JOSH GREEN, M.D.
GOVERNOR

RIKI FUJITANI
EXECUTIVE DIRECTOR

STATE OF HAWAI'I

SCHOOL FACILITIES AUTHORITY
2759 S. KING STREET, ROOM H201
HONOLULU, HAWAI'I 96826

April 25th, 2025

Ms. Mary Alice Evans, Director
Environmental Review Program, Office of Planning and Sustainable Development
Department of Business, Economic Development & Tourism
State of Hawai'i
235 South Beretania Street, Suite 702
Honolulu, Hawai'i 96813

SUBJECT: **Chapter 343, HRS Draft Environmental Assessment Publication**
Anticipated Finding of No Significant Impact
Hawai'i School Facilities Authority
'Imiloa Pre-Kindergarten Facility
TMK: (3) 2-4-001:007 (portion)
South Hilo District, Island of Hawai'i, Hawai'i

Dear Ms. Evans:

With this letter, the Hawai'i School Facilities Authority (HISFA) hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed 'Imiloa Pre-Kindergarten Facility for publication in the next available edition of *The Environmental Notice*.

We have uploaded an electronic copy of this letter and a searchable PDF file of the DEA-AFONSI to your online submittal site.

Should you have any questions, please contact Doug Cullison, Preschool Program Manager, Hawai'i School Facilities Authority at (808) 375-1414 or via email at doug.cullison@hisfa.org. You may also contact our consultant, Malachi Krishok of Bowers + Kubota Consulting, Inc. at (808) 846-3340 or mkrishok@bowersandkubota.com.

Mahalo,

Signed by:
Riki Fujitani
B21B7B52C0D24D2...
Riki Fujitani, Executive Director
Hawai'i School Facilities Authority

cc: Doug Cullison, Hawai'i School Facilities Authority
Robyn Yee Ebisui, Bowers + Kubota Consulting, Inc.
Malachi Krishok, Bowers + Kubota Consulting, Inc.

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Thursday, May 1, 2025 1:51:32 PM

Action Name

Imiloa Pre-Kindergarten Facility

Type of Document/Determination

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

HRS §343-5(a) Trigger(s)

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

Judicial district

South Hilo, Hawai‘i

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

(3) 2-4-001:007 (portion)

Action type

Agency

Other required permits and approvals

HRS Chapter 343 Compliance; HRS Chapter 6E Compliance; National Pollutant Discharge Elimination System General Permit; Community Noise Permit (If Applicable); Plan Approval; Grading, grubbing, Stockpiling Permit; Building Permits for Building, Electrical, Plumbing, & Driveway; Permit to Work within County Right-of-Way (If Applicable); Sewer Connection; Water Connection.

Proposing/determining agency

Hawaii School Facilities Authority

Agency jurisdiction

State of Hawai‘i

Agency contact name

Doug Cullison

Agency contact email (for info about the action)

doug.cullison@hisfa.org

Email address for receiving comments

mkrishok@bowersandkubota.com

Agency contact phone

(808) 375-1414

Agency address

2759 South King Street
Room H201

Honolulu, HI 96826
United States
Map It

Is there a consultant for this action?

Yes

Consultant

Bowers + Kubota Consulting

Consultant contact name

Malachi Krishok

Consultant contact email

mkrishok@bowersandkubota.com

Consultant contact phone

(808) 836-7787

Consultant address

2153 N King Street
Suite 200
Honolulu, HI 96819
United States
Map It

Action summary

The Proposed Action includes the construction of three buildings: two classroom buildings with covered lanais and an administrative building, along with additional amenities such as a covered outdoor piko gathering area and enclosed outdoor learning environment. Each classroom building would include two classrooms each designed to accommodate 20 students, 1 teacher, and 1-2 teacher's assistants or family volunteers. In total, the four classrooms would have the capacity to serve up to 80 children of preschool ages 3-5 years old.
The classrooms will feature a warming kitchen and separate child-height sinks. Combined assisted-use toilet rooms with child-height handwashing stations will also be provided in each classroom building. The outdoor learning environment will be enclosed by an exterior fence to ensure a safe and secure setting. 12 new parking new parking stalls would be constructed west of the Project Site along 'Imiloa Place, which will continue to provide two-way ingress/egress from Nowelo Street to the 'Imiloa Astronomy Center and the proposed prekindergarten facility. Plans also include a new cul-de-sac for drop-off and pick-up.

Reasons supporting determination

Please refer to Section 6.0 of the Draft EA for Findings and Anticipated Determination.

Attached documents (signed agency letter & EA/EIS)

- 250501-HISFA-Imiloa-DEA_PUBLICATION_ADA.pdf
- HISFA-Imiloa-PreK-Draft-EA-Filing-Ltr_SFA-Signed.PDF

ADA Compliance certification (HRS §368-1.5):

The authorized individual listed below acknowledges that they retain the responsibility for ADA compliance and are knowingly submitting documents that are unlocked, searchable, and may not be in an ADA compliant format for publication. The project files will be published without further ADA compliance changes from ERP, with the following statement included below the project summary in The

Environmental Notice: "If you are experiencing any ADA compliance issues with the above project, please contact (agency submitting the project and phone and/or email)."

Action location map

- ImiloaPreK_ProjectArea.zip

Authorized individual

Malachi Krishok

Email

mkrishok@bowersandkubota.com

Phone

(808) 836-7787

Authorization

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

DRAFT ENVIRONMENTAL ASSESSMENT
ʻImiloa Pre-Kindergarten Facility
Hawaiʻi School Facilities Authority

TMK: (3) 2-4-001:007 (por.)
South Hilo, Hawaiʻi Island

May 2025

Proposing Agency:
State of Hawaiʻi
School Facilities Authority
2759 S. King Street, Room H201
Honolulu, HI 96826

Prepared by:
Bowers + Kubota Consulting
2153 North King Street, Suite 200
Honolulu, HI 96819

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‘Imiloa Pre-Kindergarten Facility
Hawai‘i School Facilities Authority
SFA Job No. SP-0012-25

TMK: (3) 2-4-001:007 (por.)
South Hilo, Hawai‘i Island

DRAFT ENVIRONMENTAL ASSESSMENT

May 2025

Proposing Agency:

State of Hawai‘i

School Facilities Authority

2759 S. King Street, Room H201

Honolulu, HI 96826

Prepared by:

Bowers + Kubota Consulting

2153 North King Street, Suite 200

Honolulu, HI 96819

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PROJECT SUMMARY TABLE

This Draft Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) Title 11-200.1 Environmental Impact Statement Rules.

Project Name:	'Imiloa Pre-Kindergarten Facility
Applicant and Approving Agency:	Hawai'i School Facilities Authority (HISFA)
Consultant	Bowers + Kubota Consulting
HRS §343 Trigger:	Proposed use of State lands and funds
Project Location:	600 'Imiloa Place, Hilo, HI 96720
Tax Map Key Parcel:	(3) 2-4-001:007 (por.)
Project Size:	Approx. 2.25 acres
Landowner:	State of Hawai'i
Existing Use on Project Site:	Open area landscaped with grass in the northeast portion of the 'Imiloa Astronomy Center parcel.
State Land Use District:	Urban
County of Hawai'i Zoning:	UNV (University District)
Special Management Area (SMA):	Outside of SMA
Flood Zone Designation:	X - Outside of the 1% annual chance floodplain
Proposed Action:	The Proposed Action includes the construction of three buildings: two classroom buildings with covered lanais and an administrative building, along with additional amenities such as a covered outdoor piko gathering area and enclosed outdoor learning environment. Each classroom building would include two classrooms each designed to accommodate 20 students, 1 teacher, and 1-2 teacher's assistants or family volunteers. In total, the four classrooms would have the capacity to serve up to 80 children of preschool ages 3-5 years old. The classrooms will feature a warming kitchen and separate child-height sinks. Combined assisted-use toilet rooms with child-height handwashing stations will also

	be provided in each classroom building. The outdoor learning environment will be enclosed by an exterior fence to ensure a safe and secure setting. 12 new parking new parking stalls would be constructed west of the Project Site along ʻImiloa Place, which will continue to provide two-way ingress/egress from Nowelo Street to the ʻImiloa Astronomy Center and the proposed prekindergarten facility. Plans also include a new cul-de-sac for drop-off and pick-up.
Permits and Approvals Needed for the Project:	HRS Chapter 343 Compliance; HRS Chapter 6E Compliance; National Pollutant Discharge Elimination System General Permit; Community Noise Permit (If Applicable); Plan Approval; Grading, grubbing, Stockpiling Permit; Building Permits for Building, Electrical, Plumbing, & Driveway; Permit to Work within County Right-of-Way (If Applicable); Sewer Connection; Water Connection.
Anticipated Determination:	Anticipated Finding of No Significant Impact (AFONSI)

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AFONSI Anticipated Finding of No Significant Impact

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

AIS Archaeological Inventory Survey

amsl Above Mean Sea Level

BMP Best Management Practice

CDP Census Designated Place

CIA Cultural Impact Assessment

CZM Coastal Zone Management

dBA Decibel (A-weighted sound level)

DFIRM Digital Flood Insurance Maps

DLNR Department of Land and Natural Resources, State of Hawai'i

DOH Department of Health, State of Hawai'i

DOT Department of Transportation

EA Environmental Assessment

EOEL Executive Office on Early Learning

EPA Environmental Protection Agency

ESA Environmental Site Assessment

FEMA Federal Emergency Management Agency

GHG Greenhouse Gas

HAR Hawai'i Administrative Rules

HCDP Hilo Community Development Plan

HCM Highway Capacity Manual

HHER Hazard Evaluation and Emergency Response Office

HELCO Hawaiian Electric Light Company

HFRA Healthy Forests Restoration Act

HIDOE Hawai'i Department of Education

HISFA Hawai'i School Facilities Authority

HRS Hawai'i Revised Statutes

IAL Important Agricultural Lands

IPCC Intergovernmental Panel on Climate Change

LOS Level of Service

LRFI Archaeological Literature Review and Field Investigation Report

LUC State Land Use Commission

LUPAG Land Use Pattern Allocation Guide

MGD Million Gallons per Day

MPH Miles per Hour

NEHRP National Earthquake Hazard Reduction Program

NFPA National Fire Protection Association

NOAA National Oceanic and Atmospheric Administration

NPDES National Pollutant Discharge Elimination System

OPSD Office of Planning and Sustainable Development, State of Hawai'i

REC recognized Environmental Condition

SHPD State Historic Preservation Division

SLR-XA Sea Level Rise Exposure Area

SMA Special Management Area

SY Sustainable Yield

TIAR Traffic Impact Assessment Report

TMK Tax Map Key

TPDH Transportation Plan for the District of Hawai`i

UH University of Hawai'i

UHERO University of Hawaii Research Organization

USGS United States Geological Survey

USFWS United States Fish and Wildlife Service

vph Vehicles per hour

1.0 PROJECT OVERVIEW

1.1 BACKGROUND

The State of Hawai'i School Facilities Authority (HISFA) proposes the construction of the 'Imiloa Pre-Kindergarten (Pre-K) facility (Proposed Action) on a portion of Tax Map Key (TMK) (3) 2-4-001:007, which is located in the South Hilo District, Island of Hawai'i. The Pre-K facility would be constructed on an approximately 2.25 acre site in the University of Hawai'i at Hilo University Park of Science and Technology, adjacent to the 'Imiloa Astronomy Center of Hawai'i.

The design and construction of the proposed pre-kindergarten facility is being funded through HISFA under the "Ready Keiki" program, which seeks to provide expanded access to pre-kindergarten education through-out Hawai'i. Once the facility is constructed, the pre-kindergarten program would be operated by Ke Kula 'O Nāwahīokalani'ōpu'u Iki (Nāwahī), a Laboratory Public Charter School, in partnership with 'Aha Pūnana Leo and the University of Hawai'i at Hilo. As a university-based program, the proposed project would provide opportunities for Hawaiian immersion teaching in addition to expanding access to affordable and high-quality early childcare and education to the public.

1.2 PURPOSE FOR ENVIRONMENTAL ASSESSMENT

Chapter 343 (Environmental Impact Statements), Hawai'i Revised Statutes (HRS), establishes a system of environmental review at the State and County levels to ensure that environmental concerns are given appropriate consideration in decision-making along with economic and technical considerations. The State of Hawai'i, Office of Planning and Sustainable Development's (OPSD) Environmental Review Program facilitates the environmental review process in Hawai'i.

This project triggers the State's environmental review process under HRS Chapter 343, as amended, and Title 11, Chapter 200.1 (Environmental Impact Statement Rules) of the State Department of Health's Hawai'i Administrative Rules (HAR), as amended (State of Hawai'i, 2019) because the action involves:

Use of State Funds. State funds would be used for the design and construction of the Proposed Action.

Use of State Lands. The Proposed Action involves the construction on ceded lands which are held in Trust by the State and leased to the University of Hawai'i at Hilo.

This Draft Environmental Assessment (Draft EA) document has been prepared in accordance with these regulations to allow for the use of State lands and funds for the construction of the project. Pre-assessment consultation comments received as part of the preparation of this Draft EA document are included in Appendix A.

1.2.1 APPLICANT BACKGROUND

The Applicant or Proposing Agency for this project is the Hawaiʻi School Facilities Authority (HISFA). HISFA was established in 2020 through Act 72 and further clarified by Act 271 in 2001. The Act aimed to streamline and enhance the management of capital improvement projects related to public schools, ensuring that these projects align with the State's educational goals and fiscal policies. As such, HISFA is responsible for the development, planning, and construction of public school facilities across the State.

1.2.2 APPROVING AGENCY

The project is an "Agency Action" under the State's environmental review regulations because the project involves the use of State land and funds. The HISFA will serve as the "Approving Agency" for the processing of this environmental assessment document and currently anticipates a Finding of No Significant Impact (FONSI) determination.

Bowers + Kubota Consulting, Inc. (B+K) is serving as the "Authorized Agent" on behalf of the HISFA (Applicant) in the preparation of this Draft EA. This Draft EA was prepared pursuant to Chapter 343, Environmental Impact Statements, HRS, as amended and the State Department of Health's Title 11, Chapter 200.1, HAR (Environmental Impact Statement Rules) (State of Hawaiʻi, 2019).

1.3 REGIONAL SETTING AND PROJECT LOCATION

The Project Site is in the moku (district) of Hilo and ahupuaʻa of Waiākea on mokupuni (island) of Hawaiʻi. The Proposed Action would be located at 600 ʻImiloa Place on an approximately 2.25 acre portion of an approximately 142.8 acre State of Hawaiʻi property identified as TMK (3) 2-4-001:007. See Figure 1.1. The proposed Project Site is adjacent to the ʻImiloa Astronomy Center of Hawaiʻi in the University of Hawaiʻi at Hilo University Park of Science and Technology. The entire parcel, which is ceded land, is held in trust by the State of Hawaiʻi lands encumbered under General Lease to the University of Hawaiʻi as an addition to the University of Hawaiʻi at Hilo campus for associated research and instructional purposes.

1.4 PROJECT PURPOSE AND NEED

The purpose of the Proposed Action is to provide affordable childcare for University of Hawaiʻi at Hilo students, faculty, and the surrounding community, support workforce development for new teachers, and address the growing demand for early childhood education taught in the Hawaiian language.

Across the State of Hawaiʻi, there is a significant need for increased access and availability of preschool education, with more than 8,000 eligible children unable to attend due to high costs and limited availability of spots. According to the University of Hawaii Research Organization (UHERO),

only 55% of the 33,224 children aged 3 to 4 years in the state are currently enrolled in preschool programs. While about 20% of eligible families choose to opt out of preschool, the remainder are unable to access programs due to systemic factors. Research by the UH Center on the Family found that 86% of Hawaiʻi families lack access to preschools that are both affordable and conveniently located (Inafuku, 2024).

Research indicates that children who attend preschool are better prepared for kindergarten, less likely to repeat grades or need special education services and enjoy higher overall math and reading scores. They also tend to earn more, and exhibit reduced antisocial behavior in childhood and lower rates of adult crime and incarceration (Inafuku, 2024). Understanding these benefits, he Hawaiʻi State Legislature enacted Act 46, a landmark measure that established the goal to expand preschool access to all 3- and 4-year-olds statewide by the year 2032. The Ready Keiki initiative works to achieve that goal through a mixed delivery model that includes the construction of new facilities, subsidies for preschool tuition costs and other means.

The creation of HISFA was another major step in addressing these challenges. HISFA is tasked with overseeing the development, planning, and construction of public school facilities across the state. This includes building new preschools to meet the growing demand for early childhood education in support of Act 46 and the Ready Keiki Initiative.

Image 1: Drone photo of the project site with 'Imiloa Astronomy Center in the background

1.5 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action includes the construction of three buildings: two classroom buildings and an administrative building, along with additional amenities such as an outdoor *piko* gathering area and enclosed outdoor learning environment. Each classroom building would include two classrooms designed to accommodate 20 students each, 1 teacher, and 1-2 teacher's assistants or family volunteers. In total, the four classrooms would have the capacity to serve 80 children ages 3 to 5 years old.

The classrooms will feature a warming kitchen and separate child-height sinks. Combined assisted-use toilet rooms with separate child-height handwashing stations will also be provided. The outdoor learning environment, about 6,000 square feet, will be enclosed by an exterior fence to ensure a safe and secure setting. 12 new parking new parking stalls would be constructed west of the Project Site along ʻImiloa Place, which will continue to provide two-way ingress/egress from Nowelo Street to the ʻImiloa Astronomy Center and the proposed prekindergarten facility. Plans also include a new cul-de-sac for drop-off and pick-up, at the end of ʻImiloa Place, before the turn into the ʻImiloa Astronomy Center parking lot. A preliminary site concept is included as Figure 1.2.

The Proposed Action is being led by HISFA, the agency responsible for the design and construction of the facility. HISFA is working in tandem with the University of Hawaii, the Executive Office of Early Learning and the State Public Charter School Commission, which brought in the Hawaiian-immersion charter school and the preschool provider that will together serve the children's needs at the new site.

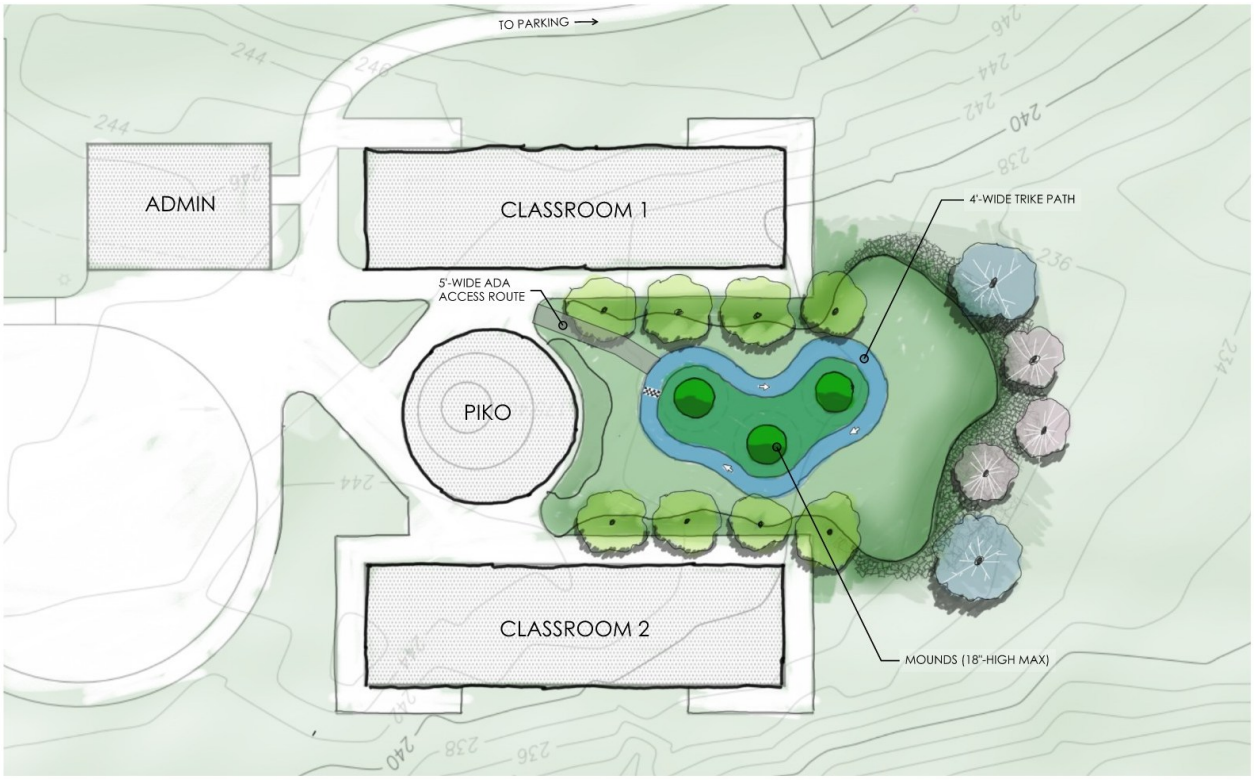
Once the facility is constructed, the free pre-kindergarten program would be operated by Ke Kula ʻO Nāwahīokalaniʻōpuʻu Iki (Nāwahī), a Laboratory Public Charter School, in partnership with ʻAha Pūnana Leo and the University of Hawaiʻi at Hilo.

1.6 PRELIMINARY PROJECT COST AND TIMELINE

The Project received $10 million in funding from HISFA, part of a larger $100 million allotment from the State Legislature, which is aimed at expanding preschool opportunities across the State. The Proposed Action is anticipated to begin construction in summer 2026.

Figure 1.1: Project Location Map

Figure 1.2: Conceptual Site Plan



2.0 ALTERNATIVES CONSIDERED

As a requirement of HAR §11-200.1-18 (2019), this chapter identifies and considers alternatives to the Proposed Action that achieve the purpose and need of the project as discussed in Section 1.4. These alternatives are described in this section and include the no-action alternative which involves not implementing the project. However, these alternatives were eliminated from further consideration because they would not support the project need and objectives as well as the project (Proposed Action). There were also other factors associated with these alternatives that did not make them as feasible and practical as the Proposed Action.

2.1 ALTERNATIVE 1: NO-ACTION

The No-Action Alternative would entail HISFA not proceeding with the construction of the new pre-kindergarten facility. The approximately 2.25 acres of land dedicated for the new pre-kindergarten facility would remain undeveloped and in its current condition or be utilized for another purpose in the future. The University of Hawai'i at Hilo students, faculty, and the surrounding community would not benefit from expanded access to free, high-quality Hawaiian immersion early childhood education, and future workforce development benefits derived from Hawaiian immersion teaching and hands-on learning opportunities on campus would not be realized. Furthermore, this alternative fails to support the objectives Act 46 and the Lieutenant Governor's Ready Keiki initiative.

2.2 ALTERNATIVE 2: LOCATE ON OTHER STATE LANDS

Under Alternative 2, the pre-kindergarten facility would be located on other State lands. Prior to selection of the proposed Project Site, HISFA conducted a "shortfall analysis," to assess areas across the State with unserved children of preschool age (3-5 years old). The assessment began by determining the overall shortfall for each island by comparing the existing pre-kindergarten capacity to the overall island population. Shortfall was allocated to areas using a weighted formula based on housing, job density, and traffic data. Once shortfall was determined, HISFA looked at sites on State land, with space to build, existing infrastructure, and partners with a viable plan to operate the pre-kindergarten facility. From this analysis, only the proposed Project Site met all criteria. As such, this alternative was eliminated from consideration.

3.0 AFFECTED ENVIRONMENT, LIKELY IMPACTS, AND MINIMIZATION MEASURES

This chapter provides a description of the project's affected environment, and includes information utilizing suitable regional, location, and site maps. This chapter identifies and analyzes the likely environmental impacts of the proposed action, and proposes minimization measures to address impacts, as applicable.

3.1 CLIMATE

3.1.1 EXISTING CONDITIONS

The temperatures in Hilo are relatively stable throughout the year, typically ranging from 64°F to 83°F. The warmest month is August, with average highs around 83°F, while January is the coolest month, with average lows around 64°F. The region experiences northeast trade winds, which are driven by high pressure systems that form in the north Pacific Ocean and help moderate temperatures. Average windspeeds at Hilo International Airport, which is approximately 2 miles northeast of the Project Site, range from 7 to 12 miles per hour. The windier part of the year typically occurs from March to May.

3.1.2 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action will not impact the climate of the Project area of region. The buildings will be single-story and will not affect wind patterns of the surrounding area.

3.2 GEOLOGY, TOPOGRAPHY, AND SOILS

3.2.1 GEOLOGY

Hawai'i Island is made up of five volcanoes and is associated with egologic hazards like volcanic eruptions and earthquakes. The entire island of Hawai'i is located within the International Building Code (IBC) Seismic Zone 4 which are defined as areas with the highest potential for seismic induced ground movement. The Project Site is located on the lower windward flanks of Mauna Loa volcano. Mauna Loa is the largest active volcano on Earth and has erupted 34 times since 1843, most recently in 2022 (USGS, 2025). The landscape of the project area was formed by pāhoehoe lava flows that are between 500 to 2,000 years old.

The U.S. Geological Survey (USGS) has developed a Lava-Flow Hazard Zones map and divided the island into zones based on the probability of coverage from future lava flows, with Zone 1 having the greatest risk and Zone 9 the least. The Project Site is located within Zone 3. Zone 3 areas are less

hazardous than Zone 2 because of greater distance from recently active vents and topography. See Figure 3.1.

3.2.2 TOPOGRAPHY

The Project Site generally slopes downward in the northeasterly direction with elevations range from approximately 250 feet above mean sea level (amsl) in the upper portion closest to the cul-de-sac to 220 feet amsl at lower northeast corner. There are more significant grade changes along the south and northeast edges of the project area where it slopes steeply away from the project area. See Figure 3.2.

3.2.3 SOILS

Soils within the Project Site are identified in the U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey as Keaukaha highly decomposed plant material, 2 to 10 percent slopes. See Figure 3.3.

The Keaukaha series of soils consists of very shallow and shallow, well drained soils that form in a thin mantle of organic material and small amount of volcanic ash overlying pāhoehoe lava. The soil is typically moist throughout the profile with precipitation typically exceeding evapotranspiration in all months of normal years. Runoff of these soils is high, permeability of the soils is moderately high, but very slow in the underlying bedrock. Depth to bedrock is 5-50 centimeters (2-20 inches). As such, the soils on site are considered hydrologic soil group D, which are characterized by having very slow infiltration rates. This is due to the shallow soils and underlying pāhoehoe lava.

The National Earthquake Hazard Reduction Program (NEHRP) soil classification system categorizes soils based on their potential to amplify seismic waves during an earthquake. This system classifies soils into five categories: A, B, C, D, and E. Category A represents hard rock with the highest shear wave velocity, while Category E includes soft soils with the lowest shear wave velocity. The project site has Class "C" soils, which are as very dense soil and soft rock. Class C soils are relatively stable and less likely to amplify seismic waves compared to softer soils, making them more favorable for construction in earthquake-prone areas.

No Agricultural Lands of Importance to the State of Hawai'i (ALISH) or Important Agricultural Lands (IAL) occur within or adjacent to the Project Site.

3.2.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action would not change the Project Site's potential exposure to geological hazards or prevent the use of any significant geological resources in the area. The Proposed Action will require grading prior to construction and will be constructed in accordance with County requirements and building codes relating to the onsite seismic conditions as well as educational specifications for Pre-school facilities, and all other applicable codes and regulations. There are no ALISH or IAL lands present within or near the project site, so there are no anticipated impacts to agricultural lands.

The project would have minimal short- or long-term impacts on the existing soils associated with this site. Effects on soils from construction activities would be limited to temporary ground disturbance activities such as minor grading. Some material may need to be imported to the site to prepare foundations for the buildings subject to geotechnical design recommendations. However, this would have a minimal effect on existing soil conditions. The temporary land-disturbing activities could cause minor short-term effects and nuisances, such as soil erosion during periods of heavy rainfall or high winds.

