located near the mouth of Keaupuni Stream (McAllister 1933:113). McAllister posits that the fishpond’s original area was 150 m by 90 m (300 ft. by 75 ft.) (1933:113). There are two other fishponds identified by Monsarrat (1878, 1902) and Jackson (1884). One of these fishponds, on the lands of Pāhoa, was on the inland side of Pōka‘ī Bay and was at least 1 km (.6 mi.) long. It extended along the length of the bay and its northwestern portion likely was buried when the Marin Road was constructed. On an early map (Pease 1860) a portion of this fishpond is identified as belonging to the “king.” All of these fishponds are now destroyed or buried. Monsarrat (1870) also depicts a ditch that provided a second channel for water flowing in Keaupuni Stream to reach the ocean.

Site 155 is Keaupuni Heiau, located on the Mākaha side of Pōka‘ī Bay, but now destroyed (McAllister 1933:114). It is likely displayed on historic maps as an unnamed structure on the north side of Keaupuni Stream (Jackson 1884; Monsarrat 1870). Flood et al. (1994:29) identify Keaupuni with this structure on a map. Site 156, Kamohoali‘i Heiau, located inland and across Farrington Highway from Puehu Fishpond, has also been destroyed (McAllister 1933:114). Flood et al. (1994:29) associate this *heiau* with a large enclosure in the ‘*ili* of Leohano-iki. The major structures and features found in this section of Wai‘anae attest to its cultural and religious significance.

At least five house sites are depicted on Pōka‘ī Bay (Monsarrat 1878) and by the early 20th century there were houses along both sides of Farrington Highway, formerly the Marin Road, that borders the bay. Stone wall enclosures are shown by Monsarrat around most of the house sites.

Much archaeological work has been done along the coastal fringe fronting Pōka‘ī Bay *makai* of Farrington Highway (Riford 1984; Kam and Ota 1984; Hammatt et al. 1985; Borthwick et al. 1999; Shun and Shaw 2002; Kalilihiwa and Cleghorn 2005). Unfortunately, virtually all of the likely prehistoric structures and features associated with this area are no longer visible. Much of the surface area was modified extensively and has seen substantial deposition of modern materials.



Figure 19 Ku'iliolo Heiau, Wai'anae.

Subsurface excavations have revealed a number of cultural features and deposits. Work in the northwestern portion of the Wai'anae Army Recreational Center (WARC) in the 1980s and 1990s was particularly notable for the large number of human remains uncovered (Riford 1984; Kam and Ota 1984; Hammatt et al. 1985). Testing and monitoring at the WARC also produced intact, buried cultural layers, possible paving stones, and hearths or firepits suggesting former habitation areas. A variety of cultural remains are noted, including volcanic glass, fishing gear and tools, adze fragments, and other stone, shell, and bone artifacts (Hammatt et al. 1985; Shefcheck and Spear 2014). Faunal remains and marine shell are also documented in these contexts. The coastal area was clearly in heavy use by pre-contact Hawaiians for a variety of activities related to food preparation, fishing and management of fish, collection of marine resources, and habitation. Cultural deposition was found exclusively in the calcareous sand deposits that are common to the coastal fringe. These deposits diminish with distance from the coastline. Stine et al. (2014) provide an assessment of historic sites or features that were previously located within the project boundaries for a sewer line; these included a former fishpond, archaeological evidence for the historic roadway, and a spur of the railway line.

Coastal Northwest Wai'anae to Kawiwi Stream

This section of Wai'anae includes the coast west of Pōka'i Bay and extended to the *ahupua'a* boundary between Mākaha and Wai'anae. This portion of the coastline is fronted by smaller sandy embayments and exposed bedrock to the west and a section of raised limestone, derived from a former coral reef that occupies the center of the coastline. The north and west boundary is represented by Kawiwi Stream, which flows from the east face of the western ridgeline in a southeast direction where it joins Keaupuni Stream. There is limited surface water on the westernmost portion of this area; a small stream that originates to the west of the *ahupua'a* boundary wall emptied out into one of the bays just on the Mākaha side of the boundary. Although it lacked stream water, there were springs that emerged near the base of the Kamaile ridgeline that were sufficiently substantial to support a relatively verdant plant community.

Historic maps (Monsarrat 1870, 1902; Jackson 1884) depict the Mākaha-Wai‘anae Ahupua‘a boundary wall with a gate about 100 m inland. The current roadway runs through this location today. North of this lies the ‘*ili* of Kamaile. Near the boundary with Mākaha there were several house sites on the Wai‘anae beach according to historical maps (Jackson 1884; Monsarrat 1870, 1902). Inland from the beach was a large area in which *lo‘i* were present, along with a number of houses. Historic maps show more than 50 plots that were presented as claims during the Māhele. These plots and their associated *lo‘i* lie below the Kamaile springs. Kamaile Heiau sits on the ridge above the valley floor and there is a cave or rockshelter just below (McAllister 1933; Hommon 1978). A second *heiau*, named Kane or Kaneikapulena was once situated within the Kamaile ‘*ili*. There is a large walled enclosure depicted on Monsarrat’s map (1870) in the northeast corner that might be the location of this *heiau*. Archaeological fieldwork in this area has further documented Kamaile Heiau and the associated cave below it (Hommon 1978). A habitation complex (Site 5949) below the Kamaile Heiau complex and Kuka‘au‘au Cave (Site 1181) was mapped. A subsurface platform or paving was also identified at this site. The habitation feature is likely associated with the large Kamaile *lo‘i* and habitation complex.

To the east of Kamaile was the ‘*ili* of Lehanoiki, whose western boundary was represented by the stone wall that extended northward from the coast. Most of this area is raised limestone karst with numerous sinkholes. There is little surface water available except to the north and east where Kawiwi Stream joins Keaupuni Stream. Natural sinkholes occur in the karst and these could have supported gardening activities or smaller residential structures. Kawiwi Stream would have been the major source of water for this area, and maps place two other ‘*ili*, Keekee and Kuaiwi, within or adjacent to the upper section of the stream.

Shapiro and Rosendahl (1988) conducted an extensive survey of the former Waianae Dairy operations. This project area covers a portion of land west of Kawiwi Stream (and hence falling into this section). Several LCA awards shown on Monsarrat’s (1902) map are placed across Kawiwi Stream. Trenching in these areas by Shapiro and Rosendahl uncovered buried gleyed soils, typically associated with *lo‘i* pondfields. Much of the surface of this project area contained historic debris from the former dairy, including concrete foundations, ditches, flumes, a well, a bridge, and a culvert.

Archaeological fieldwork in this region has further documented Kamaile Heiau and the associated cave below it (Hommon 1978). A number of sinkholes with cultural material (Flood et al. 1994; Sinoto 1975) were identified during reconnaissance surveys. Relatively few features or structures have been found on the raised limestone section.

Archaeological inventory survey was completed for the proposed Leeward Coast Emergency Homeless Shelter on Farrington Highway, east of Wai‘anae Intermediate School (Hammatt and Shideler 2006). Extensive backhoe trenching uncovered no artifactual remains, although one human burial was encountered. A total of 33 m² surrounding the find was excavated to bedrock to confirm that the remains were an isolated occurrence and not part of a larger burial complex.

Archaeological and geophysical surveys were conducted at the State of Hawai‘i Department of Transportation’s Wai‘anae Baseyard, just west of the Leeward Coast Emergency Homeless Shelter (Desilets 2007). Excavation of 11 test trenches produced no evidence of cultural remains. Outcrops of coral bedrock protruded from the surface in portions of the parcel, but in other areas the bedrock was not encountered until as deep as 150 cm below surface (cmbs).

A human burial was found at Wai‘anae Regional Park, eroding from the shoreline after Hurricane Iniki (Kawachi 1992). The individual was found at 60 cmbs and was identified as possibly an adult female. The burial was covered with sand and left in place.

Archaeological reconnaissance was carried out for the Wai‘anae Light-Draft Boat Harbor on the west side of Wai‘anae Regional Park (Sinoto 1975). Five sites were recorded, including Site 50-80-07-4822, an animal pen or enclosure; Site 50-80-07-4823, a rectangular enclosure and adjoining L-shaped wall; Site 50-80-07-4824, a stone wall; Site 50-80-07-4825, a partially destroyed enclosure; and Site 50-80-07-4826, an L-shaped wall or shelter. OR&L railroad remnants and other heavily disturbed sites were also noted but not recorded due to their poor condition. The five sites were later re-examined through archaeological inventory survey and subsurface testing (Clark et al. 2004). Two of the sites had been destroyed and four new features and two cultural deposits were identified. The new features, the three remaining previously identified sites, and a burial exposed during Hurricane Iniki were subsumed under a single site number, 50-80-07-3967. The new features were sinkholes interpreted as gardening areas. The cultural deposits were found within the sinkholes and yielded charcoal, marine shell, and animal bone.

Archaeological inventory survey and subsurface testing were completed for a proposed extension to Wai‘anae Regional Park (Denham et al. 1992). A total of ten test trenches and six auger bores produced only a volcanic glass flake, a possible basalt abrader, and historic material. No cultural deposits were identified.

In sum, this west section of coastal Wai‘anae can be separated into areas near the western *ahupua‘a* boundary where a *heiau* and the *ahupua‘a* boundary wall were located. Below Kamaile Heiau there is a cave that was occupied, probably in association with the *heiau*. A major irrigated agricultural complex, with some habitation structures is associated with Kamaile ‘Ili, just inland from the coast, below the western ridgeline. Portions of the walls and terraces likely still exist in this area. Along the western coastal zone just inland from a bay were several residential structures, and in the raised limestone that comprised the eastern portion of this section, several structural features that may have served as house sites or animal pens, human burials, and gardening areas in sinkholes have been identified. West of Keaupuni Stream at the coast was Keaupuni Heiau, depicted on several historic maps, but now destroyed. There were also two fishponds in this region, one of them named Puehu. The historic railway also passed through along the coast.

Lower or Makai Wai‘anae Valley, from Keaupuni-Kawiwi Streams to the Confluence of Keaupuni and Punana‘ula Streams

This section of the valley extends from the confluence of Kawiwi Stream with Keaupuni Stream *mauka* to the confluence of Keaupuni and Punana‘ula. Several *‘ili ‘āina* occur here: Puea, the upper *lele* section of Pāhoa, Palaloe, Ana, Lehanonui, Lehanoiki, Kaholanakio, Kaho‘olanakio Keekee, Kuaiwi, the middle Pāhoa *lele*, and Waikele. Two of these are illustrated on historic maps and contained several large *lo‘i* complexes.

Rosendahl (1981) surveyed the Wai‘anae Kai Property associated with a former dairy operation. Most of the 34 sites are remnants of the dairy (e.g., flumes, bridge). Ten of twelve trenches were excavated north of Kawiwi Stream, on properties that had been claimed as LCAs. In seven of these trenches, gleyed soils, likely the product of taro cultivation in *lo‘i*, were found. There were no remaining surface indications of terraces.

Archaeological inventory survey was conducted on a seven-acre property on the east side of Wai‘anae Intermediate School, inland of the Leeward Coast Emergency Homeless Shelter (Flood et al. 1994). A total of 24 features were recorded under Site 50-80-07-2474, including 14 unmodified sinkholes, four modified sinkholes, a wall, a historic artifact scatter, a trash mound, an alignment, a platform dog burial, and a terrace. Ten features were excavated, and traditional cultural deposits were encountered. Basalt flakes, volcanic glass, a fragment of cut bone, and an octopus lure point were collected, along with bone and shell midden, and a multitude of historic material.

Upper or *Mauka* Wai‘anae Valley, Above the Confluence of Keaupuni and Punana‘ula Streams

This area includes a series of streams that merge into upper Keaupuni Stream at different points. Punana‘ula is the first major stream (other than Kawiwi) to flow into Keaupuni at about 90 m (300 ft.) above sea level. Above this Keaupuni splits into three named streams: Kawaopu‘u, Honua, and Kūmaipō. The main branch of Honua Stream splits into Hiu Stream and Kalalua Stream. Above Kanewai, Niolopua, Kukaki, and Kanemimi Streams join Honua Stream. The branching of streams creates a series of ridgetops that extend to the north, northeast, and northwest up to the Wai‘anae Mountains and the two ridgelines that serve as the Wai‘anae Ahupua‘a boundaries. All of these streams were fed by springs or marshes, many of which are shown on a later Monsarrat (1906) map of the Forest Reserve in the upper Wai‘anae Valley.

Although several surveys have been completed in this area, few had adequately described the findings until summarized by Cordy (2012). Still much of what we know has been gleaned from historic maps (Monsarrat 1870, 1902, 1906) and two small archaeological projects (Cordy 1997; Holt et al. 2002). Several other, larger projects are recorded from this area (e.g., Sinoto 1979; Bordner 1981; Chiniago 1982) but these were not available for review.

Monsarrat’s 1906 map shows sections of the *‘ili ‘āina* of upper Pāhoa, Ka‘api, Leleakoai, Kūmaipō, along with other areas that were likely *‘ili* as well (but whose names cannot be verified, e.g., Makahiupa, Lahapapa, Koleali‘ili‘i (see Kahena 1860). This section of upper Wai‘anae was largely devoted to irrigated agriculture as is shown on the 1906 map. Although little documented by archaeologists, this map also depicts 11 areas above the Punana‘ula Stream confluence that formerly supported *kalo* cultivation. The total area is 94 ha (237 ac.), making this one of the largest *lo‘i* systems known for O‘ahu. These complexes extend as much as 305–365 m (1,000–1,200 ft.) above sea level. Several irrigation ditches are also shown on this map, one of which tapped upper Keaupuni (at about 90 m [300 ft.] above sea level) and was at least 2.12 km (6,949 ft.) in length, extending downslope to the south end of upper Pāhoa. Dryland fields also occur on the ridges between the streams and along their lower sections. A number of these fields are preserved and visible on Google Earth (Figure 20).

Cordy (2012) has updated these findings and produced maps of both the pre- and post-contact archaeology for the area. More than 115 sites are now documented for the former Wai‘anae Valley Ranch, located in the upper west portion of the valley. Many of these sites, mostly dryland and irrigated agriculture, contain numerous features or complexes and are distributed over large sections of the uplands. At least 40 habitation features or complexes are represented here, and at least eight *heiau* or other religious features are now known for this area. Historic-era sites include a series of stone walls and a variety of features (wells, tunnels, flumes, roadways) that are associated with sugarcane cultivation and water transport. Cordy’s work confirms the extensive preservation of historical and cultural properties that document the role Wai‘anae played in the region’s prehistory and history.

Cordy (1997) notes the two complexes of *lo‘i* terraces associated with upper Punana‘ula (Site 5523) and Kūmaipō Streams (5521). There is at least one *heiau*, Punana‘ula, in the Upper Valley just south of the stream. It is shown on the 1906 map; this complex (Site 165) was noted but not observed by McAllister (1933) and was located by Cordy. It is situated to the south of Punana‘ula Stream near the *lo‘i* complex, Site 5523. It is visible from the air (Figure 21). Five house sites have been recorded in this area (Cordy 1997; Holt et al. 2002) one of them near the dryland fields of lower Punana‘ula.



Figure 20. Probable dryland fields between Punana‘ula and Kūmaipō Streams.

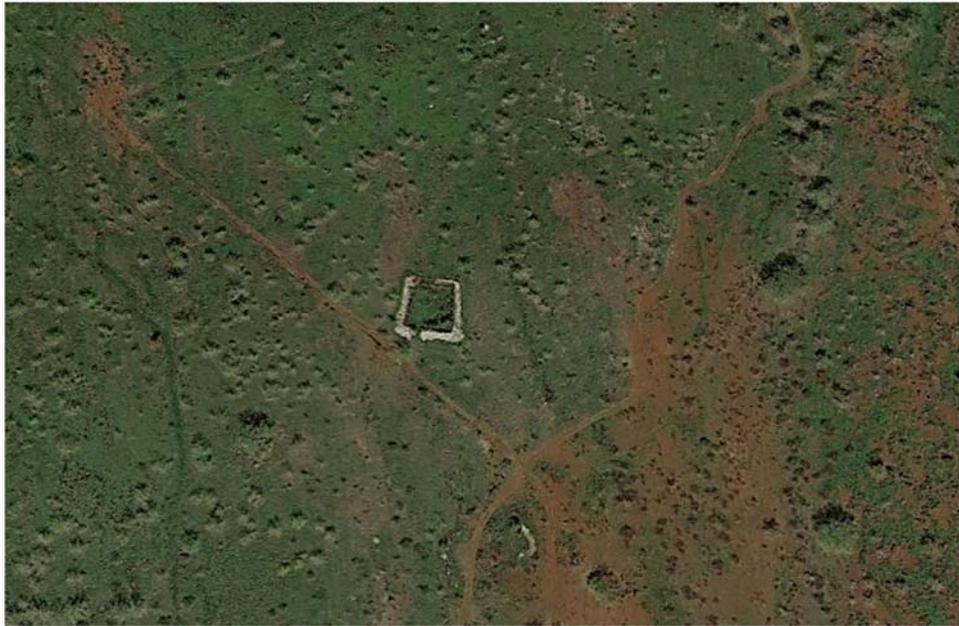


Figure 21. Aerial view of Punana‘ula Heiau, Wai‘anae.

Settlement Patterns

More than 15 distinct *'ili*, named sub-sections of Wai'anae Ahupua'a, have been identified on historic maps (Monsarrat 1870, 1902, 1906). These typically include both agricultural and habitation features. They are also where most of the LCA awards are concentrated for this *ahupua'a*. These *'ili* are distributed across the valley both along the coast, inland and adjacent to the major streams that drain into the valley from the mountains and ridges that surround it on three sides. Agricultural lands are clustered around both streams and springs and extensive areas were converted to *lo'i*. By 1880 when the first maps were developed, some areas of Wai'anae Ahupua'a had already been abandoned and their *'ili* have gone unrecorded. Several *'ili* are contiguous with one another, their boundaries distinguished by low stone walls. Nonetheless, there are irrigation ditches that cross *'ili* boundaries suggesting water was shared from a single source. In a few cases, these irrigation ditches extend for more than 1 km in length.

One *'ili*, named Pāhoa, contained at least three separate plots of land that included a fishpond on Pōka'i Bay, a small section of irrigated land adjacent to Waikele *'ili*, and a third section located farther up the valley on Keaupuni Stream that contained a number of *lo'i*.

House sites, both on historic maps and those identified by archaeologists, fit the pattern of dispersed habitation. Except the house sites that are located on the coast, the remainder are placed within LCA parcels and/or named *'ili 'āina*. Most appear to be adjacent to locations where *lo'i* or other agricultural sites would have been cultivated.

At least four *heiau* in Wai'anae were located on the *ahupua'a* boundaries with Mākaha and Lualualei, highlighting the potential integration of these separate communities by religious considerations as well as by socio-political relationships. A fifth *heiau* was on the coast, on the west end of Pōka'i Bay near a series of fishponds and at the mouth of Keaupuni Stream. Several other *heiau* were adjacent to or within the boundaries of named *'ili*, such as Kane Heiau in the *'ili* of Kamaile, suggesting they served as one or more landholding units. *Heiau* also occur inland, such as the one found near Punana'ula Stream.

Summary of Background Information

Several features of Wai'anae Ahupua'a suggest it was an important center in Leeward O'ahu. These include its central location, large size, inland boundary that extended to the Ko'olau Mountains, substantial number of *heiau*, and association with at least four paramount chiefs of O'ahu mentioned in oral traditions. While portions of the leeward coast likely had a lower density of population at the time of European contact, there were some areas such as Wai'anae that supported more substantial groups. With more than 15 named *'ili 'āina*, each of which would have supported several Hawaiian families, the population of Wai'anae Kai could have reached as many as 800–1,000 individuals. The large number of LCA awards, in excess of 160, made to residents of Wai'anae likewise are a testament to its sizeable and influential community. A number of *ali'i* also made their home in Wai'anae, probably living along the coast and attached to the larger *'ili*. Large tracts of land were devoted to the cultivation of irrigated taro and these plots extended from the *makai* area of the valley into the upper portion where there were many springs and multiple streams with perennial water flow. Elsewhere dryland crops, such as sweet potato, sugarcane, and yams, were grown on the lower ridges that separated the stream drainages. At least three fishponds are known from Wai'anae; one of them was at least 1 km in length. The ocean was a major resource, with prime fishing grounds exploited along the coast. Finally, there were at least 10 named *heiau* in the *ahupua'a*, several of them occupying key landmark locations or near important resources.

The historic period brought widespread changes to the region. Large numbers of the population were lost to the catastrophic diseases introduced to the islands by early Europeans and Americans. This set off a series of relocations of communities as well as less productive areas that were largely or completely abandoned in favor of locations closer to population centers or with access to irrigated farming. Nonetheless, Wai‘anae continued to support a series of local households and extended families. Later with large expanses converted to cattle ranches and sugarcane fields, its population grew again through emigration of laborers for the plantations and the development of Wai‘anae as a commercial center.

Many archaeological projects have taken place in the Ahupua‘a of Wai‘anae. These, along with historic maps, documented a wide variety and extensive array of structures, features, and artifacts that date to the pre- and post-contact periods. Archaeological remains in the region consist of remnants of stone walls and terraces, as well as irrigation ditches, house sites (and their artifact remains), as well as human burials. Although the surface archaeology for the project area has likely been removed or substantially altered, there are likely sizeable areas where intact subsurface deposits and features will be found. These would include, in addition to features and human burials, soils associated with pondfield cultivation of taro. The section of land on which the Elementary School lies is also significant since this parcel was identified as early as 1906 as the location where a school was to be built.

ASSESSMENT AND RECOMMENDATIONS

A literature review was conducted for the Wai‘anae Elementary School in Wai‘anae Ahupua‘a, Wai‘anae District, on the island of O‘ahu. This project covers approximately 3.06 acres on TMK: (1) 8-5-001:059 and (1) 8-5-009:018. The literature review consisted entirely of library research, and no archaeological fieldwork was conducted.

Several archaeological implications can be made based on the literature review presented above. Key data include LCA information, the results of previous archaeological work, and data for previous land use. The current project area is fully developed with buildings, roads, landscaped lawns, and parking lots. Aside from the historic structures that are known to occur there, it is not likely that any surface archaeological features remain. Nevertheless, subsurface archaeological materials or deposits may be encountered during ground disturbance.

Results of Land Commission Awards Search

There were two LCAs awarded (3276, 10585) for lands within the project area. Māhele records and historical maps indicate the presence of house lots, two *‘auwai*, stone boundary walls, a *kula* plot, bananas, and a total of 16 *lo‘i*. These suggest a range of activities (habitation, irrigated cultivation) took place there in the mid-19th century and until the early 20th century. These activities were likely carried on from earlier times. Agriculture was clearly being practiced in the project lands, including pondfield agriculture in the form of *lo‘i* cultivation and non-irrigated farming, as evidenced by the mention of *kula* plots and bananas in the Māhele data. And houses, stone walls, and later a road are all signs of active 19th century Hawaiian households on the project lands.

Results of Recent Historical Research

By 1906, the two properties claimed as Land Commission Awards were now identified as property for a “School Lot.” How this transfer of properties occurred is unknown. The original Wai‘anae Elementary School was probably built between 1916 and 1926 based on its similar construction style to other rural, plantation schools in Hawai‘i. Several of the original buildings appear to remain in place along the north boundary of the project property. These buildings are eligible for historic register status, given that two similar elementary school buildings from Kaua‘i have been placed on the National Register of Historic Places.