No long-term adverse impacts to geography, topography, or soils are anticipated during construction or operation of the Proposed Action and no additional mitigation measures are required.

The exact amount of ground disturbance will be dependent on topography, ground conditions and space needs, which will be accounted for in the final design of the Proposed Action. Efforts will be made to limit cut, fill, and grading to produce the least amount of ground disturbance. The Proposed Action will be subject to County of Hawaiʻi grading and stockpiling regulations, Hawaiʻi County Code, Chapter 10—Erosion and Sediment Control.

All demolition, excavation and grading activities will be regulated by the applicable provisions of all state and federal laws. Excavation and grading activities will minimize soil loss and erosion to protect coastal water quality by incorporating best management practices (BMPs). BMPs would be installed before construction and maintained throughout the construction period. Some BMP measures may include, but not be limited to:

- Installation of a perimeter construction fence.
- Installation of silt fence or filter socks adjacent to and down slope from disturbed areas.
- Installation of dust screens around disturbed areas.
- Utilization of methods to ensure mud, dirt, or debris would be kept onsite and minimized on roadways.
- Use of temporary sprinklers in non-active construction areas and stationing water trucks nearby during construction to provide sprinkling in active areas.
- Installing stabilized construction entrances, tire wash areas, and concrete washout areas.
- Cleaning affected pavements and roads after construction activities.
- Cleaning construction-related equipment of pollutants before and after construction. Collecting and placing building debris, as it is created, into roll-off bins or trucks for hauling and removal from the site.

The Applicant would obtain all required permits and comply with permit conditions to minimize construction impacts on soils. Permits would include, but not be limited to, the following:

- *National Pollutant Discharge Elimination System (NPDES) General Permit* for construction stormwater discharge. An NPDES General Permit would be required as construction activities would disturb at least one-acre of land.
- *Grading Permit* would be obtained from the County of Hawaiʻi Department of Public Works for the excavation or fill of soil, gravel, or rock and grubbing of vegetation.

Figure 3.1: Lava-Flow Hazard Zones

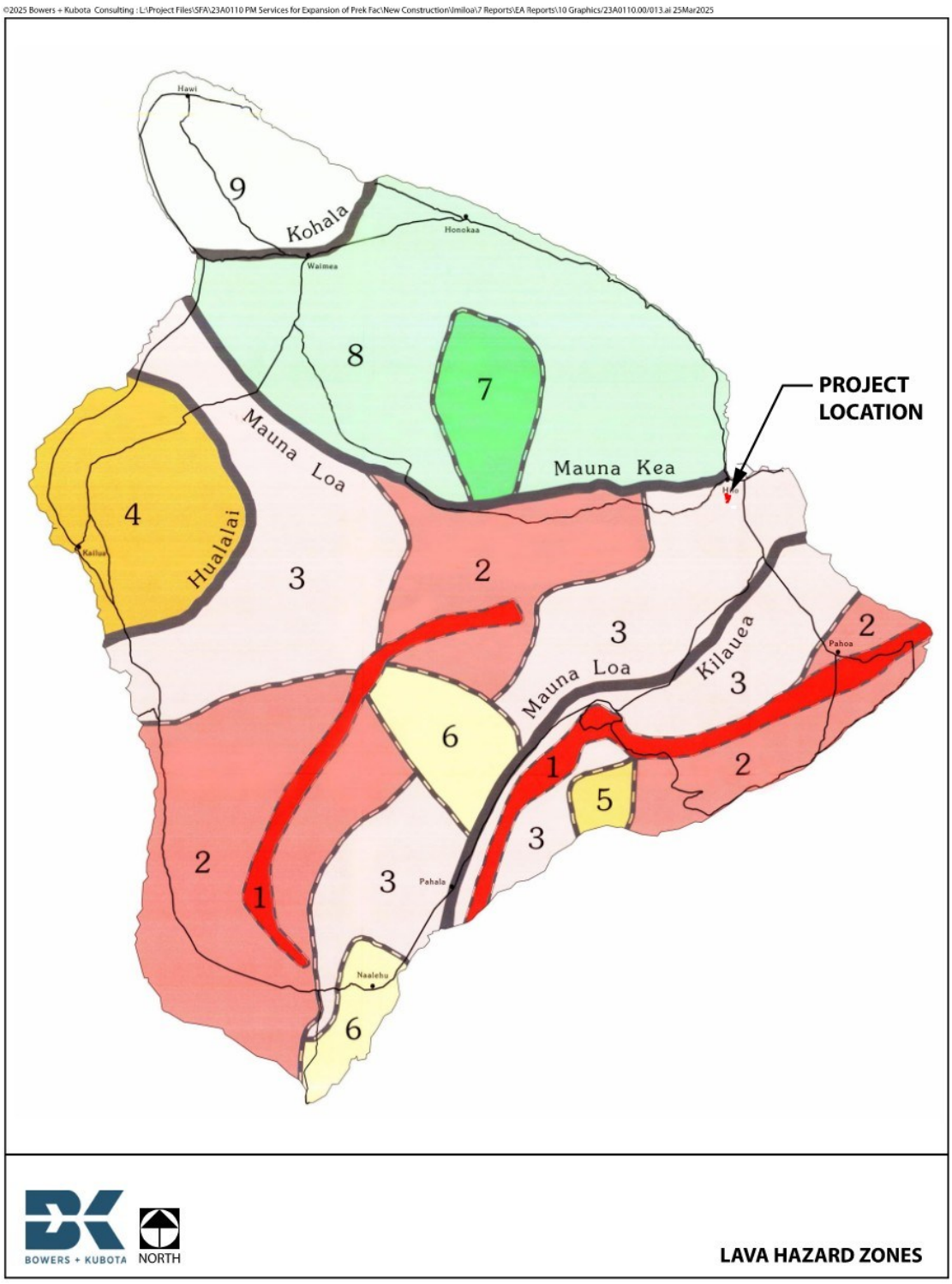
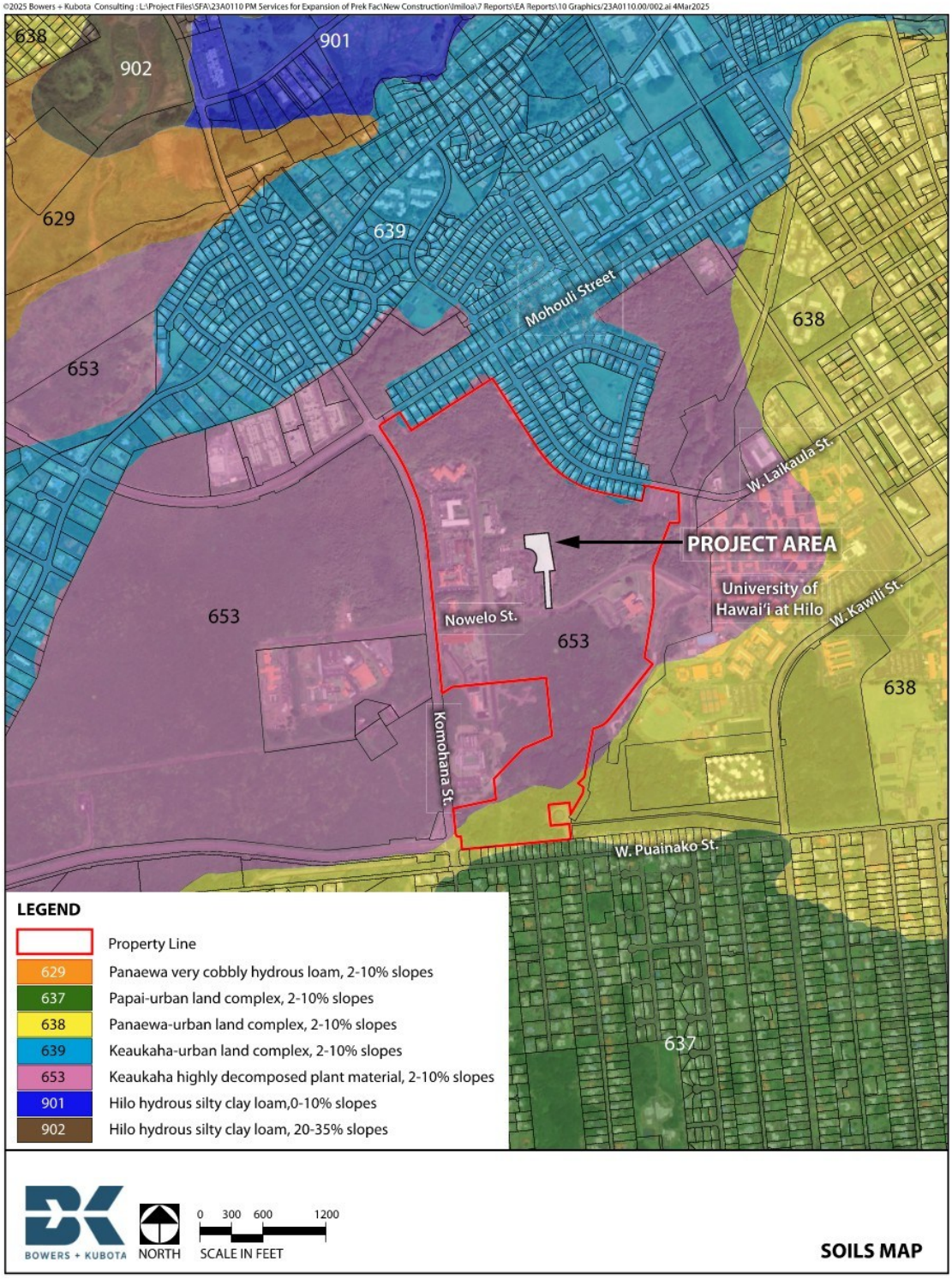


Figure 3.2: Site Topography

Figure 3.3: Soils



3.3 HYDROLOGY

3.3.1 RAINFALL, WATERSHED, AND SURFACE WATERS

The climate in Project Area is mild and moist, with high humidity and frequent rainfall. According to the University of Hawaiʻi Rainfall Atlas, Hilo receives an annual average of approximately 142 inches of rain.

The project site is located within the Wailoa watershed. The watershed encompasses an area of 98.6 square miles which stretches from the upper reaches of Mauna Loa to Hilo Bay. The watershed includes Wailoa, Kaʻahakini, and Waiākea streams. Waiākea stream is an ephemeral stream that only flows during heavy rainfall. It is located approximately 0.2 miles from the Project Site, bisecting the UH-Hilo campus. The lower reaches of the stream and watershed were previously altered to reduce flood risk through the Wailoa Stream Flood Control Project in 1965. The project includes channel improvements downstream of the University campus. The project includes channels and levees to divert the Kawili Stream flows into the Waiakea Stream, plus additional channels and levees to divert the combined flows of the Waiakea and Kawila Streams into Waiakea Pond in the Waiola River State Recreation Area about 1.2 miles north of the Project Site.

3.3.2 COASTAL WATERS

The Project Site is located approximately 1.6 miles from the nearest shoreline and outside of the Special Management area (SMA).

3.3.3 GROUNDWATER

The Project Site is located within the Northeast Mauna Loa Aquifer Sector – Hilo Aquifer System Area. According to the Hawaiʻi County Water Use and Development Plan Update (2017), the sector area covers a rectangular area from a western limit along the summit of Mauna Loa to the base of Mauna Kea to the coastline stretching from Hilo Bay south to Keaʻau.

Within the Aquifer Sector, coastal areas average less than 150 inches a year in rainfall increasing to over 250 inches per year in the higher elevations of Kaumana. Near the summit of Mauna Loa, rainfall averages less than 15 inches per year. The sustainable yield (SY) of the Hilo ASYA is 347 mgd, and the SY of the Keaʻau ASYA is 393 mgd, combining for a total SY of 740 mgd for the entire sector area, the highest of all aquifer sector areas on the island. See Figure 3.4.

3.3.4 WETLANDS

According to the U.S. Fish and Wildlife Service, National Wetlands Inventory Online Wetlands Mapper, no wetland features occur within the Project Site. There are two wetland features within the larger TMK parcel: A riverine feature (localized drainage ditch) that runs along the north edge of the parcel between the campus and the University Heights subdivision, and a freshwater emergent wetland feature (Wailoa Stream Flood Control Project) that runs along the southeast edge of the parcel. See Figure 3.5.

Figure 3.4: Aquifers

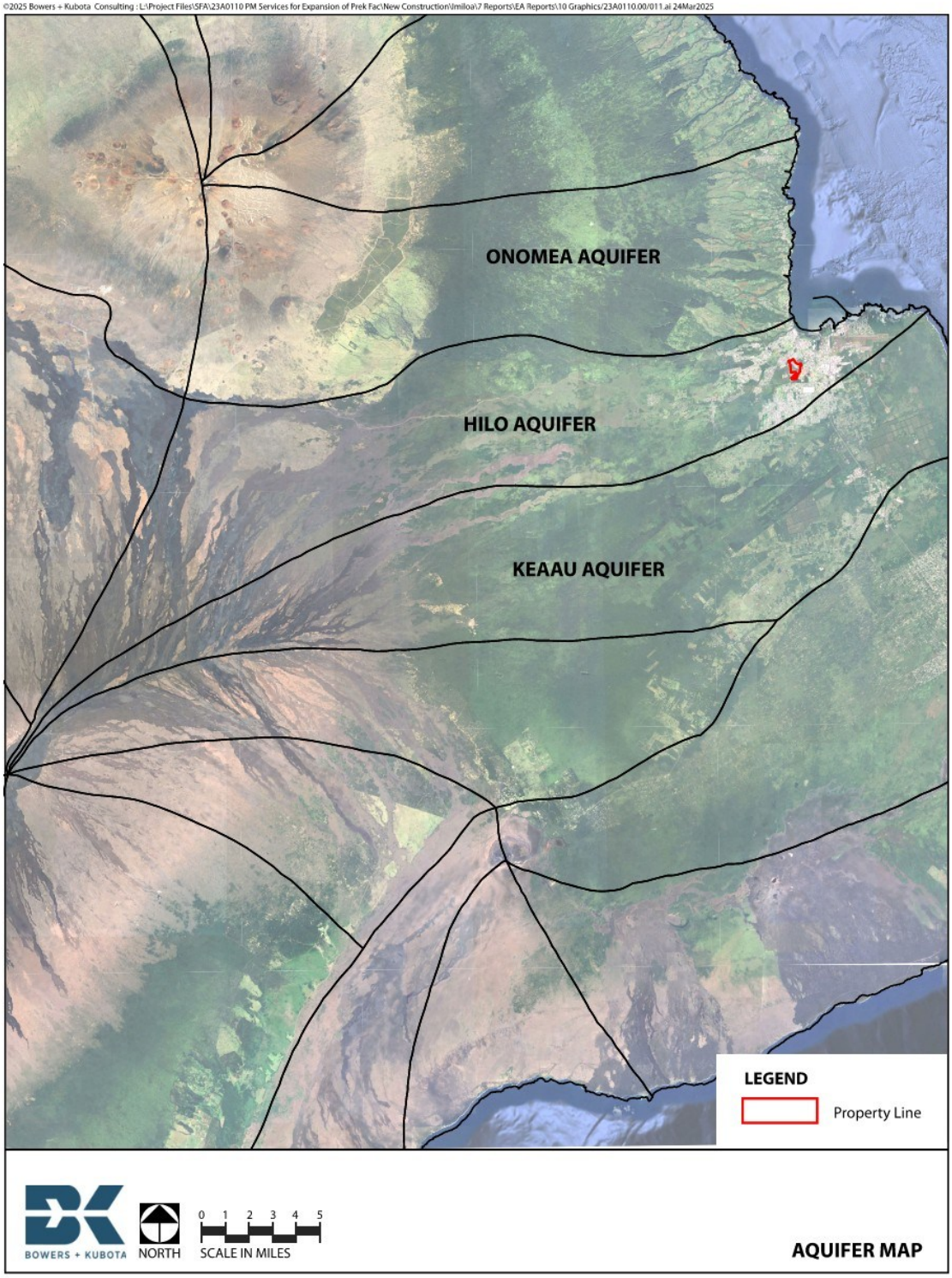
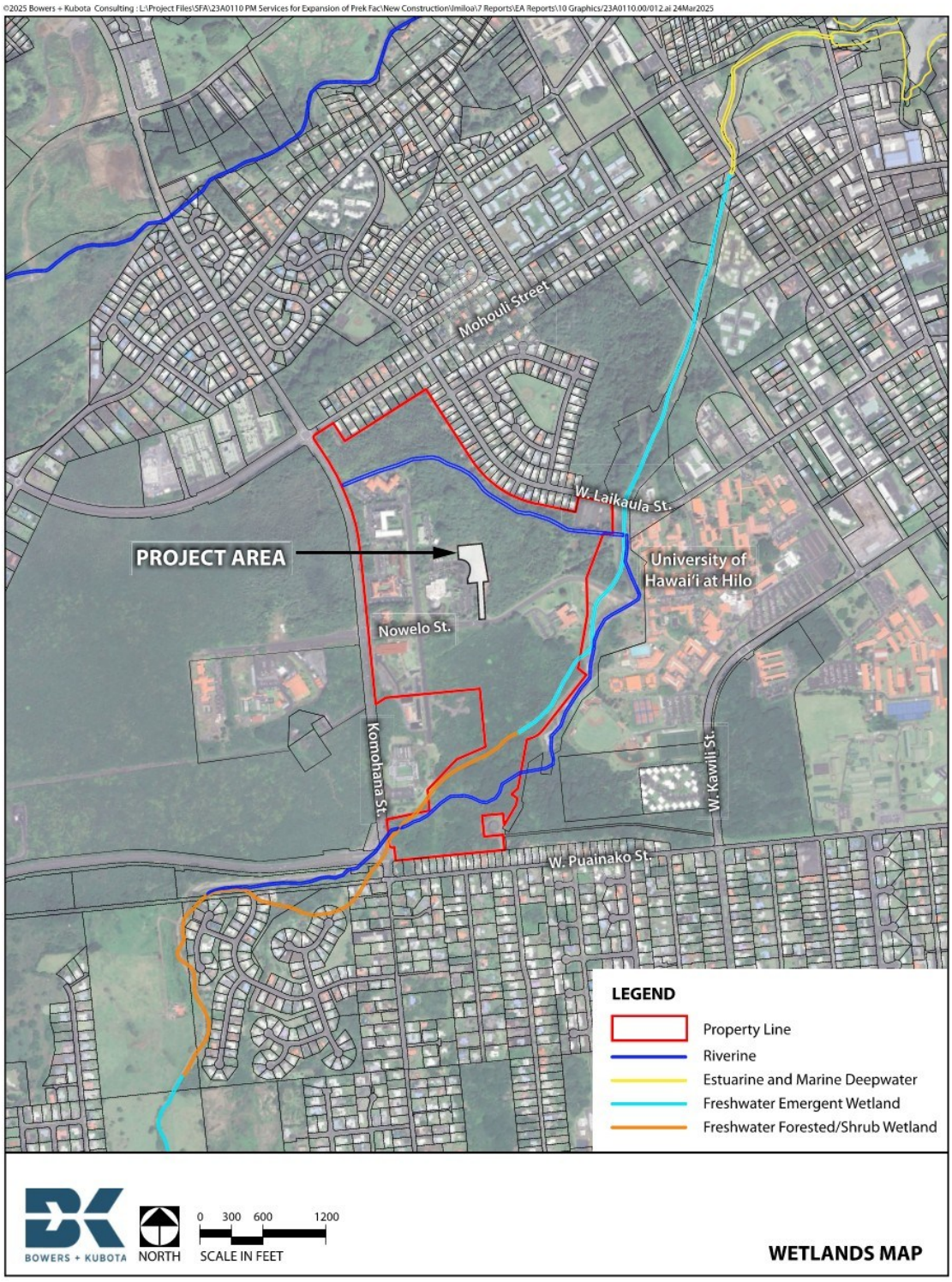


Figure 3.5: Wetlands



3.3.5 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action does not involve any work within or across streams or wetland features and is located outside of the SMA. Improvements to the Project Site would include grading and leveling as well as trenching for the installation of new utility connections along ʻImiloa Place. The Proposed Action does include construction of impermeable surfaces and thus it would be required to contain any increase in runoff onsite in accordance with Chapter 27 of the Hawaiʻi County Code. Because the Proposed Action would disturb more than 1 acre of soil, an NPDES permit is required. During construction, all earthwork and grading would be done in conformance with Chapter 10 of the Hawaiʻi County Code, and drainage and runoff would be managed through BMPs.

After construction is complete, no long-term adverse impacts to hydrologic resources are anticipated. Furthermore, the new pre-kindergarten facility is not anticipated to negatively affect groundwater resources in the area.

3.4 AIR QUALITY

3.4.1 EXISTING CONDITIONS

The Environmental Protection Agency (EPA) and Hawaiʻi State Department of Health (DOH), Clean Air Branch monitor ambient air quality for various gaseous and particulate air pollutants that cause human health effects based on short- and/or long-term exposure. The nearest air quality monitoring station to the Project Site is the Hilo station, which is approximately 1.8 miles away and located near the Hilo Medical Center on Waiānuenue Avenue. This station was established to monitor vog on the east side of Hawaiʻi Island and collects data on sulfur dioxide (SO_2) and fine particulate matter (PM2.5).

Air quality in the Hilo area is generally good, however air pollution derived from volcanic eruptions may result in periods when air quality exceeds the state and federal 3-hour SO_2 standard is 0.5 parts per million (ppm). During volcanic eruptions, volcanic fog or "vog" may appear. Vog is a type of air pollution that is formed when volcanic gases, such as sulfur dioxide, react with oxygen, moisture, and other chemicals in the atmosphere. It is similar to smog in that it can cause hazy conditions and reduced visibility, but vog is specifically associated with volcanic activity.

Vog can have harmful effects on human health, particularly for individuals with pre-existing respiratory or cardiovascular conditions. It can cause irritation of the eyes, nose, and throat, as well as coughing, wheezing, and difficulty breathing. In addition to its effects on human health, vog can also have negative impacts on agriculture, infrastructure, and the environment.

Kīlauea, the most active volcano in Hawaiʻi, has been erupting intermittently since December 23, 2024. During times of eruption, vog can be present at the Project Site when southerly or Kona wind conditions carry plumes from the volcanic vents toward Hilo, which is intermittent and not continuous.

Air quality may also be affected by motor vehicle traffic near the Project Site. Air pollutants associated with ground transportation from automobiles and cargo trucks are predominantly carbon monoxide

and dioxide. Komohana Street, which is approximately 0.2 miles to the west of the Project Site, is the nearest thoroughfare by which most vehicles will access the Project Site.

The Hilo International Airport is approximately 1.34 miles from the property boundary, as such there is a potential for fumes, smoke, vibrations, odors and other impacts resulting from occasional aircraft flight operations over or near the project site.

3.4.2 POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed action would have short-term impacts on air quality during construction. There are two potential types of air pollution emissions that could result in direct short-term air quality impacts during the project's construction period:

(1) Fugitive dust from earth-moving activities, crushing and screening activities, unregulated stockpiling of soil material, and construction vehicle movements.

(2) Diesel and/or gasoline-powered emissions from construction vehicles and equipment.

To minimize any potential impacts, construction activities will implement BMPs to contain fugitive dust to the Project Site per HAR §11-60.1 Air Pollution Control. BMPs would be described in construction plans as well as specifications to minimize the discharge of air pollutants before and after construction. BMPs for fugitive dust and engine emissions would be installed before construction and maintained throughout the construction period. Some BMPs which are consistent with measures recommended by DOH in the Fugitive Dust Fact Sheet (DOH, 2024), may include, but not be limited to:

- Designing, developing, and implementing a dust control plan.
- Applying water, dust suppressants, or suitable compounds on roads, material stockpiles, and on construction areas.
- Establish and monitor speed limits for onsite vehicles.
- Cover all moving, open-bodied trucks transporting soil or dusty material.
- Install dust screens or wind barriers around the construction site.
- Stabilize and cover stockpile materials.
- Limiting areas to be disturbed at any given time.
- Clean nearby pavements and paved roads affected by construction.
- Providing a buffer zone between the construction site and residential areas.
- Moving heavy construction equipment during periods of lower traffic volume.
- Adjusting schedules of commuting construction workers to avoid peak hours in the project vicinity.
- Implementing emission control methods on construction equipment.

As discussed in Section 3.13, the Proposed Action is not anticipated to significantly impact traffic during peak hours of traffic, once operational. Indirectly, there may be short-term air quality impacts from slow-moving construction equipment traveling to and from the Project Site, and from a temporary increase in local traffic caused by commuting construction workers.

3.5 NOISE

3.5.1 EXISTING CONDITIONS

The Noise Control Act of 1972 is the U.S. federal noise law intended to protect residents from noise that would jeopardize public health and welfare. Under the Noise Control Act, the EPA in coordination with state and local governments, required noise control standards which is now law under the Hawai'i Environmental Quality Act and is codified under HRS Chapter 342F (DOH, 2017). Administered by the State Department of Health Indoor and Radiological Health Branch, HRS Chapter 342F regulated noise pollution and developed community noise controls.

Noise is affected by several factors including the frequency of the sound, period of noise exposure, and changes or fluctuations in the noise levels during exposure. The DOH regulates noise exposure in the following rules:

- HRS, Section 342F – Noise Pollution
- HAR, Section 11-46 – Community Noise Control
- HAR, Section 12-200.1 – Occupational Noise Exposure

The DOH requires contractors engaged in construction activities to comply with HAR §11-46 Community Noise Control, which defines the maximum permissible sound levels that can be produced during construction depending on the surrounding land use as shown in Table 3.1 below. The land use designation for the Project Site is University and thus would be regulated under the Class A Zoning District.

Table 3.1 MAXIMUM PERMISSIBLE SOUND LEVELS IN DBA[1]

ZONING DISTRICTS	DAYTIME (7 A.M. TO 10 P.M.)	NIGHTTIME (10 P.M. TO 7A.M.)
CLASS A (LANDS ZONED RESIDENTIAL, CONSERVATION, PRESERVATION, PUBLIC SPACE, OPEN SPACE, OR SIMILAR TYPE)	55 dBA	45 dBA
CLASS B (LANDS ZONED FOR MULTI-FAMILY DWELLINGS, APARTMENT, BUSINESS, COMMERCIAL, HOTEL, RESORT, OR SIMILAR TYPE)	60 dBA	50 dBA
CLASS C (LANDS ZONED AGRICULTURE, COUNTRY, INDUSTRIAL, OR SIMILAR TYPE)	70 dBA	70 dBA

[1] Hawaii Administrative Rules, Section 11-46, Community Noise Control. 2015.

The Proposed Action would be within the University Park of Science and Technology and directly adjacent to the 'Imiloa Astronomy Center. Other nearby University uses include: the Hawaiian Language College (Ka Haka 'Ula Ke'elikōlani), the Gemini Observatory, the East Asian Observatory, the Smithsonian Astrophysical Observatory and the Institute for Astronomy. The University of Hawai'i at Hilo dormitories are approximately 0.25 miles away. The nearest residential area is the University Heights subdivision, which is approximately 500 feet northeast of the Project Site. Due to the project's proximity to the Hilo International Airport, there is potential for single event noise from aircraft operations flying over the project site. Generally, ambient noise is low and mainly derived from motor vehicle traffic and occasional maintenance activities for the surrounding campus facilities.

3.5.2 POTENTIAL IMPACTS AND MITIGATION MEASURES

Noise generated from the Proposed Action would primarily be associated with short-term construction activities within the Project Site. Noise generated off-site would include construction vehicles traveling to or from the construction site typically when starting or ending activities for the day. Construction activities on-site would be generated from construction equipment that would likely include, but not be limited to excavators, bulldozers, water trucks, chain saws, and trucks. Table 3-2 shows typical noise levels from commonly used heavy equipment 50 feet away from the source.