Knowledge from Previous Archaeological Studies

No archaeological materials or features have been noted on the surface of the school property. Although no previous archaeological work has been done within the project area itself, studies conducted nearby can help inform on the kinds of subsurface archaeological resources that may be found. A human burial was encountered on the southwest side of the school property (Bush and Hammatt 2004) during construction activity for the Hawaiian Electric Company. Historic artifacts were recovered from two of the anchor holes excavated to a depth of between 20 and 100 cmbs. Likewise, a waterline dug by the Board of Water Supply along McArthur Street, immediately to the east of Wai‘anae Elementary School, recovered historic artifacts that dated to the mid-19th to mid-20th centuries. These include glass bottle fragments, ceramic sherds, and a complete ink bottle. Given the documentation of *lo‘i* and several house structures within the project area, there may be subsurface features, foundations, deposits, and artifacts associated with these. This might include buried pondfield soils, remnants of agricultural terraces, and house foundation walls or retaining walls, along with trash midden and artifacts associated with both pre-contact and historic habitation on the property. Finally, since the Elementary School has been located on this parcel since the early 20th century, there may be artifacts associated with the school and its students.

Insights on Previous Land Use

Wai‘anae Ahupua‘a was the largest, most centrally located community, and likely the center of agricultural production and ritual activities before and just after the period of European contact. Areas near the coast and along streams would have supported habitation complexes and agricultural pondfields. During the Māhele, Wai‘anae residents were active (and successful) in seeking claims for their traditional lands and thus continued to live and work among the numerous, named *‘ili ‘āina* that were part of the Wai‘anae Ahupua‘a cultural landscape. However, by the late 19th century, many of the landholdings passed into the hands of individuals and companies devoted to large scale plantation agriculture, milling and the transport of sugarcane, and ranching. The U.S. military established facilities along Pōka‘ī Bay and used the area for both training soldiers and later for recreation. The town of Wai‘anae grew up around these ventures in the 20th century, which then included churches, cemeteries, schools, shops, a railway depot, a hospital, and several schools. Vestiges of the sugar industry still remain, particularly some of the housing for workers, parts of the rail line, reservoirs, flumes, and roads

Summary and Recommendations

A number of cultural and historical resources may be found within the Wai‘anae Elementary School project area, such as subsurface cultural layers, features, and artifacts, as well as the historic buildings associated with the school itself. At least four of the original school buildings still exist and are located just to the north of the project boundaries. It is recommended that an archaeological monitoring program is implemented for ground disturbance during construction. Specifics of the monitoring program should be delineated in an archaeological monitoring plan that is accepted by SHPD. Documentation of the historic buildings associated with the Elementary School should be considered as part of this project, particularly to determine if the school could be nominated to either the State or National Registers of Historic Places.

GLOSSARY

<i>ahupua‘a</i>	Traditional Hawaiian land division usually extending from the uplands to the sea.
<i>aku</i>	The bonito or skipjack (<i>Katsuwonus pelamis</i>), a prized eating fish.
<i>ali‘i</i>	Chief, chiefess, monarch.
<i>‘āpana</i>	Piece, slice, section, part, land segment, lot, district.
<i>‘auwai</i>	Ditch, often for irrigated agriculture.
<i>heiau</i>	Place of worship and ritual in traditional Hawai‘i.
<i>hōlua</i>	Traditional Hawaiian sled used on grassy slopes.
<i>‘ili, ‘ili‘āina</i>	Land area; a land section, next in importance to <i>ahupua‘a</i> and usually a subdivision of an <i>ahupua‘a</i> .
<i>‘ili kūpono</i>	An <i>‘ili</i> within an <i>ahupua‘a</i> that was nearly independent. Tribute was paid to the ruling chief rather than the chief of the <i>ahupua‘a</i> , and when an <i>ahupua‘a</i> changed hands, the <i>‘ili kūpono</i> were not transferred to the new ruler.
<i>‘ili‘ili</i>	Waterworn cobbles often used in floor paving.
<i>Kahiki</i>	A far away land, sometimes refers to Tahiti.
<i>kahuna</i>	An expert in any profession, often referring to a priest, sorcerer, or magician.
<i>kalo</i>	The Polynesian-introduced <i>Colocasia esculenta</i> , or taro, the staple of the traditional Hawaiian diet.
<i>kama‘āina</i>	Native-born.
<i>kiawe</i>	The algaroba tree, <i>Prosopis</i> sp., a legume from tropical America, first planted in 1828 in Hawai‘i.
<i>kilu</i>	A small container used for storing precious objects or for feeding a favorite child; a quoit in the <i>kilu</i> game in which a player would attempt to hit an object with the <i>kilu</i> to win a kiss from a member of the opposite sex.
<i>koa haole</i>	The small tree <i>Leucaena glauca</i> , historically-introduced to Hawai‘i.
<i>konohiki</i>	The overseer of an <i>ahupua‘a</i> ranked below a chief; land or fishing rights under control of the <i>konohiki</i> ; such rights are sometimes called <i>konohiki</i> rights.
<i>kukui</i>	The candlenut tree, or <i>Aleurites moluccana</i> , the nuts of which were eaten as a relish and used for lamp fuel in traditional times.
<i>kula</i>	Plain, field, open country, pasture, land with no water rights.
<i>kuleana</i>	Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.
<i>kupuna</i>	Grandparent, ancestor; <i>kūpuna</i> is the plural form.
<i>lele</i>	A detached part or lot of land belonging to one <i>‘ili</i> , but located in another <i>‘ili</i> .
<i>lo‘i, lo‘i kalo</i>	An irrigated terrace or set of terraces for the cultivation of taro.
<i>luakini</i>	Large <i>heiau</i> of human sacrifice.
<i>Māhele</i>	The 1848 division of land.
<i>makai</i>	Toward the sea.

<i>mauka</i>	Inland, upland, toward the mountain.
<i>mele</i>	Song, chant, or poem.
midden	A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawai‘i, the term generally refers to food remains, whether or not they appear as a heap or stratum.
<i>moku</i>	District, island.
monkeypod	A large tree, <i>Samanea saman</i> , introduced to Hawai‘i from tropical America.
<i>mo‘olelo</i>	A story, myth, history, tradition, legend, or record.
<i>niu</i>	The Polynesian-introduced tree <i>Cocos nucifera</i> , or coconut.
<i>‘ōlelo no‘eau</i>	Proverb, wise saying, traditional saying.
<i>poi</i>	A staple of traditional Hawai‘i, made of cooked and pounded taro mixed with water to form a paste.
post-contact	After A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.
pre-contact	Prior to A.D. 1778 and the first recorded arrival of Westerners in the islands.
<i>pu‘uhonua</i>	Place of refuge.
<i>‘uala</i>	The sweet potato, or <i>Ipomoea batatas</i> , a Polynesian introduction.

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Appendix D

CULTURAL IMPACT ASSESSMENT

**FINAL—Cultural Impact Assessment for Wai‘anae
Elementary School Improvements, Wai‘anae Ahupua‘a,
Wai‘anae District, Island of O‘ahu, Hawai‘i**

TMK: (1) 8-5-001:059 and (1) 8-5-009:018



Prepared For:

Group 70 International
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October 2015

Keala Pono 

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**FINAL— Cultural Impact Assessment for Wai‘anae
Elementary School Improvements, Wai‘anae Ahupua‘a,
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Prepared By:

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October 2015



MANAGEMENT SUMMARY

Keala Pono Archaeological Consulting prepared a cultural impact assessment for the proposed additions to the Wai‘anae Elementary School at TMK: (1) 8-5-001:059 and (1) 8-5-009:018 in Wai‘anae Ahupua‘a, Wai‘anae District, on the island of O‘ahu.

The current study took the form of background research and an ethnographic survey consisting of two interviews, all of which are included in this report. The background research synthesizes traditional and historic accounts and land use history for the Wai‘anae area. Community consultations were performed to obtain information about the cultural significance of the subject properties and the region as a whole, as well as to address concerns of community members regarding the effects of the proposed construction on places of cultural or traditional importance.

The interviewees were generally supportive of the project. Because of the currently developed state of the Wai‘anae Elementary School lands, there were no concerns for surface archaeological resources. It was recommended to have a cultural monitor available if archaeological remains or *iwi kūpuna* are found during construction. It was also recommended to save an important poinciana tree that has been on the school grounds for a long time.

CONTENTS

MANAGEMENT SUMMARY	i
FIGURES	v
TABLES	v
INTRODUCTION	6
Project Location and Description	6
Physical Environment	6
LITERATURE REVIEW	11
Traditional Land Use	11
<i>Mo'olelo</i> of Wai'ananae	12
Olopana	13
Kawelo	13
Halemano	13
Kūali'i	14
' <i>Ōlelo No'eau</i>	15
Historic Events and Land Use	16
Māhele Records	16
Post-Māhele History	17
Previous Archaeology and Historical Materials	18
Historic Maps	25
Historic Wai'ananae Elementary School	29
Coastal Southeast Wai'ananae, including Pōka'i Bay	37
Coastal Northwest Wai'ananae to Kawiwi Stream	38
Lower or <i>Makai</i> Wai'ananae Valley	40
Upper or <i>Mauka</i> Wai'ananae Valley	41
Settlement Patterns	43
Summary of Background Information	43
ETHNOGRAPHIC SURVEY	45
Methods	45
Consultant Background	45
Eric Enos	46
Glen Kila	46
Topical Breakouts	46
Archaeological Sites	46
Cultural Practices, <i>Mo'olelo</i>	47
Historic Wai'ananae, Change through Time	47
Concerns and Recommendations	49
Summary of Ethnographic Survey	49
SUMMARY AND RECOMMENDATIONS	50
Cultural Resources, Practices, and Beliefs Identified	50
Potential Effects of the Proposed Project	50

Confidential Information Withheld	50
Conflicting Information.....	50
Recommendations/Mitigations.....	50
GLOSSARY	52
REFERENCES.....	54
APPENDIX A: AGREEMENT TO PARTICIPATE	61
APPENDIX B: CONSENT FORM	64
APPENDIX C: TRANSCRIPT RELEASE	66
APPENDIX D: INTERVIEW WITH ERIC ENOS	68
APPENDIX E: INTERVIEW WITH GLEN KILA	72
INDEX.....	77

FIGURES

Figure 1. The project area (in red) on a 7.5 minute USGS Waianae Quadrangle map	7
Figure 2. Portion of TMK plat (1) 8-5-001, showing the project area in red.	8
Figure 3. Soils in the vicinity of the project area.	10
Figure 4. Portion of a map depicting the location of Waimalu’s Land Commission Award	18
Figure 5. Portion of an early map of Pōka‘ī Bay (Jackson 1884).	19
Figure 6. Portion of an early map of Wai‘anae (Monsarrat 1902).	20
Figure 7. Previous archaeological projects in Wai‘anae.	21
Figure 8. Early map of Wai‘anae showing the several ‘ <i>ili</i> names and locations (Kahena 1860).	27
Figure 9. Early map of Wai‘anae showing ‘ <i>ili lele</i> of Pahoa (Pease 1860).	28
Figure 10. Monsarrat’s earliest map of Wai‘anae Kai Ahupua‘a (1870).	30
Figure 11. Early map of Wai‘anae Valley, showing Forest Reserve area (Monsarrat 1906).	31
Figure 12. Map of Wai‘anae House Lots (Aiu 1924).	32
Figure 13. Historic map of Pōka‘ī Bay (Aiu 1927).	33
Figure 14. Wai‘anae Kai Map showing school lot property (Sorenson 1906).	34
Figure 15. Portion of an early Waianae Quadrangle Map (Department Engineer 1936).	35
Figure 16. Portion of a mid-20 th century Waianae Quadrangle Map (Geological Survey 1954). ...	35
Figure 17. Portion of a more recent Waianae Quadrangle Map (Geological Survey 1998).	36
Figure 18. Photograph of the main classroom buildings at Wai‘anae Elementary School.	36
Figure 19. Ku‘ilioloa Heiau, Wai‘anae.	38
Figure 20. Probable dryland fields between Punana‘ula and Kūmaipō Streams.	42
Figure 21. Aerial view of Punana‘ula Heiau, Wai‘anae.	42

TABLES

Table 1. Previous Archaeology in Wai‘anae Ahupua‘a	22
Table 2. Listing of Historical Maps for Wai‘anae.	26

INTRODUCTION

At the request of Group 70 International, Keala Pono Archaeological Consulting conducted a cultural impact assessment (CIA) for improvements to Wai‘anae Elementary School in Wai‘anae Ahupua‘a, Wai‘anae District, on the island of O‘ahu. Two new buildings are planned for the school grounds. This work was designed to identify any historic properties that may be located on the parcels in anticipation of the proposed construction.

The report begins with a description of the project area and an historical overview of land use and archaeology in the area. The next section presents methods and results of the ethnographic survey. Project results are summarized, and recommendations are made in the final section. Hawaiian words, flora and fauna, and technical terms are defined in a glossary, and an index at the end of the report assists readers in finding specific information. Also included are appendices with documents relevant to the ethnographic survey, including full transcripts of the interviews.

Project Location and Description

The Wai‘anae Elementary School project is located in Wai‘anae Ahupua‘a, Wai‘anae District, on the west side of O‘ahu. The Elementary School property covers three parcels, two of which include the proposed project. The project area is located *mauka* (to the north) about 850 ft. (260 m) from Farrington Highway, on the west side of Wai‘anae Valley, on the leeward coast of O‘ahu, north of Poka‘i Bay, in Wai‘anae Kai Ahupua‘a (Figure 1). The two Wai‘anae Elementary School properties together are roughly trapezoidal in shape and the project boundaries encompass an area of 3.06 ac. (1.24 ha).

The two parcels are shown in Figure 2. TMK: (1) 8-5-009:018 is a 2.85 ac. (1.15 ha) property owned by the City and County of Honolulu. In some records this is listed as TMK: (1) 8-5-001059. This property is surrounded on three sides (south, east, and north) by TMK (1) 8-5-001-067 and is fronted on the west side by McArthur Street. TMK: (1) 8-5-001:067 is a 10.65 ac. (4.31 ha) parcel owned by the State of Hawai‘i. This larger property encloses the first parcel on three sides and is bounded by McArthur Street to the west, Plantation Road to the east, and Imipono Street to the north. This property is immediately adjacent to the north of the Wai‘anae Protestant Church property leased to Hawai‘i Public Housing Authority and the east boundary is bordered by Pilila‘au Park.

The project will provide two new buildings on open field areas on the Wai‘anae Elementary School campus. The larger building is approximately 7,000 sq. ft. and the other is 5,000 sq. ft., and both are one story tall. Some trenching will be needed for utilities and the parking area will be repaved and restriped. There will also be a new access point from MacArthur street.

Physical Environment

The project area is relatively flat and has been cleared of all native vegetation. Elevation ranges from approximately 10–20 ft. (3–6 m) above mean sea level (amsl). The project lands rest on alluvium deposited by Kaupuni Stream to the east and would be on the north edge of the Wai‘anae Valley coastal plain. Beneath this and on both sides of the stream is an emerged fossil limestone reef rock formed by uplifted coral reefs.

According to Foote et al. (1972:6, 84–85), the soils on the property are classified as part of the Lualualei Series (Lualualei-Fill Land-Ewa association) consisting of well-drained soils on the coastal plains. These soils developed in alluvium and colluvium and are deposited and develop on nearly level or gently slopes. Typically Lualualei soils are dark grayish-brown, very sticky and

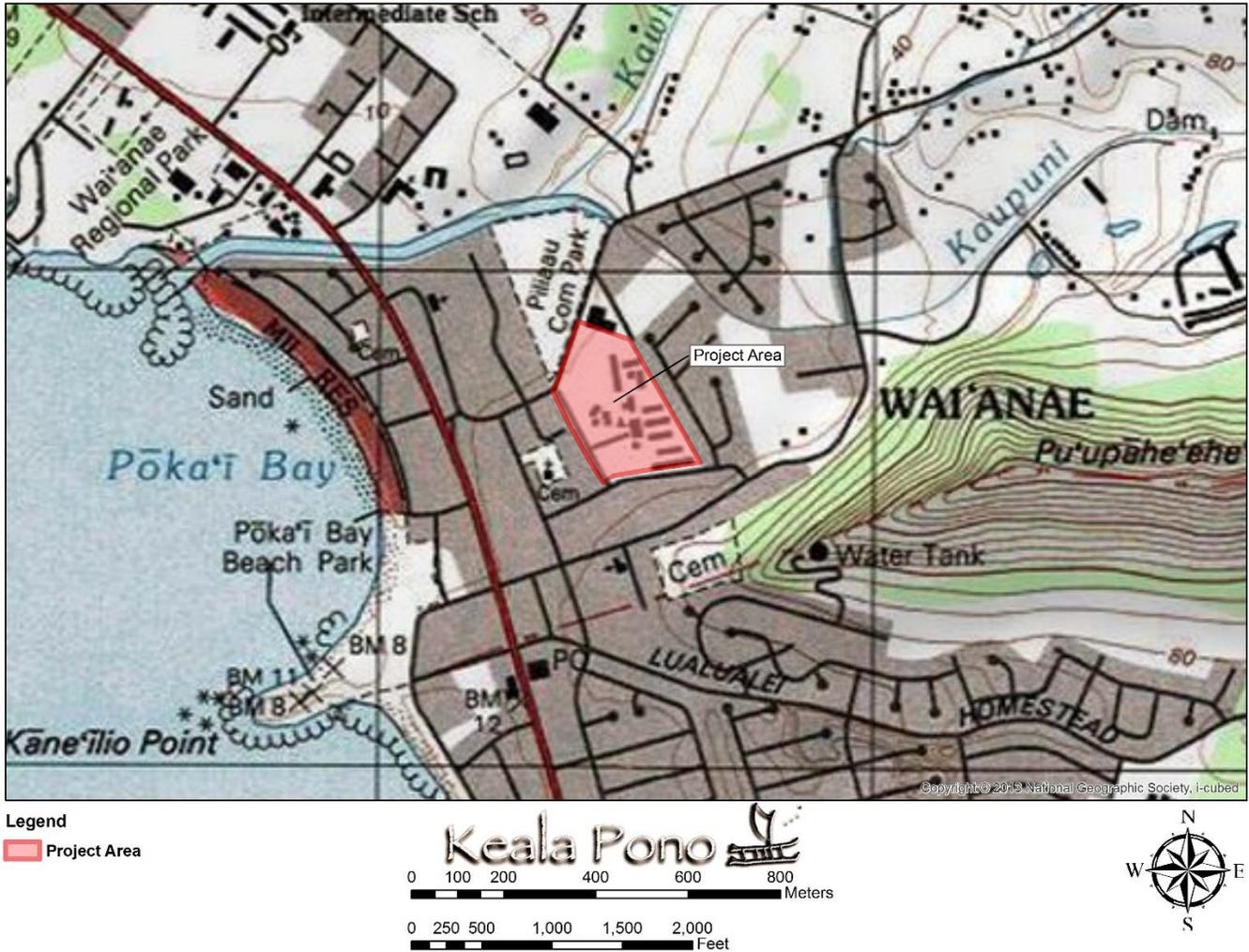


Figure 1. The project area (in red) on a 7.5 minute USGS Waianae Quadrangle map with TMK overlay.

plastic, underlain by coral gravel, sand, or clay below a depth of about 40 in. (102 cm). Specifically, soils in the project area consist entirely of PsA, or Pulehu clay loam, 0–3% slopes (Foote et al. 1972) (Figure 3).

The project area lies in a belt of warm, dry northeasterly trade winds which persist throughout much of the year. Due to the Wai‘anae Mountain Range to the east and its proximity to Pōka‘ī Bay and the coast, the region is also semi-arid (Foote et al. 1972), and rainfall ranges from 10–25 in. (25–64 cm) per annum (Giambelucua et al. 2013).

Wai‘anae Valley is drained by Kaupuni Stream and its ten tributaries with a total watershed of 9.2 sq. mi. (23.9 km²). The project area is located within the coastal flood zone of Kaupuni, which is a perennial stream whose tributaries and headwaters extend to the back of the valley and the surrounding Waianae Mountains. Although many streams in leeward O‘ahu do not flow year round, historical accounts suggest that Kaupuni carried flow throughout the year, and fed at least one large fishpond on the inland side of Pōka‘ī Bay.

Native and Polynesian introduced plants have been removed in the project area with the exception of coconut, or *niu* (*Cocos nucifera*). Grasses are the dominant vegetation with the exception of a number of large, introduced monkeypod trees (*Samanea saman*), *kiawe* (*Prosopis pallida*) and *koa haole* (*Leucaena leucocephala*).

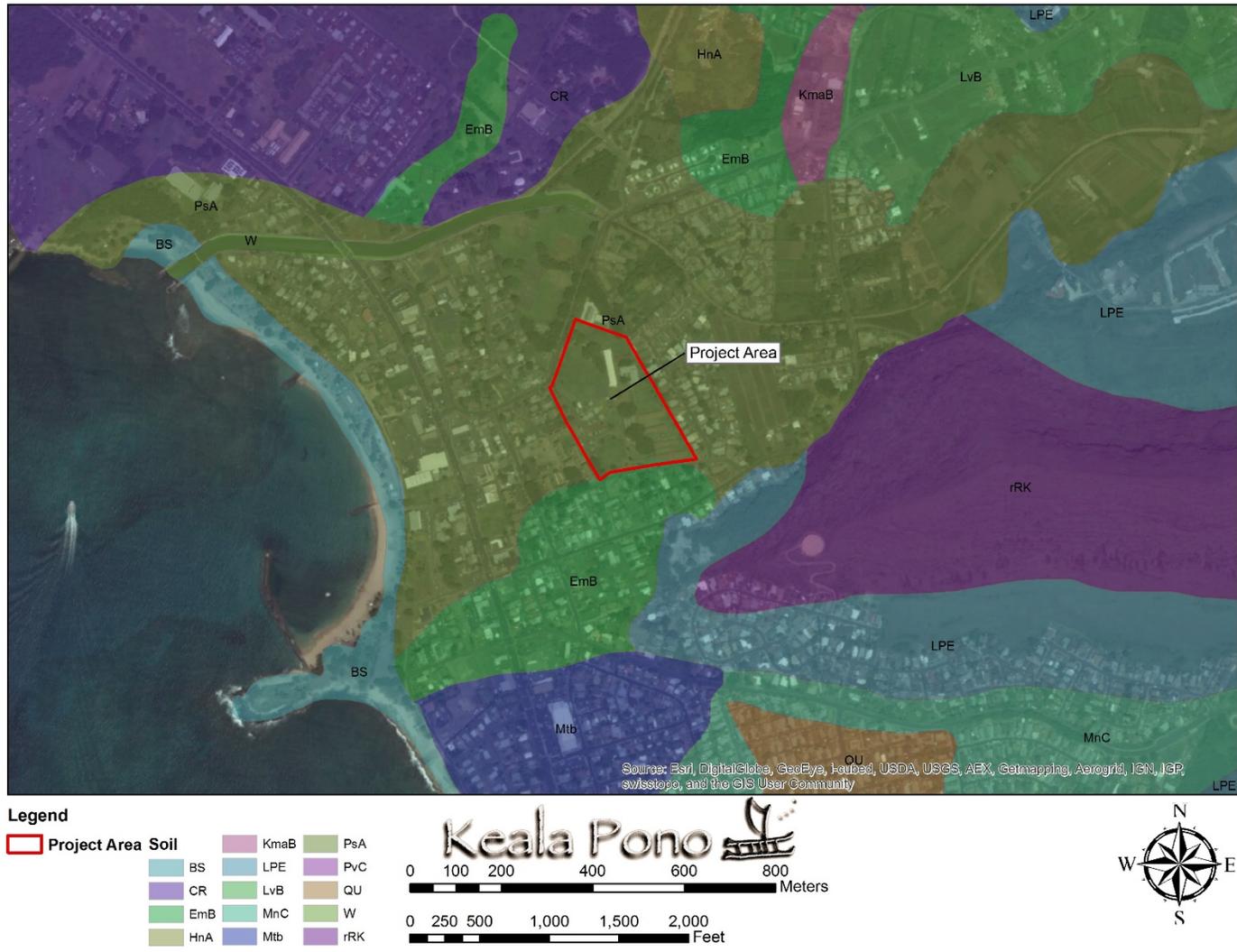


Figure 3. Soils in the vicinity of the project area.

LITERATURE REVIEW

This section of the report presents background information as a means to provide a context through which one can examine the cultural and historical significance of the project lands. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., *mo'olelo*, *'ōlelo no'eau*) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawai'i State Library, the University of Hawai'i at Mānoa libraries, the SHPD library, and online on the Waihona 'Aina database and the State of Hawai'i Department of Accounting and General Services (DAGS) website. Historical maps, archaeological reports, Māhele data, and historical reference books were among the materials examined.

Wai'anae (or more accurately Wai'anae Kai) is one of nine *ahupua'a* identified for the Wai'anae Moku, situated in western O'ahu. As the largest, most centrally located of the *ahupua'a* and one that takes its name from the *moku*, Wai'anae—both the *ahupua'a* and *moku*—played an important role in the history of leeward O'ahu. The *ahupua'a* is bounded by Mākaha and Lualualei Ahupua'a to the northwest and southeast, respectively. The boundaries of Wai'anae originally extended across the ridge tops of the Wai'anae Mountains and to the east and north it reached the ridgeline of the Ko'olau Mountains. It would have been bordered by Kamananui Ahupua'a in Waialua and Waipi'o and Waikele Ahupua'a in the *moku* of 'Ewa. This upland region was known as Wai'anae Uka. The northern boundary is now the ridgeline of the Wai'anae Mountains.

When speaking of land use terms and concepts regarding O'ahu, it is important to note that some of O'ahu's ancient traditions are unique and have continued to survive. Kupuna Glen Kila shares, "In Wai'anae, we do not use the term [*ahupua'a*], at that time before Kamehameha, we used the term *'ili*. *'Ili* was an *ahupua'a* in our vocabulary" (McElroy et al. 2013:102). Furthermore, Kupuna Kila explains that prior to the *ahupua'a* system coming to the O'ahu kingdom, there was a traditional O'ahu resource management system called "*ka'ananiau*" (McElroy et al. 2013) which can be loosely translated as "managing the beauty of the environment over time."

Traditional Land Use

Place names often shed light on traditional views of an area and can provide important contextual information. The name of the Wai'anae district and *ahupua'a* is translated as "mullet water" (Pukui et al. 1974:220), referring to the area's richness in mullet, a prized eating fish. The district might have been named for a large fishpond called Puehu, located on the northwest side of Keaupuni Stream (Handy et al. 1991:468). Pōka'i Bay is named for a chief from Kahiki who planted the coconut grove along the banks of Keaupuni Stream (Thrum in Sterling and Sterling and Summers 1978). Pāhoa includes three sections of land, possibly an *'ili kūpono*; one section is located near the coast on Pōka'i Bay. A second plot of land identified with Pāhoa includes the section of land adjacent to the Wai'anae Elementary School. The term translates as "shark dagger or stone" (Pukui et al. 1974:301). This may be in reference to the location where Olopana attempted to slay Kamapua'a (see *Mo'olelo* section).

The ridge and the mountain tops that surround Wai'anae were also named. These include the following: Kamaile'unu, Kepauala, Kawiwi, Ka'ala, Kaua'ōpu'u, Kuwale, Pāhe'ehe'e Mauka, and Pāhe'ehe'e Makai. Mt. Ka'ala is the highest mountain peak of O'ahu and sits at the head of Wai'anae. It is mentioned in numerous chants and prayers, in part because it was visible from a distance. It is associated with Kāne, a deity in the pantheon of Hawaiian gods. Place names that define the coastal boundaries of Wai'anae are Kāne'ilio on the south, and Laukīnui (now Lahilahi) to the north. Several of the ridge and mountain places are noted in oral traditions and other Hawaiian sources.

Wai‘anae was one of three dry or leeward *moku* on the Island of O‘ahu (Handy et al. 1991). Although Handy (1940:156) identifies its staple crop as sweet potato, or *‘uala* (*Ipomoea batatas*), he is likely referring to one of the other *ahupua‘a* (possibly Mākaha) within the *moku* of Wai‘anae. In Wai‘anae Ahupua‘a there were a number of relatively large *lo‘i* and house complexes along the streams that drained the valley beginning inland from the coastline and extending more than 2 km (1.2 mi.) up the valley. This is supported by Handy (1940:84) who describes an “extensive system of terraces along its various streams...” He notes at least 14 different names for these complexes, probably referring to their associated *‘ili* *‘āina*. *Kalo*, or taro (*Colocasia esculenta*), would have been the primary crop in these *lo‘i*. The *‘ili* of Kamaile on the west side of Wai‘anae was almost 40 ha (98 ac.) in size and much of it would have been devoted to irrigated agriculture. The three contiguous *‘ili* of Ana, Kaho‘olanakio, and Lehanonui (Monsarrat 1870) adjacent to Keaupuni Stream covered nearly 25 ha (61 ac.), again much of it devoted to irrigated agriculture. Based on a map by Monsarrat (1906) that depicts *lo‘i* above the confluence of Keaupuni and Kawaopuu, Honua, and Kūmaipō Streams there are more than 111 ha (275 ac.) of irrigated plots. Although these estimates are suggested by Cordy (2012) to include dryland terraces, they are evidence of the substantial conversion of lands in Wai‘anae for agricultural purposes. Smaller *lo‘i* were likely located farther inland where streams diverged and the land became more dissected at least to an elevation of 275 m (900 ft.) above sea level (Holt et al. 2002). Handy (1940:75) also includes Wai‘anae Uka, the section of the *ahupua‘a* extending from the Wai‘anae to the Ko‘olau Mountains as a location where terraces were present. Clearly, Wai‘anae was a major area for the production of *kalo* and other cultivated plants, the largest in Wai‘anae Moku (Green 1980) and similar to the valley *ahupua‘a* on the windward side of O‘ahu.

Much of the settlement of Wai‘anae would have been concentrated in the *makai* or lower section of the valley. Not only do the numerous irrigated agricultural complexes within this zone suggest such a pattern, but historical maps of Wai‘anae show house sites scattered in or adjacent to *lo‘i*. Few houses would have been clustered into coastal villages. This is supported by Vancouver’s description of the Wai‘anae area in March 1793 on his second exploration voyage to Hawai‘i. His accounts describe a village near Mauna Lahilahi on the west end of the valley, with only scattered huts and a coconut grove in other parts of the leeward coast (Handy et al. 1991:275, 468).

Kamakau offers a poetic description of Wai‘anae that mentions its reputation for *poi* and fish:

...Wai‘anae of the gentle Kaiālulu wind, the sweet waters of ‘Eku, the thick poi of Pā‘hoa, the stringy poi of Lehano and Kūāiwa, the rich poi of Kamaile, and the *aku* fish “tidbits” of Wai‘anae—in Wai‘anae, land beloved of the sun. (1991:106)

Lastly, Wai‘anae is the location of a *pu‘uhonua* or place of refuge and safety. It was reported to be a stronghold used during a time of war and was situated at a place named Kawiwī, nearly 915 m (3,000 ft.) above sea level, along the ridgeline that serves as a boundary between Mākaha and Wai‘anae (Thrum 1909:152). A major battle, involving a beleaguered O‘ahu chief, took place at this location during the time of Kahekili, a paramount chief from Maui.

Mo‘olelo of Wai‘anae

There are many accounts from oral traditions that mention the location of Wai‘anae without much further detail. Several of these associate named individuals with Wai‘anae—both the *ahupua‘a* and *moku*. Cordy (2001) provides an overview of the oral traditions and named individuals associated with the *moku* of Wai‘anae, with much of the emphasis on Wai‘anae Ahupua‘a. These accounts range over a considerable time period, beginning with Olopana who may have lived and served as a chief nearly 20 generations (see Cachola-Abad 2000) before the advent of Kamehameha I. Kūali‘i, who was a notable O‘ahu chief is associated with Wai‘anae during his lifetime about five generations

before Kamehameha. Here we describe the accounts linked to four chiefs: 1. The death of the *ali'i* Olopana at the hands of Kamapua'a; 2. The life of the *ali'i* Halemano, 3. The rise to power of the *ali'i* Kawelo, and 4. The life of Kūali'i, one of the most important *ali'i* in O'ahu's history.

Olopana

The first *ali'i* associated with Wai'anae is Olopana, one of the first paramount chiefs of the Ko'olau Moku on the windward side of O'ahu, and whose efforts to sacrifice Kamapua'a in Wai'anae are summarized here (from Fornander 1918–1919:314–326).

Olopana was an early paramount chief of O'ahu whose history is linked to Kamapua'a, a demigod who could appear either as a human or a pig. Kamapua'a was known for his appetite, particularly for chickens. Olopana summoned his priest from Kaua'i to Wai'anae to assist him in dealing with the trepidations of Kamapua'a. The *kahuna*, Malae, warned Olopana that he would not be able to kill Kamapua'a outright. Instead he suggested Olopana offer him various plants and animals to make him weak and vulnerable. After presenting this offering to Kamapua'a, Olopana's men bound and dragged him to Pāhoa, a section near the coast of Wai'anae Ahupua'a. There Kamapua'a was tightly bound, placed on a *heiau* and prepared for sacrifice (including making several cuts into his skin). The *heiau* is thought to have been Kane Heiau. At this same time a second priest, who was also opposed to Olopana heard of these plans and prepared to intervene to save Kamapua'a. (Fornander 1918–1919). Subsequently, Olopana was killed by Kamapua'a, along with his followers on O'ahu.

Kawelo

Linked by association with Kākuhihewa (a paramount chief of O'ahu who ruled at about the same time as 'Umi on Hawai'i Island), when Kawelo was born on Kaua'i it was foretold that he would be a great soldier and eventually a leader. Early in his life his family moved from Kaua'i to O'ahu where he met 'Aikanaka, an *ali'i* who later would vie to become the chief of Kaua'i. Kawelo bested one of the soldiers of Kākuhihewa in his youth and went on to become proficient in fighting and warfare. When his family was forced off their lands in Kaua'i by 'Aikanaka, Kawelo promised his support to those opposing him. Prior to traveling to Kaua'i, however, he and his followers landed in Wai'anae where they built a *heiau* (Fornander 1918–1919:28). Here Kawelo prayed for success to his god Kane-i-ka-pualena and to the idol of the god Ka-lani-hehu that had been sent from Kaua'i. Kawelo traveled with his warriors to Kaua'i and in a number of battles defeated the soldiers of 'Aikanaka and eventually bested 'Aikanaka, who had gathered his followers for a final stand against this warrior-chief. After defeating 'Aikanaka Kawelo then assumed the role of paramount chief of all of Kaua'i (Cachola-Abad 2000). Once victorious on Kaua'i, Kawelo distributed its lands to his ranking warriors.

Halemano

The story of Halemano shares some of the same elements as both Olopana and Kūali'i although in this case his history is bound up with his wife, Kamalalawalu, who betrays him, not once but twice. In one of the final accounts of Halemano he has been summoned to a game of *kilu* by a Kohala chief (in whose district he was living at the time). This game involves skill in hitting a target and between turns the chiefs recited chants. On the third and fourth rounds of this game Halemano, who has seen his wife watching his performance, chants the following that includes naming the main bay and the mountains of Wai'anae:

My lover from the Kalihi rain, where the clothes are bundled up,
Where in the back is the only sheltered spot;
It is being pressed by the Waahila (rain),
The rain of my land where women are led away secretly.

Search is made to the top of **Kaala**,
 The lower end of **Pokai** is plainly seen.
 Love looks in from Honouliuli,
 The dew comes creeping, it is like the wind of Lihue,
 Like a false gleaming of the sun at Kaena,
 For it is being destroyed by the Unulau wind from below,
 Causing coldness within, made so by love of thee,
 For I love thee, my companion of that parched plain. (Fornander 1916–1917:252, emphasis
 ours)

Halemano wins this game in the 15th round and his former wife steps up to claim him once more. But she is rejected because Halemano has a new wife. Afterwards he and his new wife return to O‘ahu where he eventually meets his first wife, Kamalalawalu again. Once more their union could not endure and she went to live with a chief in Waiāhole. In the meantime, the chief from Hilo learned of Kamalalawalu’s presence and he had previously been promised her hand. He and his warriors traveled to O‘ahu, defeated the Waiāhole chief, and returned to Hawai‘i Island with Kamalalawalu.

Kūali‘i

Kūali‘i is identified as a “usuper” king by Beckwith (1940), one who by dint of his strength and courage vanquished his foes and became one of the most recognized chiefs in Hawaiian history. His history is recounted in Fornander (1916–1917:364–402). Born in Kailua on O‘ahu, Kūali‘i, was recognized for his strength at an early age, and in his training was encouraged to challenge chiefs who were oppressive. Cachola-Abad (2001) places him in the 20th generation of paramount chiefs on O‘ahu; Kirch (2011) suggests he ruled in the late 17th century. He does so by a variety of means: usurping their roles in rituals performed at *heiau*, winning battles, marrying a high ranked chiefess, and taking on critical allies. He was said to win battles even when outnumbered and first was elevated as a paramount chief of the Kona Moku of O‘ahu, whereupon he became proficient in warfare and conquest. He traveled to Kaua‘i where again with few warriors he defeated a larger force and subdued all or part of the island. He also served as an ally to help win Moloka‘i and Lāna‘i, and aided a chief in Maui. He then went to Hawai‘i and routed a chief named Ha‘alilo, but returned to O‘ahu to repel a revolt of the Wai‘anae chiefs at Kalena.

Kūali‘i also composed a *mele* to himself and this was sung at one of his battles by his son. Among the more than 600 verses is this one that mentions several locations in Wai‘anae Ahupua‘a:

- 100 Hawaii of high mountains;
 Towering unto heaven is Kauiki;
 Down at the base of the islands
 Where the sea holds it fast.
- 105 Kauiki the mountain,
 Like the sea-gull flapping its wings when about to fall
 Kauai,
 Great Kauai inherited from ancestors
 Sitting the calm of **Waianae**
- 110 Kaena is a point
 Kahuku is hala-wreathed
 Covered with dew is the back of **Kaala**
 There below doth Waialua sit,
 That is Waialua

This verse identified Kamaile, both an *'ili* of Wai'anae and the location of a major *heiau*.

400 The koaie of Kauai;
The sea grass has been stripped by Ku—
The waving [grass] of **Kamaile**;
The towering surf of Mahiwa,
Which dammed up the water of Halapo

And these verses recognize Ka'ala and Kawiwi, two prominent landmarks of Wai'anae.

500 The moss that hangs on wood,
The red crab on the top of **Kaala**
Not like unto these are thou, Ku
Not like the kukui
The rough-barked kukui

510 The fragrant poholua tree,
Nor the maile that grows on Maoi,
Nor the kaluhea of **Kawiwi**
Not like these are thou, Ku.
Not like the kawuu
Is the kalia standing in the open (Fornander 1916–1917:364–402, emphasis ours)

The *mele* valorizes Kūali'i, linking him not only to numerous places in O'ahu and elsewhere in Hawai'i but also Tahiti (or Kahiki). The prominent role that Wai'anae place names play in this *mele* are a sign of the region's visible importance to Kūali'i's political ambitions.

'Ōlelo No'eau

Wai'anae, both the *moku* and *ahupua'a*, are mentioned in Hawaiian proverbs (Pukui 1983). They provide further insight to traditional beliefs and practices of these lands:

E nui ke aho, e ku'u keiki, a moe i ke kai, no ke kai la ho'i ka 'āina.

Take a deep breath, my son, and lay yourself in the sea, for then the land shall belong to the sea.

Uttered by the priest Ka'opulupulu at Wai'anae. Weary with the cruelty and injustice of Kahāhana, chief of O'ahu, Ka'opulupulu walked with his son to Wai'anae, where he told his son to throw himself into the sea. The boy obeyed, and there he died. Ka'opulupulu was later slain and taken to Waikīkī where he was laid on the sacrificial altar at Helumoa. (Pukui 1983:44)

Ka malu niu o Pōkā'i.

The coco-palm shade of Pōkā'i.

Refers to Wai'anae, on O'ahu. At Pōkā'i was the largest and best-known coconut grove on O'ahu, famed in chants and songs. (Pukui 1983:160)

Kapakahi ka lāma Wai'anae.

Lopsided is the sun at Wai'anae.

Used to refer to anything lopsided, crooked, or not right. First uttered by Hi'iaka in a rebuke to Lohi'au and Wahine'ōma'o for talking when she warned them not to. (Pukui 1983:164)

Malolo kai e! Malolo kai e!

Tide is not high! Tide is not high!

Said of threatening disaster. Robbers once lived at a place in Wai‘anae now known as Malolo-kai. Their spies watched for travelers to kill and rob. When there were only a few that could be easily overcome, the spies cried, “Low tide!” Which meant disaster for the travelers. But if there were too many to attack, the cry was “High tide!” (Pukui 1983 232–233)

Ola o Waianae i ka makani Kaiāulu

Wai‘anae is made comfortable by the Kaiāulu breeze.

Chanted by Hi‘iaka at Ka‘ena, O‘ahu, after her return from Kaua‘i. (Pukui 1983:273)

The Kaiāulu has been described as a “pleasant, gentle trade wind” (Nakuina 2005:123).

Historic Events and Land Use

The history of Wai‘anae is closely tied to the larger history of its *moku* and the Island of O‘ahu. Political dynamics among *ali‘i* on O‘ahu had been mostly confined to the island with occasional incursions from the chiefs of other islands. For the most part, the kingdom of O‘ahu had developed into a peaceful and prosperous kingdom. In 1783 this changed with invasion of O‘ahu by Kahekili, the paramount chief of Maui. At the time of Kahekili’s attack, Kahahana was the ruler of the O‘ahu kingdom and would be the last sovereign to rule over an independent O‘ahu. When Kahekili invaded, not only did he take the island but Kahekili killed virtually all of O‘ahu’s royal heirs and descendants of the Nanaulu line of chiefs. By 1795, Kamehameha the Great from Hawai‘i Island had taken over Maui’s rule of O‘ahu by ousting Kalanikūpule, the son of Kahekili and with that unified all of the main Hawaiian Islands, save Kaua‘i. On the leeward side of O‘ahu, control of Wai‘anae was passed to a series of Kamehameha’s retainers and family. Kamehameha’s ally, Boki was named governor of O‘ahu in 1816 and after Kamehameha’s death was the unrivaled leader of the Island. Boki was granted Wai‘anae Ahupua‘a at this time, while the *moku* of Wai‘anae was controlled by the Crown.

Māhele Records

The change in the traditional land tenure system in Hawai‘i began with the appointment of the Board of Commissioners to Quiet Land Titles by Kamehameha III in 1845. The Great Māhele took place during the first few months of 1848 when Kamehameha III and more than 240 of his chiefs worked out their interests in the lands of the Kingdom. This division of land was recorded in the Māhele Book. The King retained roughly a million acres as his own as Crown Lands, while approximately a million and a half acres were designated as Government Lands. The Konohiki Awards amounted to about a million and a half acres, however title was not awarded until the *konohiki* presented the claim before the Land Commission.

In the fall of 1850 legislation was passed allowing citizens to present claims before the Land Commission for parcels that they were cultivating within the Crown, Government, or Konohiki lands. By 1855 the Land Commission had made visits to all of the islands and had received testimony for about 12,000 land claims. This testimony is recorded in 50 volumes that have since been rendered on microfilm. Ultimately between 9,000 and 11,000 *kuleana* land claims were awarded to *kama‘āina* totaling only about 30,000 acres and recorded in ten large volumes

During the 1848 Māhele land division the entire Wai‘anae District, aside from Mākaha, was first designated as Crown Land. In the original government act that established fee simple land ownership all of Wai‘anae Ahupua‘a is identified as part of the Crown Lands (Kingdom of Hawai‘i 1846:26). A chief from Wai‘anae known as Pāhoa was given half of the *‘ili* of Kalena in Wai‘anae Uka but

this was later rescinded. Pāhoa was also the original awardee for Land Commission Award (LCA) 7713; again this was later rescinded. The lands were later awarded to Victoria Kamāmalu as part of a claim that included property on several islands.

Later there were a large number of (i.e., more than 160) successful LCAs in Wai‘anae Ahupua‘a (see Commissioner of Public Lands 1929:845–852). These awards are associated with (and assigned to) one of the more than 15 ‘*ili* ‘*āina* that have been identified in the *ahupua‘a*: Ana, Ka‘akoa, Ka‘api, Kahaniki, Kaho‘olanakio, Kamaile, Keaunui, Keekee, Kuaiwa, Kumaipo, Lehanoiki, Lehanonui, Leleakoe, Pāhoa, and Puea.

The Wai‘anae Elementary School sits on the property that was claimed by Waimalu as LCA 3276, as well as an ‘*āpana* section claimed by Olaelae as part of LCA 10585. Waimalu’s portion, totaling 3.57 ac. (1.44 ha) had two linked house sites and was surrounded on all four sides by a stone wall. In testimony provided by Waimalu he claimed 13 *lo‘i*, an ‘*auwai*, and a *kula* plot. Olaelae’s portion, totaling 1.26 ac. (0.51 ha) was bounded on two sides by a stone wall. In testimony provided by Olaelae he claimed three *lo‘i*, an ‘*auwai*, and bananas.

These two properties (Waimalu, Olaelae) have been assigned to the ‘*ili* ‘*āina* of Wailele as well as Pāhoa. They are located *mauka* (north) of the main road. A second section of Pāhoa extended into Wailele just west of Waimalu’s property. Figure 4 shows this property as first mapped by Monsarrat in 1870. The larger enclosure, encompassing the three parcels, is roughly square measuring about 360–400 ft. (110–122 m) on each side. It was enclosed by stone walls that defined its boundaries. Much of the property, and likely the ‘*ili*, was given over to the cultivation of *kalo* in a number of *lo‘i* irrigated by an ‘*auwai* from Keaupuni Stream.

On Jackson’s (1884) map, he shows a large section of *lo‘i* just west of Keaupuni Stream and north of the ‘*ili* ‘*āina* boundary wall separating Wailele and Pāhoa (Figure 5). This property on which the Elementary School sits today was part of a much larger section, again defined by a stone wall. This may demarcate the boundary of the entire ‘*ili* ‘*āina* of Wailele. It extended northeast more than 2,000 ft. (610 m) with the boundary crossing Keaupuni Stream. It then angles to the southwest, extending 1,300 ft. (396 m). The total area encompassed by the ‘*ili* was approximately 94 ac. (38 ha). And although the claimant testimony does not identify it as such, there is a house site represented on two of Monsarrat’s (1870, 1902) maps. By 1902 this property also supported eight homes, likely for the plantation workers for the Waianae Company (Figure 6).