Table 3.2 Typical Noise Levels

Equipment	*Typical Noise Level 50 Feet from Source*
Backhoe	80 dBA
Dozer	85 dBA
Generator	81 dBA
Grader	85 dBA
Loader	85 dBA
Paver	89 dBA
Scraper	89 dBA
Truck	88 dBA

If noise is expected to exceed the State's "maximum permissible" property line noise levels, a Community Noise Permit will be obtained. Prior to issuing the noise permit, DOH may require the contractor to incorporate noise mitigation into the construction plan or require the contractor to conduct noise monitoring or community meetings to discuss construction noise.

No significant increase in noise levels over existing levels is anticipated from the operation of the Proposed Action. Typical sound levels associated with pre-school land uses including indoor learning environments and outdoor play, generally fall within the maximum permissible sound levels for Class A. In addition, according to HAR Section 11-46-5, any school activity which is approved by school authorities is exempt from State noise controls if activities are from the hours of 7:00 a.m. to 10 p.m. (HAR, 2015).

3.6 FLORA AND FAUNA

AECOS conducted a flora and fauna survey and prepared a report for the Proposed Action, which is attached as Appendix B. The following is a summary of the findings.

3.6.1 FLORA

AECOS surveyed the Project site two times: first on December 3, 2024, and second time on January 3, 2025. The AECOS botanists used wandering transects and identified plant species as they were encountered. Any plant not immediately recognized during the survey was photographed and/or a representative feature (fruit, flower, branch) collected for later identification at the laboratory.

In all, 109 species of vascular plants, 11 ferns, and 98 angiosperms (flowering plants) were recorded. Native taxa comprise ten indigenous species (native and distributed elsewhere in the Pacific) representing 9% of the total species observed, and 4 (4%) endemic species (native to Hawaiʻi and found naturally nowhere else). Seven species (6%) are early Polynesian introductions (so-called "canoe plants"). The remaining 87 species (79%) are plants introduced to the Hawaiian Islands after 1778.

The native species recorded are four ferns—palapalai (*Microlepia strigosa*), uluhe (*Dicranopteris linearis*), kupukupu lau lii (*Nephrolepis cordifolia*), and pākahakaha *(Lepisorus thunbergianus*)—hala, naupaka kahakai (*Scaevola sericea*), milo (*Thespesia populnea*), ʻilieʻe (*Plumbago zeylanica*), pōpolo (*Solanum americanum*), and pōhinahina (*Vitex rotundifolia*). Six of these ten species grow naturally in the Project area. Of the endemic species recorded, only ʻōhiʻa lehua (*Metrosideros polymorpha*) grows naturally in the Project area; the other three, loulu (*Pritchardia sp.*), kokiʻo keʻokeʻo (*Hibiscus arnottianus*), and ʻākia (*Wikstroemia uva-ursi*) are planted as landscape specimens.

3.6.2 FAUNA

AECOS conducted an Avian Survey and Mammalian survey of the Project area. Birds were identified to species by visual observation, aided by Leica 8 X 42 binoculars, and by listening for vocalizations. Three avian point-count stations were distributed across the survey area and a single eight-minute avian point-count conducted at each station. Additional species observed in the Project area outside of the station counts were recorded as incidental observations. A list was made of mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other animal signs were noted.

A total of 12 bird species, representing nine separate families, were recorded during the survey. One recorded species, Pacific Golden-Plover (*Pluvialis fulva*), is an indigenous migratory shorebird species. The remaining 11 species are non-native introductions that have become naturalized in Hawaiʻi. The only mammalian resources recorded were A total of 12 bird species, representing nine separate families, were one cat (*Felis catus*) and sign of dog (*Canis lupus damiliaris*).

Image 2: Disturbed vegetation observed at the transition (AECOS, 2024)

3.6.3 Potential Impacts and Mitigation Measures

No impacts to plants, avian, or mammalian species listed as endangered or threatened species are anticipated.

No plants proposed or listed as threatened or endangered species as set forth in the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543; USFWS, nd-a; HDLNR, 1998) were seen in the Project area. Although native flora is present within the Project area, these plants are either common species, cultivated for food, or cultivated here as part of the landscaping.

No avian species that is currently listed under federal or State of Hawaii endangered species statutes was observed (HDLNR, 1998, 2015; USFWS, nd-a). Pacific Golden-Plover is a native, indigenous migratory shorebird species which nests in the high Arctic during the late spring and summer months, returning to Hawaiʻi and the Tropical Pacific to spend the fall and winter months each year. The birds usually leave Hawaiʻi for their migration back to the Arctic in late April or the very early part of May. This plover is widely distributed across the Hawaiian Islands during the cooler months.

All mammalian species observed during this survey are alien to the Hawaiian Islands. All introduced mammalian species are considered harmful to natural biota. No rodents were recorded but one or more of the four alien Muridae found on Hawai'i Island – European house mouse (*Mus muscucus*), roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), and black rat (*Rattus exulans hawaiiensis)* – likely utilize various resources within the general Project area.

The Flora and Fauna Survey report provides recommendations, which are partly based on the U.S. Fish and Wildlife Service, Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2023). Implementation of the recommendations provided below would minimize impacts to listed species to the maximum extent practicable.

Seabirds

It is possible that Hawaiian Petrel (*Puffinus sandwichesis*), Band-rumped Storm-Petrel (*Hydrobates castro*), and Newell's Shearwater (*Puffinus newelli*) over-fly the Project area between April and the middle of December each year in small numbers. No suitable nesting habitat exists within or close to the Project area for any of these three seabird species. The principal potential impact that the Project poses to protected seabirds is an increased threat that birds will be downed after becoming disoriented by lights associated with construction activities if undertaken during the nesting season. As well, following build-out of the Proposed Action, security lighting operated during the seabird nesting season can pose a hazard. As such, the following is recommended:

- Lighting deployed during construction or planned for the Preschool must be shielded and pointed directly downward (Reed et al., 1985; Telfer et al., 1987)]. All associated outdoor lighting must be fully "dark sky compliant" (HDLNR-DOFAW, 2016).

Hawaiian Hoary Bat

It is probably that the Hawaiian hoary bat overflies the Project area on a seasonal basis. The removal of trees within the Project area could temporarily displace individual bats using the trees for roosting. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. However, during the pupping season, females carrying their pups may be less able to vacate a roost site if the tree is felled. Further, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled. As such, the following is recommended:

- Potential adverse impacts from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) between June 1 and September 15, the period in which bats may have pups.

3.7 NATURAL HAZARDS

Due to Hawaiʻi's location in the Pacific Ocean, the island's topographic landscape, geologic makeup, and climate, Hawaiʻi is vulnerable to several natural hazards that can threaten both communities and physical infrastructure. These hazards include flooding, sea level rise, hurricanes, tsunamis, earthquakes, volcanic eruptions, and wildfires. Some of these hazards have the potential for greater impacts in the future due to climate change. The vulnerability of the project to these hazards are described below:

3.7.1 CLIMATE CHANGE

According to the Intergovernmental Panel on Climate Change (IPCC), climate change impacts are affecting every region on earth in a variety of ways. This includes rising temperatures, intensification of the water cycle and changing rainfall patterns (IPCC, 2021). These changes are already being seen in Hawaiʻi. Statewide temperatures have been rising and 2019 was the hottest summer in recorded history. Additionally, rainfall has decreased over the past 35 years and may decrease an additional 10 percent by the end of the century (Frazier, A.G., et al., 2016). The IPCC have confirmed that climate change impacts are the result of human produced greenhouse gas (GHG) emissions, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and sulfur oxides (Frazier, A.G., et al., 2016).

3.7.2 SEA LEVEL RISE

Current best available science has pointed to 3 to 4 feet of sea level rise by 2100 as a mid-range scenario for Hawaiʻi (HSCC, 2022). The Sea Level Rise Exposure Area (SLR-XA) is a tool used extensively by state and county agencies for adaptation planning purposes. SLR-XA combines projected footprint that maps three chronic flooding hazards with a 3.2-feet sea level rise scenario: passive flooding, annual high-wave flooding, and coastal erosion, (HSCC, 2022). The Project Site is approximately 1.6 miles from the nearest shoreline and is outside of the SLR-XA.

3.7.3 FLOODING

The Federal Emergency Management Agency (FEMA) has identified Special Flood Hazard Areas or high-risk areas that are vulnerable to flooding. These Flood Hazard Areas are delineated on FEMA's Digital Flood Insurance Rate Maps (DFIRM). The Project Site falls within areas designated flood zone X. Zone X is not considered a special flood hazard zone and is described to be the area determined to be outside the 500-year flood occurrence or 0.2-percent-annual-chance of flood. See Figure 3.6.

3.7.4 TROPICAL STORMS AND HURRICANES

Tropical storms (winds between 39 to 73 mph) and hurricanes (winds greater than 74 mph) are tropical cyclones that occur over tropical or subtropical oceans and gain their energy from warm ocean waters (NOAA, 2020). Characterized by high winds, heavy rainfall, and large storm surges,

these tropical cyclones can have devastating impacts to coastal areas. The Hawaiian Islands are seasonally affected by tropical storms and hurricanes in the Pacific Ocean from June to November.

Since the 1950s, only one hurricane has affected Hawaiʻi County, however, one should reasonably anticipate the prospect of another hurricane impacting the County in the future. In the near future, it is expected that warmer oceans due to climate change would create better conditions for more frequent, irregular, and intense tropical cyclones to form in the Pacific Ocean and approach the Hawaiian Islands.

The three major elements making a hurricane hazardous are: 1) strong winds and gusts; 2) large waves and storm surge; and 3) heavy rainfall (FEMA, 1993). Impacts from hurricanes can thus be severe and lead to beach erosion, large waves, high winds, and marine over-wash despite the fact that the hurricane may have missed a particular island (USGS, 2002). Study of the aftermath of Hurricane Iniki found that a significant threat related to hurricane overwash along the coastline in the Hawaiian Islands is due to water-level rise from wave forces rather than wind forces.

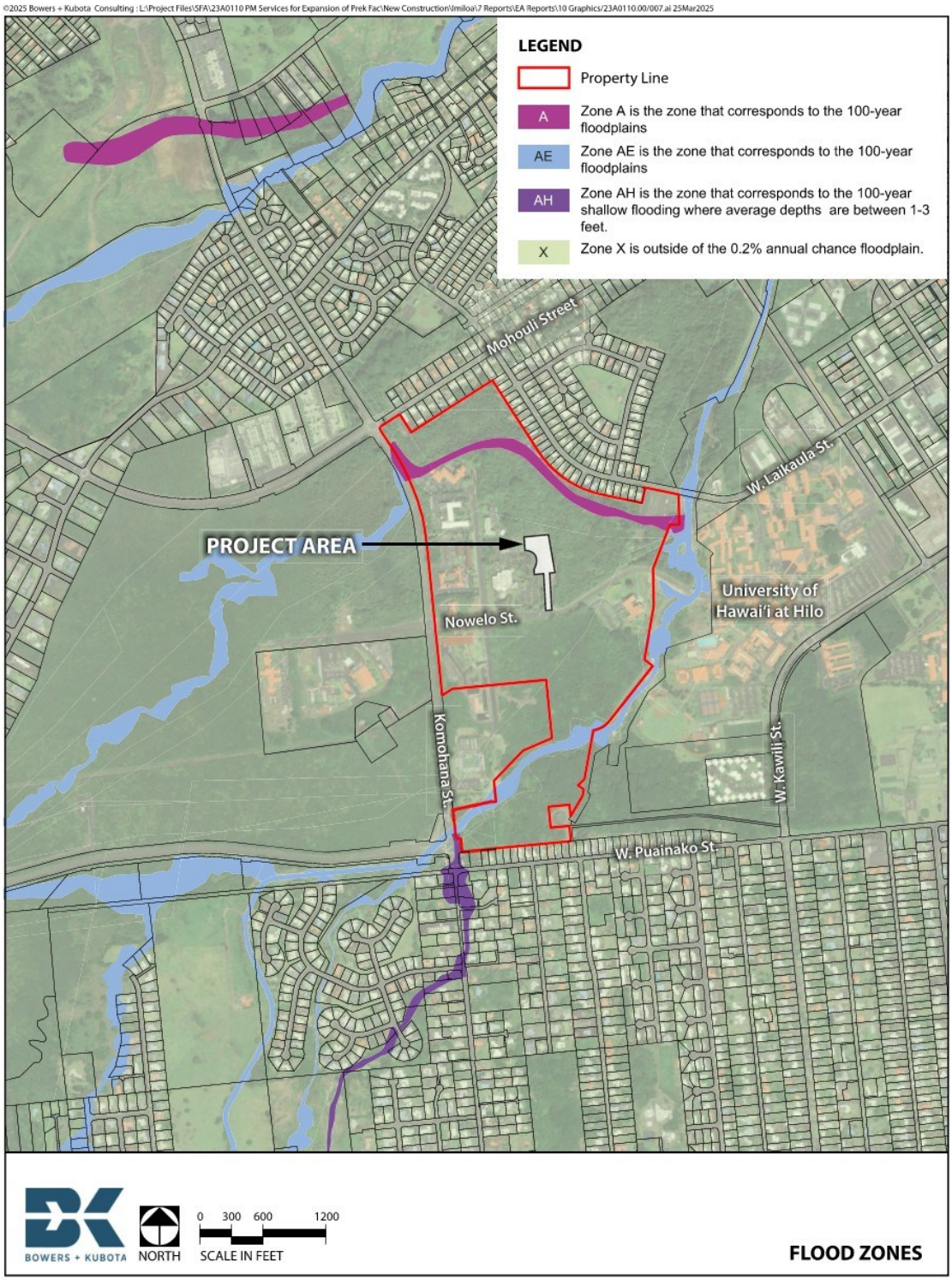
3.7.5 TSUNAMI

The Project Site is located approximately 1.6 miles from the nearest shoreline and is outside the tsunami evacuation zone.

3.7.6 EARTHQUAKES

The Island of Hawaiʻi experiences thousands of earthquakes every year because of the presence of active volcanoes and the weight of the islands on Earth's underlying crust (USGS, 2025). Most earthquakes are so small that they can only be detected by highly sensitive instruments, however, potentially destructive earthquakes do occur. Although much more rare, larger damaging earthquakes of 5.0 magnitude or greater do occur on Hawaiʻi island. Seismic activity generally occurs closest to the Kilauea and Mauna Loa Volcanoes, along the southern coastline of the island. According to the U.S. Geological Survey (USGS), each year the Island of Hawaiʻi experiences an average of about 100 magnitude 3 or greater earthquakes, ten magnitude 4 or greater earthquakes, and one magnitude 5 or great earthquake. Additionally, the State experiences, on average, one M6 or greater earthquake every 10 years, and two M7 or greater earthquakes every 100 years (USGS, 2023). Most recently, a magnitude 5.9 earthquake occurred on February 9, 2024, with the epicenter about 46 miles southwest of Hilo.

Figure 3.6: Flood Zones



3.7.7 LAVA FLOW

According to the USGS, Lava Flow Hazard Zones are divided into 9 zones, each with its own level of hazard. The zones range from high hazard (Zone 1) to low hazard (Zone 9) based on factors such as proximity to recently active vents, topography, and past volcanic activity. Zones 1 and 2 (High and Moderate Hazard Zones) are near the summits and rift zones of Kilauea and Mauna Loa and have a high likelihood of being affected by lava flows in the future. Zones 3 to 4 (Moderate to Low Hazard Zones) are less hazardous but still have some risk of being affected by lava flows. Zones 5 and 6 (Low Hazard Zones) are protected by topography and have a low likelihood of being affected by lava flows. Zones 7 and 8 (Low Hazard Zones) are located on Mauna Kea and have only seen a small amount of lava coverage in the past. Zone 9 (Low Hazard Zone) is the Kohala Volcano, which last erupted over 60,000 years ago and is considered to have a minimal risk of future eruptions.

As shown previously in Figure 3.1, the Project Site is located within Zone 3, which is considered moderate to low risk. In 1881, a historic lava flow from Mauna Loa flowed into Hilo within one mile of Hilo Bay.

3.7.8 WILDFIRES

Wildfires are uncontrolled fires that burn wildland vegetation, often occurring in undeveloped or rural areas. Increased wildfires in the State have been occurring from declining managed agricultural land leaving more fire-prone dry invasive grasses and shrubs, and the changing native Hawaiian wilderness to one comprised of drying grasslands. Prolonged periods of drought exacerbated from climate change also contribute to these conditions. Human caused ignitions are the main cause (95%) of starting wildfire incidents. Statewide, data from 2002 to 2012, indicated that about 76 percent were accidentally caused, 19 percent were intentional, and 5 percent from lava and lightning. Accidental ignitions include campfires, fireworks, equipment, and vehicles (HWMO, 2013).

Guided by the National Fire Plan and the Healthy Forests Restoration Act (HFRA), State wildland fire-fighting agencies and their federal and local partners are responsible for identifying communities at risk from wildland fires. The Division of Land and Natural Resources (DLNR), Division of Forestry and Wildlife identified at-risk wildland-urban interface communities in the major Hawaiian Islands and rated each community's risk from wild-land fires, rating Hilo "low" risk.

3.7.9 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action is not anticipated to cause any adverse effects contributing to climate change impacts or impacts from other natural hazards and no additional mitigation measures are required.

3.8 HAZARDOUS MATERIALS

3.8.1 EXISTING CONDITIONS

There are no known facilities on or near the Project Site that would release contamination into the soil. The land adjacent to the Project Site is developed as the ʻImiloa Astronomy Center and other areas of the parcel are also developed for research and educational facilities. The State DOH Environmental Health Portal, administered by the Hazard Evaluation and Emergency Response (HEER) Office shows no sites or incidents in the vicinity of the Project Site.

A Phase 1 Environmental Site Assessment (ESA) was completed for the University of Hawaiʻi at Hilo College of Hawaiian Language Facilities in 2006, which aimed to identify recognized environmental conditions (RECs) that exist on the project site, and existing RECs in the project area that have the potential to impact the subject property. The term recognized environmental conditions means the presence or likely presence of any hazardous substances or petroleum products on the property under conditions that indicate an existing release, a past release, or a material threat of a future release into structures on the property or into the ground, groundwater, or surface water of the property (ASTM, 2021). The ESA research covered a 1-mile radius surrounding the UH-Hilo Hawaiian Language Facilities, which encompasses the Project Area, and found that no RECs were present.

3.8.2 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Project Site is not impacted by existing RECs nor is it anticipated to be impacted by future presence of RECs. Furthermore, the Proposed Action is not anticipated to have an impact on the potential for hazardous materials at the Project Site. There is not evidence that there were any structure or uses on the Project Site that would result in residual asbestos, lead, or polychloride biphenyls (PCBs). The Project parcel was undeveloped prior to the establishment of the University of Hawaiʻi at Hilo University Park of Science and Technology and there has not been any intensive agricultural uses of the area within the past 50 years.

3.9 HISTORIC, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

As required by HRS §343, HRS §6E-8, HAR §13-275 and HAR §13-276, an investigation was conducted to determine if any historic, cultural, or archaeological resources are present within the Project Site. An archaeological literature review and field inspection (LRFI) was conducted by ASM Affiliates (ASM) to identify and evaluate the potential of any historic, cultural, or archaeological resources being found on the Project Site. The LRFI is included in Appendix C. A cultural impact assessment (CIA) was not completed specifically for this project, however, cultural impacts were previously assessed for two projects located on the same parcel as the Proposed Action: the ʻImiloa Astronomy Center (Mauna Kea Astronomy Education Center FEA-FONSI, 2002) and the University of Hawaiʻi at Hilo College of Hawaiian Language Facilities (University of Hawaiʻi at Hilo College of Hawaiian Language Facilities FEA-FONSI, 2008). The following is a summary of the findings from these investigations.

3.9.1 HISTORIC AND CULTURAL BACKGROUND

The Project Site is located in Waiākea Ahupuaʻa, whose name translates as "broad waters" (Pukui et al. 1974:220) and is home to the Wailoa River and portions of Hilo, Reed's, Kuhio, and Puhi Bays. In the upland areas of Waiākea, which included the proposed project area, relatively shallow soils and lava flows shaped the potential for agricultural development prior to the nineteenth century, as described by (Handy et al. 1991:539):

On the lava strewn plain of Waiakea and on the slopes between Waiakea and Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantations in Panaʻewa and in all the lower fern-forest zone above Hilo town.

Significant demographic changes occurred in Waiākea during the 19th century due to interactions with foreigners, the arrival of missionaries, a tsunami that struck Hilo in 1837, and epidemics in 1848 and 1853. These events led to a decreased and relocated population and a shift from traditional land tenure to private land ownership. Historically, the entire ahupuaʻa of Waiākea was treated as personal land by Kamehameha I and later passed on to his son, Liholiho. During the Māhele ʻĀina (land division) of 1848, Waiākea was set aside as Crown Lands for Kamehameha III, and twenty-six kuleana claims for Land Commission Awards (LCAws) were registered within Waiākea for houselots and cultivated fields.

Following the Māhele, large portions of Waiākea were leased for pasture and sugarcane cultivation. The Waiākea Mill Company, established in 1879, played a significant role in the area's industrial and economic growth. The company cleared lands, planted sugarcane, and established a railroad system to transport the cane. When the company's lease expired in 1918, the land was divided into house lots, homesteads, and cane lots for lease and purchase under new homesteading laws.

The project area, located on the makai end of a parcel less suitable for sugarcane cultivation, was set aside as pastureland in 1919. During World War II, the lands west of the Project Site were used by the United States Army for training.

The University of Hawaiʻi at Hilo opened in 1947, and by 1990, the area around the Project Site began to be developed with the construction of the University Park of Science and Technology. The ʻImiloa Astronomy Center, adjacent to the project area, opened in 2006, involving significant clearing, grading and landscaping.

There is no indication that caves, springs, puʻu, native forest groves, gathering resources, or other natural features are present in the Project Site or vicinity. As noted, the immediate Project Area is heavily disturbed and does not possess the quality or quantity of resources necessary for native gathering.

3.9.2 ARCHEOLOGICAL LITERATURE REVIEW AND FIELD INSPECTION (LRFI)

The LRFI consisted of detailed historic, cultural, and archaeological background research and a pedestrian field inspection of the Project Site by ASM on October 25, 2024. The studies provided background on the area's early historical period, and changes to landownership and land use to the

present day. More information on the ethnohistorical background of the area is available in the LRFI in Appendix C.

Seventeen prior archaeological and cultural studies have been conducted in the vicinity of the project area (see Table 3.3 and Figure 3.7). Among the most significant are the Archaeological Inventory Survey (AIS) and a supplemental follow-up survey by Cultural Surveys Hawaii in 1993. These surveys covered approximately 174 acres, including the entirety of the Project Site. The surveys recorded four Historic Period sites attributed to the Waiākea Sugar Plantation's use of the area. The sites included an agricultural field complex (Site 50-10-35-18667) consisting of two discontinuous field walls with approximately 25 stone clearing mounds between; an enclosure (Site 50-10-35-18668) and an enclosure/wall (Site 50-10-35-18669) that were interpreted as the remains of a twentieth century camp and lunch station once occupied by the field workers; and another field complex (Site 50-10-35-18670) containing roughly sixteen stone clearing mounds.

Escott's 2004 survey of a 258-acre parcel recorded twenty archaeological sites, mostly related to historic sugarcane cultivation, ranching, and World War II military activities. These sites included rock alignments, sugarcane fields, and military fighting positions. Further studies in the area identified similar features, with no additional historic properties indicated by historic aerial photographs, maps, or tax records.

Table 3.3: Summary of Previous Archaeological Studies

Study	Type	Findings
Borthwick et al. (1993)	AIS	Sugarcane agricultural sites
Borthwick and Hammatt (1993)	AIS	Sugarcane agricultural sites
Hunt and McDermott (1993)	AIS	Sugarcane agricultural sites
Maly et al. (1994)	AIS	Sugarcane agricultural sites
Spear (1995)	DRR	None
Maly (1996)	CIA	Oral testimony relating to gathering of mai'a 'ele'ele bark and trails
Rechtman and Henry (1998)	AIS	Sugarcane agricultural sites
McGerty and Spear (1999)	AIS	Sugarcane agricultural sites
Bush et al. (2000)	AIS	Burial in lava sink overhang and sugarcane agricultural sites

Study	Type	Findings
McDermott and Hammatt (2001a)	AIS	Sugarcane agricultural sites
Escott (2004)	AIS	Sugarcane agricultural and military training sites
Clark and Rechtman (2006)	AIS	Sugarcane agricultural sites
Rechtman (2012)	AMR	Sugarcane agricultural sites
Clark et al. (2012)	AIS	Sugarcane agricultural sites, historic sites
Nelson and Rechtman (2015)	AMR	Historic sites and artifacts
Barna (2020)	FI	None
Barna (2023)	FI	None

3.9.3 FIELD INSPECTION RESULTS

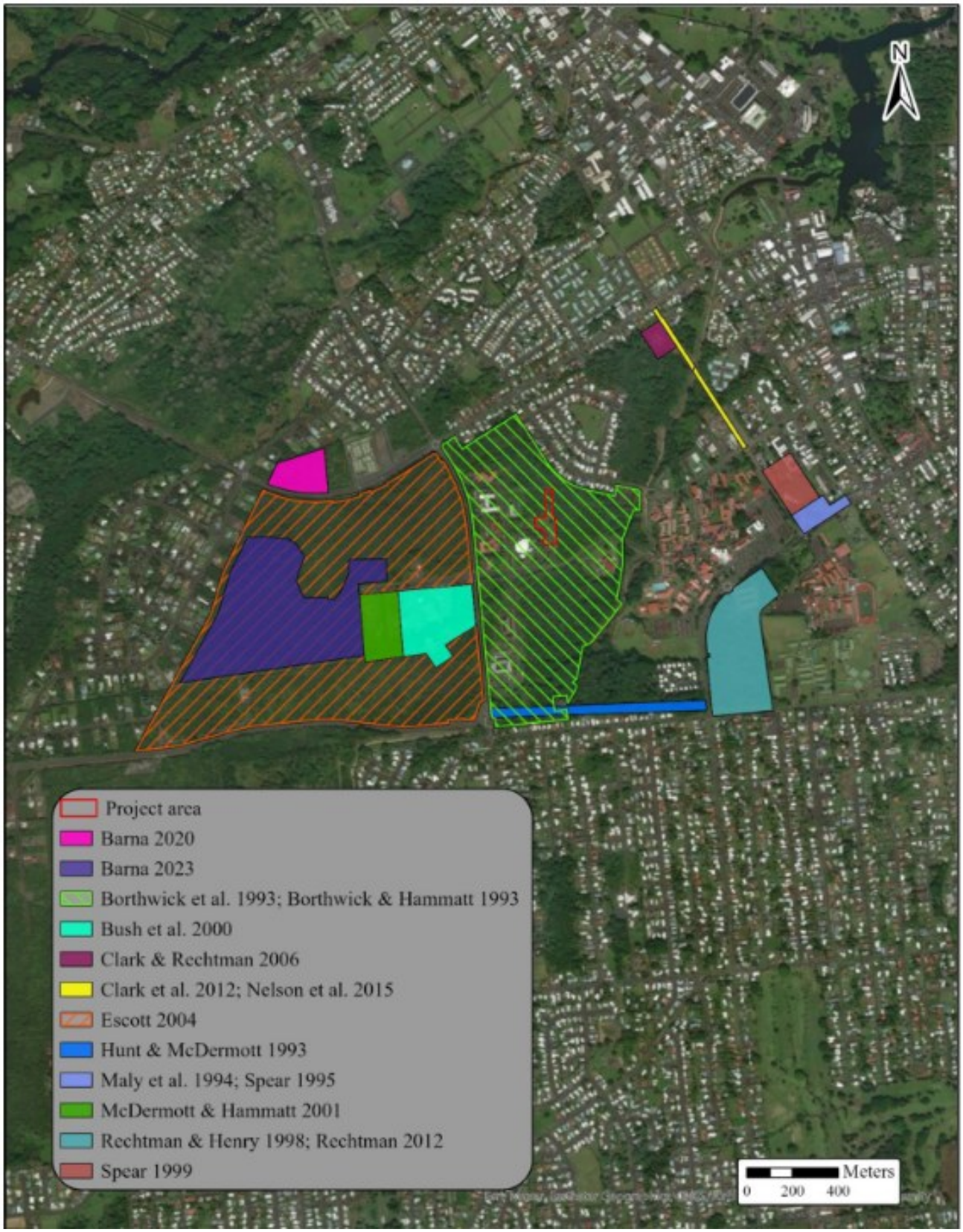
On October 25, 2024, ASM Affiliates conducted a field inspection of the proposed project area. During the field inspection, the ground surface of the entire parcel was visually inspected utilizing north/south pedestrian transects, maintaining 10-meter spacing intervals. The Project Area was clearly dozed, flattened and landscaped into an open lawn with ornamental trees and bushes, as well as composting piles. As a result of the field inspection, no archaeological sites, features, or deposits were identified within the project area. No subsurface sampling was conducted as part of the fieldwork due to the rocky and shallow nature of accumulated soils and prior ground disturbance.