Post-Māhele History

After the Māhele, large tracts of land in the upper valley were leased or purchased as grants for ranching, initiating a series of landscape changes in the region. The Waianae Sugar Plantation was founded in 1878 by H.A. Widemann; its cultivated lands encompassed much of *makai* Wai‘anae both east and west of Keaupuni Stream. Ranching occurred in the uplands as L.L. McCandless acquired several large leases on the east side of the valley. With this the Wai‘anae community grew substantially. By 1906 the Waimalu parcel is recorded as property for a school—presumably the precursor to the current Wai‘anae Elementary School. By 1884, Wai‘anae was listed in the Hawaiian Directory as one of the largest settlements on O‘ahu, second only to Honolulu.

During the 1890s the Oahu Railway and Land Co. (OR&L) railroad was constructed to bring crops and animals from the Leeward Coast to Pearl Harbor. This railway would eventually run through all of the Wai‘anae District and around Ka‘ena Point to Kahuku. Vestiges of the old rail line can still be seen along Farrington Highway. Two sections of this railway extended into Wai‘anae Valley to transport sugarcane harvested on Waianae Company lands. The eastern extension of the railway was located about 30 m (100 ft.) south of the Waimalu property.

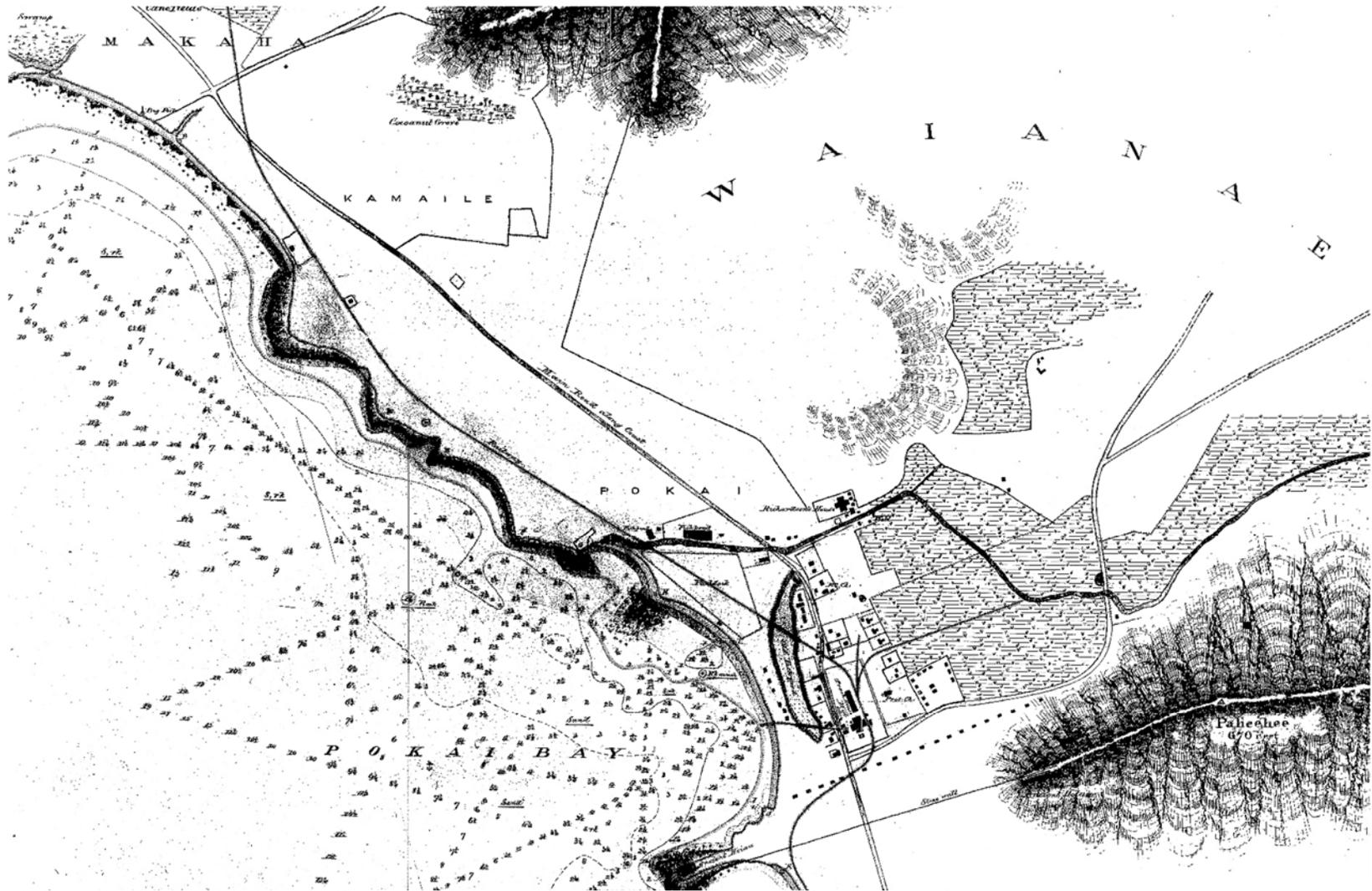
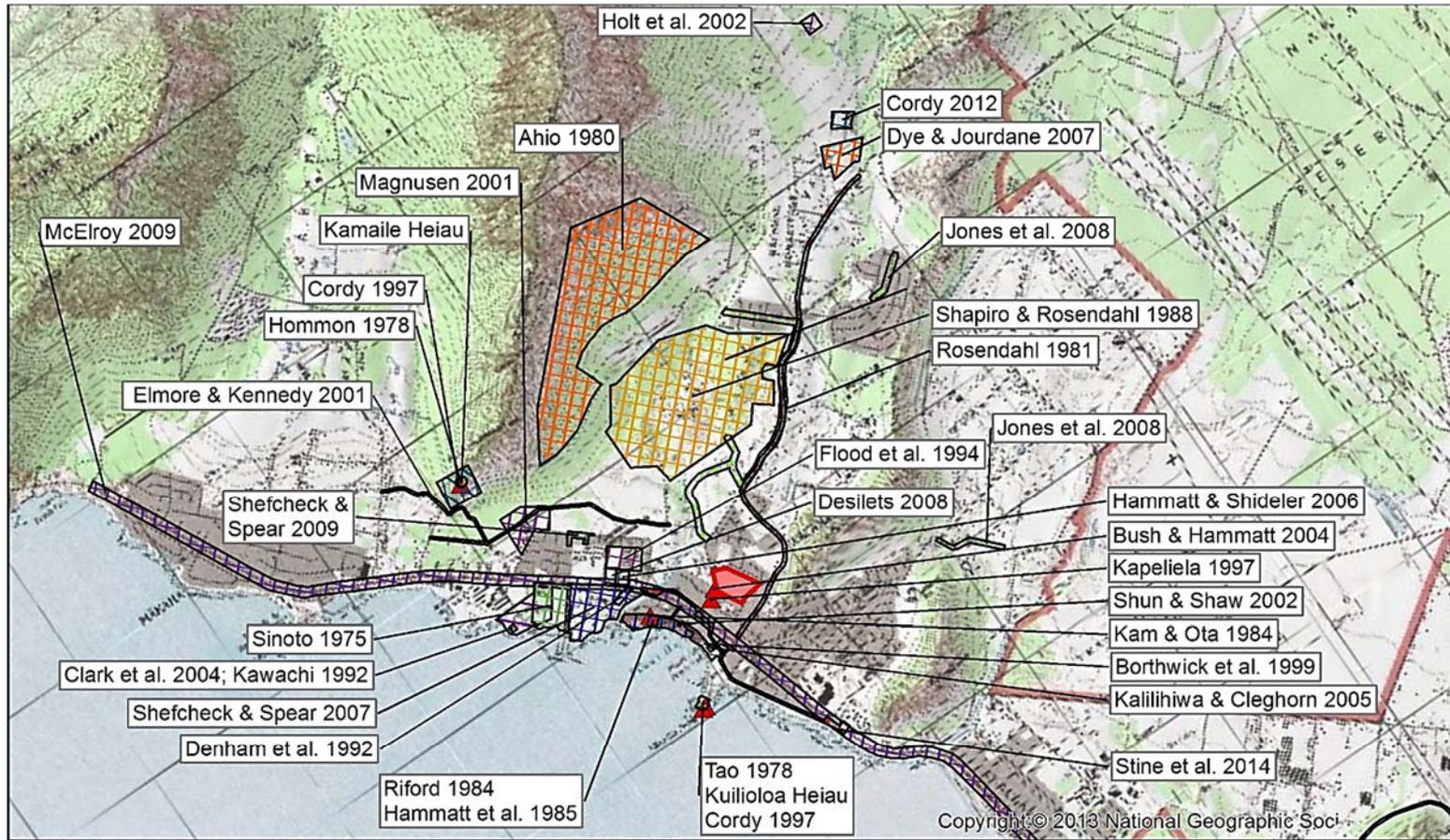


Figure 5. Portion of an early map of Pōka'i Bay (Jackson 1884).



Legend

- Project Area
- Previous Archaeology
- Archaeological Site

Keala Pono



Figure 7. Previous archaeological projects in Wai'anae.

Table 1. Previous Archaeology in Wai‘anae Ahupua‘a

Author and Year	Location	Work Completed	Findings
McAllister 1933	Nine site locations in Wai‘anae	Island-wide Survey	Described ten <i>heiau</i> , one rockshelter, one fishpond, several house sites, refuge site.
Sinoto 1975	Wai‘anae Regional Park	Reconnaissance	Identified five dry-laid masonry structures or features, including three enclosures, an L-shaped wall, and an isolated wall.
Hommon 1978	Kamaile Heiau	Survey and Mapping	Mapped the <i>heiau</i> , described habitation cave and terraces below.
Tao 1978	Ku‘iliola Heiau, Pōka‘ī Bay, Wai‘anae	Archival Research	Planned to restore the <i>heiau</i> .
Abe and Kelly 1979	Ku‘iliola Heiau, Pōka‘ī Bay, Wai‘anae	Survey and Mapping	Identified eight construction features for Ku‘iliola Heiau.
Sinoto 1979	Western Coastline, Wai‘anae Kai	Reconnaissance	Documented irrigated terraces.
Ahlo 1980	Wai‘anae Agricultural Park, Wai‘anae Kai	Reconnaissance	Identified 24 archaeological features used for dryland agriculture or habitation.
Ota 1981	Upper Wai‘anae Valley, Honua Stream	Reconnaissance	Documented irrigated and dryland agricultural terraces.
Rosendahl 1981	Wai‘anae Valley Road Improvements	Survey	No artifacts or features located.
Kam and Ota 1984	Wai‘anae Army Recreational Area, Pōka‘ī Bay	Inadvertent Burial, Burial Recovery	Recorded two human burials, historic artifacts, hearths or fire pits.
Riford 1984	Pōka‘ī Bay	Monitoring	Human remains.
Hammatt et al. 1985	Pōka‘ī Bay	Test Excavation and Monitoring	Recorded prehistoric and historic cultural features (fire pits, human burials) and layers, human remains, and significant number of traditional artifacts including volcanic glass, adze fragments, worked calcite, faunal remains.
Shapiro and Rosendahl 1988	Lower Wai‘anae Valley, north of Keaupuni Stream	Surface Survey, Subsurface Testing and Significance Assessment	Recorded 34 sites with 45 features, most associated with historic dairying. Traditional features included dry laid masonry walls, ditches, coral and basalt lithic scatter, and a terrace. Subsurface trenching identified buried pondfield soils in seven locations where LCAs were claimed.
Bordner 1989	Upper Wai‘anae Valley, Hui Stream	Reconnaissance	Identified dryland agricultural features.
Kawachi 1990	Mauna Lahilahi, Coastal Wai‘anae	Inadvertent Burial, Burial Recovery	Recorded a human burial.
Kawachi 1992	Wai‘anae Regional Park	Burial Report	Recorded a human burial.

Table 1 (Cont.)

Author and Year	Location	Work Completed	Findings
Denham et al. 1992	Wai‘anae Regional Park	Survey and Subsurface Testing	Recovered one volcanic glass flake, possible basalt abrader, shellfish, and faunal remains; no cultural deposits.
Flood et al. 1994	East of Wai‘anae Intermediate School	Survey	Identified 24 features including 14 unmodified sinkholes, four modified sinkholes, a wall, a historic artifact scatter, a trash mound, an alignment, a platform dog burial, and a terrace.
Cordy 1997	Upper Wai‘anae Valley, Punana‘ula and Kūmaipō Streams	Reconnaissance Survey	Relocated Punana‘ula Heiau, and documented the occurrence of <i>lo‘i</i> complexes associated with the two streams. Identified dryland agricultural fields in their lower reaches. One complex with 20 features mapped, including an animal pen, house site, dryland field walls, <i>lo‘i</i> terraces and <i>‘auwai</i> .
Kapeliela 1997	Lihue Street and Plantation Road, Wai‘anae	Inadvertent Discovery of Human Remains, Burial Recovery	Documented human remains.
Borthwick et al. 1999	Pōka‘ī Beach Park, Pōka‘ī Bay, Wai‘anae	Subsurface Survey	Noted a possible pre-contact cultural layer.
McGuire and Hammatt 2001	‘Ili of Kamaile and Wai‘anae Ahupua‘a	Traditional and Historical Assessment	Identified known references to Kamaile and Wai‘anae and interviewed residents on the history of the sugar plantation.
Magnusen 2001	Kamaile Elementary School, Wai‘anae	Reconnaissance	No archaeological features or remains encountered.
Shun and Shaw 2002	Pōka‘ī Bay, Wai‘anae	Monitoring	Recorded a disturbed charcoal layer, fire-cracked rock, possible <i>‘ili ‘ili</i> paving stones.
Holt et al. 2002	Site 5803, Upper Wai‘anae Valley	Surface Survey and Excavation	Documented three, possibly four structural, dry-laid masonry foundations (including a shrine), two features (fire pits), basalt flakes, and adze preform.
Clark et al. 2004	Wai‘anae Regional Park	Survey, Subsurface Testing	Recorded three dry-laid masonry structures, three sinkholes used as gardening areas, including subsurface cultural deposits. Recovered volcanic glass, basalt flakes, faunal materials, historic bottle glass, <i>kukui</i> , pearl shell fishhook, wood charcoal, bird bone, pig bone, large variety of shellfish, and invertebrates.
Bush and Hammatt 2004	Near Wai‘anae Elementary School, Hawaiian Electric Company	Inadvertent Discovery of Human Remains, Burial Recovery	Identified a portion of one human burial.

Table 1. (Cont.)

Author and Year	Location	Work Completed	Findings
Kalilihiwa and Cleghorn 2005	Pōkaʻī Bay, Waiʻanae	Monitoring	No findings, only modern materials identified.
Hammatt and Shideler 2006	Leeward Coast Emergency Homeless Shelter, Waiʻanae	Survey	Documented one human burial.
Desilets 2007	Dept. of Transportation Waiʻanae Baseyard	Assessment and Geophysical Survey	No findings.
Dye and Jourdane 2007	Chen Farm, Waiʻanae Valley Road	Assessment	No findings.
Jones et al. 2008	Waiʻanae Valley Road, Board of Water Supply	Monitoring	Recorded former <i>loʻi</i> soils, red brick.
Shefcheck and Spear 2007	Waiʻanae Regional Park, Pōkaʻī Bay	Archaeological Assessment	Possible subsurface cultural deposits
Nakamura et al. 2008	Waiʻanae Water System, McArthur and Kawili Streets, Waiʻanae Kai	Monitoring	Recovered 19 th -20 th century historic artifacts (bottle glass, ceramics). Project area linked to pre-contact foot trail.
Shefcheck and Spear 2008	Waiʻanae Regional Park, Pōkaʻī Bay	Archaeological Assessment	Found no cultural materials; noted possible subsurface cultural deposits.
McElroy 2009	Farrington Highway Fiber Optic Line, Lualualei, Waiʻanae, and Mākaha	Monitoring	Collected a 20 th century glass bottle.
Shefcheck and Spear 2009	Waiʻanae Kai, Hawaii Coalition of Christian Churches	Monitoring	Identified a grinding stone mortar.
Cordy 2012	Waiʻanae Valley Ranch, Ranch headquarters and western, upper portion of Kawiki, Punanaʻula, Kumaipu streams, Waiʻanae Kai	Reconnaissance	Recorded 116 sites located in the upper valley mostly used for dryland and irrigated agriculture, including irrigation canals. One rockshelter used for habitation, a number of house sites, several possible shrines, small platforms that may be locations for human burials. Historic era dry laid masonry walls also identified.
Stine et al. 2014	Lualualei and Waiʻanae Ahupuaʻa	Monitoring	Identified three sites: Puehu Fishpond, the Old Government Road, and the Waianae Sugar Plantation railway.
Graves et al. 2015	Waiʻanae Elementary School	Literature Review	Conducted archival research as part of the current study.

construction of a roadway and then a railway through the area. Relatively few reports provide chronometric dates and those that do, generally do not describe the reliability of these dates (e.g., if the samples were identified as short lived taxa). Few of the archaeological studies have included any synthesis (but see Flood et al. 1994 for an extended summary of archaeological studies done prior to 1990). Project summaries here are presented for four areas within Wai‘anae: 1. Coastal Southern Section, including Pōka‘ī Bay, to Keaupuni Stream, 2. Coastal Western Section of Wai‘anae including the Kamaile ‘ili ‘āina, 3. Lower or Makai Wai‘anae Valley, above Keaupuni-Kawiwi Streams, and 4. Upper or Mauka Wai‘anae Valley above Punana‘ula Stream. Several historical maps for Wai‘anae were also used in this overview. They are listed in Table 2 and can be found on the Department of Accounting and General Services website. These maps depict various aspects of land use, as well, as including “archaeological” features and structures (e.g., fishponds and *heiau*).

One measure of the cultural and ritual significance of Wai‘anae is the large number of *heiau* identified there. McAllister (1933:112–116) names nine *heiau* in Wai‘anae Valley: Pu‘upahe‘ehe‘e (Site 152), Kū‘īlioloa (Site 153), Keaupuni (or Keopuni) (Site 155), Kamohoali‘i (Site 156, also known as Haua [Sterling and Summers 1978:71], Malaeha‘akoa (Site 157), Kikahi (Site 158), Kalamaluna (Site 159), Kane (Site 160), Kamaile (Site 161), and Punana‘ula (Site 161), many more than he identified in either Mākaha or Lualualei. Some of these *heiau* have been destroyed, some may be partially intact (e.g., Malaeha‘akoa) while a few may be fully intact. Cordy (1997; Holt et al. 2002) relocated Punana‘ula Heiau in the upper reaches of Punanua‘ula Stream. Keaupuni Heiau, located along the west bank of Keaupuni Stream near its mouth in Pōka‘ī Bay, was identified by Flood et al. (1994:29) as the structure mapped by Monsarrat (1870, 1902). It has been leveled. They also identify the likely location and structure associated with Kamohoali‘i Heiau, located about 300 m (1,000 ft.) inland from Pōka‘ī Bay, in the ‘ili of Leohano-iki. It was mapped by Monsarrat (1870, 1902) by which time it apparently had houses constructed on its foundation. Pu‘upahe‘ehe‘e Heiau, on the eastern ridgeline separating Wai‘anae from Lualualei, was destroyed when a cemetery was enlarged. It was identified by Thrum (1916) as a *luakini* class *heiau*. Kū‘īlioloa Heiau is the only known *heiau* on O‘ahu to be surrounded by water on three sides. McAllister (1933) speculates its use may be related to the sea and fishing. It is located on Kāne‘īlio Point at the eastern end of Pōka‘ī Bay (1933:11). It has been partly restored and its history and archaeology described by Tao (1979) and Abe and Kelly (1979). Kamaile Heiau is relatively well preserved on the ridgeline and *ahupua‘a* boundary separating Wai‘anae and Mākaha. It was mapped by McAllister (1933) and again by Hommon (1978).

While none of these *heiau* have been adequately documented or studied, they do illustrate how the locations of such structures were organized: there are two *heiau* on the coastal points on both the east and west *ahupua‘a* boundaries. Similarly there were two *heiau* constructed on the ridgelines above the coast, again situated on the east and west *ahupua‘a* boundaries. Both Kamaile and Pu‘upahe‘ehe‘e Heiau were likely of the *luakini* class, as were possibly Kamohoali‘i and Kane Heiau (where Kamapua‘a was supposedly held).

Historic Maps

One of the earliest maps for Wai‘anae was prepared in 1860 for the Waimalu Lease (Figure 8). It is not a final map—many names are written in long hand. It does show a number of ‘ili ‘āina that are noted on later maps. There are also several other names that are probably ‘ili ‘āina names as well. The property of Waimalu, where the Elementary School is located, is shown on this map. There are apparently other place names or named individuals labeled but these could not be deciphered.

Another map of part of Wai‘anae Kai, also dated 1860, does not provide much detail (Figure 9). It depicts the locations of the *lele* (separate properties) of the ‘ili *kūpono* named Pāhoa. The large coastal fishpond on Pōka‘ī Bay is represented; it shows a section of it as belonging to the “king.”

Table 2. Listing of Historical Maps for Wai‘anae

Author and Year	Location	Mapped Objects
Pease 1860	Wai‘anae Ahupua‘a	Coastline, streams, <i>ahupua‘a</i> boundaries, named landholdings, road, place names, fishpond.
Kahena 1860	Wai‘anae Ahupua‘a	Place names, named landholdings, stream, coastline.
Jackson 1884	<i>Makai</i> Wai‘anae	Coastline, major topographic features, streams, roads, houses, churches, railway, agricultural complexes, fishponds.
Monsarrat 1870	<i>Makai</i> Wai‘anae	Coastline, <i>ahupua‘a</i> boundaries, streams, land awards (LCA, Grants), named landholdings, roads, houses, churches, agricultural complexes, irrigation ditches, fishponds, stone walls, <i>heiau</i> .
Monsarrat 1902	Wai‘anae Ahupua‘a	Coastline, major topographic features, streams, reservoirs, land awards (LCA, Grants), named landholdings, leased lands, roads, houses, churches, railway, agricultural complexes, fishpond, <i>heiau</i> .
Monsarrat 1906	<i>Makai</i> and <i>Mauka</i> Wai‘anae	Major topographic features, streams, swamps, reservoirs, land awards (LCA, Grants), named landholdings, homestead plots, former taro cultivation lands, leased lands, roads, trails, houses, churches, railway, agricultural complexes or locations, irrigation ditches, tunnels, springs.
Sorenson 1906	<i>Makai</i> Wai‘anae	Coastline, <i>ahupua‘a</i> boundaries, streams, land awards (LCA, Grants), named landholdings, roads, railway, houses, cemetery, Wai‘anae Elementary School plot.
Aiu 1924	<i>Makai</i> Wai‘anae	Three LCA plots, stone walls, and irrigation ditches.
Aiu 1927	Pōka‘ī Bay, <i>Makai</i> Wai‘anae	Coastline, <i>ahupua‘a</i> boundaries, streams, land awards (LCA, Grants), named landholdings, roads, railway, houses, cemetery, <i>heiau</i> .



Figure 9. Early map of Wai'anae showing 'ili lele of Pahoia including a large fishpond (Pease 1860).