3.9.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

No historic properties were identified within the project area and previous studies have indicated that there is no evidence of traditional gathering uses or other cultural practices in the vicinity. As such, the Proposed Action would not likely impact any significant cultural, historical or archaeological resources. Rather, the project provides greater access Hawaiian immersion and perpetuation of Hawaiian culture, which will benefit cultural resources and practices.

Prior to construction, the proposing agency will consult with the State Historic Preservation Division (SHPD), pursuant to HRS §6E-8. Should historic or archaeological sites or remains be discovered on-site, all construction work in the area would cease and the find would be protected from damage. Construction personnel would contact the SHPD who will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

Figure 3.7: Previous Archaeological Studies Within Project Vicinity (ASM Affiliates, 2024)



3.10 SCENIC RESOURCES

3.10.1 EXISTING RESOURCES

The Project Site is not in or near visually sensitive areas or areas that are considered significant for their scenic character in the Hawai'i County General Plan. The Proposed Action would not impact views of significant natural landmarks such as Mauna Kea, Mauna Loa, or Hilo Bay. The mountains would still be visible from the University Campus and due to existing vegetation surrounding the Project Site, views of Hilo Bay are mostly impaired.

3.10.2 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action would not have significant adverse impacts on scenic resources. The pre-kindergarten facilities are being thoughtfully designed as single-story buildings that complement the existing architecture of the ʻImiloa Astronomy Center and nearby College of Hawaiian Language, providing an attractive addition to the campus area. No short- or long-term adverse impacts to scenic resources are anticipated during construction or operation of the Proposed Action and no additional mitigation measures are required.

Image 3: View of the project site facing east, toward Hilo Bay

3.11 TRANSPORTATION FACILITIES

A Traffic Impact Assessment Report (TIAR) has been prepared by The Traffic Management Consultant (TMC) based on procedures presented in the Highway Capacity Manual 6th Edition (HCM) to assess existing and anticipated traffic impacts from the Proposed Action. See Appendix D. The traffic count observations were conducted in November 2024. The following is a summary of the findings.

3.11.1 EXISTING ROADWAYS AND FACILITIES

Komohana Street is a two-way, two-lane collector roadway between Waianuenue Avenue and Ainaola Drive in South Hilo. Exclusive left-turn lanes are provided in both directions on Komohana Street at its signalized intersection with Nowelo Street. The posted speed on Komohana Street is 45 miles per hour (mph).

Nowelo Street is a two-way, two- to four-lane local street, which provides access to the University of Hawai`i at Hilo. Nowelo Street intersects Komohana Street at a signalized four-legged intersection. Paved sidewalks are provided on both sides of Nowelo Street.

The posted speed on Nowelo Street is 15 mph. North Aohoku Place is a two-way, two-lane cul-de-sac street, which provides access to the Institute for Astronomy. South Aohoku Place provides access to Daniel K. Inouye College of Pharmacy. North/South Aohoku Place intersects Nowelo Street at a stop-controlled four-legged intersection.

ʻImiloa Place is a 36-foot wide, two-way, two-lane cul-de-sac street, which provides access to `Imiloa Astronomy Center. `Imiloa Place intersects Nowelo Street at a stop-controlled Tee-intersection. Curbs and paved sidewalks are provided on both sides of ʻImiloa Place. The posted speed on ʻImiloa Place is 15 mph.

3.11.2 EXISTING TRAFFIC CONDITIONS

Traffic conditions were analyzed and based on the concept of Level of Service (LOS) to identify the traffic impacts associated with traffic demands during the peak periods of traffic. LOS are defined by LOS “A” to LOS “F” representing ideal or free-flow traffic operating conditions to unacceptable or congested traffic conditions as described in Table 3.4.

Turning movement traffic count surveys were conducted in November 2024 during the weekday AM and PM peak periods of traffic at the following intersections:

- Komohana Street and Nowelo Street
- Nowelo Street and North/South Aohoku Place
- Nowelo Street and ʻImiloa Place

The traffic count surveys included pedestrian traffic, crossing the roadways, and bicycle traffic.

Table 3.4 LEVEL OF SERVICE DESCRIPTIONS

LOS	GENERAL DESCRIPTION	ACCEPTABLIITY
A	Free-flow traffic	Ideal
B	Reasonable free-flow traffic	Satisfactory
C	Stable or near free-flow traffic	Satisfactory
D	Approaching unstable traffic flow	Acceptable
E	Unstable traffic flow	Unsatisfactory
F	Congestion/Forced traffic flow	Unacceptable

The existing AM peak hour of traffic occurred between 7:00 AM and 8:00 AM. Komohana Street carried about 1,400 vehicles per hour (vph), total for both directions at Nowelo Street. Between Komohana Street and North/South Aohoku Place, Nowelo Street carried about 150 vph, total for both directions. The AM peak hour traffic volume on Nowelo Street was about 100 vph at `Imiloa Place, total for both directions. 'Imiloa Place carried 13 vph, total for both directions.

The intersection of Komohana Street and Nowelo Street operated at LOS "B", during the existing AM peak hour of traffic. All the individual traffic movements at the intersection operated at satisfactory Levels of Service (LOS), i.e., LOS "C" or better.

North/South Aohoku Place operated at LOS "B" at Nowelo Street, during the existing AM peak hour of traffic. 'Imiloa Place operated at LOS "A" at Nowelo Street. Figure 3.8 depicts the existing AM peak hour traffic volumes.

The existing PM peak hour of traffic occurred between 3:15 PM and 4:15 PM. Komohana Street carried about 1,400 vph, total for both directions. Nowelo Street carried about 160 vph total for both directions, between Komohana Street and North/South Aohoku Place. The PM peak hour traffic volume on Nowelo Street was about 90 vph at 'Imiloa Place. 'Imiloa Place carried about 30 vph, total for both directions.

During the existing PM peak hour of traffic, the intersection of Komohana Street and Nowelo Street operated at LOS "A". The individual traffic movements at the intersection operated at satisfactory Levels of Service.

North/South Aohoku Place and `Imiloa Place operated at LOS "A" at Nowelo Street, during the existing PM peak hour of traffic. The existing PM peak hour traffic volumes are depicted in Figure 3.9.

3.11.3 PROJECTED TRAFFIC CONDITIONS WITHOUT THE PROPOSED ACTION

The Federal-Aid Highways Transportation Plan for the District of Hawai`i (TPDH) was prepared for the State of Hawai`i Department of Transportation (DOT), in cooperation with the County of Hawai`i Department of Public Works and Planning Department. The TPDH developed long-range travel

forecasts for Hawai`i Island based upon future socio-economic conditions. The TPDH projected an annual growth rate of about 1.14 percent in vehicle trips in South Hilo. The annual growth rate was uniformly applied to the existing traffic conditions to estimate the Year 2028 peak hour traffic demands without the proposed

During the year 2028, AM and PM peak hour traffic volumes are expected to continue to operate at satisfactory Levels of Service without the Proposed Action.

3.11.4 PROJECTED TRAFFIC CONDITIONS WITH THE PROPOSED ACTION

The trip generation characteristics for the `Imiloa Pre-Kindergarten School were based upon the ITE trip rates for a daycare center. The proposed `Imiloa Pre-Kindergarten School is expected to generate totals of 61 vph and 60 vph, during the AM and PM peak hours of traffic, respectively. The trip generation characteristics for the 'Imiloa Pre-Kindergarten School are summarized in Table 3.5.

Table 3.5: Trip Generation Characteristics

Peak Hour	Direction	Vehicle Trips
AM Peak Hour	Enter	32
	Exit	29
	TOTAL	61
PM Peak Hour	Enter	28
	Exit	32
	TOTAL	60

During the Year 2028 AM peak hour of traffic with the proposed project, the intersection of Komohana Street and Nowelo Street is expected to operate at an overall LOS "C". The shared through/right-turn movement on northbound Komohana Street is expected to operate at LOS "D". The other traffic movements at the intersection are expected to operate at satisfactory Levels of Service.

The other intersections in the study area are expected to operate at LOS "B" or better, during the Year 2028 AM peak hour of traffic with the proposed project. Figure 3.10 depicts the Year 2028 AM peak hour traffic volumes with the proposed project.

The study intersections are expected to continue to operate at satisfactory Levels of Service, during the Year 2028 PM peak hour of traffic with the proposed project. The Year 2028 PM peak hour traffic volumes with the proposed project are depicted in Figure 3.11.

Figure 3.8: Existing AM Peak Hour Traffic

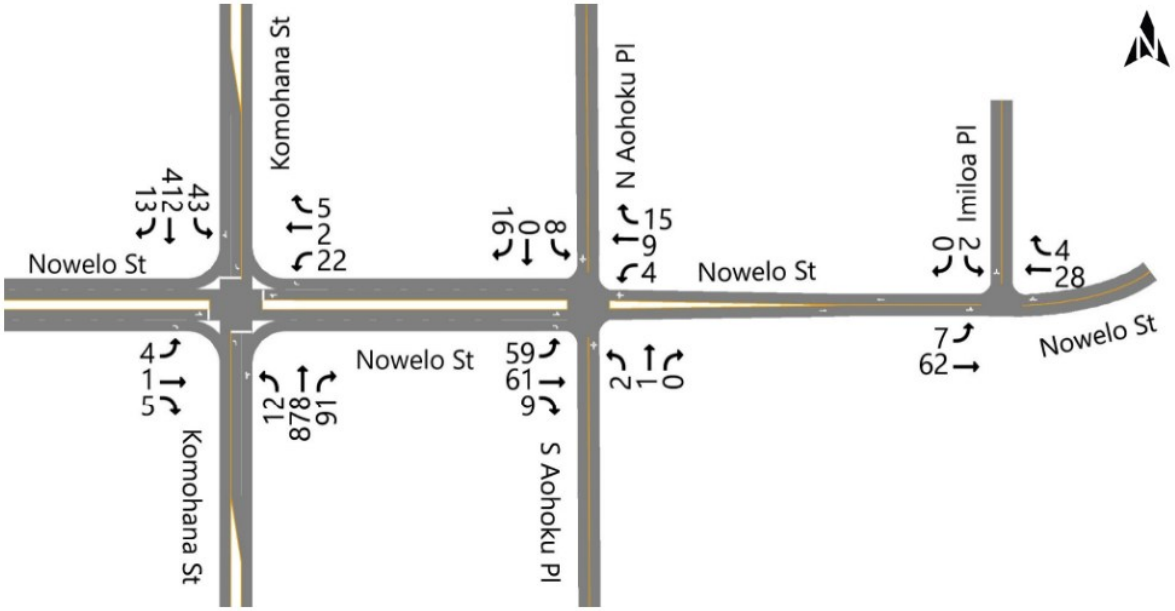


Figure 3.9: Existing PM Peak Hour Traffic

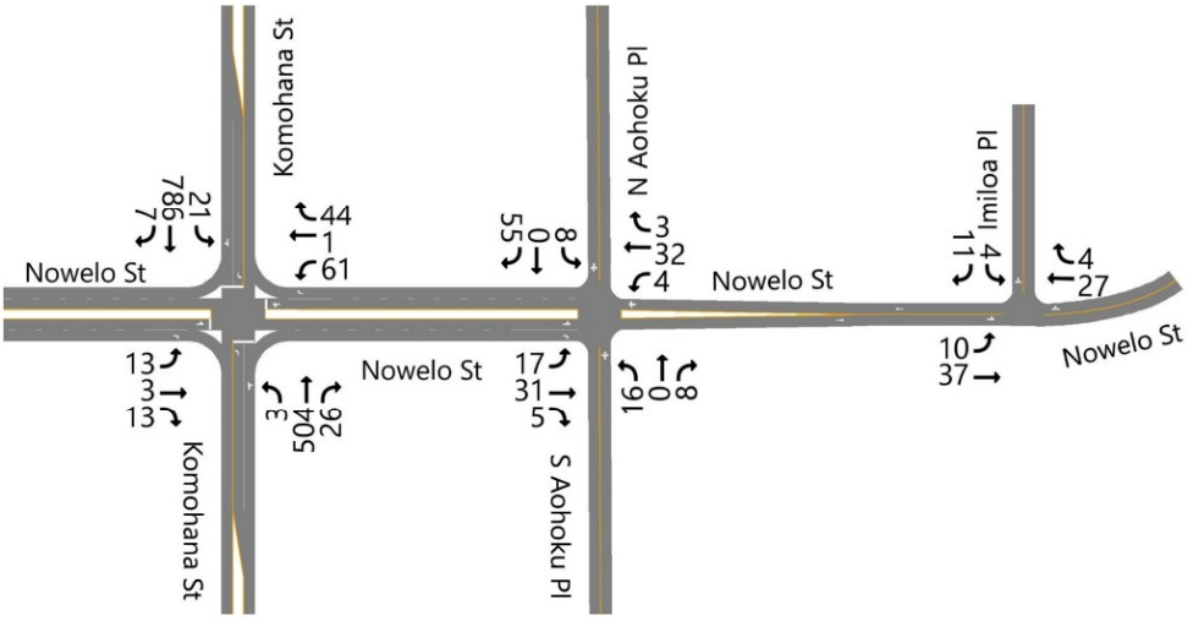


Figure 3.10: Year 2028 AM Peak Hour Traffic with Proposed Action

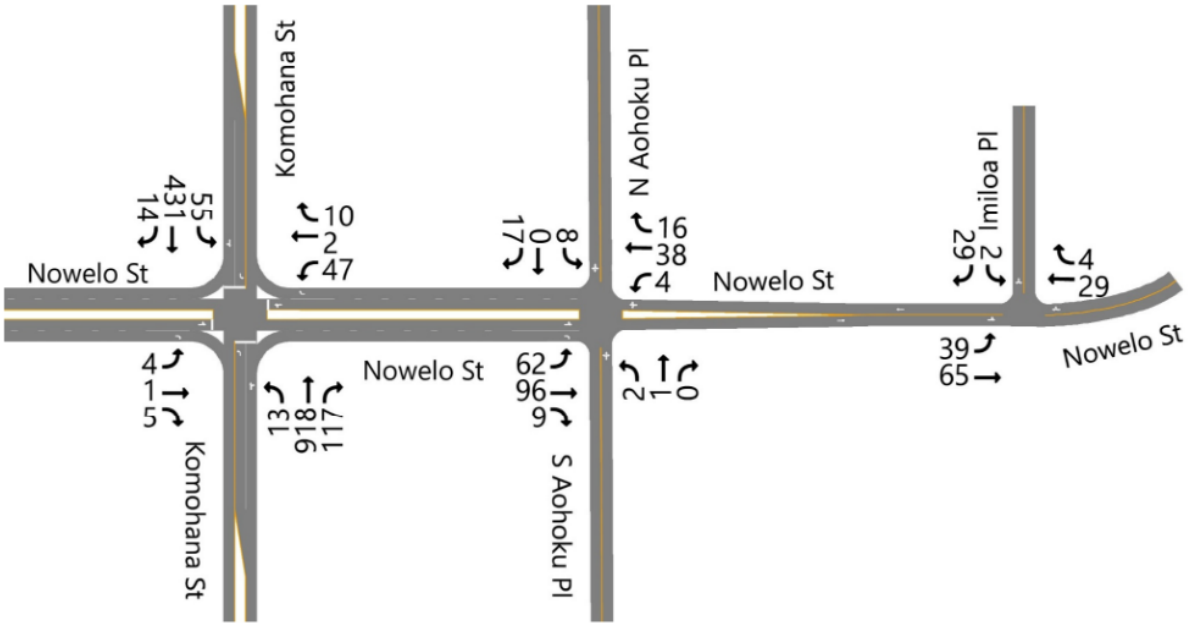
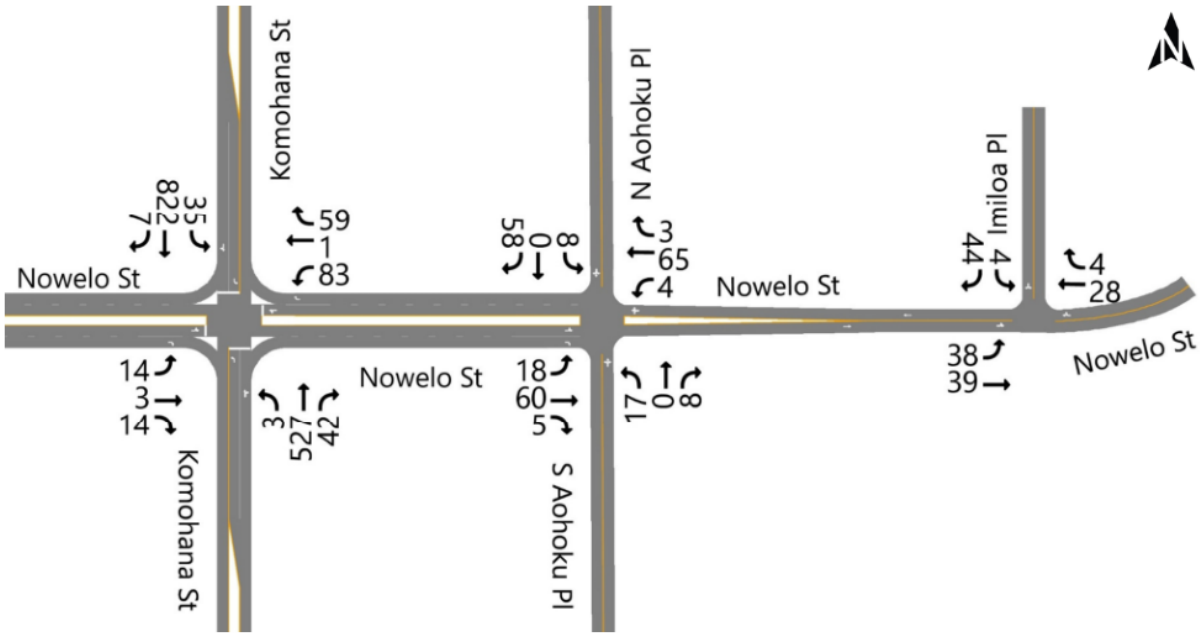


Figure 3.11: Year 2028 PM Peak Hour Traffic with Proposed Action



3.11.5 DROP-OFF AND PICK-UP OPERATIONS

The cul-de-sac at the north end of ʻImiloa Place will be used for the drop-off and pick-up operations at the proposed ʻImiloa Pre-Kindergarten School. The cul-de-sac will be able to accommodate up to six (6) vehicles parked curbside, while providing for vehicles to turn around and exit the cul-de-sac. Parents will park their vehicles and walk their children into and out of the school grounds. A parent, legal guardian, or other authorized individual must sign their child in and out each day and make their child's arrival and departure known to the school staff. Only those listed as the child's designated individuals or emergency contacts may sign their child in and out. Children will not be permitted to enter or leave the school grounds without being accompanied by an adult.

The TIAR references a study conducted for another preschool project located on Oʻahu that aimed to estimate the school's drop-off and pick-up operations "dwell time" i.e., the time required for a parent of guardian to park their vehicle, unload/load their child, walk to/from the school, and exit the school parking lot. The study found that AM dwell times ranged from 4 minutes to 29 minutes, averaging about 9 minutes per vehicle. PM dwell times ranged from 4 minutes to 18 minutes, with an average dwell time of 8.5 minutes per vehicle.

If all pick-up/drop-off occurs within the cul-de-sac, cars may que along ʻImiloa Place as they wait for parking to become available within the cul-de-sac. 95-percentile queue can be expected to extend about 240 feet along ʻImiloa Place during the AM peak hour. During the PM peak hour of traffic, the pick-up queue can be expected to extend about 80 feet along ʻImiloa Place. However, if parents or guardians opt to park along ʻImiloa Place, which is wide enough to accommodate street parking, and walk their children to/from the school, the 95-percentile queues of parked cars along `Imiloa Place are expected to be about four (4) vehicles and three (3) vehicles, during the AM and PM peak hours of traffic, respectively.

3.11.6 POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed ʻImiloa Pre-Kindergarten School is not expected to significantly impact traffic during the peak hours of traffic. The study intersections are expected to operate at the minimum acceptable Levels of Service or better during the AM and PM peak hour of traffic with the proposed project. ʻImiloa Place is expected to operate at LOS "A", during the AM and PM peak hours of traffic with the proposed project. As such, traffic mitigation measures are not recommended at this time.

The drop-off and pick-up operations can be expected to extend from the cul-de-sac onto ʻImiloa Place. However, ʻImiloa Place is wide enough to accommodate parking on both sides of the roadway, while maintaining the two-way traffic flow. Furthermore, ʻImiloa Place is a low volume, local road which will only provide access to ʻImiloa Astronomy Center as well as the proposed ʻImiloa Pre-Kindergarten facility. The drop-off/pick-up operations could be improved by providing staff to assist in the unloading/loading children out of and into their vehicles and checking the children in and out of school. Lastly, the TIAR also recommends that a parking management plan be implemented during special events.

3.12 PUBLIC INFRASTRUCTURE AND PRIVATE UTILIITIES

The Proposed Action includes the construction private utilities to service the proposed facilities. These utilities include sewer, water, drainage, solid waste, electrical, and telecommunication infrastructure.

3.12.1 WATER

Water utility service to the proposed pre-kindergarten facility would be provided by the County of Hawaiʻi Department of Water Supply. A new water connection would be installed to tie-into the existing 12" water main along ʻImiloa Place and would provide domestic water, irrigation supply, and a fire hydrant connection for the Proposed Action. A municipal water supply connection would provide a safe and reliable water source, and adequate fire protection for the Project Site and surrounding community.

3.12.2 WASTEWATER

The Proposed Action would require connection the County of Hawaiʻi sewer system. There is an existing sewer line on Imiloa Place serving the Imiloa Astronomy Center. However, the invert of the line is high relative to the project site, so gravity flow is not possible. As such, a force main will be installed in order to move wastewater from the Project Site to the sewer main.

3.12.3 DRAINAGE

The development of the ʻImiloa Astronomy Center included onsite drainage improvements to retain increased runoff on-site. Improvements included four retention basins, including one which is within the Project Area. As such, the Proposed Action would design drainage improvements to ensure no increased runoff toward adjacent properties and uses. This includes relocating and redesigning the retention basin within the Project Area and improving stormwater drainage on ʻImiloa Place.

3.12.4 SOLID WASTE DISPOSAL SERVICES

Solid waste services are provided by Hawaiʻi County Department of Environmental Management, which operates the County's South Hilo Landfill and Puʻuanahulu Landfill (West Hawaiʻi). The University of Hawaiʻi at Hilo contracts a private company to collect and haul recycling and solid waste from campus to the South Hilo Landfill.

3.12.5 ELECTRICAL AND TELECOMMUNICATION FACILITIES

The Hawaiʻi Electric Light Company, Inc. (HELCO), a privately-owned utility company regulated by the State Public Utilities Commission, provides electrical power to the island of Hawaiʻi. HELCO operates several power plants that service the Hilo area including: Kanoelehua Hill Generating Station, Keāhole Power Plant, Puna Power Plan, and the Waimea Power Plant. Additionally, Hilo benefits from renewable energy sources such as the Puueo Hydro Plant and the Waiau Hydro Plant, both located along the Wailuku River (HELCO, 2025). The Proposed Action would require a new

HELCO meter and connect to the existing spare stubbed electrical duct located near the entry driveway of the ʻImiloa Astronomy Center.

Telecommunication infrastructure consisting of fiber optic and copper backbone connections would be provided by Hawaiian Telcom or Spectrum Charter, connecting near the entry driveway of the ʻImiloa Astronomy Center.

3.12.6 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action is not anticipated to significantly impact the demand for public facilities or infrastructure. The Proposed Action would include drainage improvements to ensure no increase in runoff toward adjacent properties such as catch basins, grading, and landscaping to provide filtering and detention of stormwater runoff.

During the construction phase, solid waste generated from construction materials being sent to the South Hilo Landfill may have short-term impacts. The project would have minimal short-term construction-related effects on the County's water system and supply. Such water use would likely be associated with BMP measures such as watering developed site conditions to minimize erosion, seeding landscaping improvements, and BMPs for trucks and vehicles accessing the site (e.g., cleaning tires of debris).

The Proposed Action would have no anticipated long-term adverse impacts on public infrastructure and not additional mitigation measures are recommended.

3.13 PUBLIC SERVICES

See Figure 3.12 for locations of police stations, fire stations, educational facilities, medical services, and parks and recreation areas in relation to the Project Site.

3.13.1 EDUCATIONAL FACILITIES

The Project Site is located within the University of Hawaiʻi at Hilo property identified as TMK (3) 2-4-001:007. The Proposed Action would be developed on an approximately 2.25 acre portion of the approximately 142.8 acre State of Hawaiʻi property. The Proposed Project Area is within a section of the campus designated for the University of Hawaiʻi at Hilo University Park of Science and Technology. The Project Site is adjacent to the ʻImiloa Astronomy Center and other astronomy base facilities. The UH-Hilo College of Hawaiian Language, Ka Haka ʻUla O Keʻelikōlani, is located approximate 900 feet to the southeast, across Nowelo Street. The main UH-Hilo campus is approximately 0.25 miles from the Project Site.

The Project Site is located within the Hawaiʻi Department of Education's (HIDOE) Hilo-Waiākea School Complex Area, which includes nine elementary schools, two middle schools and two high schools. The schools nearest to the Project Site are Waiākea High School, Waiākea Middle School, and Waiākea Elementary School, which are located approximately 0.75 miles east of the Project Site.

There are four existing private licensed preschools in the vicinity of the Project Site, all located to the east of the Project Site. There are two free public pre-kindergarten programs operated by the State's Executive Office on Early Learning (EOEL) in the South Hilo region – one located at Chiefess Kapiʻolani Elementary School and one located at Hilo Union Elementary School. Both programs have limited enrollment of 20 students and offer priority to students who are eligible for special education services, English as second language learners, children in foster care, or experiencing other at-risk situations.

3.13.2 RECREATIONAL FACILITIES

The South Hilo District is home to a variety of recreational facilities and resources, both county and state managed. There are two neighborhood parks located in the immediate vicinity of the Project – University Heights Park and Mohouli Park – which cater to local residents with playgrounds, sports fields, and community gathering spaces.

In addition to local parks, the region is also home to significant national parks and refuges. Hawaii Volcanoes National Park is a major attraction, encompassing two active volcanoes, Kīlauea and Mauna Loa, and offering unique geological and ecological experiences. The Hakalau Forest National Wildlife Refuge provides a sanctuary for native Hawaiian birds and plants, promoting conservation and biodiversity.