Monsarrat produced the most complete maps of Wai‘anae, three of which were consulted. The first of these appears undated (Figure 10) although Cordy (2012) identifies the date of its completion as 1878. When the map was created, there were no sugarcane fields yet established in the valley. A single house is shown, along with the stone walls surrounding the Waimalu property and the larger area of the LCA (No. 3276) on which it occurred. Several other features are presented that are not represented on later maps, such as the second channel from Keaupuni Stream to the coast, which was identified as a “ditch.” Both *ahupua‘a* boundaries are included and represented as stone walls, with gates. This map has the most inclusive set of ‘*ili ‘āina* names but only shows the walled boundaries of these places, likely representing the extent of *lo‘i* still in use at the time the map was completed.

A map by Jackson (1884) of *makai* Wai‘anae also depicts the Pāhoa fishpond, suggesting it was still in use at this time (see Figure 5). It shows the locations of a number of houses along the coast, the new housing for sugarcane workers, and the railway. Just inland from the lower Pāhoa property there are large agricultural areas depicted with fence lines drawn in. These would have been areas under sugarcane cultivation. The Waimalu property is shown with additional houses placed on it that are likely those for sugarcane workers.

The latest Monsarrat map from 1906 includes the upper part of Wai‘anae Kai (Figure 11). This map was prepared to identify the new Forest Reserve area within Wai‘anae, as well as to show lease and homestead properties. The lease properties were either under sugarcane cultivation or used for ranching. This map depicts a number of areas “formerly in taro.” It is unclear if these were originally recorded by Monsarrat but not previously incorporated into his earlier maps.

The map by Aiu (1924) shows a small section of land in what was likely the upper *lele* of Pāhoa (Figure 12). This map shows three LCA plots along with several stone walls that bounded the plots and ditches, some of which match Monsarrat’s earlier map from 1902 (see Figure 6). Taro was still under cultivation and watered by a traditional ditch. A later map (Aiu 1928) shows the location and surrounding features of the military reservation in Pōka‘ī Bay (Figure 13).

Historic Wai‘anae Elementary School

The Wai‘anae Elementary School is said to be more than 150 years old (Anonymous 2012), although it is not clear if the school buildings have been in the same location over this period of time. Public education was established by law in 1840 under the Kingdom of Hawaii (Wist 1940), and the Reorganization Act of 1865 established the Bureau of Public Instruction (Hunt 1969:295). The establishment of commercial sugar companies, including the Wai‘anae Sugar Company in 1879, often expanded educational opportunities with the creation of local schools. A school fund for both ‘Ewa and Wai‘anae had been previously established in 1875 (Hawai‘i State Archives 2003:C-77). Until the early 20th century, there was just one public secondary school in Hawai‘i; the rest were elementary schools only (Forbes 1988:9).

Historic maps by Jackson (1884) and Monsarrat (1902) show several structures on what was to become the school lot property (see Figures 5 and 6). The 1902 map depicts a row of what appear to be plantation houses along the south and east boundary of the school’s property, plus a larger structure set in the center of the parcel. Sorenson’s (1906) map includes all of the coastline of Wai‘anae Kai and labeled as “school lot” a 2.85 acre property that had been awarded to Waimalu (Figure 14). No structures or buildings are depicted on Sorenson’s map.



Figure 10. Monsarrat's earliest map of Wai'anae Kai Ahupua'a (1870).

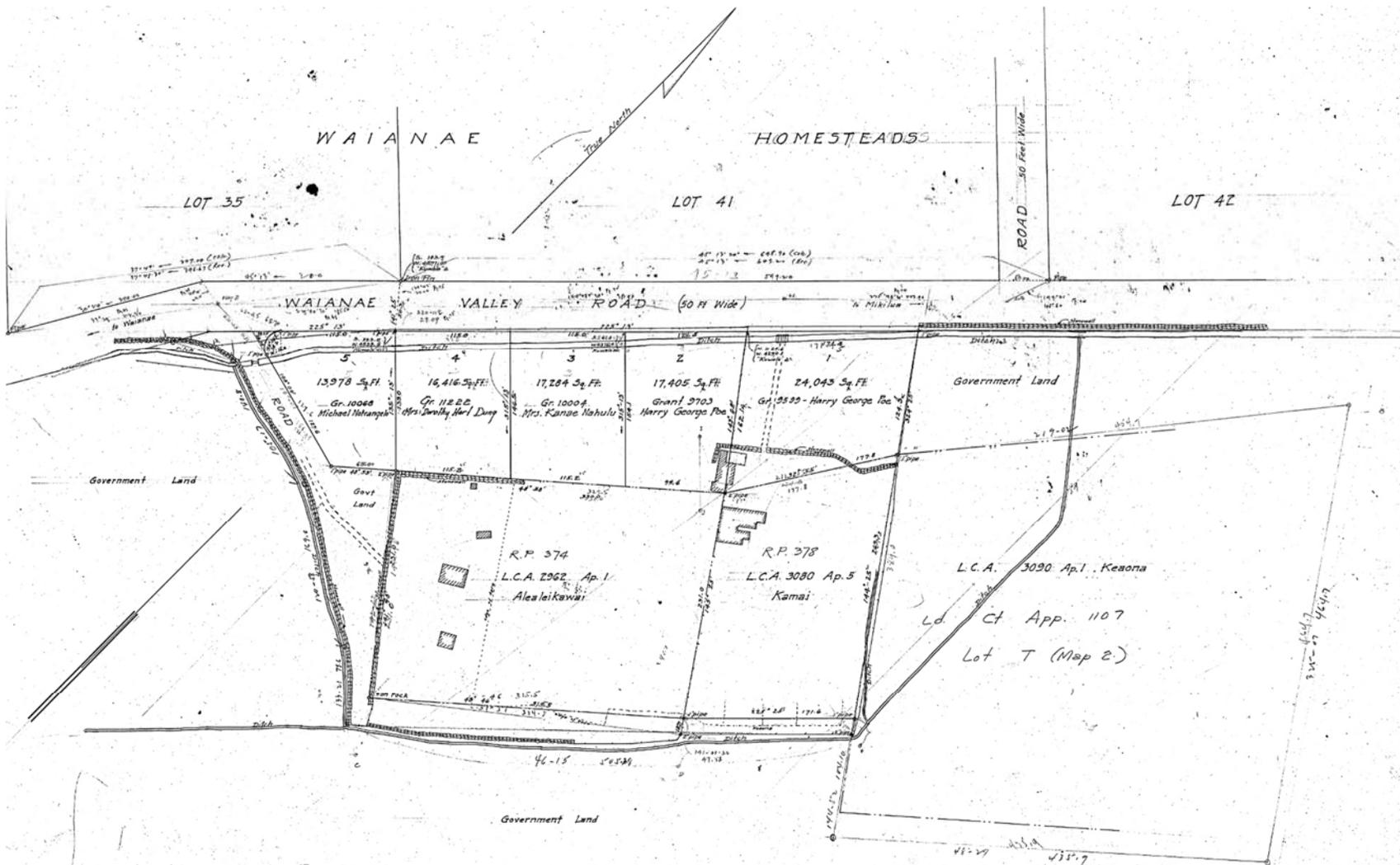


Figure 12. Map of Wai'anae House Lots (Aiu 1924).

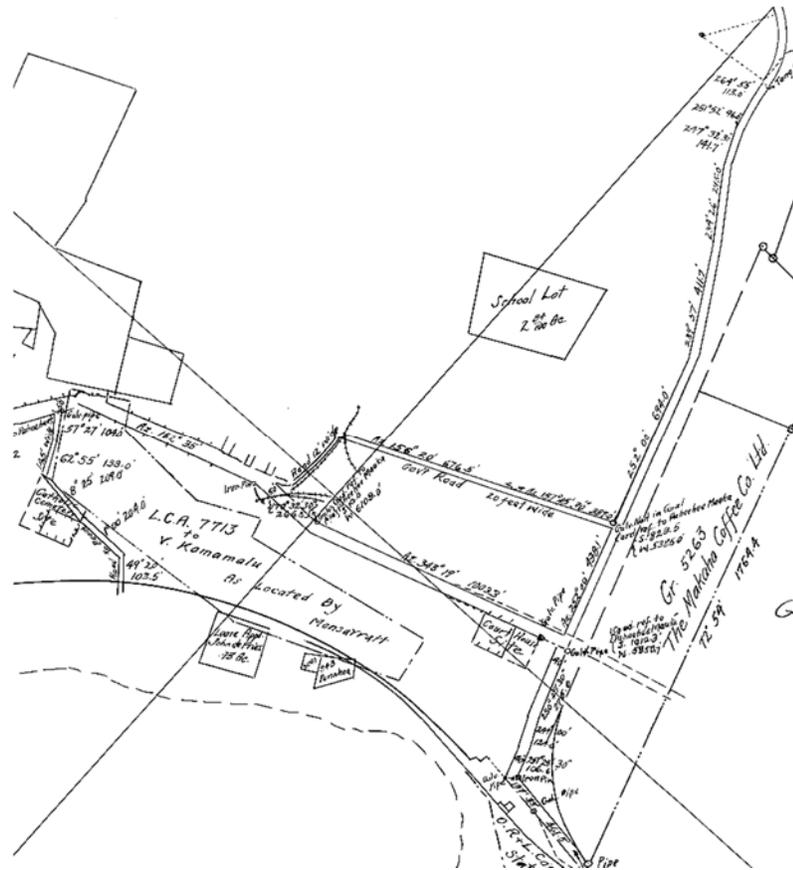


Figure 14. Wai'anae Kai Map showing the school lot property (Sorenson 1906).

The first map that depicts a school house on the Wai'anae Elementary School parcel is a Waianae Quadrangle, topographic map that was prepared in 1928–1929 by the Department Engineer, Territory of Hawaii under the sponsorship of the Coast and Geodetic Survey and Corps of Engineers, U.S. Army, War Department but printed later (Department Engineer 1936) (Figure 15). The school can be discerned by the flag atop one of the buildings shown on the parcel. The series of school buildings on the north edge of the property represented on the 1936 map are still in place today. There are two small houses located on the east edge of the property that may be same as those on Monsarrat's 1902 map.

The map from 1936 was followed up by a 1954 revised quadrangle map (Figure 16) that again depicts the Wai'anae Elementary School buildings on the north perimeter of the campus. They are distinguishable as long structures set perpendicular to the property's border. A number of other buildings, generally small, possibly houses, along the south portion of the property are shown, several of which reappear on later maps. The 1983 Waianae Quadrangle map largely replicates the 1954 version (Geological Survey 1983). The most recent version of the Waianae Quadrangle (Figure 17) printed in 1998 depicts all of the current school buildings that are also shown on the project area map: along the north edge of the property there are now only five of the original six long buildings and a number of smaller buildings located west of the open area on the southwest section of the parcel. The library and cafeteria buildings are shown on the 1998 map along with a series of portable buildings, six of which are placed in the locations where several of the original plantation houses were located on the 1954 Quadrangle.

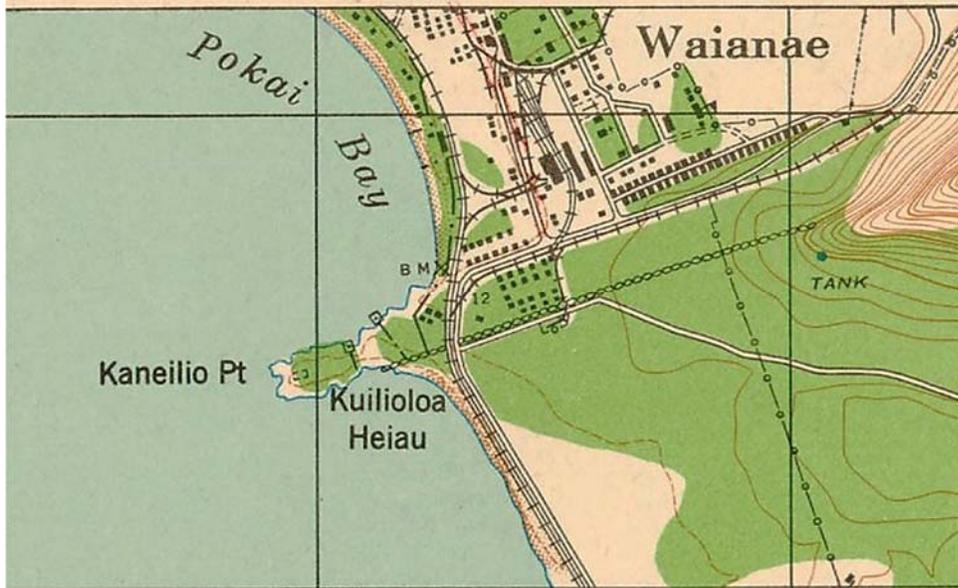


Figure 15. Portion of an early Waianae Quadrangle Map (Department Engineer 1936).

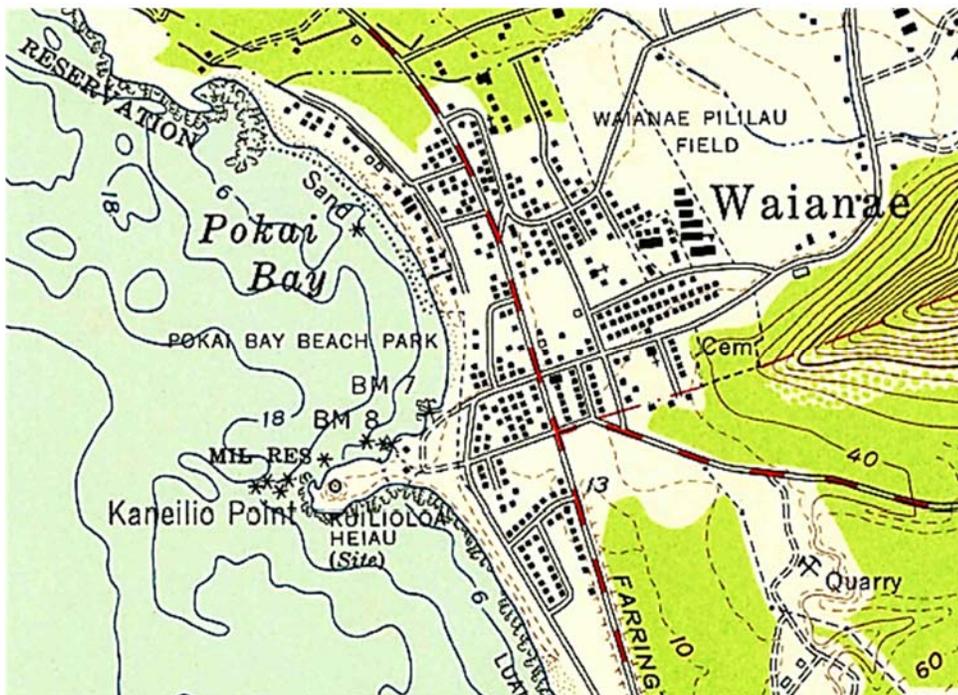


Figure 16. Portion of a mid-20th century Waianae Quadrangle Map (Geological Survey 1954).

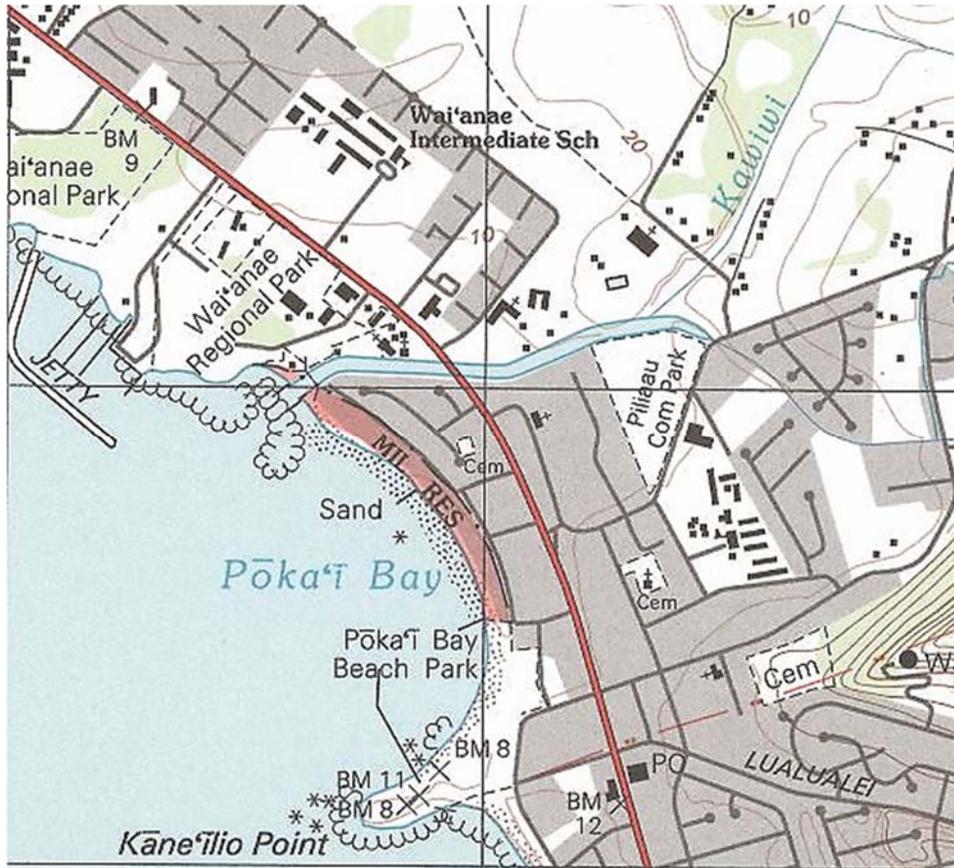


Figure 17. Portion of a more recent Wai'anae Quadrangle Map (Geological Survey 1998).

Several of the original buildings, from the north side of the property and depicted on the early quadrangle maps, are shown in this photograph of the school that was taken from the Department of Education website (Figure 18). While not as architecturally imposing as other historic schools on O'ahu, the original buildings at Wai'anae Elementary School are similar to others built in plantation communities such as Hanalei and Kilauea Elementary Schools on Kaua'i. Both Hanalei and Kilauea are listed on the National Register of Historic Places and were built between 1916 and 1926.



Figure 18. Photograph of the main classroom buildings at Wai'anae Elementary School.

Coastal Southeast Wai‘anae, including Pōka‘ī Bay

Lower Keaupuni Stream (below its confluence with Kawiwi Stream), Pōka‘ī Bay and Kāne‘īlio Point define the major natural features along the southeast coastal section of Wai‘anae. This area had the best access to the ocean as well as to fresh water from the stream. It would have been a prized area for habitation. Later both a roadway and railway were established along the inland section of the bay.

McAllister’s early archaeological survey identified a number of sites in Wai‘anae Ahupua‘a near or on the coast (1933). Site 153 is Kū‘īlioloa Heiau, located on the *makai* end of Kāne‘īlio Point (McAllister 1933:112) (Figure 19). Ten *heiau* were named by McAllister: Pu‘upahe‘ehe‘e, Kū‘īlioloa, Keaupuni, Kamohoali‘i (or Kahoalii), Malaeha‘akoa (or Malaihakoa), Kikiahi, Kalamalama, Kane, Pu‘uana‘ula, and Kamaile. Pu‘upahe‘ehe‘e and Kamaile likely were located on their respective *ahupua‘a* boundaries—Pu‘upahe‘ehe‘e with Lualualei, and Kamaile with Mākaha. Two of the *heiau* were situated in the valley itself: Malaeha‘akoa and Pu‘uana‘ula. Kū‘īlioloa Heiau had three main, stepped terraces and platforms and evidence of additional terracing on the *mauka* end. The highest platform is at the tip of the point (McAllister 1933:112). Abe and Kelly (1979) conducted a condition assessment of the *heiau*, identifying as many as eight construction features, one with walls at least 2.5 m (8 ft.) in height. This *heiau* is identified on at least two historical maps (Jackson 1884; Aiu 1927) where it is associated with what appears to be the *ahupua‘a* boundary wall separating Wai‘anae and Lualualei Ahupua‘a (see Monsarrat 1870, 1902). A section of this boundary wall apparently also served as a *hōlua* ramp (Jackson 1884). Pukui et al. note that Kū‘īlioloa was dedicated to and named after a giant dog-man (1974:84), likely a variant of the deity, Kū.

Site 154 is Puehu Fishpond, once located near the mouth of Keaupuni Stream (McAllister 1933:113). McAllister posits that the fishpond’s original area was 150 m by 90 m (300 ft. by 75 ft.) (1933:113). There are two other fishponds identified by Monsarrat (1878, 1902) and Jackson (1884). One of these fishponds, on the lands of Pāhoa, was on the inland side of Pōka‘ī Bay and was at least 1 km (.6 mi.) long. It extended along the length of the bay and its northwestern portion likely was buried when the Marin Road was constructed. On an early map (Pease 1860) a portion of this fishpond is identified as belonging to the “king.” All of these fishponds are now destroyed or buried. Monsarrat (1870) also depicts a ditch that provided a second channel for water flowing in Keaupuni Stream to reach the ocean.

Site 155 is Keaupuni Heiau, located on the Mākaha side of Pōka‘ī Bay, but now destroyed (McAllister 1933:114). It is likely displayed on historic maps as an unnamed structure on the north side of Keaupuni Stream (Jackson 1884; Monsarrat 1870). Flood et al. (1994:29) identify Keaupuni with this structure on a map. Site 156, Kamohoali‘i Heiau, located inland and across Farrington Highway from Puehu Fishpond, has also been destroyed (McAllister 1933:114). Flood et al. (1994:29) associate this *heiau* with a large enclosure in the *‘ili* of Leohano-iki. The major structures and features found in this section of Wai‘anae attest to its cultural and religious significance.

At least five house sites are depicted on Pōka‘ī Bay (Monsarrat 1878) and by the early 20th century there were houses along both sides of Farrington Highway, formerly the Marin Road, that borders the bay. Stone wall enclosures are shown by Monsarrat around most of the house sites.

Much archaeological work has been done along the coastal fringe fronting Pōka‘ī Bay *makai* of Farrington Highway (Riford 1984; Kam and Ota 1984; Hammatt et al. 1985; Borthwick et al. 1999; Shun and Shaw 2002; Kalilihiwa and Cleghorn 2005). Unfortunately, virtually all of the likely prehistoric structures and features associated with this area are no longer visible. Much of the surface area was modified extensively and has seen substantial deposition of modern materials.



Figure 19 Ku'ilioloa Heiau, Wai'anae.

Subsurface excavations have revealed a number of cultural features and deposits. Work in the northwestern portion of the Wai'anae Army Recreational Center (WARC) in the 1980s and 1990s was particularly notable for the large number of human remains uncovered (Riford 1984; Kam and Ota 1984; Hammatt et al. 1985). Testing and monitoring at the WARC also produced intact, buried cultural layers, possible paving stones, and hearths or firepits suggesting former habitation areas. A variety of cultural remains are noted, including volcanic glass, fishing gear and tools, adze fragments, and other stone, shell, and bone artifacts (Hammatt et al. 1985; Shefcheck and Spear 2014). Faunal remains and marine shell are also documented in these contexts. The coastal area was clearly in heavy use by pre-contact Hawaiians for a variety of activities related to food preparation, fishing and management of fish, collection of marine resources, and habitation. Cultural deposition was found exclusively in the calcareous sand deposits that are common to the coastal fringe. These deposits diminish with distance from the coastline. Stine et al. (2014) provide an assessment of historic sites or features that were previously located within the project boundaries for a sewer line; these included a former fishpond, archaeological evidence for the historic roadway, and a spur of the railway line.

Coastal Northwest Wai'anae to Kawiwi Stream

This section of Wai'anae includes the coast west of Pōka'ī Bay and extended to the *ahupua'a* boundary between Mākaha and Wai'anae. This portion of the coastline is fronted by smaller sandy embayments and exposed bedrock to the west and a section of raised limestone, derived from a former coral reef that occupies the center of the coastline. The north and west boundary is represented by Kawiwi Stream, which flows from the east face of the western ridgeline in a southeast direction where it joins Keaupuni Stream. There is limited surface water on the westernmost portion of this area; a small stream that originates to the west of the *ahupua'a* boundary wall emptied out into one of the bays just on the Mākaha side of the boundary. Although it lacked stream water, there were springs that emerged near the base of the Kamaile ridgeline that were sufficiently substantial to support a relatively verdant plant community.

Historic maps (Monsarrat 1870, 1902; Jackson 1884) depict the Mākaha-Wai‘anae Ahupua‘a boundary wall with a gate about 100 m inland. The current roadway runs through this location today. North of this lies the ‘ili of Kamaile. Near the boundary with Mākaha there were several house sites on the Wai‘anae beach according to historical maps (Jackson 1884; Monsarrat 1870, 1902). Inland from the beach was a large area in which *lo‘i* were present, along with a number of houses. Historic maps show more than 50 plots that were presented as claims during the Māhele. These plots and their associated *lo‘i* lie below the Kamaile springs. Kamaile Heiau sits on the ridge above the valley floor and there is a cave or rockshelter just below (McAllister 1933; Hommon 1978). A second *heiau*, named Kane or Kaneikapulena was once situated within the Kamaile ‘ili. There is a large walled enclosure depicted on Monsarrat’s map (1870) in the northeast corner that might be the location of this *heiau*. Archaeological fieldwork in this area has further documented Kamaile Heiau and the associated cave below it (Hommon 1978). A habitation complex (Site 5949) below the Kamaile Heiau complex and Kuka‘au‘au Cave (Site 1181) was mapped. A subsurface platform or paving was also identified at this site. The habitation feature is likely associated with the large Kamaile *lo‘i* and habitation complex.

To the east of Kamaile was the ‘ili of Lehanoiki, whose western boundary was represented by the stone wall that extended northward from the coast. Most of this area is raised limestone karst with numerous sinkholes. There is little surface water available except to the north and east where Kawiwi Stream joins Keaupuni Stream. Natural sinkholes occur in the karst and these could have supported gardening activities or smaller residential structures. Kawiwi Stream would have been the major source of water for this area, and maps place two other ‘ili, Keekee and Kuaiwi, within or adjacent to the upper section of the stream.

Shapiro and Rosendahl (1988) conducted an extensive survey of the former Waianae Dairy operations. This project area covers a portion of land west of Kawiwi Stream (and hence falling into this section). Several LCA awards shown on Monsarrat’s (1902) map are placed across Kawiwi Stream. Trenching in these areas by Shapiro and Rosendahl uncovered buried gleyed soils, typically associated with *lo‘i* pondfields. Much of the surface of this project area contained historic debris from the former dairy, including concrete foundations, ditches, flumes, a well, a bridge, and a culvert.

Archaeological fieldwork in this region has further documented Kamaile Heiau and the associated cave below it (Hommon 1978). A number of sinkholes with cultural material (Flood et al. 1994; Sinoto 1975) were identified during reconnaissance surveys. Relatively few features or structures have been found on the raised limestone section.

Archaeological inventory survey was completed for the proposed Leeward Coast Emergency Homeless Shelter on Farrington Highway, east of Wai‘anae Intermediate School (Hammatt and Shideler 2006). Extensive backhoe trenching uncovered no artifactual remains, although one human burial was encountered. A total of 33 m² surrounding the find was excavated to bedrock to confirm that the remains were an isolated occurrence and not part of a larger burial complex.

Archaeological and geophysical surveys were conducted at the State of Hawai‘i Department of Transportation’s Wai‘anae Baseyard, just west of the Leeward Coast Emergency Homeless Shelter (Desilets 2007). Excavation of 11 test trenches produced no evidence of cultural remains. Outcrops of coral bedrock protruded from the surface in portions of the parcel, but in other areas the bedrock was not encountered until as deep as 150 cm below surface (cmbs).

A human burial was found at Wai‘anae Regional Park, eroding from the shoreline after Hurricane Iniki (Kawachi 1992). The individual was found at 60 cmbs and was identified as possibly an adult female. The burial was covered with sand and left in place.

Archaeological reconnaissance was carried out for the Wai‘anae Light-Draft Boat Harbor on the west side of Wai‘anae Regional Park (Sinoto 1975). Five sites were recorded, including Site 50-80-07-4822, an animal pen or enclosure; Site 50-80-07-4823, a rectangular enclosure and adjoining L-shaped wall; Site 50-80-07-4824, a stone wall; Site 50-80-07-4825, a partially destroyed enclosure; and Site 50-80-07-4826, an L-shaped wall or shelter. OR&L railroad remnants and other heavily disturbed sites were also noted but not recorded due to their poor condition. The five sites were later re-examined through archaeological inventory survey and subsurface testing (Clark et al. 2004). Two of the sites had been destroyed and four new features and two cultural deposits were identified. The new features, the three remaining previously identified sites, and a burial exposed during Hurricane Iniki were subsumed under a single site number, 50-80-07-3967. The new features were sinkholes interpreted as gardening areas. The cultural deposits were found within the sinkholes and yielded charcoal, marine shell, and animal bone.

Archaeological inventory survey and subsurface testing were completed for a proposed extension to Wai‘anae Regional Park (Denham et al. 1992). A total of ten test trenches and six auger bores produced only a volcanic glass flake, a possible basalt abrader, and historic material. No cultural deposits were identified.

In sum, this west section of coastal Wai‘anae can be separated into areas near the western *ahupua‘a* boundary where a *heiau* and the *ahupua‘a* boundary wall were located. Below Kamaile Heiau there is a cave that was occupied, probably in association with the *heiau*. A major irrigated agricultural complex, with some habitation structures is associated with Kamaile ‘Ili, just inland from the coast, below the western ridgeline. Portions of the walls and terraces likely still exist in this area. Along the western coastal zone just inland from a bay were several residential structures, and in the raised limestone that comprised the eastern portion of this section, several structural features that may have served as house sites or animal pens, human burials, and gardening areas in sinkholes have been identified. West of Keaupuni Stream at the coast was Keaupuni Heiau, depicted on several historic maps, but now destroyed. There were also two fishponds in this region, one of them named Puehu. The historic railway also passed through along the coast.

Lower or *Makai* Wai‘anae Valley, from Keaupuni-Kawiwi Streams to the Confluence of Keaupuni and Punana‘ula Streams

This section of the valley extends from the confluence of Kawiwi Stream with Keaupuni Stream *mauka* to the confluence of Keaupuni and Punana‘ula. Several *‘ili ‘āina* occur here: Puea, the upper *lele* section of Pāhoa, Palaloe, Ana, Lehanonui, Lehanoiki, Kaholanakio, Kaho‘olanakio Keekee, Kuaiwi, the middle Pāhoa *lele*, and Waikele. Two of these are illustrated on historic maps and contained several large *lo‘i* complexes.

Rosendahl (1981) surveyed the Wai‘anae Kai Property associated with a former dairy operation. Most of the 34 sites are remnants of the dairy (e.g., flumes, bridge). Ten of twelve trenches were excavated north of Kawiwi Stream, on properties that had been claimed as LCAs. In seven of these trenches, gleyed soils, likely the product of taro cultivation in *lo‘i*, were found. There were no remaining surface indications of terraces.

Archaeological inventory survey was conducted on a seven-acre property on the east side of Wai‘anae Intermediate School, inland of the Leeward Coast Emergency Homeless Shelter (Flood et al. 1994). A total of 24 features were recorded under Site 50-80-07-2474, including 14 unmodified sinkholes, four modified sinkholes, a wall, a historic artifact scatter, a trash mound, an alignment, a platform dog burial, and a terrace. Ten features were excavated, and traditional cultural deposits were encountered. Basalt flakes, volcanic glass, a fragment of cut bone, and an octopus lure point were collected, along with bone and shell midden, and a multitude of historic material.

Upper or *Mauka* Wai‘anae Valley, Above the Confluence of Keaupuni and Punana‘ula Streams

This area includes a series of streams that merge into upper Keaupuni Stream at different points. Punana‘ula is the first major stream (other than Kawiwi) to flow into Keaupuni at about 90 m (300 ft.) above sea level. Above this Keaupuni splits into three named streams: Kawaopu‘u, Honua, and Kūmaipō. The main branch of Honua Stream splits into Hiu Stream and Kalalua Stream. Above Kanewai, Niolopua, Kukaki, and Kanemimi Streams join Honua Stream. The branching of streams creates a series of ridgetops that extend to the north, northeast, and northwest up to the Wai‘anae Mountains and the two ridgelines that serve as the Wai‘anae Ahupua‘a boundaries. All of these streams were fed by springs or marshes, many of which are shown on a later Monsarrat (1906) map of the Forest Reserve in the upper Wai‘anae Valley.

Although several surveys have been completed in this area, few had adequately described the findings until summarized by Cordy (2012). Still much of what we know has been gleaned from historic maps (Monsarrat 1870, 1902, 1906) and two small archaeological projects (Cordy 1997; Holt et al. 2002). Several other, larger projects are recorded from this area (e.g., Sinoto 1979; Bordner 1981; Chiniago 1982) but these were not available for review.

Monsarrat’s 1906 map shows sections of the *‘ili ‘āina* of upper Pāhoa, Ka‘api, Leleakoai, Kūmaipō, along with other areas that were likely *‘ili* as well (but whose names cannot be verified, e.g., Makahiupa, Lahapapa, Koleali‘ili‘i (see Kahena 1860). This section of upper Wai‘anae was largely devoted to irrigated agriculture as is shown on the 1906 map. Although little documented by archaeologists, this map also depicts 11 areas above the Punana‘ula Stream confluence that formerly supported *kalo* cultivation. The total area is 94 ha (237 ac.), making this one of the largest *lo‘i* systems known for O‘ahu. These complexes extend as much as 305–365 m (1,000–1,200 ft.) above sea level. Several irrigation ditches are also shown on this map, one of which tapped upper Keaupuni (at about 90 m [300 ft.] above sea level) and was at least 2.12 km (6,949 ft.) in length, extending downslope to the south end of upper Pāhoa. Dryland fields also occur on the ridges between the streams and along their lower sections. A number of these fields are preserved and visible on Google Earth (Figure 20).

Cordy (2012) has updated these findings and produced maps of both the pre- and post-contact archaeology for the area. More than 115 sites are now documented for the former Wai‘anae Valley Ranch, located in the upper west portion of the valley. Many of these sites, mostly dryland and irrigated agriculture, contain numerous features or complexes and are distributed over large sections of the uplands. At least 40 habitation features or complexes are represented here, and at least eight *heiau* or other religious features are now known for this area. Historic-era sites include a series of stone walls and a variety of features (wells, tunnels, flumes, roadways) that are associated with sugarcane cultivation and water transport. Cordy’s work confirms the extensive preservation of historical and cultural properties that document the role Wai‘anae played in the region’s prehistory and history.

Cordy (1997) notes the two complexes of *lo‘i* terraces associated with upper Punana‘ula (Site 5523) and Kūmaipō Streams (5521). There is at least one *heiau*, Punana‘ula, in the Upper Valley just south of the stream. It is shown on the 1906 map; this complex (Site 165) was noted but not observed by McAllister (1933) and was located by Cordy. It is situated to the south of Punana‘ula Stream near the *lo‘i* complex, Site 5523. It is visible from the air (Figure 21). Five house sites have been recorded in this area (Cordy 1997; Holt et al. 2002) one of them near the dryland fields of lower Punana‘ula.



Figure 20. Probable dryland fields between Punana‘ula and Kūmaipō Streams.

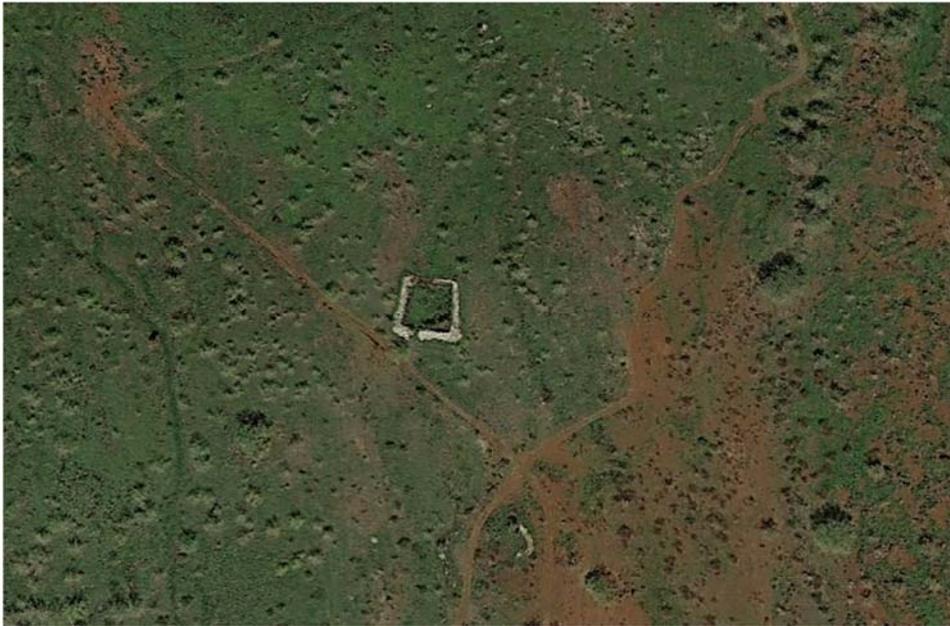


Figure 21. Aerial view of Punana‘ula Heiau, Wai‘anae.

Settlement Patterns

More than 15 distinct *'ili*, named sub-sections of Wai'anae Ahupua'a, have been identified on historic maps (Monsarrat 1870, 1902, 1906). These typically include both agricultural and habitation features. They are also where most of the LCA awards are concentrated for this *ahupua'a*. These *'ili* are distributed across the valley both along the coast, inland and adjacent to the major streams that drain into the valley from the mountains and ridges that surround it on three sides. Agricultural lands are clustered around both streams and springs and extensive areas were converted to *lo'i*. By 1880 when the first maps were developed, some areas of Wai'anae Ahupua'a had already been abandoned and their *'ili* have gone unrecorded. Several *'ili* are contiguous with one another, their boundaries distinguished by low stone walls. Nonetheless, there are irrigation ditches that cross *'ili* boundaries suggesting water was shared from a single source. In a few cases, these irrigation ditches extend for more than 1 km in length.

One *'ili*, named Pāhoa, contained at least three separate plots of land that included a fishpond on Pōka'i Bay, a small section of irrigated land adjacent to Waikele *'ili*, and a third section located farther up the valley on Keaupuni Stream that contained a number of *lo'i*.

House sites, both on historic maps and those identified by archaeologists, fit the pattern of dispersed habitation. Except the house sites that are located on the coast, the remainder are placed within LCA parcels and/or named *'ili 'āina*. Most appear to be adjacent to locations where *lo'i* or other agricultural sites would have been cultivated.

At least four *heiau* in Wai'anae were located on the *ahupua'a* boundaries with Mākaha and Lualualei, highlighting the potential integration of these separate communities by religious considerations as well as by socio-political relationships. A fifth *heiau* was on the coast, on the west end of Pōka'i Bay near a series of fishponds and at the mouth of Keaupuni Stream. Several other *heiau* were adjacent to or within the boundaries of named *'ili*, such as Kane Heiau in the *'ili* of Kamaile, suggesting they served as one or more landholding units. *Heiau* also occur inland, such as the one found near Punana'ula Stream.

Summary of Background Information

Several features of Wai'anae Ahupua'a suggest it was an important center in Leeward O'ahu. These include its central location, large size, inland boundary that extended to the Ko'olau Mountains, substantial number of *heiau*, and association with at least four paramount chiefs of O'ahu mentioned in oral traditions. While portions of the leeward coast likely had a lower density of population at the time of European contact, there were some areas such as Wai'anae that supported more substantial groups. With more than 15 named *'ili 'āina*, each of which would have supported several Hawaiian families, the population of Wai'anae Kai could have reached as many as 800–1,000 individuals. The large number of LCA awards, in excess of 160, made to residents of Wai'anae likewise are a testament to its sizeable and influential community. A number of *ali'i* also made their home in Wai'anae, probably living along the coast and attached to the larger *'ili*. Large tracts of land were devoted to the cultivation of irrigated taro and these plots extended from the *makai* area of the valley into the upper portion where there were many springs and multiple streams with perennial water flow. Elsewhere dryland crops, such as sweet potato, sugarcane, and yams, were grown on the lower ridges that separated the stream drainages. At least three fishponds are known from Wai'anae; one of them was at least 1 km in length. The ocean was a major resource, with prime fishing grounds exploited along the coast. Finally, there were at least 10 named *heiau* in the *ahupua'a*, several of them occupying key landmark locations or near important resources.

The historic period brought widespread changes to the region. Large numbers of the population were lost to the catastrophic diseases introduced to the islands by early Europeans and Americans. This set off a series of relocations of communities as well as less productive areas that were largely or completely abandoned in favor of locations closer to population centers or with access to irrigated farming. Nonetheless, Wai‘anae continued to support a series of local households and extended families. Later with large expanses converted to cattle ranches and sugarcane fields, its population grew again through emigration of laborers for the plantations and the development of Wai‘anae as a commercial center.

Many archaeological projects have taken place in the Ahupua‘a of Wai‘anae. These, along with historic maps, documented a wide variety and extensive array of structures, features, and artifacts that date to the pre- and post-contact periods. Archaeological remains in the region consist of remnants of stone walls and terraces, as well as irrigation ditches, house sites (and their artifact remains), as well as human burials. Although the surface archaeology for the project area has likely been removed or substantially altered, there are likely sizeable areas where intact subsurface deposits and features will be found. These would include, in addition to features and human burials, soils associated with pondfield cultivation of taro. The section of land on which the Elementary School lies is also significant since this parcel was identified as early as 1906 as the location where a school was to be built.

ETHNOGRAPHIC SURVEY

As we all know, there are some things that cannot be found in the archives, in textbooks, or at the library. It is here, through the stories, knowledge and experiences of our *kama ʻāina* and *kūpuna*, that we are able to better understand the past and plan for our future. With the goal to identify and understand the importance of, and potential impacts to, traditional Hawaiian and/or historic cultural resources and traditional cultural practices of the Waiʻanae region, ethnographic interviews were conducted with community members who are knowledgeable about the project area.

Methods

This Cultural Impact Assessment was conducted through a multi-phase process between March and May, 2015. Guiding documents for this work include The Hawaiʻi Environmental Council's Guidelines for Assessing Cultural Impacts, A Bill for Environmental Impact Statements, and Act 50 (State of Hawaiʻi). Personnel involved with this study include Windy McElroy, PhD, Principal Investigator of Keala Pono Archaeological Consulting, Michael Graves, PhD, Archival Researcher, and Dietrix Duhaylonsod, BA, Ethnographer.

Consultants were selected because they met one or more of the following criteria: 1) was referred by Keala Pono Archaeological Consulting or Group 70; 2) had/has ties to the project area or vicinity; 3) is a known Hawaiian cultural resource person; 4) is a known Hawaiian traditional practitioner; or 5) was referred by other cultural resource professionals. Two individuals participated in the current study. *Mana ʻo* and *ʻike* shared during these interviews are included in this report.

Interviews were taped using a digital MP3 recorder. During the interviews, consultants were provided with a map or aerial photograph of the subject property, the Agreement to Participate (Appendix A), and Consent Form (Appendix B), and briefed on the purpose of the Cultural Impact Assessment. Research categories were addressed in the form of open questions which allowed the consultant to answer in the manner that he/she was most comfortable. Follow-up questions were asked based on the consultant's responses or to clarify what was said.

Transcription was completed by listening to recordings and typing what was said. A copy of the edited transcript was sent to each consultant for review, along with the Transcript Release Form. The Transcript Release Form provided space for clarifications, corrections, additions, or deletions to the transcript, as well as an opportunity to address any objections to the release of the document (Appendix C). When the forms were returned, transcripts were corrected to reflect any changes made by the consultant.

The ethnographic analysis process consisted of examining each transcript and organizing information into research themes, or categories. Research topics include archaeological sites, cultural practices and *moʻolelo* historic Waiʻanae/change through time, and concerns and recommendations for the project. Edited transcripts are presented in Appendices D and E.

Consultant Background

The following section includes background information obtained from each consultant during the interviews. This includes information on the consultant's *ʻohana* and where the consultant was born and raised. The interviewees are prominent Waiʻanae residents Eric Enos and Glen Kila.

Eric Enos

Eric Enos has lived in Mākaha for approximately 60 years. He attended Wai‘anae Elementary School from kindergarten through sixth grade and then transferred to Kamehameha Schools. After graduating from the University of Hawai‘i he began working with the community, starting with Nānākuli and continuing down the coast. Uncle Eric helped establish the cultural learning center at Ka‘ala Farm as part of a model cities project with the Wai‘anae Rap Center in the early 1970s. The Ka‘ala Farm lands in Wai‘anae Valley were made available in 1976 and he has been working with the community and studying the cultural sites there ever since. Of particular importance is working to preserve the cultural landscape.

Glen Kila

Glen Makakauali‘i Kila has ancestral ties to the lands of Wai‘anae, which extended from Wai‘anae Kai to Wai‘anae Uka. ‘Ohana with the family name of Haulele lived at Pu‘u Palailai near Honokai Hale, and also came from Pōka‘ī and Wai‘anae Valley. Some of his ancestors were also the *ali‘i* of the Manuia clan. Uncle Glen acquired significant knowledge of cultural sites, traditional beliefs, and practices from his *kūpuna*. He attended Wai‘anae Elementary School from kindergarten to 7th grade and then continued on to Wai‘anae High School. Wai‘anae Elementary was also the school of his grandfather John, his father Benedict, and Uncle Glen’s two sons. Uncle Glen is a respected cultural practitioner today.

Topical Breakouts

A wealth of information was obtained through the oral interviews. This is organized in the following sections by topic. Topical breakouts include archaeological sites, cultural practices and *mo‘olelo*, historic Wai‘anae/change through time, and concerns and recommendations for the project.. Quotes from the interviews are provided below for each topic.