3.13.3 POLICE AND FIRE PROTECTION

The Project Site is within the Hawaiʻi Police Department Area 1 Operations Bureau, which includes investigative and patrol operations in East Hawaiʻi. Area 1 covers 1,685 square miles and its districts include Hāmākua/North Hilo, South Hilo, and Puna. The Project Site is within the South Hilo district, which operates out of the Hilo Station located at 349 Kapiʻolani Street, approximately 1-mile from the proposed pre-kindergarten facility. The Holomua police substation is also located near the Project Site, approximately 1.5 miles east off of Highway 11.

The Hawaiʻi Fire Department is primarily responsible for fire protection and suppression, pre-hospital emergency medical services, land and sea search and rescue, hazardous materials response, ocean safety, fire prevention, and public education for the County of Hawaiʻi. There 23 fire stations across Hawaiʻi Island. The fire station closest to the Project Site is the Central Station, which is located at 466 Kinoʻole Street in Hilo, approximately 1.25 miles from the Project Site.

The distance by road between the station and University of Hawaiʻi at Hilo is approximately 2.4 miles. According to the National Fire Protection Association (NFPA) 1710 standards, the travel time for first responders should be within 240 seconds (4 minutes) for fire suppression incidents. For low and medium hazard incidents, the initial full alarm assignment should arrive within 480 seconds (8 minutes). For high hazard/high-rise incidents, within 610 seconds (10 minutes, 10 seconds). Given the proximity, the response time from Hilo Central Station to UH Hilo is likely to be within this range, assuming normal traffic conditions and readiness.

3.13.4 MEDICAL SERVICES

The closest health care and emergency facility to the Project Site is the Hilo Benioff Medical Center located at 932 Waiānuenue Avenue in Hilo. As a Level III Trauma Center, Hilo Benioff Medical Center operates the second busiest emergency room in the state, providing 24-hour care to more than 49,000 patients annually. Hilo Medical Center is approximately 2 miles west of the Project Site and an estimated 9-minute drive according to Google Maps and assuming light traffic.

3.13.5 POTENTIAL IMPACTS AND MITIGATION MEASURES

The Proposed Action would have a positive beneficial impact on the education system and facilities by providing additional access to early childhood education with the unique benefit of providing Hawaiian immersion learning and teaching opportunities to UH-Hilo students in partnership with ʻAha Pūnana Leo and the University of Hawaiʻi at Hilo College of Hawaiian Language, Ka Haka ʻUla O Keʻelikōlani.

The Proposed Action include an outdoor learning environment that will be enclosed for safety and security so use of public recreational facilities would be rare and only occur as part of a field trip or planned and supervised excursion.

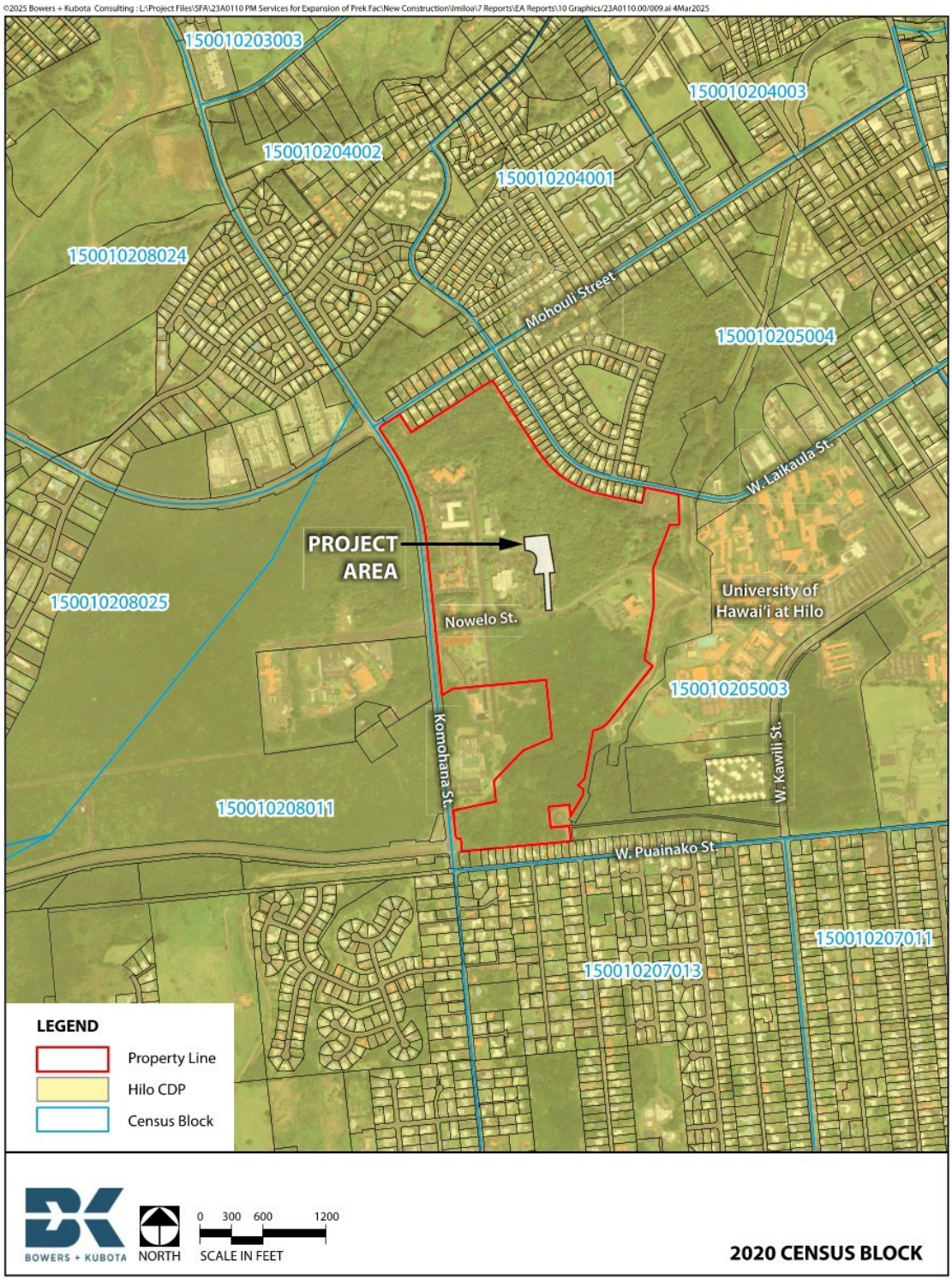
The Proposed Action should not have a significant long-term impact on the police and fire department's ability to provide protection services or their operations. As discussed in Section 3.12, the Proposed Action includes connection to the municipal water system including a fire hydrant connection.

Lastly, the Proposed Action should not have a long-term impact on the medical facilities as it does not include new residential housing or other land uses that would increase the resident population.

Overall, there may be minimal short-term noise impacts to the educational activities at the ʻImiloa Astronomy Center, as discussed in Section 3.5.2, however, the construction noise would not likely impact other educational facilities that are farther away. As discussed in Section 3.4.2 BMPs in design plans would also include specifications to minimize the discharge of air pollutants during construction.

Figure 3.12: Public Facilities

Figure 3.13: Census Designation Places



3.14 SOCIOECONOMIC CHARACTERISTICS

3.14.1 OVERVIEW

Hawaiʻi County has the second largest population in the State of Hawaiʻi, accounting for approximately 14.5% of the State's population. Though the overall State population has been declining, Hawaiʻi County's population has risen over 8 percent in the past decade and is expected to grow to over 230,000 residents by the year 2050 (DBEDT, 2024). The Department of Business Economic Development and Tourism (DBEDT) estimates the island population, as of July 1, 2024, to be 209,790 (DBEDT, 2024).

As shown in Figure 3.13, the Project Site is located within the Hilo Census Designated Place (CDP). The Hilo CDP is the most populous in Hawaiʻi County with a population of approximately 48,718 (U.S. Census Bureau). Table 3.6 provides details on the population and socioeconomic characteristics of the Hilo CDP and Hawaiʻi County.

Table 3.6: Socioeconomic Profile, Hilo CDP

Characteristic	Hilo CDP	Hawaii County
Resident Population	48,718	207,615
Median Age	42.6 years	43.5 years
% of Population Under 18	20.5%	20.5%
% of Population 65 or Older	22.7%	24.4%
% of Population by Ethnicity		
White Alone	16.3%	34.7%
Asian Alone	31.8%	20.4%
Native Hawaiian and Other Pacific Islander	13.9%	12.8%
Two or More Races	35.9%	30.6%
Civilian Unemployment Rate	4.2%	4.5%
People Below the Poverty Level	14.1%	15.6%
Median Household Income	$78,713	$72,700
Housing Units	19,000	91,546
Owner Occupied	65.5%	73.1%
Average Household Size	2.74	2.76
Median Value of Owner-Occupied Unit	$455,100	$486,400
High School Diploma or Higher	94.7%	93.1%
Bachelor's Degree or Higher	34.0%	30.9%

The median age in the Hilo CDP is 42.6 years, reflecting a balanced mix of age groups. About 20.5% of the population is under 18 years old, while 22.7% are 65 years and older. According to the U.S. Census Bureau, 3.8% of Hilo's population is under 5 years old, which translates to around 1,800 preschool-age children near the Project Area.

Hilo is ethnically diverse with nearly 40% of residents claiming two or more races in the U.S. Census. 31.8% of the population is Asian alone while 13.9% of the population is Native Hawaiian or Other Pacific Islander.

Median household income in the Hilo CDP is $78,713, with a per capita income of $39,868. However, approximately 14.1% of the population lives below the poverty line.

Employment in Hilo spans various sectors, with a civilian unemployment rate of 4.2% and civilian labor force participation rate of 59.3%. Key industries include accommodation and food services, employing around 11,911 people, retail trade with 10,715 employees, and health care and social assistance, which provides jobs for 10,091 residents.

Education is a strong focus in Hilo, with 94.7% of individuals aged 25 and over having at least a high school diploma, and 34.0% holding a bachelor's degree or higher.

The Proposed Action is located within the campus of University of Hawaiʻi at Hilo, which enrolls approximately 3,165 students, with 2,112 undergraduates and 349 graduate students. The gender distribution among undergraduates is 64% women and 36% men, while among graduate students, it is 67% women and 33% men (UH Hilo, 2025). Socioeconomically, UH Hilo students come from a range of backgrounds. Approximately 18% of the students are considered nontraditional, meaning they took a gap of three or more years between graduating high school and enrolling in college. This includes students who are parents, full-time employees, or those returning to education later in life (UH Hilo, 2025).

3.14.2 Potential Effects and Proposed Mitigation

The Proposed Action is a pre-kindergarten facility and does not include any residential development. As such, the Proposed Action would not have a direct impact on population change within the County or CDP. It would create temporary employment opportunities during construction and long-term employment and teacher training opportunities through the preschool and planned partnership with the University of Hawaiʻi at Hilo College of Hawaiian Language program. The State of Hawaiʻi Keiki Ready Initiative estimates that there are 6,737 unserved children of preschool age (3-4 years old). The Proposed Action would provide beneficial impacts in providing greater access to early childhood education within Hilo.

3.15 SECONDARY AND CUMULATIVE IMPACTS

3.15.1 SECONDARY EFFECTS

Secondary effects, also referred to as indirect effects or secondary impacts, are effects caused by an action that is later in time or farther removed in distance but is still reasonably foreseeable as defined under Hawaiʻi Administrative Rules Title 11-200.1-2 (2019). A secondary effect may include a growth-inducing effect and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems. Secondary impact assessments are concerned with impacts that are sufficiently "likely" to occur and not with the speculation of any impact that can be conceived of or imagined.

The Project would not result in secondary impacts that would have significant or adverse long-term impacts on the natural and human environment including ecosystems, social-economic conditions, infrastructure, or public facilities. The construction of the ʻImiloa Pre-Kindergarten facility would not contribute to growth inducing effects or changes to resident population densities.

Once in operation, the Project may provide beneficial secondary economic effects associated with greater access to preschool education. Research shows that the economic benefits of expanding preschool access are substantial. Children from low- to middle-income households who attend preschool can expect to earn an additional $2,400 to $4,700 in annual income at age 35 (UHERO, 2024). Furthermore, the workforce development associated with the partnership between the preschool program and UH-Hilo will allow student teachers to have coursework and practicum experience that benefits their future careers as teachers.

3.15.2 CUMULATIVE IMPACTS

"Cumulative Impact" as defined in HAR §11-200.1-2 is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time associated with the study year. The focus is on "reasonably foreseeable" actions that are those likely to occur or probable rather than those that are merely possible or subject to speculation. The prediction of reasonably foreseeable impacts thus requires judgment based on information obtained from reliable sources such as approved development plans and land use entitlements received.

There are no other known developments in the immediate area that are reasonably anticipated to be completed within the 2025 study year and contribute to a cumulative impact on the project area's environment or infrastructure facilities serving the Project Site.

4.0 RELATIONSHIP TO PLANS AND POLICIES

As a requirement of HAR §11-200.1-24 (2019), this chapter provides a description of the relationship and compatibility of the Proposed Action to other land use plans and policies. This chapter discusses the proposed project's conformance with pertinent State and County land use plans and policies, which include the State Land Use District regulations, State Environmental Policy (Chapter 344, HRS), and the regulations, policies, and goals set forth by the County's General Plan, and Special Management Area (Chapter 205A, HRS).

4.1 STATE OF HAWAI'I

4.1.1 HAWAI'I STATE PLAN (HRS §226)

The Hawai'i State Plan, as amended, is a broad policy document that guides all activities, programs and decisions made by State and local agencies by establishing a set of themes, goals, objectives and policies meant to guide the State's long-term growth and development. The purpose of the plan is to: (1) improve the planning process; (2) increase the effectiveness of government and private actions; (3) improve coordination among agencies and levels of government; (4) provide for the use of Hawai'i's resources; and (5) guide the future development of the state.

Part I of the Plan references the Overall Theme, Goals, Objectives and Policies and Part III references the Priority Guidelines; because Part II pertains primarily to internal government affairs it is not applicable to the Proposed Action and was not addressed. Table Of the 107 sections that comprise HRS §226, six are directly applicable to the Proposed Action and the applicable objectives and policies are discussed below.

Table 4.1: Summary of Applicability of HRS §226 to the Proposed Action

HRS Chapter 226 Hawai'i State Planning Act	**Applicability to Proposed Action**
Part I. Overall Theme, Goals, Objectives, and Policies	
§226-4 State Goals	**Applicable**
§226-5 Objective and policies for population	Not applicable
§226-6 Objectives and policies for the economy--in general	Not applicable
§226-7 Objectives and policies for the economy--agriculture	Not applicable
§226-8 Objective and policies for the economy--visitor industry	Not applicable
§226-9 Objective and policies for the economy--federal expenditures	Not applicable
§226-10 Objective and policies for the economy--potential growth and innovative activities	Not applicable
§226-10.5 Objectives and policies for the economy--information industry	Not applicable
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources	Not applicable

HRS Chapter 226 Hawai'i State Planning Act	Applicability to Proposed Action
§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources	Not applicable
§226-13 Objectives and policies for the physical environment--land, air, and water quality	Not applicable
§226-14 Objective and policies for facility systems--in general	Not applicable
§226-15 Objectives and policies for facility systems--solid and liquid wastes	Not applicable
§226-16 Objective and policies for facility systems--water	Not applicable
§226-17 Objectives and policies for facility systems--transportation	Not applicable
§226-18 Objectives and policies for facility systems--energy	Not applicable
§226-18.5 Objectives and policies for facility systems--telecommunications	Not applicable
§226-19 Objectives and policies for socio-cultural advancement--housing	Not applicable
§226-20 Objectives and policies for socio-cultural advancement--health	**Applicable**
§226-21 Objective and policies for socio-cultural advancement--education	**Applicable**
§226-22 Objective and policies for socio-cultural advancement--social services	**Applicable**
§226-23 Objective and policies for socio-cultural advancement--leisure	Not applicable
§226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being	Not applicable
§226-25 Objective and policies for socio-cultural advancement--culture	Applicable
§226-26 Objective and policies for socio-cultural advancement--public safety	Not applicable
§226-27 Objective and policies for socio-cultural advancement--government	Not applicable
Part III. Priority Guidelines	
§226-103 Economic priority guidelines	Not applicable
§226-104 Population growth and land resources priority guidelines	Not applicable
§226-105 Crime and criminal justice	Not applicable
§226-106 Affordable housing	Not applicable
§226-107 Quality education	**Applicable**
§226-108 Sustainability	Not applicable
§226-109 Climate change adaptation priority guidelines	Not applicable

HRS §226-4 State Goals

(a) In order to ensure, for present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:

> (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations.
>
> (3) Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.

Discussion: The Proposed Action is consistent with the State Goals above. The project supports these principles and values as the Proposed Pre-kindergarten facilities will provide high quality free Hawaiian immersion early childhood education opportunities for local families. Research finds that expanding access to early childhood education has a plethora of benefits. Children who attend preschool are less likely to repeat grades, need special education services, and have higher high school graduation rates. They also tend to have higher earnings in adulthood.

HRS §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:

> (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:

> (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 Proposed Action increases access to preschool education, which has been shown to address social determinants of health and help eliminate health disparities, especially among lower-income families. High-quality preschool programs foster cognitive and emotional development, which are crucial for long-term health outcome.

HRS §226-21 Objective and policies for socio-cultural advancement-education

(a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.

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

(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.

(2) Ensure the provision 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 Hawaii's cultural heritage.

(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.

(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.

Discussion: The Proposed Action is directly applicable to the socio-cultural and educational advancement policies in the State Plan. Act 46 and the Ready Keiki program seek to address these policies by setting the goal of universal access to preschool education in the State of Hawaiʻi. he initiative ensures adequate educational services and facilities, supports children with special needs, and promotes academic excellence. Additionally, it offers higher educational opportunities for future educators, helping Hawaii's workforce adapt to changing employment demands. Overall, Ready Keiki aims to foster a comprehensive and inclusive educational environment that supports the development and well-being of all children in Hawaii.

HRS §226-22 Objective and policies for socio-cultural advancement-social services

(a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.

(b) To achieve the social service objective, it shall be the policy of the State to:

(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 Hawaii's communities.

Discussion: The Proposed Action is an example of public and private partnership to use public funds to develop the necessary facilities to facilitate increased access to preschool education and work with private and non-profit partners to administer a free early childhood education program specifically aimed to address the needs of the local population, especially Native Hawaiian residents. The Proposed Action also provide workforce development benefits, which may translate to great self-sufficiency, improving individuals and families well-being.

HRS §226-25 Objective and policies for socio-cultural advancement-culture

(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.

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

(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.

(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.

(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.

(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.

Discussion: The Proposed Action is consistent with this goal and policies. Once in operation, the Pre-Kindergarten program will enhance cultural identities, traditions, and values of Hawaiian culture through the Hawaiian immersion preschool program operated by Ke Kula ʻO Nāwahīokalaniʻōpuʻu Iki (Nāwahī), a Laboratory Public Charter School, in partnership with ʻAha Pūnana Leo and the University of Hawaiʻi at Hilo.

HRS §226-107 Quality Education

Priority guidelines to promote quality education:

(3) Initiate efforts to improve the quality of education by improving the capabilities of the education workforce;

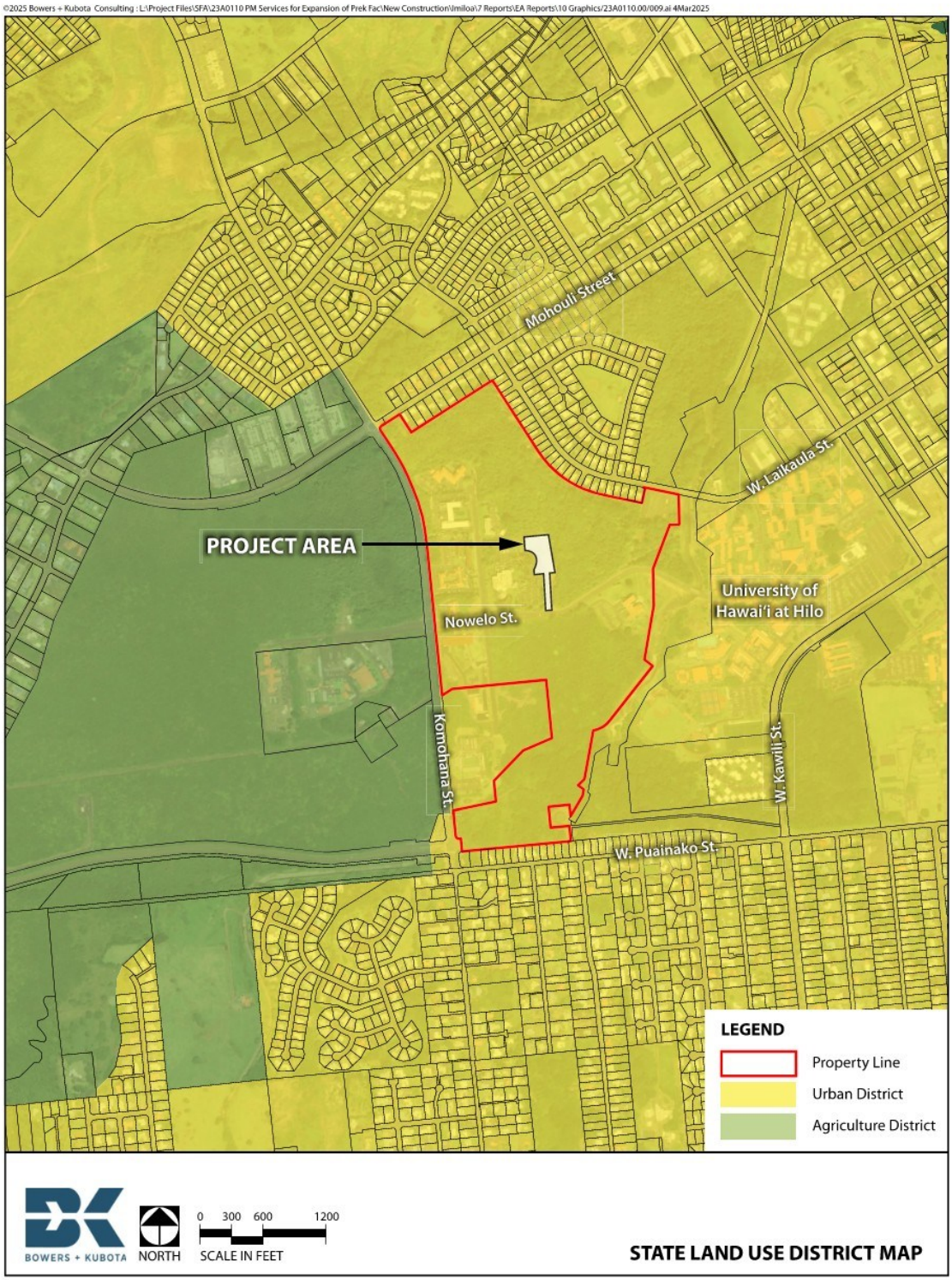
(7) Develop resources and programs for early childhood education;

(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and

(9) Strengthen and expand educational programs and services for students with special needs.

Discussion: The Proposed Action is consistent with these priority guidelines and directly applicable. The Proposed Action would provide affordable childcare for University of Hawaiʻi at Hilo students, faculty, and the surrounding community, support workforce development for new teachers, and address the growing demand for early childhood education taught in the Hawaiian language. The Proposed Project is an important piece of the overall Ready Keiki Initiative, which aims to provide preschool access for all 3- and 4-year-olds in Hawaii by 2032.

Figure 4.1: State Land Use Districts



4.1.2 HAWAIʻI STATE LAND USE DISTRICTS (HRS §205)

The Hawaiʻi State Legislature adopted the State Land Use Law, codified as HRS §205, in 1961 to establish an overall framework of land use management. The purpose of this law is to protect Hawaiʻi's valuable lands from development that resulted in short-term gains at the detriment to the long-term growth potential of the State's economy. HRS §205 classified all lands within the State in one of four land use districts: Urban, Agricultural, Conservation, or Rural. The State Land Use Commission (LUC) was established to administer HRS §205 and is responsible for the designated land use districts and preserving and protecting Hawaiʻi's lands.

Discussion: As shown in **Error! Reference source not found.** the Proposed Action is within the State's Urban District. The Urban District is characterized by "city-like" concentrations of people, structures, and services, and includes vacant lands for future urban development. Uses in the Urban Districts are regulated at the County level. Section XX discusses how the Proposed Action is compliant with the Hawaiʻi County Zoning Code.

4.1.3 THE STATE ENVIRONMENTAL POLICY (HRS §344)

HRS § 344 establishes the State environmental policy that (1) encourages productive and enjoyable harmony between people and their environment, (2) promotes efforts that will prevent or eliminate damage to the environment and biosphere, (3) stimulates the health and welfare of humanity, and (4) enriches the understanding of the ecological systems and natural resources important to the people of Hawaiʻi.

Discussion: The Proposed Action adheres to the policies and direction provided under HRS §344 by way of this Environmental Assessment. The Proposed Action would not result in adverse impacts to the State's natural resources and environmental characteristics, and proposes mitigation measures where necessary to minimize or eliminate potential impacts, as discussed in Section.

4.1.4 STATE COASTAL ZONE MANAGEMENT PROGRAM (HRS §205A)

The Hawaiʻi Coastal Zone Management (CZM) Program was enacted in 1977 through the passage of HRS Chapter 205A. Administered by the State Office of Planning and Sustainable Development, the purpose of the CZM Program is to provide effective management, beneficial use, protection, and development of the lands within the coastal zone. Because there is no point of land more than 30 miles from the ocean, a definite land-sea connection exists throughout the state, thus the CZM area encompasses the entire State. As such, the Proposed Action is located within the CZM area.

Each of the four counties in Hawaiʻi are responsible for administering the program for their jurisdiction through the Special Management Area (SMA) permitting system. The SMA was established to regulate any use, activity, or operation of all "developments" along the shoreline to preserve, protect, and where possible, to restore the natural resources of the coastal zone, and that they comply with CZM objectives, policies, and guidelines. SMA boundaries are delineated for each county as areas where development needs to be regulated to protect coastal resources. The Proposed Action is not within the SMA.

The Proposed Action is consistent with the following objectives and policies of the Hawaiʻi CZM Program:

1.) Recreational Resources

Objectives: Provide coastal recreational opportunities accessible to the public.

Policies:

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

(B) Provide adequate, accessible and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

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

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

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

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

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

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting that dedication against the requirements of section 46-6.

Discussion: The Proposed Action is not located on the coastline and does not impact shoreline recreational resources; therefore, policies regarding shoreline recreational resources are not applicable. The project would require an NPDES Permit, which requires compliance with BMPs during construction to minimize soil erosion into adjacent waterways and to maintain water quality during operation in order to comply with State water quality standards to protect coastal waters.

2.) Historic Resources

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

Policies:
(A) Identify and analyze significant archaeological resources;

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

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

Discussion: As discussed in Section 3.9, the Proposed Action is not expected to significantly impact historic resources. A LRFI was conducted and no historic properties were found near within the Project Site.

3.) Scenic and Open Space Resources

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

Policies:

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

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

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

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

Discussion: The Proposed Action is not located on the coastline and is not in an area with "valued scenic resources."

4.) Coastal Ecosystems

Objectives: Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

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

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

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

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

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

Discussion: The Proposed Action includes earth-moving activities but does not include any work within existing streams or waterways. The project would require an NPDES Permit, which requires compliance with BMPs during construction to minimize soil erosion into adjacent waterways and to maintain water quality during operation in order to comply with State water quality standards to protect coastal waters.

5.) Economic Uses

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

Policies:
(A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent development and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal development to areas designated and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of designated areas when:

(i) Use of designated locations is not feasible;

(ii) Adverse environmental effects and risks from coastal hazards are minimized; and

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

Discussion: The Proposed Action does not involve coastal development.

6.) Coastal Hazards

Objectives: Reduce hazard to life and property from coastal hazards.

Policies:
(A) Develop and communicate adequate information about the risks of coastal hazards;

(B) Control development, including planning and zoning control, in areas subject to coastal hazards;

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

(D) Prevent coastal flooding from inland projects;

Discussion: The Proposed Action is located away from areas exposed to coastal hazards. The Proposed Action would be designed using the International Building Code, 2018 Edition (IBC, 2018) to ensure it can withstand potential impacts from natural hazards.

7.) Managing Development

Objectives: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

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

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

Discussion: The Proposed Action does not involve coastal development. As previously discussed, BMPs would be utilized to minimize impacts due to stormwater runoff and erosion during construction. The project would also obtain all necessary development permits and approvals listed in Section 5. The EA review process requires public notification and allows public agencies and stakeholders to respond with any comments or concerns regarding the Proposed Action.

8.) Public Participation

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

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

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

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

Discussion: The EA review process requires public notification and allows for public agencies and stakeholders to respond with any comments or concerns regarding the Proposed Action.

9.) Beach Protection

Objectives:
(A) Protect beaches and coastal dunes for:

(i) Public use and recreation;

(ii) The benefit of coastal ecosystems; and

(iii) Use as natural buffers against coastal hazards; and

(B) Coordinate and fund beach management and protection.

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

(B) Prohibit construction of private shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;

(C) Minimize the construction of public shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;

(D) Minimize grading of and damage to coastal dunes;

(E) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and

(F) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

Discussion: The Proposed Action does not involve coastal development, shoreline hardening, or activities that would directly impact coastal resources and interfere with natural shoreline processes.

10.) Marine and Coastal Resources

Objectives: (A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

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

(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(D) Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and

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

Discussion: The project does not include the use of marine or coastal resources and is not expected to directly impact coastal resources. This EA addressed the affected environment and analyzed the likely environmental impact from the project which would not have significant effects on the environment. BMPs discussed in various sections would be utilized to minimize impacts to marine and coastal resources due to construction-generated stormwater runoff and erosion.

4.2 COUNTY OF HAWAIʻI

4.2.1 HAWAIʻI COUNTY GENERAL PLAN

The County of Hawaiʻi General Plan (General Plan) is the County's long-range comprehensive plan that guides the pattern of future developments for the island. It provides a sound growth strategy that directs future opportunities related to land use, zoning amendments and capital expenditures. The General Plan was last updated and adopted by ordinance in 2005, and is organized into 13 elements, with policies, objectives, standards and principles for each element. The County of Hawaiʻi is in the process of updating the General Plan through 2045, and the revised version the Draft General Plan 2045 was released for public comment in September 2023. The public comment period closed, however the Final Revised General Plan Update is still pending final approval from the County Council. As such, the Proposed Action must address its consistency with the current 2005 amended version of the County of Hawaiʻi General Plan. The policies, standards and courses of action most relevant to the Proposed Action are discussed below:

Economic

2.3 Policies:

(f) Support all levels of educational, employment and training opportunities and institutions.

2.4.2.2 South Hilo Courses of Action

(a) Encourage the State to provide the necessary funds for the development of the University complex and airport facilities. Provide necessary support services and facilities to aid the development of these complexes.

(f) Support the development of a master plan for lands within the vicinity of the University of Hawaii at Hilo to incorporate a "college town" concept utilizing an appropriate mixture of residential, commercial and other land uses to complement the University's infrastructure.

Public Facilities

10.2.2 Education Policies:

(a) Encourage continuous joint pre-planning of schools with the Department of Education and the University of Hawaii to ensure coordination with roads, water, and other support facilities and considerations such as traffic and safety, and access for vehicle, bicycle, and pedestrian. Encourage master planning of present and proposed public and private institutions

10.2.4.2.2 South Hilo Courses of Action

(a) Encourage the establishment of additional schools as the need arises.

(d) Support the continued expansion of the University system and the University of Hawaii at Hilo and Hawaii Community College campus and encourage the continuing education programs throughout the community. The transfer of State lands to the University should be actively pursued.

Land Use

14.9 Public Lands

14.9.2 Goals

(a) publicly owned lands in the best public interest and to the maximum benefit for the greatest number of people.

14.9.3 Policies

(a) Encourage uses of public lands that will satisfy specific public needs, such as housing, recreation, open space and education.

(b) Encourage the adoption of State programs for State lands consistent with the General Plan

(d) A sub-classification, University use, shall continue to be utilized, permitting the primary institutional and numerous supportive and accessory uses required for establishing and/or expanding a public university. Its designation shall continue to be shown on the Land Use Pattern Allocation Guide map.

(d) Encourage continual improvements to existing educational facilities.

(g) Encourage the implementation of existing State and University of Hawaii plans for the continued development of the "Research and Technology Park" on the campus of the University of Hawaii at Hilo.

Land Use Pattern Allocation Guide

The Hawaiʻi County General Plan Land Use Pattern Allocation Guide (LUPAG) indicates the general location of various land uses in relation to each other and serves as a graphic representation of the Plan's goals, policies, and standards. The Project Site is designated University Use in the LUPAG.

Discussion: The Proposed Action aligns with the relevant goals, policies, and courses of action related to educational facilities in Hawaiʻi County and South Hilo. The Proposed Pre-Kindergarten facility supports the continued development of the University of Hawaiʻi at Hilo campus by providing a land use and programming that complements the University population and educational programs. HISFA and the Ready Keiki program have established that there is a significant need for increased access to preschool education. Early consultation with the County of Hawaiʻi Planning Department confirmed that the Proposed Action would be consistent with the intention and uses of the University Use designation and zoning, as discussed below.

4.2.2 COUNTY OF HAWAIʻI ZONING CODE

The Hawaiʻi County Code Chapter 25 is the County's "Zoning Code", as it defines permitted land uses within the State Land Use Urban and Agricultural Districts. The Zoning Code provides required building setbacks, height limits, and other development regulations for each zoning district. As shown in Figure 4.2, the Project Site is located within the University District, which applies to areas of land

that are utilized for campus-related activities and is intended to apply to areas for the location and expansion of universities and the uses and facilities that are associated with and are supportive of them. Section 25-7-32(a) of the Hawaiʻi County Code states that permitted uses include classrooms, laboratory and research facilities, administration facilities, athletic centers, student health clinics, maintenance facilities and parking lots.

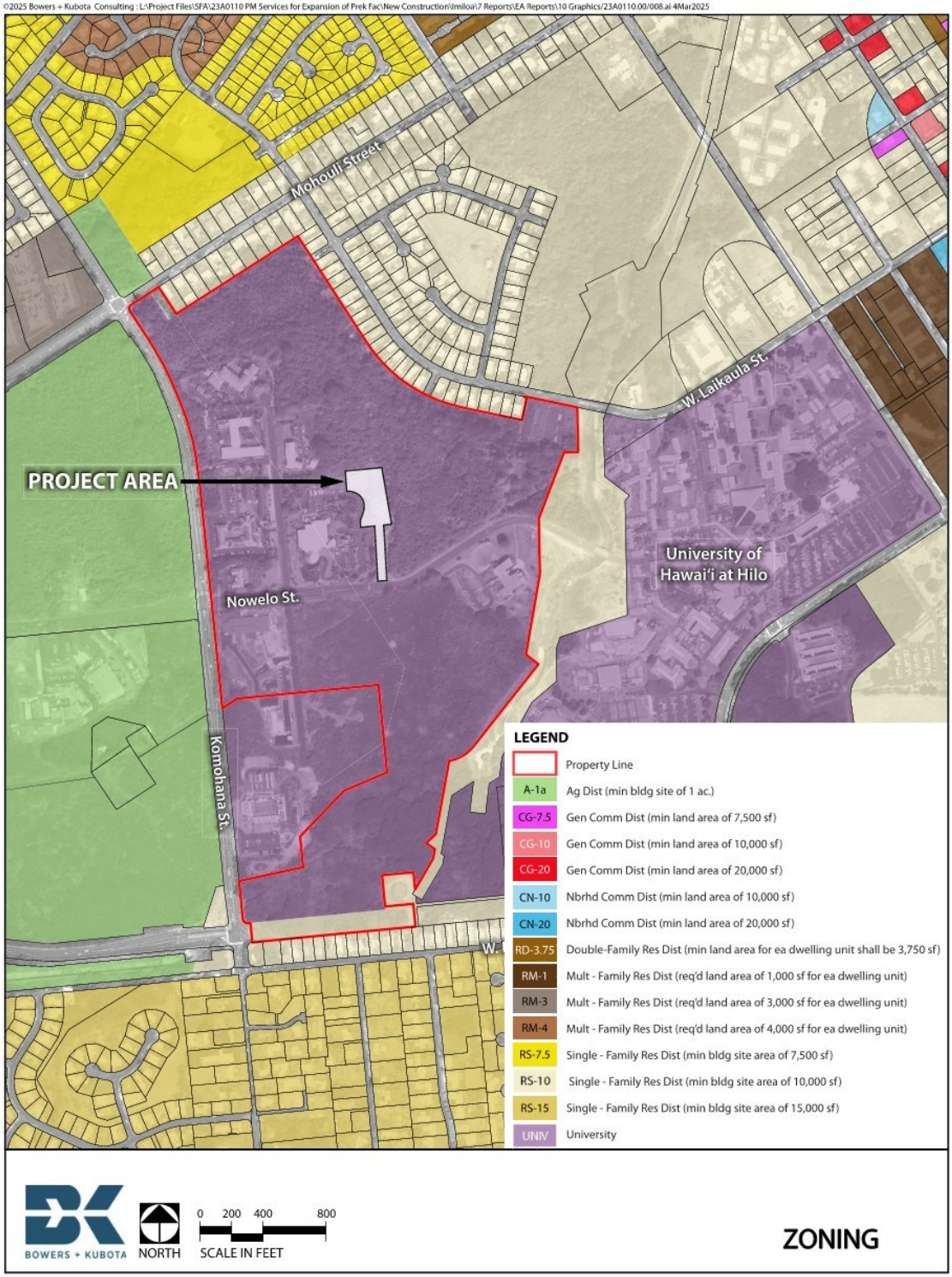
Early consultation with the County of Hawaiʻi Planning Department dated November 18, 2024 confirmed that the proposed pre-kindergarten facility would be consistent with the intention and uses permitted in the University District and advised that a Plan Approval will be required in accordance with Hawaiʻi County Code Section 25-7-37(a). This letter is included in Appendix A.

4.2.3 HILO COMMUNITY DEVELOPMENT PLAN

The current Hilo Community Development Plan (HCDP) was adopted in May 1975. This plan is considerably outdated and there have been more recent community planning efforts covering various area around Hilo including the Downtown Hilo Multimodal Master Plan (2018) and Envision Downtown Hilo Plan (2011). However, neither of the newer plans cover the Project Area.

The HCDP includes information on the planned development of the University, noting that area surrounding the Project Site would have “university related uses.” There are no Goals, Standards, or Courses of Action that are directly applicable to the Proposed Action.

Figure 4.2: County of Hawaii Zoning



5.0 LIST OF PERMITS AND APPROVALS REQUIRED

As a requirement of HAR §11-200.1-28 (2019), the Proposed Action will be subject to the following list of permits and approvals to be completed prior to the start of construction.

APPROVAL OR PERMIT	APPROVING AGENCY
HRS CHAPTER 343 COMPLIANCE	Hawai'i School Facilities Authority; filed with State of Hawai'i: Office of Planning and Sustainable Development, Environmental Review Program
HRS CHAPTER 6E COMPLIANCE	State of Hawai'i: Department of Land and Natural Resources, State Historic Preservation Division
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT	State of Hawai'i: Department of Health, Clean Water Branch
DCAB APPROVAL	State of Hawai'i; Department of Health, Disability and Communication Access Board
COMMUNITY NOISE PERMIT, *IF APPLICABLE*	State of Hawai'i: Department of Health, Indoor and Radiological Health Branch
PLAN APPROVAL	County of Hawai'i Planning Department
GRADING, GRUBBING, STOCKPILING PERMIT	County of Hawai'i Department of Public Works
BUILDING PERMITS FOR BUILDING, ELECTRICAL, PLUMBING, & DRIVEWAY	County of Hawai'i Department of Public Works
PERMIT TO WORK WITHIN COUNTY RIGHT-OF-WAY, *IF APPLICABLE*	County of Hawai'i Department of Public Works
SEWER CONNECTION	County of Hawai'i, Department of Environmental Management
WATER CONNECTION	County of Hawai'i Department of Water Supply

6.0 FINDINGS AND DETERMINATION

As a requirement of HAR §11-200.1-18 (2019), this chapter provides a description of the proposing agency's anticipated determination for the project, including findings and reasons supporting the determination.

6.1 ANTICIPATED DETERMINATION

The proposing agency's analysis of the Proposed Action's primary, secondary, cumulative, and short and long-term effects on the environment would result in a determination of either: 1.) the action would have a significant impact on the environment and an Environmental Impact Statement Preparation Notice should be issued, or 2.) the action would not have a significant impact on the environment warranting a Finding of No Significant Impact (FONSI).

To support an anticipated determination, the project's effects on the environment are discussed in relation to the 13 Significance Criteria prescribed under the State Department of Health's Administrative Rules Title 11, Chapter 200.1. The results of the assessments conducted in the following Chapter 6.2 determine that the proposed project should not have a substantial adverse effect on the surrounding environment.

As a result, the Proposing Agency's anticipated determination is that the Proposed Action is **not** to have a significant impact on the environment based on the criteria set forth in HAR §11-200.1-13, and therefore, through its review and evaluation of the overall impacts discussed in the DEA finds a FONSI determination is anticipated for this project.

6.2 SIGNIFICANCE CRITERIA FINDINGS

The project was assessed against the thirteen (13) "significance criteria" set forth in HAR §11-200.1-13 to evaluate whether the project would have a significant impact on the surrounding environment which led to develop the anticipated determination of a FONSI. A discussion of the Proposed Action with each significant criteria to support that anticipated determination is discussed below.

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

The Proposed Action would not result in the irrevocable commitment to loss or destruction of any natural, cultural, or historic resources. Chapter 3 discussed the project's effect on natural resources and discussed how no historic properties were identified within the Project Site and no sensitive natural resources were identified to be impacted. BMPs and mitigation measures to address any potential impacts will be implemented to minimize possible secondary impacts that would result in significant losses or destruction to natural or cultural resources not yet discovered.

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

The Proposed Action would remain consistent with the existing educational use of the Project Site and there are no anticipated impacts that would curtail future beneficial uses of the environment.

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

The Proposed Action would not conflict with environmental policies in the Hawaiʻi State Plan, State Land Use Law, and Coastal Zone Management Program along with County plans and regulations. Potential adverse impacts that may occur with short-term construction activities would be mitigated through compliance with regulatory guidelines and BMPs.

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

The Proposed Action may have a short-term, positive economic impact due to the increase in construction-related spending and employment. Direct construction activities would result in an overall short-term positive economic impact by stimulating indirect and inducted employment within other industries on the island.

Furthermore, the Proposed Action would provide a beneficial positive impact on the economic and social welfare of children and families in Hawaiʻi County by providing affordable childcare for University of Hawaiʻi at Hilo students, faculty, and the surrounding community, support workforce development for new teachers, and address the growing demand for early childhood education taught in the Hawaiian language.

The Proposed Action would not adversely impact cultural practices of the community or State. Rather it may have beneficial impacts to cultural practices through the perpetuation of ʻōlelo Hawaiʻi (Hawaiian language) and cultural practices and activities taught through the Hawaiian immersion program.

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

The Proposed Action would not contribute any substantial adverse effects on public health. Construction would have some temporary impacts on air and noise quality in the areas surrounding the Project Site. These short-term impacts would be minimized to the extent practicable through the utilization of BMPs and compliance with State and local regulations.

The project would not result in a long-term adverse impact on public health and resources. Research shows a wealth of positive outcomes associated with early childhood education including promoting healthy physical, social, emotional and cognitive development.

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

The Proposed Action would not cause substantial adverse secondary impacts to the social environment or public facilities The new Pre-Kindergarten would serve the local community and is not anticipated result in population changes that would result in adverse impacts to public facilities.

(7) Involve a substantial degradation of environmental quality.

The Proposed Action would not substantially degrade the environmental quality at the Project Site or surrounding area. Construction activities would cause some impacts to air quality, noise, and traffic in the project area, but these impacts would be temporary and mitigated with BMPs in accordance with State and County regulations.

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

The Proposed Action would not have a considerable effect upon the environment and does not involve future commitments for larger actions beyond the current Proposed Action.

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

The Proposed Action is not anticipated to cause significant impact to rare, threatened or endangered species or habitats as none were observed during the flora and fauna survey conducted by AECOS. AS discussed in Section 3.6.3, construction activities would be restricted to daylight hours as much as practicable during seabird breeding season, and proposed outdoor lighting would be shielded to minimize impacts to native seabirds that may frequent the area. BMPs would be utilized during vegetation removal and construction to minimize adverse impacts to the Hawaiian hoary bat or any endangered birds that are found in the Project Site.

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

The Proposed Action would not create substantial long-term adverse effects on air, water, or noise conditions at the Project Site. As discussed previously, it is anticipated that short-term and temporary impacts to air quality and noise levels would occur in the areas surrounding the Project Site during construction. These impacts would be mitigated to the extent practicable in accordance with State and County permit regulations. Therefore, a substantial adverse effect on air or noise quality is not expected.

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

It is not anticipated that the Proposed Action would result in substantial adverse effects or risk of damage from natural hazards at the Project Site. The entire Project Site is located within the Flood Zone "X". The Project Site is located outside of the coastal zone, tsunami evacuation zone, and the SLR-XA.

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

The Proposed Action would not significantly impact scenic vistas and viewplanes as no scenic vistas and viewplanes identified in the Hawaiʻi County General Plan would be adversely affected by the project.

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

Implementation of the Proposed Action will increase energy consumption but is not expected to require substantial energy consumption or emit substantial greenhouse gases.

7.0 AGENCIES AND ORGANIZATIONS CONSULTED

As a requirement of HAR §11-200.1-18 (2019), this chapter identifies agencies, citizen groups, and individuals solicited in the preparation of the Draft EA. Consultation with various government agencies, officials, and community members were undertaken to obtain information on agency requirements and comments about potential community issues so that they could be addressed in this Draft EA. Consultation involved distributing a pre-assessment consultation letter with supporting documentation to various parties requesting their written comments. Table7.1 provides a list of the agencies and organizations that were consulted; those who provided a comment have been marked with a "✓" symbol. Copies of written comments received and responses to these comments are included in Appendix A.

Table 7.1: AGENCIES AND ORGANIZATIONS CONSULTED

✓	AGENCY/ORGANIZATION
	FEDERAL
	U.S Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office
	STATE
	Department of Agriculture (DOA)
	Department of Business, Economic Development and Tourism (DBEDT)
	Department of Health (DOH)
	Department of Land and Natural Resources (DLNR) – Office of the Chairperson
	DLNR– Aha Moku Advisory Committee
✓	DLNR – Commission on Water Resource Management (CWRM)
	DLNR – Division of Forestry and Wildlife (DOFAW)
✓	DLNR – Land Division
	DLNR – State Historic Preservation Division (SHPD)
✓	Department of Transportation (HDOT)
	Office of the Governor – East Hawai'i Representative
	Office of Hawaiian Affairs (OHA)
	Office of Planning and Sustainable Development (OPSD)
	University of Hawai'i at Hilo
	COUNTY
	Department of Public Works
✓	Department of Water Supply
	Fire Department
✓	Planning Department
✓	Police Department

✓	AGENCY/ORGANIZATION
	ELECTED OFFICIALS
	State Senator Lorraine Inouye (Senate District 1)
	State Representative Richard H.K. Onishi (House District 2)
	County Councilmember Jennifer Kagiwada (Council District 2)
	UTILITY COMPANIES
✓	Hawaiian Electric Company
	Hawaiʻi Gas
	Hawaiian Telcom
	Spectrum / Charter Communications
	COMMUNITY
	The Hawaiian Civic Club of Hilo
	ʻAha Pūnana Leo
	Hui Hoʻoleimaluō
	Nā Limahana O Ke Kula ʻO Nāwahīokalaniʻōpuʻu, Labratory Public Charter School

8.0 REFERENCES

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APPENDICES

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APPENDIX A:
Pre-Assessment Consultation Comments

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Mitchell D. Roth
Mayor

Benjamin T. Moszkowicz
Police Chief

Reed K. Mahuna
Deputy Police Chief

County of Hawai`i

POLICE DEPARTMENT
349 Kapi`olani Street • Hilo, Hawai`i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

November 7, 2024

Bowers + Kubota Consulting, Inc.
Attn: Malachi Krishok
2153 N. King Street, Suite 200
Honolulu, Hawaii 96819-4554

Dear Malachi Krishok:

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR ENVIRONMENTAL ASSESSMENT, HRS CHAPTER 343; IMILOA PRE-K FACILITY; TAX MAP KEY: (3) 2-4-001:007 (POR.); WAIAKEA, SOUTH HILO, HAWAII

Staff, upon reviewing the provided documents, does not anticipate any significant impact to traffic and/or public safety concerns.

Thank you for allowing us the opportunity to comment.

If you have any questions, please contact our South Hilo District Commander, Captain Brian Prudencio, at (808) 961-2316 or via email at Brian.Prudencio@hawaiicounty.gov.

Sincerely,

KENNETH A.K. QUIOCHO
ASSISTANT POLICE CHIEF

BP:ws/24HQ1133

BOWERS + KUBOTA

Construction Management · A/E Design · Planning · Project Management

April 30, 2025

23A0110.00 / 25P-028

Mr. Kenneth A.K. Quiocho, Assistant Police Chief
Police Department
County of Hawai'i
349 Kapi'olani Street
Hilo, HI 96720

Subject: Hawai'i School Facilities Authority - 'Imiloa Pre-K Facility
Pre-Assessment Consultation for Environmental Assessment
Tax Map Key: (3) 2-4-001:007 (por.)
Waiakea, South Hilo, Hawai'i

Dear Mr. Quiocho:

Thank you for your letter dated November 7, 2024, in response to the pre-assessment consultation for the Environmental Assessment (EA) of the subject project.

We confirm that the County of Hawai'i Police Department does not anticipate any significant impact to traffic and/or public safety concerns. A Traffic Impact Assessment Report was completed for the subject project and the Draft EA includes analysis of potential traffic impacts.

We appreciate your comments and participation in the process. If you have any questions, please contact me at (808) 846-3340 or via email at mkrishok@bowersandkubota.com.

Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planning Project Manager

MK:kn

Jonathan Ramento

From: Liu, Rouen <rouen.liu@hawaiianelectric.com>
Sent: Friday, November 8, 2024 11:27 AM
To: Malachi Krishok
Cc: Okamura, Dave; Demichelis, Dina L.; Mather, Matthew; Kuwaye, Kristen; Kakazu, Lisa
Subject: [External] Pre-Assessment Consultation for Environmental Assessment (EA), Imiloa Pre K facility, Waiakea, South Hilo
Attachments: BK.pdf

Dear Milachi Krishok,
Thank you for the opportunity to comment on the subject project. Hawaiian Electric Company has no objection to the project. Should Hawaiian Electric have existing easements and facilities on the subject property, we will need continued access for maintenance of our facilities. We appreciate your efforts to keep us apprised of the subject project in the planning process. As the proposed Imiloa Pre-K facility project comes to fruition, please continue to keep us informed.

Please contact me at 808-772-2135 should there be any questions.

Rouen Liu (WA3 – PTA)
Permits Engineer
Hawaiian Electric Company
PO Box 2750
Honolulu Hawaii 96840-0001

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April 30, 2025

23A0110.00 / 25P-027

Mr. Rouen Liu (WA3-PTA)
Permits Engineer
Hawaiian Electric Company
P.O. Box 2750
Honolulu, HI 96840

Subject: Hawai'i School Facilities Authority - 'Imiloa Pre-K Facility
Pre-Assessment Consultation for Environmental Assessment
Tax Map Key: (3) 2-4-001:007 (por.)
Waiakea, South Hilo, Hawai'i

Dear Mr. Liu:

Thank you for your email dated November 8, 2024, in response to the pre-assessment consultation for the Environmental Assessment (EA) of the subject project.

We confirm that HECO has no objections to the project and the information provided, and acknowledge that should HECO have any easements and facilities on the subject property, it will need continued access for maintenance. We will notify you when the Draft EA is published and available for public comment.

We appreciate your comments and participation in the process. If you have any questions, please contact me at (808) 846-3340 or via email at mkrishok@bowersandkubota.com.

Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planning Project Manager

MK:kn

Mitchell D. Roth
Mayor

Deanna S. Sako
Managing Director

West Hawai'i Office
74-5044 Ane Keohokālole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
Fax (808) 327-3563

County of Hawai'i
PLANNING DEPARTMENT

Zendo Kern
Director

Jeffrey W. Darrow
Deputy Director

East Hawai'i Office
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720
Phone (808) 961-8288
Fax (808) 961-8742

November 18, 2024

Malachi Krishok, Planning Project Manager
Bowers + Kubota Consulting, Inc.
2153 N. King Street
Email: mkrishok@bowersandkubota.com

Dear Malachi Krishok:

SUBJECT: Early Consultation for Draft Environmental Assessment
Project: 'Imiloa Pre-Kindergarten Facility
(PL-ENV-2024-000032)
TMK: (3) 2-4-001:007 (por.) Waiākea, South Hilo, Hawai'i

Thank you for your letter dated October 31, 2024, inviting our participation in the early consultation process of the Draft Environmental Assessment (DEA) for the 'Imiloa pre-kindergarten facility, pursuant to HRS Chapter 343. The project aims to construct a new pre-kindergarten facility on the University of Hawai'i at Hilo campus located in South Hilo. The proposed project includes the construction of four classrooms and an administrative building, an outdoor piko gathering area, an outdoor play area, and a parking lot.

The project proposes to construct classrooms approximately 1,200 square feet in size, and would support 20 students, 2 teachers, and 1-2 family volunteers. Each classroom would include a warming kitchen and two single-user toilets with separate handwashing stations. A new sewer line would tie into the existing gravity main located north of the project site, which connects to the County wastewater system at Lanikaula Street. The outdoor play area would be enclosed by an exterior fence, which would also surround the preschool facility to ensure a secure environment. The parking lot, accessed via 'Imiloa Place, will provide a two-way access with a roundabout for drop-off and pick-up, and a minimum of 12 parking stalls for staff and visitors. If the site and funding permits, additional parking stalls may be constructed.

Please clarify exact acreage of the project as part of the due diligence, prior to DEA submittal. The parcel is designated as Urban by the State Land Use Commission. The Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG) map designation is University Use,

and it is in the University District as indicated by the County of Hawai‘i Zoning Code. The property is not located within the Special Management Area (SMA).

The University District applies to areas of land that are utilized for campus-related activities and is intended to apply to areas for the location and expansion of universities and the uses and facilities that are associated with and are supportive of them. Special consideration of such uses and facilities is appropriate given the unique characteristics of university areas, the variety of uses needed to serve the university community, and the varying intensity of land uses in such a community. Section 25-7-32(a) of the Hawai‘i County Code (HCC) states that permitted uses include classrooms, laboratory and research facilities, administration facilities, athletic centers and facilities, auditoriums, student centers, libraries, museums, exhibition halls, cafeterias, student health clinics, maintenance facilities and parking lots.

Based on the above, a pre-kindergarten facility would be consistent with the intention and uses permitted in the University District. As this is a new facility with several new structures, Section 25-7-37(a) of the Zoning Code states that Plan Approval will be required.