Archaeological Sites

I remember stories about a spring there called Wai‘oli, “Happy Waters,” that my grandfather would talk about. [Glen Kila]

Because there was a famous spring there, Wai‘oli, there were a lot of Hawaiian settlements at that time that surrounded Wai‘anae Elementary, Pīlilā‘au Park and Pu‘u Kahea. The plantation manager’s house up there was the home of O‘ahu’s king Kahahana. [Glen Kila]

If we look at our family properties that we own today, we are reminded about the ancient streams and springs where our families lived. Their crops, the *kalo*, sweet potato, bananas all grew next to the water sources. Stories also talked about a *heiau*, a *hale mua*, near or on the school grounds. I think if you go deep under the ground there may be remnants of the old Hawaiian village. We called this place again Pāhoa, the same name we called in the valley and near the beach area. [Glen Kila]

If we look at our family properties that we own today, we are reminded about the ancient streams and springs where our families lived. Their crops, the *kalo*, sweet potato, bananas all grew next to the water sources. Stories also talked about a *heiau*, a *hale mua*, near or on the school grounds. I think if you go deep under the ground there may be remnants of the old Hawaiian village. We called this place again Pāhoa, the same name we called in the valley and near the beach area. [Glen Kila]

...There's a lot of significant sites, but aside from the *hōlua* [slide], the other site is across where the water was, and that would have been where the *heiau* once sat, which was destroyed, which the Mormon temple sits on now, I mean the Mormon church and the plantation. So that was a major site, and then right at the point over there, where the stream comes in and where the rest camp is, all in that area, those were the important sites. They all have been pretty bus' up already, and the fishpond area. So aside from that, this area in question is far away and isolated so that's the only impact I see. [Eric Enos]

...Being *kula* lands, the lands up here, up in Wai'anae Valley is where all the *lo'i* were. And the majority of the cultural sites were closest to the water source. Down below were *kula* lands, the only cultural site adjacent to it was the *hōlua*, which is maybe less than a quarter mile from the site in question, as you face the southeast on that little *pu'u* coming down. But that has been kind of bus' up already, the *hōlua* slide, and other than that, I can't see any surface impacts, except when they start to do any subsurface. [Eric Enos]

Cultural Practices, *Mo'olelo*

Well aside from gathering knowledge, the *'ike*, which the school needs to do more of, but then that's a DOE issue, not a building issue. [Eric Enos]

There's no gathering practices of any kind that I've seen or heard of at the site. [Glen Kila]

One incident that was very famous in Wai'anae was the story of the Green Lady. The Green Lady stemmed from the ancient legend of Hi'iaka and Wahine'ōma'oma'o. She supposed to have killed children in Wai'anae. This led to mass hysteria back in the '60s and at one time closed the school because of students fears. [Glen Kila]

Historic Wai'anae, Change through Time

Well the school has already been in existence before I was there. Obviously it's one of the older elementary schools. In fact, it might have even been even higher grades way back when, during the plantation era. [Eric Enos]

...I think all the buildings are pre and post-World War II, and then the modern portables that have come up. The cafeteria was there when I was there. The main office is long gone. The oldest thing is probably that stage over there, but then that's about it. I don't see any historical properties or buildings existing on the campus anymore. [Eric Enos]

Wai'anae Elementary was part of the plantation homes in the area after the Hawaiian settlements because of the Wai'oli spring. I don't recall churches except for the Protestant Church nearby. I do recall it being government and plantation lands which extended to the Japanese and Chinese graveyard just above the school at Pu'u Pahe'ehe'e Hill and Heiau. [Glen Kila]

The school itself was very village-like. We had principal, Mr. Moore, who lived at the school with teachers at the teacher's cottages. Some of the teachers at Wai'anae Elementary also taught at Wai'anae High and Intermediate. We didn't have Mākaha, Mā'ili, Leihōkū Elementary, so the population for the student body at Wai'anae Elementary was very large. There were over a thousand students at the time. [Glen Kila]

He [my grandfather] also shared that Wai'anae Elementary was the center of the community. Even during my time in the 1960s, Wai'anae Elementary had a lot of different events, like the Halloween bazaars, Christmas, May Day programs. This was really the center for the Wai'anae families to celebrate the holidays. [Glen Kila]

There were all wooden buildings at that time. The administration building was a long wooden building that consisted of the health room and the sixth grade class. The area that is now planned for development is where the principal's cottage was. He had a garden, and there were cottages next to it. [Glen Kila]

The buildings were very large, as I recall. The area, where there's the new library, consisted of the old library, a smaller building. The cafeteria itself is the same cafeteria that I grew up 55 years ago, except for the small extension. All of the wooden buildings are gone and the area that is being planned was were cottages where people lived. [Glen Kila]

In the 1960s, the 2nd grade classes consisted of Quonset huts from World War II. There were a lot of trees, large trees, and specifically, the tamarind tree which all the children used to pick up fruits. It is near the area that is planned for the parking lot. Also there was a jacaranda tree next to the stage that was very famous for its beautiful purple flowers that bloomed every year. [Glen Kila]

There was also the stage that was built by the Japanese Hongwanji community in recognition of the three Wai'anae men that died in World War II. They were from the Nakamine and the Teramoto families. The third person, I am not too sure of his name. [Glen Kila]

There were a lot of Hawaiians, Japanese, Filipinos, Portuguese, you know, plantation people attending Wai'anae Elementary. The school was a place where people congregated and lived. [Glen Kila]

The mill ended in the 1940s, right after World War II. But the mill camps were still part of the community. We had areas that lived native Hawaiians such as my family. We owned a portion of the beach area. Then you had the Japanese family with their *furo*, community baths, right next to our family property. You had the Okinawans who were separated from the Japanese, "*naichi*" people. The Japanese and Okinawans had their own Buddhist Hongwanji churches. We also had the Chinese camp which is now near McDonald's, and in fact it's right here next to this restaurant. The Filipino camp was closer to the Japanese camp and the Portuguese camp near Army Beach road. We all knew each other and lived together as one family. [Glen Kila]

The common culture was, the Local culture, that we call the Plantation culture. The school was center for the local cultures. And then of course, during this time, we all intermarried. My grandpa is Filipino, my uncles Japanese, Portuguese, and Chinese. [Glen Kila]

Yes, the Portuguese, many of us are part-Portuguese. The Portuguese camp was near the back of this building. There is a small Catholic graveyard near here. Our Portuguese side of the family is buried here. I don't recall Korean and Puerto Ricans here. [Glen Kila]

Most of the people here attended the Sacred Hearts Catholic Church, Honpa Hongwanji Buddhist church and the Waianae Protestant Church and several pentacostal churches in the community. A lot of the boys and girls belonged to the young Buddhist association because there weren't any YMCAs clubs in Wai'anae during that time. There was only a two lane road in Wai'anae that held Christmas and homecoming parades. [Glen Kila]

Wai'anae Elementary area was the center for a lot of homes in Wai'anae town. Some of the area was the area called Pāhoa after the home of our *konohiki*, Ka'apuiki. My nephew Chris Oliveira is a direct descendant of this *konohiki*. [Glen Kila]

Concerns and Recommendations

I don't believe [the proposed development will affect any place of cultural significance], because as I recall, that area was where the cottages were. The cottages are gone. The Quonset huts are gone. There are modern portables in that area now. The area's an open grass area now. People also park there. There's an old tree that I do remember. It's the royal poinciana tree that still remains there. The tree should stay because it's part of the school cottage history. It was a famous tree for the students because it marked summer time was coming. [Glen Kila]

Basically, I see that that land, because it's been developed, and it has all those buildings already, that I have no concerns. I think all the surface features, if they were there, have long been obliterated, first with agriculture, and then now with the school, historically. I went there in the kindergarten, so you can imagine, and I'm born in 1948, you can do the math, so the school was already pretty old at that time. So my assumption is, you know, that place was developed prior. [Eric Enos]

If you run into anything of concern, then you should always have a cultural monitor nearby, if there's any *iwi*, or if there's any subsurface types [of features], at least it could be recorded. But as far as it stopping the job, I don't think that's practical and necessary. [Eric Enos]

None whatsoever [when asked if the project will affect any places of cultural significance]. This is already building within the compound of buildings so it's all part of the school's *kuleana*. I see no interference. [Eric Enos]

I don't foresee any other cultural concerns, unless there's something major, significant, subsurface. Other than that, as I said, we should have enough people to monitor, but it should not stop its development and the building. [Eric Enos]

Summary of Ethnographic Survey

The consultants noted that the project area was once the location of a spring called Wai'oli, and a village, *hōlua* side, *hale mua*, *heiau*, and agricultural zones were nearby. The place name associated with the area was Pāhoa. However, the land has been heavily modified over the years, and the consultants did not know of any surface remains of these resources within the project boundaries. Likewise, the consultants also did not know of any traditional practices, such as plant gathering, that occur at the school property today.

Historically, Wai'anae Elementary School was very different than it is today. There were fewer schools in the area, so the student body was very large, with more than 1,000 students at one time. The school served as a center for the community, often hosting events, especially on holidays. Also, the principal and teachers lived at the school in cottages on campus, and the principal's cottage was situated where the current construction is proposed. The cafeteria is one of the buildings still standing that was there when the consultants attended school, but this building is outside the current construction footprint.

The interviewees were generally supportive of the project. Because of the currently developed state of the Wai'anae Elementary School lands, there were no concerns for surface archaeological resources. It was recommended to have a cultural monitor available, particularly if subsurface archaeological remains or *iwi kūpuna* are found during construction. It was also recommended to save an important poinciana tree that has been on the school grounds for a long time.

SUMMARY AND RECOMMENDATIONS

Wai‘anae Elementary School has a long history as the center of the Wai‘anae community. The exact date of construction is not known, however the property was designated as a school on historic maps as early as 1906. Two community members were interviewed to share their *mana‘o* about the area and to help identify any potential cultural resources or practices that might be affected by the proposed improvements to the school. The consultants were generally very supportive of the proposed plans for school improvements and did not identify any cultural resources that would be affected. They did note that subsurface cultural remains, such as human burials might be found in the area.

Cultural Resources, Practices, and Beliefs Identified

The ethnographic interviews revealed that the project area was once the location of a thriving village centered around a spring called Wai‘oli. A *hōlua* side, *hale mua*, *heiau*, and agricultural areas were also in the vicinity. Since the land has been heavily modified over the years, it is not likely that any surface vestiges of this early use of the property remain.

In the historic era, Wai‘anae Elementary School served as a center for the community, often hosting events, especially on holidays. The principal and teachers lived at the school in cottages, and the principal’s cottage was once located where the current construction is proposed. The cafeteria is one of the buildings still standing that was there when the consultants attended school, but this building is outside the current construction footprint.

Because the project area was identified as supporting a traditional settlement and then the historic school, subsurface archaeological remains of these resources might be found during construction.

The consultants also did not know of any traditional practices, such as plant gathering, that occur at the school property today.

Potential Effects of the Proposed Project

The consultants were not aware of any specific cultural resources or practices which may be affected by the proposed school improvements. In general, they were supportive of the plans.

Confidential Information Withheld

During the course of researching the present report and conducting the ethnographic survey program, no sensitive or confidential information was discovered or revealed, therefore, no confidential information was withheld.

Conflicting Information

No conflicting information was obvious in analyzing the gathered sources. On the contrary, a number of themes were repeated and information was generally confirmed by independent sources.

Recommendations/Mitigations

The interviewees shared several concerns and recommendations for the project:

- there may be vestiges of former use of the property beneath the surface
- a cultural monitor should be available if archaeological remains are found during construction
- a notable poinciana tree should be saved

Background research and oral history interviews did not reveal any surface archaeological resources within the project area, aside from the school itself. It is possible, however, that subsurface remains of the former village or historic use of the school might be found. Keala Pono recommends that a program of archaeological monitoring is developed for the project to ensure that any historic properties are not adversely affected by the proposed improvements. Community concerns and recommendations should be considered during all phases of the project.

GLOSSARY

<i>ahupua‘a</i>	Traditional Hawaiian land division usually extending from the uplands to the sea.
<i>aku</i>	The bonito or skipjack (<i>Katsuwonus pelamis</i>), a prized eating fish.
<i>ali‘i</i>	Chief, chiefess, monarch.
<i>‘āpana</i>	Piece, slice, section, part, land segment, lot, district.
<i>‘auwai</i>	Ditch, often for irrigated agriculture.
<i>furo</i>	Japanese style bathtub.
<i>hale mua</i>	Men’s eating house.
<i>heiau</i>	Place of worship and ritual in traditional Hawai‘i.
<i>hōlua</i>	Traditional Hawaiian sled used on grassy slopes.
<i>‘ike</i>	To see, know, feel; knowledge, awareness, understanding.
<i>‘ili, ‘ili‘āina</i>	Land area; a land section, next in importance to <i>ahupua‘a</i> and usually a subdivision of an <i>ahupua‘a</i> .
<i>‘ili kūpono</i>	An <i>‘ili</i> within an <i>ahupua‘a</i> that was nearly independent. Tribute was paid to the ruling chief rather than the chief of the <i>ahupua‘a</i> , and when an <i>ahupua‘a</i> changed hands, the <i>‘ili kūpono</i> were not transferred to the new ruler.
<i>‘ili‘ili</i>	Waterworn cobbles often used in floor paving.
<i>iwi</i>	Bone.
<i>Kahiki</i>	A far away land, sometimes refers to Tahiti.
<i>kahuna</i>	An expert in any profession, often referring to a priest, sorcerer, or magician.
<i>kalo</i>	The Polynesian-introduced <i>Colocasia esculenta</i> , or taro, the staple of the traditional Hawaiian diet.
<i>kama‘āina</i>	Native-born.
<i>kiawe</i>	The algaroba tree, <i>Prosopis</i> sp., a legume from tropical America, first planted in 1828 in Hawai‘i.
<i>kilu</i>	A small container used for storing precious objects or for feeding a favorite child; a quoit in the <i>kilu</i> game in which a player would attempt to hit an object with the <i>kilu</i> to win a kiss from a member of the opposite sex.
<i>koa haole</i>	The small tree <i>Leucaena glauca</i> , historically-introduced to Hawai‘i.
<i>konohiki</i>	The overseer of an <i>ahupua‘a</i> ranked below a chief; land or fishing rights under control of the <i>konohiki</i> ; such rights are sometimes called <i>konohiki</i> rights.
<i>kukui</i>	The candlenut tree, or <i>Aleurites moluccana</i> , the nuts of which were eaten as a relish and used for lamp fuel in traditional times.
<i>kula</i>	Plain, field, open country, pasture, land with no water rights.
<i>kuleana</i>	Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.
<i>kupuna</i>	Grandparent, ancestor; <i>kūpuna</i> is the plural form.
<i>lele</i>	A detached part or lot of land belonging to one <i>‘ili</i> , but located in another <i>‘ili</i> .

<i>lo‘i, lo‘i kalo</i>	An irrigated terrace or set of terraces for the cultivation of taro.
<i>luakini</i>	Large <i>heiau</i> of human sacrifice.
<i>Māhele</i>	The 1848 division of land.
<i>makai</i>	Toward the sea.
<i>mana‘o</i>	Thoughts, opinions, ideas.
<i>mauka</i>	Inland, upland, toward the mountain.
<i>mele</i>	Song, chant, or poem.
midden	A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawai‘i, the term generally refers to food remains, whether or not they appear as a heap or stratum.
<i>moku</i>	District, island.
monkeypod	A large tree, <i>Samanea saman</i> , introduced to Hawai‘i from tropical America.
<i>mo‘olelo</i>	A story, myth, history, tradition, legend, or record.
<i>niu</i>	The Polynesian-introduced tree <i>Cocos nucifera</i> , or coconut.
<i>‘ohana</i>	Family.
<i>‘ōlelo no‘eau</i>	Proverb, wise saying, traditional saying.
<i>poi</i>	A staple of traditional Hawai‘i, made of cooked and pounded taro mixed with water to form a paste.
post-contact	After A.D. 1778 and the first written records of the Hawaiian Islands made by Captain James Cook and his crew.
pre-contact	Prior to A.D. 1778 and the first recorded arrival of Westerners in the islands.
<i>pu‘u</i>	Hill, mound, peak.
<i>pu‘uhonua</i>	Place of refuge.
<i>‘uala</i>	The sweet potato, or <i>Ipomoea batatas</i> , a Polynesian introduction.

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APPENDIX A: AGREEMENT TO PARTICIPATE

**Agreement to Participate in the Cultural Impact Assessment for the
Wai‘anae Elementary School Project**
Dietrix J. U. Duhaylonsod, Ethnographer, Keala Pono Archaeological Consulting

You are invited to participate in a Cultural Impact Assessment (CIA) of the Wai‘anae Elementary School Project in Wai‘anae, on the island of O‘ahu (herein referred to as “the Project”). The Project is being conducted by Keala Pono Archaeological Consulting (Keala Pono), a cultural resource management firm, on behalf of Group 70 International. The ethnographer will explain the purpose of the Project, the procedures that will be followed, and the potential benefits and risks of participating. A brief description of the Project is written below. Feel free to ask the ethnographer questions if the Project or procedures need further clarification. If you decide to participate in the Project, please sign the attached Consent Form. A copy of this form will be provided for you to keep.

Description of the Project

This CIA is being conducted to collect information about the Project property in Wai‘anae and its surrounding areas in the Wai‘anae Kai region of O‘ahu Island through interviews with individuals who are knowledgeable about this area, and/or about information including (but not limited to) cultural practices and beliefs, *mo‘olelo*, *mele*, or *oli* associated with this area. The goal of this Project is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources, or traditional cultural practices in properties on the current subject properties. This Assessment will also attempt to identify any affects that the proposed development may have on cultural resources present, or once present within the Project area.

Procedures

After agreeing to participate in the Project and signing the Consent Form, the ethnographer will digitally record your interview and it may be transcribed in part or in full. The transcript may be sent to you for editing and final approval. Data from the interview will be used as part of the ethno-historical report for this project and transcripts may be included in part or in full as an appendix to the report. The ethnographer may take notes and photographs and ask you to spell out names or unfamiliar words.

Discomforts and Risks

Possible risks and/or discomforts resulting from participation in this Project may include, but are not limited to the following: being interviewed and recorded; having to speak loudly for the recorder; providing information for reports which may be used in the future as a public reference; your uncompensated dedication of time; possible misunderstanding in the transcribing of information; loss of privacy; and worry that your comments may not be understood in the same way you understand them. It is not possible to identify all potential risks, although reasonable safeguards have been taken to minimize them.

Benefits

This Project will give you the opportunity to express your thoughts and opinions and share your knowledge, which will be considered, shared, and documented for future generations. Your sharing of knowledge may be instrumental in the preservation of cultural resources, practices, and information.

Confidentiality

Your rights of privacy, confidentiality and/or anonymity will be protected upon request. You may request, for example, that your name and/or sex not be mentioned in Project material, such as in written notes, on tape, and in reports; or you may request that some of the information you provide remain off-the-record and not be recorded in any way. To ensure protection of your privacy, confidentiality and/or anonymity, you should immediately inform the ethnographer of your requests. The ethnographer will ask you to specify the method of protection, and note it on the attached Consent Form.

Refusal/Withdrawal

At any time during the interview process, you may choose to not participate any further and ask the ethnographer for the tape and/or notes. If the transcription of your interview is to be included in the report, you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

APPENDIX B: CONSENT FORM

Consent Form

I, _____, am a participant in the Wai‘anae Elementary School Project Cultural Impact Assessment (herein referred to as “Project”). I understand that the purpose of the Project is to conduct oral history interviews with individuals knowledgeable about the subject property and surrounding area in the Wai‘anae Kai region of O‘ahu Island. I understand that Keala Pono Archaeological Consulting and/or Group 70 will retain the product of my participation (digital recording, transcripts of interviews, etc.) as part of their permanent collection and that the materials may be used for scholarly, educational, land management, and other purposes.

_____ I hereby grant to Keala Pono and Group 70 ownership of the physical property delivered to the institution and the right to use the property that is the product of my participation (e.g., my interview, photographs, and written materials) as stated above. By giving permission, I understand that I do not give up any copyright or performance rights that I may hold.

_____ I also grant to Keala Pono and Group 70 my consent for any photographs provided by me or taken of me in the course of my participation in the Project to be used, published, and copied by Keala Pono and Group 70 and its assignees in any medium for purposes of the Project.

_____ I agree that Keala Pono and Group 70 may use my name, photographic image, biographical information, statements, and voice reproduction for this Project without further approval on my part.

_____ If transcriptions are to be included in the report, I understand that I will have the opportunity to review my transcripts to ensure that they accurately depict what I meant to convey. I also understand that if I do not return the revised transcripts after two weeks from the date of receipt, my signature below will indicate my release of information for the draft report, although I will still have the opportunity to make revisions during the draft review process.

By signing this permission form, I am acknowledging that I have been informed about the purpose of this Project, the procedure, how the data will be gathered, and how the data will be analyzed. I understand that my participation is strictly voluntary, and that I may withdraw from participation at any time without consequence.

_____	_____
Consultant Signature	Date
_____	_____
Print Name	Phone

Address	

Thank you for participating in this valuable study.

APPENDIX C: TRANSCRIPT RELEASE

Transcript Release

I, _____, am a participant in the Cultural Impact Assessment for the Wai‘anae Elementary School Project (herein referred to as “Project”) and was interviewed for the Project. I have reviewed the transcripts of the interview and agree that the transcript is complete and accurate except for those matters delineated below under the heading “CLARIFICATION, CORRECTIONS, ADDITIONS, DELETIONS.”

I agree that Keala Pono Archaeological Consulting and/or Group 70 may use and release my identity, biographical information, and other interview information, for the purpose of including such information in a report to be made public, subject to my specific objections, to release as set forth below under the heading “OBJECTIONS TO RELEASE OF INTERVIEW MATERIALS.”

CLARIFICATION, CORRECTIONS, ADDITIONS, DELETIONS:

OBJECTIONS TO RELEASE OF INTERVIEW MATERIALS:

Consultant Signature	Date
Print Name	Phone
Address	

APPENDIX D: INTERVIEW WITH ERIC ENOS

TALKING STORY WITH

ERIC ENOS (EE)

Oral History for the Wai‘anae Elementary project by Dietrix Duhaylonsod (DD)
For Keala Pono 4/22/2015

DD: Aloha, today is Wednesday, April 22, 2015, and we’re up in the back of Wai‘anae Valley at Ka‘ala Farms, and we’re gonna be talking about the renovations they’re gonna be making at Wai‘anae Elementary School. We’re talking with Uncle Eric Enos, and we’d like to thank him for taking time out of his busy schedule to talk story with us and share his *mana ‘o* about the area, so *aloha*.

Uncle, if we could start, if you could just give us some background about yourself; if you could state your name; where/when you were born; where you grew up; where you went to school?

EE: Ok, *aloha*, my name is Eric Enos. I live in Mākaha. I’ve lived in Mākaha basically for the past, oh maybe 60 years. My parents moved out here when Chinn Ho first opened up the lower portion of Mākaha Valley for sale. I went to Wai‘anae Elementary from kindergarten to the sixth grade; 7th grade I went to Kamehameha Schools; graduated and I went to the University of Hawai‘i, and I got my degree. And then I started working back in the community right after I graduated from the university, starting with Nānākuli, and worked my way down the coast. And we’re now at the cultural learning center at Ka‘ala, Ka‘ala Farm, which we helped to establish as part of a model cities project with the Wai‘anae Rap Center which I was involved with in the early 1970s.

But basically in 1976, this land was made available, and so now I have been involved with this project up in Wai‘anae Valley. But I’m very familiar with the community and all those areas, and we’ve been studying those cultural sites for a long time. And we have been one of the people at the forefront trying to preserve our cultural landscape.

DD: *Mahalo*, Uncle, for sharing that. Is there anything else that you would like to share about your *‘ohana* background, your family background on this side?

EE: Well, I come from the two sides, one from Kaua‘i and one from the Big Island, Hawai‘i Island, the Hawaiian side, and the rest is all mix-up [ethnicities].

DD: Ok, *mahalo*.

So today, we’re talking about that parcel of land where Wai‘anae Elementary is located. Could you share your association, I know you said you went to that school, any other ways you’ve acquired special knowledge of that particular area.

EE: Well the school has already been in existence before I was there. Obviously it’s one of the older elementary schools. In fact, it might have even been even higher grades way back when, during the plantation era.