Based on the information provided, our recommendation is to include the following information in the Environmental Assessment:

- Conduct an analysis of critical habitat areas and describe mitigating measures to reduce impacts to threatened and/or endangered species.
- Describe how the proposed use is consistent with the Hawai‘i County’s General Plan and Hilo Community Development Plan.
- Conduct a review for historic properties within the project area. Contact the State Historic Preservation Division for assistance in identifying any possible historic sites and, if found, provide a detailed process for mitigating impacts.

If you have any questions or need further assistance, please feel free to contact Kim Tanaka at (808) 961-8833 or email Kim.Tanaka@hawaiicounty.gov.

Sincerely,

for Jeffrey W. Darrow
Jeffrey W. Darrow (Nov 18, 2024 09:18 HST)
ZENDO KERN
Planning Director

KT:ad
V:\PL\PL\planning\public\wpwin60\CH343\2024\PL-ENV-2024-000032 'Imiloa\2024-12-01 PL-ENV-2024-000032 'Imiloa - final.doc

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April 30, 2025

23A0110.00 / 25P-026

Mr. Jeffrey Darrow, Director
Planning Department
County of Hawai'i
101 Pauahi Street, Suite 3
Hilo, HI 96720

Subject: Hawai'i School Facilities Authority - 'Imiloa Pre-K Facility
Pre-Assessment Consultation for Environmental Assessment
Tax Map Key: (3) 2-4-001:007 (por.)
Waiakea, South Hilo, Hawai'i

Dear Mr. Darrow:

Thank you for your letter dated November 18, 2024, in response to the pre-assessment consultation for the Environmental Assessment (EA) of the subject project (PL-ENV-2024-000032).

We confirm that the subject project is located within the Urban State Land Use District and designated University Use in the County General Plan Land Use Pattern Allocation Guide. Thank you for confirming that the proposed pre-kindergarten facility would be consistent with the intention and uses permitted in the University District. We acknowledge that the proposed project will require Plan Approval by the Planning Director in accordance with Section 25-7-37(a) of the Zoning Code.

Lastly, we acknowledge and confirm that the Draft EA includes information and discussion regarding critical habitat areas and impacts to threatened and/or endangered species, the Hawai'i County General Plan and Hilo Community Development Plan, and historic properties. A biological survey of flora and fauna, along with an archaeological literature review and field investigation, were conducted to support this discussion. Both reports will be included as appendices to the Draft EA.

We appreciate your comments and participation in the process. If you have any questions, please contact me at (808) 846-3340 or via email at mkrishok@bowersandkubota.com.

Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planning Project Manager

MK:kn

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

November 21, 2024

Mr Malachi Krishok
Bowers + Kubota Consulting, Inc.
2153 North King Street, Suite 200
Honolulu, HI 96819-4554

Subject: Pre-Assessment Consultation for 'Imiloa Pre-K Facility
Tax Map Key (3) 2-4-001:007 (Portion)

This is in response to your Pre-Environmental Assessment Consultation letter of October 31, 2024.

Please be informed that there is an existing 12-inch waterline along 'Imiloa Place, which ends at the entrance of the 'Imiloa Astronomy Center.

To ascertain the water needs of the project, the Department requests that the applicant submit estimated maximum daily water usage calculations for the proposed project, prepared by a professional engineer licensed in the State of Hawai'i, for review and approval. The water usage calculations should include the total estimated daily water usage in gallons per day and the estimated peak-flow in gallons per minute.

Upon receipt of the water usage calculations above, the Department will make a determination as to the water commitment deposit amount, prevailing facilities charge (subject to change) and necessary water system improvements.

Should there be any questions, please contact Mr. Ryan Quitoriano of our Water Resources and Planning Branch at (808) 961-8070, extension 256.

Sincerely yours,

Keith K. Okamoto, P.E.
Manager-Chief Engineer

RQ:dfg

BOWERS + KUBOTA

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April 30, 2025

23A0110.00 / 25P-025

Mr. Keith Okamoto, P.E., Manager-Chief Engineer
Department of Water Supply
County of Hawai'i
345 Kekuanaoa Street, Suite 20
Hilo, HI 96720

Subject: Hawai'i School Facilities Authority - 'Imiloa Pre-K Facility
Pre-Assessment Consultation for Environmental Assessment
Tax Map Key: (3) 2-4-001:007 (por.)
Waiakea, South Hilo, Hawai'i

Dear Mr. Okamoto:

Thank you for your letter dated November 21, 2024, in response to the pre-assessment consultation for the Environmental Assessment (EA) of the subject project.

We confirm that there is an existing 12-inch waterline along 'Imiloa Place, which ends at the entrance of the 'Imiloa Astronomy Center. Design plans will be coordinated with the County Department of Water Supply to ascertain the water needs of the proposed project and obtain the necessary ministerial permits.

We appreciate your comments and participation in the process. If you have any questions, please contact me at (808) 846-3340 or via email at mkrishok@bowersandkubota.com.

Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planning Project Manager

MK:kn

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

December 3, 2024

Bowers & Kubota Consulting, Inc.
Attn: Mr. Malachi Krishok
Planning Project Manager
2153 North King Street, Suite 200
Honolulu, Hawaii 96819-4554

via email: mkrishok@bowersandkubota.com

SUBJECT: Pre-Assessment Consultation for Environmental Assessment for the Proposed **Imiloa Pre-K Facility** on the University of Hawaii at Hilo Campus located at Waiakea, South Hilo, Island of Hawaii; TMK: (3) 2-4-001:007 (por.) on behalf of Hawaii School Facilities Authority

Dear Mr. Krishok:

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

At this time, enclosed are comments from the (a) Commission on Water Resource Management and (b) Land Division-Hawaii District on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES | KA 'OIHANA KUMUWAIWAI 'ĀINA
COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO
P.O. BOX 621
HONOLULU, HAWAII 96809

Nov 18, 2024

REF: RFD.6342.8

TO: Russell Tsuji, Administrator
Land Division Oahu

FROM: Ciara W.K. Kahahane, Deputy Director
Commission on Water Resource Management

SUBJECT: Pre-Assessment Consultation for EA, 'Imiloa Pre-K Facility

FILE NO.: RFD.6342.8
TMK NO.: (3) 2-4-001:007

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

Our comments related to water resources are checked off below.

- [ ] 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- [ ] 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- [ ] 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- [X] 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.
- [X] 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/
- [ ] 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. The Hawaii Water Plan is directed toward the achievement of the utilization of reclaimed water for uses other than drinking and for potable water needs in one hundred per cent of State and County facilities by December 31, 2045 (§174C-31(g)(6), Hawaii Revised Statutes). We strongly recommend that this project consider using reclaimed water for its non-potable water needs, such as irrigation. Reclaimed water may include, but is not limited to, recycled wastewater, gray water, and captured rainwater/stormwater. Please contact the Hawai'i Department of Health, Wastewater Branch, for more information on their reuse guidelines and the availability of reclaimed water in the project area.

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

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

☐ 14. 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.

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

☐ 16. 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.

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

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

☐ 19. 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:

If you have any questions, please contact Ryan Imata of the Groundwater Regulation Branch at (808) 587-0225 or Katie Roth of the Planning Branch (808) 587-0216.

11/26/24

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

November 6, 2024

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Hawaii District (gordon.c.heit@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for Environmental Assessment for the Proposed **Imiloa Pre-K Facility** on the University of Hawaii at Hilo Campus
LOCATION: Waiakea, South Hilo, Island of Hawaii; TMK: (3) 2-4-001:007 (por.)
APPLICANT: Bowers & Kubota on behalf of Hawaii School Facilities Authority

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **December 3, 2024.**

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

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

Signed: _____
Print Name: GORDON C. HEIT
Division: Land Division
Date: 11/15/24

Attachments
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

75 Aupuni Street, Room 204
Hilo, Hawaii 96720
PHONE: (808) 961-9590
FAX: (808) 961-9599

November 15, 2024

MEMORANDUM

TO: Russell Y. Tsuji, Administrator

FROM: Gordon C. Heit, Hawaii District Land Agent

SUBJECT: Pre-Assessment Consultation for an Environmental Assessment for the Imiloa Pre-K Facility

LOCATION: Waiakea, South Hilo, Island of Hawaii,
TMK: (3) 2-4-001:007 (por.)

APPLICANT: Bowers & Kubota on behalf of the Hawaii School Facilities Authority

Pursuant to your request for comments on the above matter, we offer the following:

The property identified by TMK: (3) 2-4-001:007 is currently encumbered under General Lease No S-4919 to the University of Hawaii as an addition to the UH Hilo campus for associated research and instructional purposes.

The Land Division will provide further comments when the Draft Environmental Assessment is available for review.

Please contact me should you have any questions.

BOWERS + KUBOTA

Construction Management · A/E Design · Planning · Project Management

April 30, 2025

23A0110.00 / 25P-024

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

Subject: Hawai'i School Facilities Authority - 'Imiloa Pre-K Facility
Pre-Assessment Consultation for Environmental Assessment
Tax Map Key: (3) 2-4-001:007 (por.)
Waiakea, South Hilo, Hawai'i

Dear Mr. Tsuji:

Thank you for your letter dated December 3, 2024, with attachments from Department of Land and Natural Resources divisions in response to the pre-assessment consultation for the Environmental Assessment (EA) of the subject project. The letter received included comments from the (a) Commission on Water Resource Management (CWRM) and (b) Land Division – Hawai'i District on the subject matter. Our responses to the comments are below.

(a) Commission on Water Resource Management

Thank you for the review comments and recommendations provided in CWRM file number RFD.6342.8. We acknowledge CWRM's recommendations related to water efficient fixtures and water efficient practices to reduce increased demand on the area's freshwater resources, and stormwater best management practices (BMP) to minimize the project impacts on existing hydrology and preventing polluted runoff from storm events.

Potential impacts of the project to freshwater resources are discussed in the Draft EA, including BMPs related to erosion, infiltration and stormwater runoff. Fixtures will be decided later in the design process, at which time the design team will consider certified water efficient fixtures for the pre-k facility.

(b) Land Division – Hawai'i District

Thank you for the review comments provided. We understand that the subject project is located on lands encumbered under General Lease to the University of Hawai'i as an addition to the UH Hilo campus for associated research and instructional purposes. This information is included in the Draft EA.

We appreciate the DLNR division's comments and participation in the process. If you have any questions, please contact me at (808) 846-3340 or via email at mkrishok@bowersandkubota.com.

Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planning Project Manager

MK:kn

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

EDWIN H. SNIFFEN
DIRECTOR
KA LUNA HO'OKELE

Deputy Directors
Nā Hope Luna Ho'okele
DREANALEE K. KALILI
TAMMY L. LEE
CURT T. OTAGURO
ROBIN K. SHISHIDO

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF TRANSPORTATION | KA 'OIHANA ALAKAU
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO

DIR0001060
STP 8.3862

November 27, 2024

VIA EMAIL: mkrishok@bowersandkubota.com

Mr. Malachi Krishok
Planning Project Manager
Bowers + Kubota Consulting, Inc.
2153 North King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Krishok:

Subject: Pre-Assessment Consultation for Environmental Assessment (EA)
Imiloa Pre-K Facility
Hilo, Hawaii Island, Hawaii
Tax Map Key: (3) 2-4-001: 007 (por.)

Thank you for your letter, dated October 31, 2024, requesting the Hawaii Department of Transportation's (HDOT) review and comments on the subject project. HDOT understands the State of Hawaii, Hawaii School Facilities Authority is proposing to construct a new pre-kindergarten facility on the University of Hawaii at Hilo campus.

HDOT has the following comments:

1. The proposed development project is approximately 1.34 miles from the property boundary of Hilo International Airport (ITO). All projects within five miles from Hawaii State airports are advised to read the Technical Assistance Memorandum (TAM) for guidance with development and activities that may require further review and permits. The TAM can be viewed at this link: http://files.hawaii.gov/dbedt/op/docs/TAM-FAA-DOT-Airports_08-01-2016.pdf

2. The project site is approximately 8,160 feet from the end of Runway 3 at ITO. Federal Aviation Administration (FAA) regulation requires the submittal of FAA Form 7460-1 Notice of Proposed Construction or Alteration pursuant to the Code of Federal Regulations, Title 14, Part 77.9, if the construction or alteration is within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with its longest runway more than 3,200 feet. Construction equipment and staging area heights, including heights of temporary construction cranes, shall be included in the submittal. The form and criteria for submittal can be found at the following website:

https://oeaaa.faa.gov/oeaaa/external/portal.jsp. Please provide a copy of the FAA response to the Part 77 analysis to the HDOT Airport Planning Section.

3. Due to the project's proximity to ITO, the applicant and future users should be aware of potential single event noise from aircraft operations. There is also a potential for fumes, smoke, vibrations, odors, etc., resulting from occasional aircraft flight operations over or near the project. These incidences may increase or decrease over time and are dependent on airport operations.

4. If a solar energy photovoltaic (PV) system is going to be installed, be aware that PV systems located in or near the approach path of aircrafts can create a hazardous condition for pilots due to possible glint and glare reflected from the PV panel array. If glint or glare from the PV array creates a hazardous condition for pilots, the owner of the PV system shall be prepared to immediately mitigate the hazard upon notification by the HDOT and/or FAA.

   The FAA requires a glint and glare analysis for all solar energy PV systems near airports. The www.sandia.gov/glare website has information and guidance with the preparation of a glint and glare analysis. A separate FAA Form 7460-1 will be necessary for the solar energy PV system. After the FAA determination of the Form 7460-1 glint and glare analysis, a copy shall be provided to the HDOT Airport Planning Section by the owner of the solar energy PV system.

   Solar energy PV systems have also been known to emit radio frequency interference (RFI) to aviation-dedicated radio signals, thereby disrupting the reliability of air-to-ground communications. Again, the owner of the solar energy PV system shall be prepared to immediately mitigate the RFI hazard upon notification by the HDOT and/or FAA.

5. The proposed development shall not provide landscape and vegetation that will create a wildlife attractant, which can potentially become a hazard to aircraft operations. Please review the FAA Advisory Circular 150/5200-33C, Hazardous Wildlife Attractants On Or Near Airports for guidance. If the project's landscaping creates a wildlife attractant, the developer shall immediately mitigate the hazard upon notification by the HDOT and/or FAA.

6. An evaluation should be provided in the Draft EA on whether the proposed buildings, operation, and maximum enrollment projection will have any local impacts to the nearby roadways or state highways.

7. HDOT encourages strategies to reduce carbon emissions from the project, if any. Suggestions include:

   a. Incorporate elements that encourage and enhance the use of multiple types of transportation to reduce carbon emissions.

b. Implement energy-efficient technologies and practices, such as light-emitting diode lighting.

c. Use sustainable, recycled, or low-emission materials in construction and manufacturing.

Please submit any subsequent land use entitlement related requests for review or correspondence to the HDOT Land Use Intake email address at DOT.LandUse@hawaii.gov.

If there are any questions, please contact Mr. Blayne Nikaido, Planner, Land Use Section of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

EDWIN H. SNIFFEN
Director of Transportation

BOWERS + KUBOTA

Construction Management · A/E Design · Planning · Project Management

April 30, 2025

23A0110.00 / 25P-030

Mr. Blayne Nikaido, Planner
Land Use Section
HDOT Statewide Transportation Planning Office
869 Punchbowl Street
Honolulu, HI 96813

Subject: Hawai'i School Facilities Authority - 'Imiloa Pre-K Facility
Pre-Assessment Consultation for Environmental Assessment
Tax Map Key: (3) 2-4-001:007 (por.)
Waiakea, South Hilo, Hawai'i

Dear Mr. Nikaido

Thank you for HDOT's letter dated November 27, 2024 (DIR 0001060/STP 8.3862), in response to the pre-assessment consultation for the Environmental Assessment (EA) of the subject project.

Thank you for the information regarding the project's proximity to Hilo International Airport (ITO). We understand that the project is within 5 miles of ITO and approximately 8,160 feet from the end of Runway 3. The Draft EA does discuss the project's proximity to ITO and the potential for occasional noise and air quality impacts from aircraft flight over or near the project. The most recent conceptual design of the proposed project includes three, single story buildings and thus would not exceed the 100:1 surface ratio from the nearest runway. As such, we do not anticipate the need to submit FAA Form 7460-1.

We confirm that a Traffic Impact Assessment Report was completed for the subject project and the Draft EA includes analysis of potential traffic impacts on nearby roadways or state highways. We also will take into consideration HDOT's recommendations regarding reducing carbon emissions from the project as the project is designed and constructed.

We appreciate your comments and participation in the process. If you have any questions, please contact me at (808) 846-3340 or via email at mkrishok@bowersandkubota.com.

Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planning Project Manager

MK:kn

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APPENDIX B:
Flora and Fauna Survey Report

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AECOS No. 1860

Biological surveys of the ʻImiloa Pre-K facility site Tax Map Key: (3) 2-4-001:007 (por.) Waiākea, Hawaiʻi

AECOS Inc.
45-939 Kamehameha Highway
Suite 104
Kāneʻohe, Hawaiʻi 96744

January 30, 2025

Biological surveys of the ʻImiloa Pre-K Facility site Tax Map Key: (3) 2-4-001:007 (por.) Waiākea, Hawaiʻi

January 30, 2025 *AECOS* No. 1860

Eric Guinther, Reginald E. David, and Gioconda López
AECOS Inc.
45-939 Kamehameha Highway Suite 104
Kāneʻohe, Hawaiʻi 96744
Phone: (808) 234-7770 Email: reggie@aecos.com

Introduction

The Hawaiʻi School Facilities Authority (HISFA) is preparing an Environmental Assessment (EA)[1] for the construction of a pre-kindergarten facility on the University of Hawaiʻi at Hilo campus located in South Hilo on the Island of Hawaiʻi (herein the "Project"). The proposed Project site is located at 600 ʻImiloa Place on an approximately 1.07-ac portion of a 202.7-ac parcel (TMK 2-4-001:007) in Waiākea, South Hilo District of Hawaiʻi Island. The site is located on ceded land, which is held in trust by the State of Hawaii and leased to the University of Hawaiʻi at Hilo. The Project area is bounded by the ʻImiloa Astronomy Center to the west, Nowelo Street to the south and undeveloped lands to the north and east (Figure 1). Proposed new buildings and outdoor play area would be situated within that part of the property currently landscaped in ornamental planting (including lawn areas).

The proposed action is construction of three buildings: two classroom buildings and an administrative building, along with additional amenities such as an outdoor gathering area and a play area. A parking lot would be accessed via ʻImiloa Place. A new sewer line connection will be required to tie into the existing gravity main located north of the Project area.

[1] This report was prepared for Bowers + Kubota Consulting Inc. to become part of the public record by incorporation into an EA for the subject project.

Figure 1. Project area at Waiākea, Hilo. Project site outlined in red.

Methods

Botanical Survey

AECOS botanist Gioconda López surveyed the Project site on December 3, 2024, using wandering transects to cover the developed Project site. A second survey was conducted by E. Guinther and G. López on January 3, 2025, primarily covering the secondary forest located in the northern part (proposed sewerage line) of the Project site. Plant species were identified as they were encountered. Any plant not immediately recognized during the survey was photographed and/or a representative feature (fruit, flower, branch) collected for later identification at the laboratory. Species names follow *Hawai'i's Ferns and Fern Allies* (Palmer, 2003), and *Taxonomic and Nomenclatural Updates to the Fern and Lycophyte Flora of the Hawaiian Islands* (Ranker et al, 2019) for ferns, *Manual of the Flowering Plants of Hawai'i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental plants. More recent name changes for naturalized plant species follow Imada (2019).

Terrestrial Vertebrates Survey

Avian Survey

An avian survey of the Project area was conducted by *AECOS* biologist Reginald David in the morning hours of December 3, 2024. Birds were identified to species by visual observation, aided by Leica 8 X 42 binoculars, and by listening for vocalizations. Three avian point-count stations were distributed across the survey area and a single eight-minute avian point-count conducted at each station. Additional species observed in the Project area outside of the station counts were recorded as incidental observations.

Weather conditions were ideal, with no precipitation and light winds between 1 and 5 kph. The avian phylogenetic order and nomenclature used in this report follows the AOS *Check-List of North and Middle American Birds* 2024 (Chesser et al., 2024).

Mammalian Survey

A list was made of mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other animal sign were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson and Reeder, 2005).

Results

Vegetation

The proposed area for the ʻImiloa Preschool is presently in bare ground (used for parking) and landscaping, including extensive lawns and bordering ornamental plantings (see cover photo). The latter includes a number of native plant species. Bordering the east side of the site where the graded fill ends in a steep drop-off occurs an area of highly disturbed vegetation characterized by Guinea grass (*Megathyrsus maximus*) and several species of vines, merging into secondary forest beyond.

The survey area extending north includes a short area of disturbed vegetation along a drop-off (grass and other herbs; Figure 2) but beyond is mostly a dense forest of strawberry guava (*Psidium cattleianum*) and an understory of ferns and mosses (Figure 3). Scattered throughout this low-stature forest are several taller trees, including *Alstonia macrophylla,* gunpowder tree (*Trema orientalis*), *hala* (*Pandanus tectorius*), and *Melochia umbellata.*

Figure 2. Disturbed vegetation observed at the transition from graded ground (in lawn) to secondary forest.

Figure 3. A secondary forest of strawberry guava occurs north of the proposed school site.

Flora

In all, we recorded a total of 109 species of vascular plants, 11 ferns, and 98 angiosperms (flowering plants). Native taxa comprise ten indigenous species (native and distributed elsewhere in the Pacific) representing 9% of the total species observed, and 4 (4%) endemic species (native to Hawai'i and found naturally nowhere else). Seven species (6%) are early Polynesian introductions (so-called "canoe plants"). The remaining 87 species (79%) are plants introduced

to the Hawaiian Islands after 1778, comprising 82 naturalized species (i.e., grow naturally in the wild) and five ornamentals.

The native species recorded are four ferns—*palapalai* (*Microlepia strigosa*)*, uluhe* (*Dicranopteris linearis*)*, kupukupu lau lii* (*Nephrolepis cordifolia*), and *pākahakaha* (*Lepisorus thunbergianus*)—*hala, naupaka kahakai* (*Scaevola sericea*)*, milo* (*Thespesia populnea*), *ʻilieʻe* (*Plumbago zeylanica*), *pōpolo* (*Solanum americanum*), and *pōhinahina* (*Vitex rotundifolia*)*.* Six of these ten species grow naturally in the Project area. Of the endemic species recorded, only *ʻōhiʻa lehua* (*Metrosideros polymorpha*) grows naturally in the Project area; the other three, *loulu* (*Pritchardia* sp.), *kokiʻo keʻokeʻo* (*Hibiscus arnottianus*), and *ʻākia* (*Wikstroemia uva-ursi*) are planted as landscape specimens.

Table 1. Plant species observed at ʻImiloa pre-school site.

Species listed by family	Common name	Status	Abundance	Notes
FERNS AND FERN ALLIES				
BLECHNACEAE				
Blechnum appendiculatum Willd.	---	Nat	C	<1>
DENNSTAEDTIACEAE				
Microlepia strigosa (Thunb.) C.Presl	*palapalai*	**Ind**	R	
GLEICHENIACEAE				
Dicranopteris linearis (Burm. f.) Underw.	*uluhe*	**Ind**	U	
LYGODIACEAE				
Lygodium japonicum (Thunb.) Sw.	Japanese climbing fern	Nat	O	
NEPHROLEPIDACEAE				
Nephrolepis brownii (Desv.) Hovenkamp & Miyam.	sword fern	Nat	O	
Nephrolepis cordifolia (L.) C.Presl	*kupukupu lau lii*	**Ind**	U	
POLYPODIACEAE				
Lepisorus thunbergianus (Kaulf.) Ching	*pākahakaha*	**Ind**	U	
Phlebodium aureum (L.) J. Sm.	rabbit's-foot fern	Nat	U	
Microsorum grossum (Langsd. & Fisch.) S.B.Andrews	*lauaʻe*	Nat	U	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
PTERIDACEAE				
Pityrogramma calomelanos (L.) Link	silver fern	Nat	R	
THELYPTERIDACEAE				
Christella parasitica (L.) H. Lev	downy woodfern	Nat	U	
FLOWERING PLANTS MAGNOLIIDS				
LAURACEAE				
Persea americanum Mill.	avocado	Nat	R	<2>
FLOWERING PLANTS MONOCOTS				
ARACEAE				
Colocasia esculenta (L.) Schott	*kalo*	**Pol**	p	<2>
Xanthosoma rosea Schott	*ʻape*	Nat	R	
ARECACEAE				
Cocos nucifera L.	coconut palm	**Pol**	U	
Pritchardia sp.	*loulu*	**End**	p	<2,3>
ASPARAGACEAE				
Cordyline fruticosa (L.) A. Chev.	*ki,* ti	Nat	U	<2>
Dracaena fragrans (L.) Ker Gawl.	fragrant dracaena	Orn	R	
BROMELIACEAE				
Ananas comosus (L.) Merr.	pineapple	Orn	p	<2>
COMMELINACEAE				
Commelina diffusa N.L. Burm.	day flower; *honohono*	**Pol**	O	
CUCURBITACEAE				
Momordica charantia L.	balsam pear	Nat	U	
CYPERACEAE				
Cyperus gracilis R. Br.	McCoy grass	Nat	O	
Cyperus polysytachyos Rottb.	---	Nat	U	
Cyperus rotundus L.	nut grass	Nat	U	
Fimbristylis littoralis Gaudich.	---	Nat	U	
Kyllinga brevifolia Rottb.	*kiliʻoʻopu*	Nat	U	
MUSACEAE				
Musa sp.	banana, *maiʻa*	**Pol**	p	<2>
PANDANACEAE				
Pandanus tectorius S. Parkinson ex Z	*hala*	**Ind**	O	<2>