Basically, I see that that land, because it’s been developed, and it has all those buildings already, that I have no concerns. I think all the surface features, if they were there, have long been obliterated, first with agriculture, and then now with the school, historically. I went there in the kindergarten, so you can imagine, and I’m born in 1948, you can do the math, so the school was already pretty old at that time. So my assumption is, you know, that place was developed prior.

And being *kula* lands, the lands up here, up in Wai‘anae Valley is where all the *lo‘i* were. And the majority of the cultural sites were closest to the water source. Down below were *kula* lands, the only cultural site adjacent to it was the *hōlua*, which is maybe less than a quarter mile from the site in question, as you face the southeast on that little *pu‘u* coming down. But that has been kind of bus’ up already, the *hōlua* slide, and other than that, I can’t see any surface impacts, except when they start to do any subsurface.

If you run into anything of concern, then you should always have a cultural monitor nearby, if there’s any *iwi*, or if there’s any subsurface types [of features], at least it could be recorded. But as far as it stopping the job, I don’t think that’s practical and necessary.

DD: Ok, yeah it makes a lot of sense that the school is so old that a lot of the previous development would’ve taken away any surface features, and definitely to keep a cultural monitor in case of any subsurface finds and so forth. Ok, so *mahalo* for sharing that.

What about the surrounding area or that particular parcel, do you have any personal stories or any *mo‘olelo*, *mele*, place names that you’d like to share?

EE: Not at this time. I mean, there’s a lot of significant sites, but aside from the *hōlua* [slide], the other site is across where the water was, and that would have been where the *heiau* once sat, which was destroyed, which the Mormon temple sits on now, I mean the Mormon church and the plantation. So that was a major site, and then right at the point over there, where the stream comes in and where the rest camp is, all in that area, those were the important sites. They all have been pretty bus’ up already, and the fishpond area. So aside from that, this area in question is far away and isolated so that’s the only impact I see.

DD: *Mahalo* for that. For clarity, the places that Uncle is sharing are like in the surrounding area but not on the property itself.

Uncle, are there any other cultural sites or historic buildings from the site area that you’d like to share about, on the property itself?

EE: No I think all the buildings are pre and post-World War II, and then the modern portables that have come up. The cafeteria was there when I was there. The main office is long gone. The oldest thing is probably that stage over there, but then that’s about it. I don’t see any historical properties or buildings existing on the campus anymore.

DD: Ok, *mahalo*. Uncle is talking about the stage that’s on that grassy area on the school property.

What about this proposed development, do you foresee that it would affect any place of cultural significance, or if it would affect access to any place of cultural significance?

EE: None whatsoever. This is already building within the compound of buildings so it’s all part of the school’s *kuleana*. I see no interference.

DD: Ok, and how about traditional gathering practices, any gathering practices at that project area?

EE: Well aside from gathering knowledge, the *‘ike*, which the school needs to do more of, but then that’s a DOE issue, not a building issue.

DD: Ok, *mahalo* for that. Well, we're coming towards the end, and this is already a previously developed piece of property of course. Are you aware of any other cultural concerns the community might have related to this project site?

EE: I don't foresee any other cultural concerns, unless there's something major, significant, subsurface. Other than that, as I said, we should have enough people to monitor, but it should not stop its development and the building.

DD: Ok, *mahalo*. And finally, are there any other *kūpuna*, or *kama 'āina*, or descendants that you think we should speak with?

EE: Uh, aside from the usual suspects, uh no. [laughs]

DD: [laughs]

EE: I'm sure you have the names of people stepping up as cultural experts. They're out there, you know, so some are hidden, and some, you know, people know who they are. And everybody has a little bit of knowledge.

DD: True.

EE: Everything is important.

DD: Yeah.

EE: Everything that you can glean, I think it's just to filter it so that we can cross check the information.

DD: Yup, good advice.

Ok, so that concludes our *kūkākūkā*, and again, *mahalo nui loa* to Uncle Eric Enos for taking time out of his busy schedule to talk story with us. Ok, so *aloha*.

EE: *Aloha*.

APPENDIX E: INTERVIEW WITH GLEN KILA

TALKING STORY WITH

GLEN KILA (GK)

Oral History for the Wai‘anae Elementary project by Dietrix Duhaylonsod (DD)
For Keala Pono 3/25/2015

DD: Aloha, today is Wednesday, March 25, 2015, and we are at Coquito’s in Wai‘anae, sitting with Uncle Glen Kila once again, very grateful that he’s taken the time to share with us his *mana ‘o* today on this area in Wai‘anae, specifically the elementary school.

So in the past, Uncle has given us his family background, and we’re going to go straight to Wai‘anae Elementary to ask Uncle about his association to that property there.

GK: My association for Wai‘anae Elementary is that I attended the school back in 1960, and I graduated from Wai‘anae Elementary, 7th grade. At that time it was from kindergarten to 7th grade and after I went to Wai‘anae High School.

The school itself was very village-like. We had principal, Mr. Moore, who lived at the school with teachers at the teacher’s cottages. Some of the teachers at Wai‘anae Elementary also taught at Wai‘anae High and Intermediate. We didn’t have Mākaha, Mā‘ili, Leihōkū Elementary, so the population for the student body at Wai‘anae Elementary was very large. There were over a thousand students at the time.

DD: Ok, wow Uncle, so that’s about over 50 years ago, interesting. Could you share maybe what are the ways that you acquired knowledge of that area around Wai‘anae Elementary?

GK: As I stated before, my parents and my ancestors all came from Pōka‘ī and Wai‘anae Valley, so Wai‘anae Elementary was the school of my grandfather John, my father Benedict, myself, and my two sons.

I remember stories about a spring there called Wai‘oli, “Happy Waters,” that my grandfather would talk about. He also shared that Wai‘anae Elementary was the center of the community. Even during my time in the 1960s, Wai‘anae Elementary had a lot of different events, like the Halloween bazaars, Christmas, May Day programs. This was really the center for the Wai‘anae families to celebrate the holidays.

DD: Thank you, Uncle, yeah that’s special going to the school and growing up there.

As far as you remember with your experiences, how has the area changed? Could you share how it was when you were young and how it’s different now?

GK: There were all wooden buildings at that time. The administration building was a long wooden building that consisted of the health room and the sixth grade class. The area that is now planned for development is where the principal’s cottage was. He had a garden, and there were cottages next to it.

The buildings were very large, as I recall. The area, where there’s the new library, consisted of the old library, a smaller building. The cafeteria itself is the same cafeteria that I grew up 55 years ago, except for the small extension. All of the wooden buildings are gone and the area that is being planned was were cottages where people lived.

In the 1960s, the 2nd grade classes consisted of Quonset huts from World War II. There were a lot of trees, large trees, and specifically, the tamarind tree which all the children used to pick up fruits. It is near the area that is planned for the parking lot. Also there was a jacaranda tree next to the stage that was very famous for its beautiful purple flowers that bloomed every year.

There was also the stage that was built by the Japanese Hongwanji community in recognition of the three Wai‘anae men that died in World War II. They were from the Nakamine and the Teramoto families. The third person, I am not too sure of his name.

One incident that was very famous in Wai‘anae was the story of the Green Lady. The Green Lady stemmed from the ancient legend of Hi‘iaka and Wahine‘ōma‘oma‘o. She supposed to have killed children in Wai‘anae. This led to mass hysteria back in the ‘60s and at one time closed the school because of students fears.

There were a lot of Hawaiians, Japanese, Filipinos, Portuguese, you know, plantation people attending Wai‘anae Elementary. The school was a place where people congregated and lived.

DD: Wow, thank you for sharing that, Uncle.

So it kind of sounds like you alluding to Wai‘anae having a plantation history with a mill and all that back in the day, but just to be certain, by that time in the ‘60s, the mill was no longer there, but there was the descendants of the plantation community, is that correct?

GK: Yes, correct. The mill ended in the 1940s, right after World War II. But the mill camps were still part of the community. We had areas that lived native Hawaiians such as my family. We owned a portion of the beach area. Then you had the Japanese family with their *furo*, community baths, right next to our family property. You had the Okinawans who were separated from the Japanese, “*naichi*” people. The Japanese and Okinawans had their own Buddhist Hongwanji churches. We also had the Chinese camp which is now near McDonald’s, and in fact it’s right here next to this restaurant. The Filipino camp was closer to the Japanese camp and the Portuguese camp near Army Beach road. We all knew each other and lived together as one family.

The common culture was, the Local culture, that we call the Plantation culture. The school was center for the local cultures. And then of course, during this time, we all intermarried. My grandpa is Filipino, my uncles Japanese, Portuguese, and Chinese.

DD: Wow, that’s a Wai‘anae that I’m sure looks different from the layout of the town today. Thank you for describing that, Uncle.

What about, I’m just curious, do you remember a Portuguese camp or a Puerto Rican camp or Korean by any chance, did they have their own area also?

GK: Yes, the Portuguese, many of us are part-Portuguese. The Portuguese camp was near the back of this building. There is a small Catholic graveyard near here. Our Portuguese side of the family is buried here. I don’t recall Korean and Puerto Ricans here.

Most of the people here attended the Sacred Hearts Catholic Church, Honpa Hongwanji Buddhist church and the Waianae Protestant Church and several pentacostal churches in the community. A lot of the boys and girls belonged to the young Buddhist association because there weren’t any YMCAs clubs in Wai‘anae during that time. There was only a two lane road in Wai‘anae that held Christmas and homecoming parades.

DD: Uncle, thank you for sharing that, and you mentioned this graveyard behind here, I just wanted to share, my great-great grandfather is buried there.

GK: Oh wow, is that right?

DD: Yeah, and also I just would just like to say that Uncle is describing where the building is going to be. We do have a map, and we went to the property before we sat down here to kind of figure out where the layout is going to be, and that's why he's mentioning that he remembers that's where the garden was and so forth, the cottage and so forth. Yeah, we took a walk down there and tried to envision it.

Ok, Uncle, so is there any other *mana 'o* you'd like to share regarding the area, some *mo 'olelo*, place names, personal stories, or any other *mana 'o* that you'd like to share about the area around the school?

GK: Because there was a famous spring there, Wai'oli, there were a lot of Hawaiian settlements at that time that surrounded Wai'anae Elementary, Pili'ā'au Park and Pu'u Kahea. The plantation manager's house up there was the home of O'ahu's king Kahahana.

Wai'anae Elementary area was the center for a lot of homes in Wai'anae town. Some of the area was the area called Pāhoa after the home of our *konoiki*, Ka'apuiki. My nephew Chris Oliveira is a direct descendant of this *konoiki*.

If we look at our family properties that we own today, we are reminded about the ancient streams and springs where our families lived. Their crops, the *kalo*, sweet potato, bananas all grew next to the water sources. Stories also talked about a *heiau*, a *hale mua*, near or on the school grounds. I think if you go deep under the ground there may be remnants of the old Hawaiian village. We called this place again Pāhoa, the same name we called in the valley and near the beach area.

DD: Thank you for sharing that, Uncle, so we have the ancient settlement there, the spring, Wai'oli, are there any other cultural or archaeological sites or even historic buildings that we should be aware of, that were there or might still be there or any other structures or even burials that we should take note of?

GK: Wai'anae Elementary was part of the plantation homes in the area after the Hawaiian settlements because of the Wai'oli spring. I don't recall churches except for the Protestant Church nearby. I do recall it being government and plantation lands which extended to the Japanese and Chinese graveyard just above the school at Pu'u Pahe'ehe'e Hill and Heiau.

Other than that, I don't believe the site has remnants of the village. I don't recall even during my time, except for stories, that there were a small *heiaus*, called *unu's* temples along the Kanepuniu and Eku streams in Wai'anae.

DD: Thank you Uncle for sharing that.

Do you think that this proposed development will affect any place of cultural significance or access to any place?

GK: I don't believe so, because as I recall, that area was where the cottages were. The cottages are gone. The Quonset huts are gone. There are modern portables in that area now. The area's an open grass area now. People also park there. There's an old tree that I do remember. It's the royal

poinciana tree that still remains there. The tree should stay because it's part of the school cottage history. It was a famous tree for the students because it marked summer time was coming.

DD: This tree, the royal poinciana, is that the one where we were looking at, or is it near the parking lot?

GK: Yes that is the tree that has a cemented foundation now, I guess that is to help it from falling over.

DD: Ok, alright, I know which one is that.

That's in the corner outline of the property, so to clarify, Uncle is saying that it would be good to keep that tree. That tree has some history there, and it's within that grassy area where the construction is planned to be done.

Ok, Uncle, are there any traditional gathering practices that we should be aware of in this area that they are developing?

GK: No. There's no gathering practices of any kind that I've seen or heard of at the site.

DD: Yeah, it's on the school grounds, and Uncle, are there any other cultural concerns the community might have in the vicinity of the project?

GK: I might say that where the parking lot is, there may be remnants of graves, only because of the proximity to Hawaiian Protestant church that's on Mill Street. The reason I believe this is because the area is in close proximity to the Protestant Church that has many graves on its property. I would also be cautious of the area because it has always been an open place never developed. I also recall, a burial found by a Portuguese-Hawaiian family at their home next to the school.

DD: Ok. Thank you for sharing that, Uncle, I think that's something that we should really be aware of and look out for.

GK: If they dig down a certain depth like planting a tree, you might find burials.

DD: Right. Ok.

So we're nearing the end here. Uncle, is there anyone else you suggest we should talk to regarding this area?

GK: I'm not sure at this time.

DD: Right, ok. Well thank you, Uncle. It's always a pleasure talking story with you.

GK: Mahalo Kumu for your due diligence in protecting and recording the information about our community.

DD: *Mahalo ia 'oe.* Ok, so we're gonna close.
And *Aloha.*

GK: *Aloha.*

INDEX

- ‘Aikanaka, 13
 ‘ili, v, 11, 12, 25, 27, 28, 29, 39, 40, 41, 43, 52
 ‘ōlelo no ‘eau, 11, 53
 ‘uala, 12, 53
 agriculture, 12, 22, 24, 41, 49, 52, 69
 ahupua‘a, 11, 12, 15, 17, 18, 25, 26, 29, 37, 38, 40, 43, 52
 ali‘i, 13
 Boki, 16
 burial, 22, 23, 24, 39, 40, 44, 50, 75, 76
 cafeteria, 34, 47, 48, 49, 50, 70, 73
 cave, 22, 39, 40
 church, 47, 48, 70, 74, 76
 dairy, 39, 40
 fishpond, 9, 11, 22, 25, 26, 28, 29, 37, 38, 43, 47, 70
 gathering, 47, 49, 50, 70, 76
 hale mua, 46, 49, 50, 52, 75
 Halemano, iii, 13, 14
 heiau, 13, 14, 15, 22, 25, 26, 37, 39, 40, 41, 43, 46, 47, 49, 50, 52, 53, 70, 75
 historic, i, 6, 11, 22, 23, 24, 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 50, 51, 62, 70, 75
 hōlua, 37, 47, 49, 50, 52, 70
 iwi, i, 49, 52, 70
 Ka‘ala, 11, 15, 69
 Kahekili, 12, 16
 kalo, 12, 17, 41, 46, 52, 53, 75
 Kamaile, 11, 12, 15, 17, 22, 23, 25, 37, 38, 39, 40, 43, 57, 58
 Kamapua‘a, 13
 Kāne, 11, 25, 37
 Kawelo, iii, 13
 Kawiwī, iii, 11, 12, 15, 25, 37, 38, 39, 40, 41
 Keaupuni, 11, 12, 17, 22, 25, 29, 37, 38, 39, 40, 41, 43
 Kūali‘i, iii, 12, 13, 14, 15
 kuleana, 16, 49, 52, 70
 Kūmaipō, v, 12, 23, 41, 42
 LCA, 17, 26, 29, 39, 43
 lele, v, 25, 28, 29, 40, 52
 lo‘i, 12, 17, 23, 24, 40
 Māhele, iii, 11, 16, 17, 39, 53
 map, v, 7, 11, 12, 17, 18, 19, 20, 25, 27, 28, 29, 30, 31, 33, 34, 36, 37, 39, 40, 41, 43, 44, 45, 50, 75
 midden, 40, 53
 military, 18, 29
 mo‘olelo, 11, 45, 46, 53, 62, 70, 75
 Monsarrat, v, 12, 17, 18, 20, 25, 26, 29, 30, 31, 34, 37, 39, 41, 43, 58, 60
 mountain, 11, 14, 53
 mullet, 11
 Old Government Road, 24
 Olopana, iii, 11, 12, 13
 Pāhoa, 11, 13, 16, 17, 25, 29, 37, 40, 41, 43, 46, 48, 49, 75
 plantation, 17, 23, 29, 34, 36, 46, 47, 48, 69, 70, 74, 75
 Pōka‘ī Bay, iii, 9, 11, 18, 22, 23, 24, 25, 26, 29, 37, 38, 43, 54, 56, 57
 practices, 15, 45, 46, 47, 49, 50, 62, 70, 76
 pu‘uhonua, 12, 53
 Puehu, 11, 24, 37, 40
 Punana‘ula, v, 23, 24, 25, 40, 41, 42, 43
 railroad, 17, 18, 24, 25, 26, 29, 37, 38, 40
 ridge, 11, 39
 rockshelter, 22, 24, 39
 school, 1, 3, i, iii, v, 6, 11, 17, 18, 23, 24, 25, 26, 29, 34, 36, 39, 40, 44, 46, 49, 50, 54, 56, 57, 58, 62, 65, 67, 69, 73
 settlement, 12, 50, 53, 75
 shark, 11
 sinkhole, 23, 39, 40
 spring, 46, 47, 49, 50, 73, 75
 sugarcane, 17, 18, 29, 41, 43, 44
 tree, i, 15, 48, 49, 51, 52, 53, 74, 75, 76
 village, 12, 46, 47, 49, 50, 51, 73, 75
 Wai‘anae Kai, v, 11, 22, 24, 25, 29, 34, 40, 43, 54, 55, 59, 60, 62, 65
 Wai‘anae Mountains, 11, 41
 Wai‘anae Valley, iii, 17, 22, 23, 24, 25, 40, 41, 47, 55, 57, 59, 69, 70, 73
 Waianae Company, 17
 Wai‘anae Uka, 46
 Wailele, 17
 Waimalu, v, 17, 18, 25, 29
 Wai‘oli, 46, 47, 49, 50, 73, 75

Appendix E

CIVIL ENGINEERING ASSESSMENT

TOPOGRAPHIC SURVEY

The Waianae Elementary School property is located at 83-220 McArthur Street (TMK (1) 8-5-001: 067, 018). The site of the proposed Admin Building is located onsite in an open field area east of the existing school's parking lot. The site is bordered by McArthur Street on the south, existing administrative building and library on the east, classrooms and road access on the north, and an apartment building on the west sides of the site.

A topographic survey has been prepared by ControlPoint Surveying, Inc. dated March 2015.

ACCESS, ROADWAYS AND PARKING

EXISTING CONDITIONS

The property has access rights to the Plantation Road (City) on the north. There is an existing 16-foot wide access road (private) leading to the school's parking lot.

PROPOSED IMPROVEMENTS

For the Phase 1 development, the width of existing asphalt concrete (ac) paved road will be increased to 20 feet to comply with fire code by installing grass pavers along both sides of the 450-foot length access road.

For the Phase 2 development, a new ac parking lot will be constructed next to the classroom just north of the proposed Admin Building. The existing parking lot will be rehabilitated with a new driveway leading to McArthur Street. As part of the City's road widening plan, McArthur Street fronting the Waianae Elementary School property will be widened by 8 feet on both sides of the street.

The parking lot will be sloped to drain at a 1% minimum grade. In areas where the parking lot must be ADA compliant, the pavement will be sloped a maximum of 2% in any direction. ADA compliance will be evaluated during the Design Development phase.

Concrete sidewalks will be installed to provide pedestrian access to and from the new Admin Buildings to the other facilities including the parking lots.

SITE GRADING AND EARTHWORK

EXISTING CONDITIONS

The elevations of the site range from 10.5 feet above mean sea level at the high point on the property to 9.8 feet at its lowest elevation. The property generally slopes from a high point on the east side of the site to the west towards the existing apartment building. The slopes on the property are flat and range from approximately 0.5% to 1%.

The surface soils on site have been identified by the geotechnical engineer as a medium stiff silty clay and clayey silt, underlain by beach deposits of loose to medium dense beach

sand extended to a depth of 2 to 6 feet. Below the sand, loose to very loose clayey gravel and/or clayey sand were encountered to a maximum depth of 21 feet.

PROPOSED DESIGN

For Phases 1 and 2, conceptual slope, pad elevations and contours for the project have been established using the required minimum and maximum slopes for the driveways, parking lots, and utilities.

The interior access roadway grades will vary about 1% minimum and the parking lots will be sloped at 1% minimum.

The site is flat and minimal grading will be required.

Phases 1 and 2 will be provided in separate submittals. A NPDES permit will not be obtained for erosion and sediment control during construction since the area of disturbance for each phase is less than one acre.

STORMWATER MANAGEMENT

EXISTING CONDITIONS

There a grass swale at the west end of the site next to the apartment building. There are no existing drainage pipe systems, streams or ponds onsite. The existing drainage system is in Plantation Road.

Runoff from the project site drains to the onsite swale on the west side of the site and outlets onto McArthur Street.

The property is outside of the 100 year flood zone (FIRM 1500 3C 0834).

PROPOSED DESIGN

The proposed drainage system will collect runoff from the open area, parking lots and roof drains. The storm surface runoff will sheetflow to the existing swale located at the west end of the site next to the apartment building.

Since the project site is less than 100 acres, the Rational Method shall be used for determining peak runoff rates for the onsite drainage system.

WATER SYSTEM

EXISTING SYSTEM

The existing water system is comprised of an 8-inch fire protection line and a 4-inch domestic line. The fire protection and domestic lines are connected to a FM meter and 3-inch compound meter, respectively. The two lines run in parallel just west of the existing library and admin building.

There are two fire hydrant onsite, which provides hose stream coverage for most of the project area.

Based on the BWS's calculated flow data (i.e. letter dated September 3, 2014) for fire hydrant L-2677 on McArthur Street, results are as follows: static pressure at 99 psi, residual pressure at 76 psi and flow at 2,000 gpm. The fire flow test indicates that the water pressure and flowrate are adequate to support the new Admin Building.

There is an existing fire hydrant onsite which provides 125-foot hose stream coverage for the Admin Buildings. The fire hydrant is located near the existing admin building next to the library. Another fire hydrant is located near the classroom area.

PROPOSED SYSTEM

For Phases 1 and 2, the new water system for the two new Admin Buildings will be connected to the existing 4-inch lateral. Based on the fire flow test results, it is assumed that the water capacity and available pressure will be sufficient to serve the new Admin Building. Domestic and fire water system demands and sizing will be completed during the design phase.

WASTEWATER SYSTEM

EXISTING SYSTEM

There is an existing 8-inch vitrified clay (VC) sewer line spanning across the central area of the project site at an approximate slope of 0.37% from an east to west direction. The sewer lines were installed in 1965.

PROPOSED SYSTEM

For Phases 1 and 2, the proposed sewer laterals will be connected to the existing VC sewer line. The new Admin Buildings will be sited in close proximity to the existing sewer line. It is assumed that the building connections will face the existing sewer line in order to provide the shortest sewer lateral connection length.

The sewer peak flow rates and sewer system sizing shall be done during the Design Development phase. It is assumed that the sewer capacity of the existing system is sufficient for the proposed project and that no additional improvements off site are required.