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
ORCHIDACEAE				
Arundina graminifolia (D. Don) Hochr.	bamboo orchid	Nat	R	
Dendrobium sp.	---	---	R	<3>
Phaius tankarvilleae (Banks ex L'Hér.)	Chinese ground orchid	Nat	R	
Spathoglottis plicata Blume	Malayan ground orchid	Nat	R	
POACEAE (GRAMINEAE)				
Axonopus compressus (Sw.) P. Beauv.	brd-lf carpetgrass	Nat	A	
Chloris virgata Sw.	feather fingergrass	Nat	U	
Dactyloctenium aegypticum (L.) Willd.	beach wiregrass	Nat	R	
Digitaria eriantha Steud.	Pangola grass	Nat	U	
Digitaria violascens Link	violet crabgrass	Nat	U	
Eleusine indica (L.) Gaertn.	wiregrass	Nat	U	
Eragrostis amabilis (L.) Wight & Arnott	Japanese lovegrass	Nat	R	
Eragrostis superba Peyr.	Wilman lovegrass	Nat	R	
Megathyrsus maximus (Jacq.) B.K. Simon & W.L. Jacobs	Guinea grass	Nat	O	
Melinis minutiflora P. Beauv.	molasses grass	Nat	U	
Sacciolepis indica (L.) Chase	Glenwood grass	Nat	C	
ZINGIBERACEAE				
Zingiber zerumbet (L.) Sm.	*ʻawapuhi*	**Pol**	p	<2>
	FLOWERING PLANTS EUDICOTS			
ACANTHACEAE				
Thunbergia sp.	---	Nat	U	<3>
ANACARDIACEAE				
Mangifera indica L.	mango	Nat	R	
APOCYNACEAE				
Alstonia macrophylla Wall. ex G.Don	---	Nat	U	
Plumeria rubra L.	graveyard flower	Orn	p	<2>
ARALIACEAE				
Hydrocotyle sibthorpioides Lam.	marsh pennywort	Nat	R	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
ASTERACEAE				
Ageratum conyzoides L.	*maile hohono*	Nat	U	
Conyza canadensis (L.) Cronq.	horseweed	Nat	U	
Crassocephalum crepidioides (Benth.) S. Moore	---	Nat	R	
Galinsoga quadriradiata Ruiz & Pav.	Peruvian daisy	Nat	U	
Sphagneticola trilobata L.	wedelia	Nat	U	
Youngia japonica (L.) DC.	Oriental hawksbeard	Nat	U	
BEGONIACEAE				
Begonia hirtella Link	---	Nat	R	
BIGONACEAE				
Spathodea campanulata P. Beauv.	African tulip tree	Nat	U	
BRASSICACEAE				
Lepidium virginicum L.	---	Nat	R	<3>
CAMPANULACEAE				
Hippobroma longiflora (L.) G. Don	star of Bethlehem	Nat	R	
CANNABACEAE				
Trema orientalis (L.) Blume	gunpowder tree	Nat	U	
CARICACEAE				
Carica papaya L.	papaya	Nat	p	<2>
CARYOPHYLLACEAE				
Drymaria cordata (L.) Willd. ex Roem.	*pipili*	Nat	U	
CLUSIACEAE				
Clusia rosea Jacq.	autograph tree	Nat	R	
CONVOLVULACEAE				
Ipomoea triloba L.	little bell	Nat	U	
Ipomoea ochracea (Lindl.) G.Don	morning glory	Nat	U	
EUPHORBIACEAE				
Aleurites moluccana (L.) Wild.	*kukui*	**Pol**	U	
Euphorbia hirta L.	garden spurge	Nat	U	
Euphorbia hypericifolia L.	graceful spurge	Nat	U	
Euphorbia prostrata Aiton	prostrate spurge	Nat	U	
Manihot esculenta Crantz	cassava, manioc	Orn	U	
Macaranga tanarius (L.) Müll.Arg.	---	Nat	O	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
FABACEAE				
Canavalia cathartica Thouars	*maunaloa*	Nat	O	
Chamaecrista nictitans (L.) Moench	partridge pea	Nat	R	
Crotalaria assamica Benth.	rattlepod	Nat	R	
Crotalaria pallida Aiton	smooth rattlepod	Nat	R	
Desmodium triflorum (L.) DC.	---	Nat	O	
Mimosa pudica L.	sensitive plant	Nat	O	
GOODENIACEAE				
Scaevola sericea L.	*naupaka kahakai*	**Ind**	p	<2>
LAMIACEAE				
Mesosphaerum pectinatum (L.) Kuntze	comb hyptis	Nat	O	
LINDERNIACEAE				
Torenia crustacea (L.) Cham. & Schltdl.	false pimpernel	Nat	R	
LYTHRACEAE				
Cuphea carthagenensis (Jacq.) Macbr.	tarweed	Nat	R	
MALVACEAE				
Hibiscus arnottianus A. Gray	*kokiʻo keʻokeʻo*	**End**	p	<2>
Melochia umbellata (Houtt.) Stapf	---	Nat	O	
Thespesia populnea (L.) Sol. Ex Corrêa	*milo*	**Ind**?	p	<2>
MELASTOMATACEAE				
Clidemia hirta (L.) D. Don	Koster's curse	Nat	U	
Melastoma sanguineum Sims	fox-tongued melastoma	Nat	O	
Heterotis rotundifolia (Sm.) Jacq.-Fél.	---	Nat	U	
MYRSINACEAE				
Ardisia elliptica Thunb.	shoebutton ardisia	Nat	U	
MYRTACEAE				
Metrosideros polymorpha var. *polymorpha* Gaud.	*ʻōhiʻa lehua*	**End**	R	
Psidium cattleianum Sabine	strawberry guava	Nat	AA	<1>
Psidium guajava L.	common guava	Nat	R	
Syzygium cuminii (L.) Skeels	Java plum	Nat	R	
OXALIDACEAE				
Oxalis corniculata L.	yellow wood sorrel	**Pol**	U	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
PHYLLANTHACEAE				
Phyllanthus debilis Klein ex Willd.	*niruri*	Nat	U	
Phyllanthus tenellus Roxb.	---	Nat	R	
PLUMBAGINACEAE				
Plumbago zeylanica L.	*ʻilieʻe*	**Ind**	p	<2>
POLYGALACEAE				
Polygala paniculata L.	bubblegum plant	Nat	R	
PRIMULACEAE				
Anagallis arvensis L.	scarlet pimpernel	Nat	O	
RUBIACEAE				
Hedyotis corymbosa (L.) Lam.	---	Nat	U	
Paederia foetida L.	*maile pilau*	Nat	O	
RUTACEAE				
Citrus sp.	---	Orn	p	<2,3>
SOLANACEAE				
Capsicum annuum L.	*nīoi*	Nat	p	<2>
Solanum americanum Mill.	*pōpolo*	**Ind**	R	
THYMELAEACEAE				
Wikstroemia uva-ursi A.Gray	*ʻākia*	**End**	p	<2>
URTICACEAE				
Cecropia obtusifolia Bertol.	guarumo	Nat	U	
VERBENACEAE				
Lantana camara L.	lantana	Nat	U	
Pilea microphylla (L.) Liebm.	artillery plant	Nat	U	
Citharexylum caudatum L.	fiddlewood	Nat	U	
Vitex rotundifolia L. fil.	*pōhinahina*	**Ind**	p	<2>

Legend to Table 1

Status = distributional status

End = endemic; native uniquely to the Hawaiian Islands.

Ind = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.

Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since 1778 and well-established.

Orn = exotic, ornamental or cultivated; plant not naturalized (not well-established outside of cultivation).

Pol = Polynesian introduction before 1778.

Abundance = occurrence ratings for plants in survey area.

R - Rare – seen in only one or two locations.

U - Uncommon – seen at most in several locations.

O - Occasional – seen with some regularity.

C - Common – observed numerous times during the survey.

A - Abundant – found in large numbers; may be locally dominant.

p - Present – Abundance not determined, plant cultivated for ornamental or agricultural purposes.

Table 1 (continued).

Notes:
<1> - Especially abundant in strawberry guava forest.
<2> - Plant part of the landscaping (planted here).
<3> - Plant without flower or fruit; identification uncertain.

Avian Fauna

A total of 12 bird species, representing nine separate families, were recorded during the survey (Table 2). One recorded species, Pacific Golden-Plover (*Pluvialis fulva*), is an indigenous migratory shorebird species. The remaining 11 species are non-native introductions that have become naturalized in Hawaiʻi.

Table 2. Avian species detected at ʻImiloa pre-school site, December 2024.

Common Name	**ORDER** FAMILY *Species*	**Status**	**RA**
	COLUMBIFORMES		
Spotted Dove	*Streptopelia chinensis*	A	5.33
Zebra Dove	*Geopelia striata*	A	4.33
	CHARADRIIDAE - Golden-Plovers, Lapwings & Plovers		
	Pluvialinae - Golden-Plovers		
Pacific Golden-Plover	*Pluvialis fulva*	IM	0.67
	PASSERIFORMES		
	ZOSTEROPIDAE - White-eyes		
Warbling White-eye	*Zosterops japonicus*	A	6.00
	LEIOTHRICHIDAE - Babblers		
Chinese Hwamei	*Garrulax canorus*	A	0.67
	STURNIDAE - Starlings		
Common Myna	Acridotheris tristis	A	3.33
	ESTRILDIDAE - Estrildid Finches		
Java Sparrow	*Lonchura oryzivora*	A	2.33
Common Waxbill	*Estrilda astrild*	A	3.33

Table 2 (continued).

Common Name	ORDER FAMILY *Species*	Status	RA
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies Carduelinae - Carduline Finches and Hawaiian Honeycreepers		
House Finch	*Haemorhous mexicanus*	A	1.67
Yellow-fronted Canary	*Ceithagra mozambica*	A	2.00
	CARDINALIDAE - Cardinals & Allies		
Northern Cardinal	*Cardinalis cardinalis*	A	1.33
	THRAUPIDAE - Tanagers Thraupinae - Core Tanagers		
Saffron Finch	*Sicalis flaveola*	A	0.67

Legend to Table 1.

Status:
A = Alien, introduced by humans, non-native
IM = Indigenous migrant, native but not unique to Hawai'i, found elsewhere naturally
RA= Relative abundance: number of birds counted divided by number of count station (n=2)

Avian diversity and densities are in keeping with the location of the Project and the surrounding vegetation. Three species—Warbling White-eye (*Zosterops japonicus*), Spotted Dove (*Streptopelia chinensis*), and Zebra Dove (*Geopilia striata*)—accounted for 53% of the birds recorded. The most frequently recorded species was Warbling White-eye, which made up 20% of the birds recorded.

Fauna Resources

We recorded one cat (*Felis catus*) and sign of dog (*Canis lupus familiaris*).

Discussion and Recommendations

Recommendations are partly based on U.S. Fish and Wildlife Service, Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2023). Implementation of the recommendations (provided below as bulleted items) will minimize impacts to listed species to the maximum extent practicable.

Floral Resources

Although native flora is present within the Project area, these plants are either common species, cultivated for food, or cultivated here as part of the landscaping. No plants proposed or listed as threatened or endangered species as set forth in the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543; USFWS, nd-a; HDLNR, 1998) were seen in the Project area. For plants, state listing follows the federal listing.

Avian Resources

Pacific Golden-Plover is a native, indigenous migratory shorebird species which nests in the high Arctic during the late spring and summer months, returning to Hawaiʻi and the Tropical Pacific to spend the fall and winter months each year. The birds usually leave Hawaiʻi for their migration back to the Arctic in late April or the very early part of May. This plover is widely distributed across the Hawaiian Islands during the cooler months.

No avian species that is currently listed under federal or State of Hawaii endangered species statutes was observed (HDLNR, 1998, 2015; USFWS, nd-a). Indeed, no native birds (other than the Pacific Golden-Plover) were observed or expected in the Project area.

Seabirds

It is possible that Hawaiian Petrel (*Puffinus sandwichesis*), Band-rumped Storm-Petrel (*Hydrobates castro*), and Newell's Shearwater (*Puffinus newelli*) over-fly the Project area between April and the middle of December each year in small numbers. The primary cause of mortality in Hawaiian Petrels and Newell's Shearwaters in Hawaiʻi is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these listed seabird species in Hawaiʻi. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. Disoriented seabirds may collide with man-made structures and, if not killed outright, become easy targets of opportunity for feral mammals (Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003). No suitable nesting habitat exists within or close to the Project area for any of these three seabird species.

The principal potential impact that the Project poses to protected seabirds is an increased threat that birds will be downed after becoming disoriented by lights associated with construction activities if undertaken during the nesting season. As well, following build-out, security lighting operated during the seabird nesting season can pose a hazard.

- Lighting deployed during construction or planned for the Preschool must be shielded and pointed directly downward (Reed et al., 1985; Telfer et al., 1987)]. All associated outdoor lighting must be fully "dark sky compliant" (HDLNR-DOFAW, 2016).

Mammalian Resources

All mammalian species observed during this survey are alien to the Hawaiian Islands. No rodents were recorded but one or more of the four alien Muridae found on Hawai'i Island—European house mouse (*Mus musculus*), roof rat (*Rattus* rattus), brown rat (*Rattus norvegicus*), and black rat (*Rattus exulans hawaiiensis*)—likely utilize various resources within the general Project area. These human commensal species are drawn to areas of human habitation and activity. All introduced mammalian species are deleterious to the native biota.

No mammalian species currently protected or proposed for protection under either the federal or State of Hawaiʻi endangered species programs were detected during this survey (DLNR, 2015; USFWS, nd-a).

Hawaiian hoary bat

It is probable that the Hawaiian hoary bat overflies the Project area on a seasonal basis (David, 2025). The removal of trees within the Project area could temporarily displace individual bats using the trees for roosting. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. However, during the pupping season, females carrying their pups may be less able to vacate a roost site if the tree is felled. Further, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled.

- Potential adverse impacts from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) between June 1 and September 15, the period in which bats may have pups.

Other Resources of Potential Concern

Critical Habitat

Federally delineated Critical Habitat is not present in the Project area (USFWS, nd-b). No equivalent designation exists under state law.

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APPENDIX C:
Archaeological Literature Review and Field Investigation Report

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November 13, 2024

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Subject: Archaeological Field Inspection for the Proposed Pre-Kindergarten Facility on TMK: (3) 2-4-001:007, Waiākea Ahupuaʻa, South Hilo District, Island of Hawaiʻi

Dear Malachi:

As requested, ASM Affiliates (ASM) conducted an archaeological field inspection for an approximately 1.07-acre portion of TMK: (3) 2-4-001:007, located in Waiākea Ahupuaʻa, South Hilo District, Island of Hawaiʻi (Figures 1, 2, and 3). The field inspection was conducted to support the preparation of an HRS-343 Environmental Assessment (EA) for the construction of a new pre-kindergarten facility on the University of Hawaiʻi campus located in South Hilo on the Island of Hawaiʻi. The proposed development activities include the construction of five buildings, along with additional amenities such as an outdoor piko gathering area and separate play area. A new sewer line connection is also required to tie into the existing gravity main located north of the project site (Figure 4). The purpose of the study was to identify any undocumented historic properties or other cultural resources that may be present within the project area and to provide information to assist the Department of Land and Natural Resources-State Historic Preservation Division (DLNR-SHPD) with their Hawaiʻi Revised Statutes (HRS) Chapter 6E-8 review of the EA. This letter report presents a description of the project area and a brief culture-historical background for this portion of South Hilo, followed by a description of the methods and results of the current field inspection and a recommended determination of effect for the proposed project.

Description of the Project area

The project area is located at 600 ʻImiloa Place, Hilo, HI, 96720 on an approximately 1.07-acre portion of the 143.42-acre parcel of TMK: (3) 2-4-001:007. The project area is located on ceded land, which is held in trust by the state of Hawaiʻi and leased to the University of Hawaiʻi at Hilo. The project area is bounded by the ʻImiloa Astronomy Center to the west, Nowelo Street and a parking lot to the south and undeveloped thick forest to the north and east (See Figure 3). Located at an elevation of roughly 60 to 75 meters (200 to 240 feet) above mean sea level (amsl), soils within the project area are classified as belonging to the Keaukaha highly decomposed plant material, with 2 to 10 percent slopes (Figure 5) (Soil Survey Staff 2022). These soils are formed of ash deposits on top of lava flows of the Qk3 Kau Basalt that erupted from Mauna Loa roughly 750 to 1,500 years ago (Figure 6) (Trusdell et al. 2005). The soil deposits observed within the project area in undisturbed areas appeared shallow (approximately 10-20 centimeters deep) and bedrock exposures were common. The Mauna Loa flow of 1881 extends northeast of the current project area, but does not overlap (See Figure 6).

The project area can be seen as two sections, with the first southern portion being approximately 0.7-acres of landscaped lawn with clear mechanical disturbance along the edges, and the second portion being approximately 0.35-acres of undulating forest extending northward (See Figure 3). While southern portion of the project area has been graded, flattened and landscaped (Figure 7) , the ground surface of the northern portion is very rocky and appears less disturbed (Figure 8). The terrain slopes fairly steeply from west to east, with a very undulating ground surface. Vegetation within the area consists primarily of waiwi (*Psidium cattleianum*), bamboo orchid (*Arundina graminifolia*), albizia (*Albizia julibrissin*) and autograph tree (*Clusia rosea*), with thick uluhe fern

(*Dicranopteris linearis*) draped over much of the area (Figure 9). Hala trees (*Panadus tectorius*) were also identified, although there were only two on the north end of the project area and the rest were observed outside the project area bounds (Figure 10).

Brief culture-historical background

With respect to the cultural significance of the project area and any ramifications such significance may have pertaining to the proposed development, a brief culture-historical background is included within. Much of this information is taken from research conducted during the preparation of the environmental impact statement for the Pūʻainakō Street Extension/Widening project (FHWA et al. 2000). This research included extensive archival research and oral history interviews focused on Hawaiian settlement and population expansion and sugarcane plantation development (Maly 1996).

The proposed project area is located in Waiākea Ahupuaʻa, whose name translates as "broad waters" (Pukui et al. 1974:220) and is home to the Wailoa River and portions of Hilo, Reed's, Kuhio, and Puhi Bays. In the upland areas of Waiākea, which included the proposed project area, relatively shallow soils and lava flows shaped the potential for agricultural development prior to the nineteenth century, as described by (Handy et al. 1991:539):

> On the lava strewn plain of Waiakea and on the slopes between Waiakea and Wailuku River, dry taro was formerly planted wherever there was enough soil. There were forest plantations in Panaʻewa and in all the lower fern-forest zone above Hilo town.

Nineteen-century written accounts of Waiākea also describe agricultural use of the Hilo uplands, including the incorporation of foreign crops as the century progressed. For example, Isabella Bird (1875:54) writes, "Above Hilo, broad lands sweeping up cloudwards, with their sugar cane, kalo, melons, pine-apples, and banana groves suggest the boundless liberality of Nature." One long-standing practice in the forested uplands was the snaring (ʻahele) of birds to collect feathers by bird catchers known as kia manu (Maly 1996).

The nineteenth century also saw major demographic changes in Waiākea that resulted from prolonged interaction with foreigners, the arrival of missionaries in 1824, a tsunami that struck Hilo Bay in 1837, and epidemics in 1848 and 1853 (Clark and Rechtman 2016). These events led to a decreased and relocated population at a time when pressure from foreign investors resulted in a shift from traditional land tenure to a system of private land ownership. Historically, the entire ahupuaʻa of Waiākea was treated as personal land by Kamehameha I and passed on to his son Liholiho. Waiākea was later inherited by chiefess Kaunuohua, a grand-daughter of Keawemauhili and kahu of Alexander Liholiho (Kameʻeleihiwa 1992), who later relinquished the ahupuaʻa during the Māhele ʻĀina (Land Division) of 1848. As a result of the Māhele, Waiākea Ahupuaʻa was set aside as Crown Lands for Kamehameha III. In addition, twenty-six kuleana claims for Land Commission Awards (LCAws) were registered within Waiākea for houselots and cultivated fields. Most of the claims were for houselots and cultivated sections located along major inland roads or fishponds near Hilo Bay (Devereux et al. 1997; Moniz 1992), none of which were in the immediate vicinity of the proposed project area.

Following the Māhele, Kamehameha IV leased large portions of Waiākea to outside interests for pasture and sugarcane cultivation (Moniz 1992). In 1861, S. Kipi leased the Crown Lands of Waiākea for the rate of $600 dollars a year to be used as pastureland for five years (Kelly et al. 1981; Maly 1996). In 1874, the first lease for sugarcane cultivation in Waiākea was granted to Rufus A. Lyman for a term of 25 years. The lease granted him all the privileges of the land including the use of the fishponds and the cutting of firewood (Maly 1996). This lease was eventually transferred to the Waiākea Mill Company, founded by Alexander Young and Theo H. Davis, and the Waiākea Sugar Plantation was established in 1879. The population of Waiākea increased as a

result of the industrial and economic growth brought about by the sugar industry (Wolforth 2007). In 1888 the company acquired a 30-year lease that increased their land holdings in Waiākea Ahupua‘a. The Waiākea Mill Company systematically cleared these lands and planted sugarcane on them. They established a railroad system to carry the cane from the fields to the mill for processing, and workers in the sugarcane fields were often housed in camps located adjacent to the rail lines.

When the Waiākea Mill Company's lease of Waiākea Ahupua‘a expired in 1918 preparations were undertaken, encouraged by Territorial Governor McCarthy, for a large-scale homesteading experiment (Horowitz et al. 1969). The land holdings of the company, which had increased to more than 7,000 acres by 1918, were placed under new homesteading laws that required the government to lease portions of it to individual homesteaders who would be willing to grow sugarcane (Kelly et al. 1981). The Waiākea Mill company lands were divided up by the Territory of Hawai‘i into house lots, homesteads, and cane lots of various sizes for lease and purchase. The house lots, centered along Kīlauea Avenue, were primarily for the working men and their families to establish residences. The first series of homesteads were created by 1919, followed by the cane lots. The homesteads and cane lots ranged in size from 10 to 76 acres and stretched west from Kīlauea Avenue (Kelly et al. 1981). They encompassed much of the already cultivated cane lands of Waiākea, including a portion of the parcel that contains the proposed project area. Waiākea Cane Lot 20-A extended into the southern end of the subject parcel, but outside of the current project area (Escott 2004).

The project area is located on the makai end of a parcel that was less suitable for sugarcane cultivation (Escott 2004). This land was instead set aside in 1919 for lease as a 570-acre parcel (Figure 11) designated the "Waiakea Pasture Land" (Chaney 1919). The metes and bounds description of the property notes that its boundaries follow "along cultivated land," suggesting that this parcel was not under sugarcane (or other) cultivation at the time. The pasture land was leased again in 1939 (Figure 12) and 1942, but during World War II it was used by the United States Army for training (Maly 1996). Documentation of these training activities indicate that barbed wire, latrine buildings, and three Quonset huts were constructed to the west of the current project area, but later removed (Maly 1996).

The University of Hawai‘i at Hilo opened in Hilo in 1947, but it wasn't until 1990 that the area around the current project area began to be developed with the construction of UH Hilo's University Park of Science and Technology. Prior to 1990, no development of the area took place (Figures 13 and 14). Several base facilities for international observatories were constructed, with the Smithsonian Array base facilities located just east of the northern portion of the current project area. In 2006, the ‘Imiloa Astronomy Center (directly adjacent to the current project area) opened, which involved the clearing, dozing and landscaping of the southern portion of the current project area.

Summary of Previous Archaeological Work Conducted within vicinity

Seventeen prior archaeological and cultural studies (Table 1) have been conducted in the project area vicinity. While most archaeological studies are closely located to the project area (Figure 15), the most pertinent of these include an Archaeological Inventory Survey (AIS) and a supplemental follow-up survey conducted in 1993 by Cultural Surveys Hawaii (CSH) (Borthwick et al. 1993; Borthwick and Hammatt 1993). These surveys covered approximately 174 acres in the UH Hilo mauka lands development area, including the entirety of the current project area (Figure 16). As a result of those surveys four Historic Period sites attributed to the Waiākea Sugar Plantation's use of the area for sugarcane cultivation were recorded. The sites included an agricultural field complex (Site 50-10-35-18667) consisting of two discontinuous field walls with approximately 25 stone clearing mounds between; an enclosure (Site 50-10-35-18668) and an enclosure/wall (Site 50-10-35-18669) that were interpreted as the remains of a twentieth century camp and lunch station once

occupied by the field workers; and another field complex (Site 50-10-35-18670) containing roughly sixteen stone clearing mounds. Two of the mounds at Site 18670 were subject to subsurface testing, indicating that the features were constructed and maintained historically as part of the Waiākea Mill Company's sugar cane fields. Borthwick and Hammatt suggest that "the construction and maintenance of the mounds. . . were done to increase the cultivatable soil area by removing rocks from the fields and piling them into mounds and/or along field edges" (1993:13). None of these sites were within the current project area. Furthermore, the site map provided by these reports show a bulldozed road impacting much of the current project area (see Figure 16).

Table 1. Relevant prior archaeological and cultural studies.

Study	*Type*	*Findings*
Borthwick et al. (1993)	AIS	Sugarcane agricultural sites
Borthwick and Hammatt (1993)	AIS	Sugarcane agricultural sites
Hunt and McDermott (1993)	AIS	Sugarcane agricultural sites.
Maly et al. (1994)	AIS	Sugarcane agricultural sites
Spear (1995)	DRR	None
Maly (1996)	CIA	Oral testimony relating gathering of *mai'a 'ele'ele* bark and trails
Rechtman and Henry (1998)	AIS	Sugarcane agricultural sites
McGerty and Spear (1999)	AIS	Sugarcane agricultural sites
Bush et al. (2000)	AIS	Burial in lava sink overhang and sugarcane agricultural sites
McDermott and Hammatt (2001a)	AIS	Sugarcane agricultural sites
Escott (2004)	AIS	Sugarcane agricultural and military training sites
Clark and Rechtman (2006)	AIS	Sugarcane agricultural sites
Rechtman (2012)	AMR	Sugarcane agricultural sites
Clark et al. (2012)	AIS	Sugarcane agricultural sites, historic sites
Nelson and Rechtman (2015)	AMR	Historic sites and artifacts
Barna (2020)	FI	None
Barna 2023	FI	None

Two archaeological surveys (Bush et al. 2000; McDermott and Hammatt 2001b) conducted by Cultural Surveys Hawai'i, Inc. examined the United States Department of Agriculture facility located southwest of the current project area, across Komohana Street. During these surveys, three archaeological sites were identified. Bush et al. (2000) identified a burial site (Site 50-10-35-22080) approximately 300 meters east of the currently proposed project area for the solar development. The site included human skeletal remains hidden within an overhang in a lava sink. A burial preserve was established for this site. McDermott and Hammatt (2001b) identified two sites associated with Historic Period use of the area (Sites 50-10-35-22734 and 50-10-35-22735). Site 22734 is a rectangular rock mound interpreted as a planting feature or foundation associated with sugarcane cultivation or ranching. Site 22735 is a stone causeway located on the alignment of an unimproved roadway. Both of these sites were determined to be significant under Criterion d for their information content and no further mitigation was recommended for future effects to these sites.

Escott (2004) conducted an archaeological inventory survey of a 258-acre parcel (TMK: (3) 2-4-001:122) located to the southwest of the current project area surrounding the Bush et al. (2000) and McDermott and Hammatt (2001) study areas (see Figure 15). The Escott survey area was also situated at the western end of the Pū'āinakō Street extension corridor surveyed by Hunt and

McDermott (1993). As a result of the survey, Escott (2004) recorded twenty archaeological sites (Sites 50-10-35-18918, 18919, 20681, and 24233-24247), eighteen of which were interpreted as associated with the Historic cultivation of sugarcane. The other two sites also dated to the Historic Period, but were interpreted as related to ranching and World War II military activities. The recorded sites included two rock alignments, a rock concentration, a rock mound, six sugarcane fields, an enclosed lava blister, a water catchment, three dirt roads, two World War II era U.S. military fighting positions, the old location of the Fair View Dairy where later military activities also took place during World War II, and an old fence line marked by three iron fence posts. The six sugarcane field sites all contained multiple features, nearly all of which were rock piles interpreted as field clearing mounds. Although none of the clearing mound features within the former sugarcane fields were tested by Escott (2004), he relates that "the historic sugar cane fields are well documented on historical maps and in historical maps", and that, "soil depths at these sites are very shallow, features are built on bedrock outcrops, and the dismantling of features during past testing has contributed no new archaeological data to improve our understanding of them" (2004:113-114).

Further archaeological studies within the area (See Figure 15) identified similar features, with sugarcane agricultural features and historic artifacts being recorded in further surveys and monitoring. A review of available historic aerial photographs, maps, and County of Hawai'i tax records did not indicate other potential historic properties within the proposed project area.

Field Inspection Results

On October 25, 2024, ASM Affiliates conducted a field inspection of the proposed project area. Fieldwork was conducted by David King, M.Sc., Johnny Dudoit, B.A., and Ryan Coughlin (ASM's UH Hilo Intern). During the field inspection, the ground surface of the entire parcel was visually inspected utilizing north/south pedestrian transects, maintaining 10-meter spacing intervals. As mentioned above, the southern portion of the project area was clearly dozed, flattened and landscaped into open lawn with ornamental trees and bushes, as well as composting piles. The northern portion of the project area was thickly forested. As a result of the field inspection, no archaeological sites, features, or deposits were identified within the project area. No subsurface sampling was conducted as part of the fieldwork due to the rocky and shallow nature of accumulated soils and prior ground disturbance.

Conclusion and Recommendations

As a result of the current field inspection, no historic properties were identified within the project area. Therefore, an effect determination of "no historic properties affected" pursuant to HAR §13-275-7 is recommended for the proposed development of the pre-kindergarten facility on 1.07-acres of TMK: (3) 2-4-001:007. In the unlikely event that any historic properties are encountered during grading activities associated with the proposed development, such activities must be halted and DLNR-SHPD contacted immediately.

Should you have any questions or concerns, please feel free to contact me directly.

Sincerely,

Matthew R. Clark, M.A.
ASM Principal Investigator

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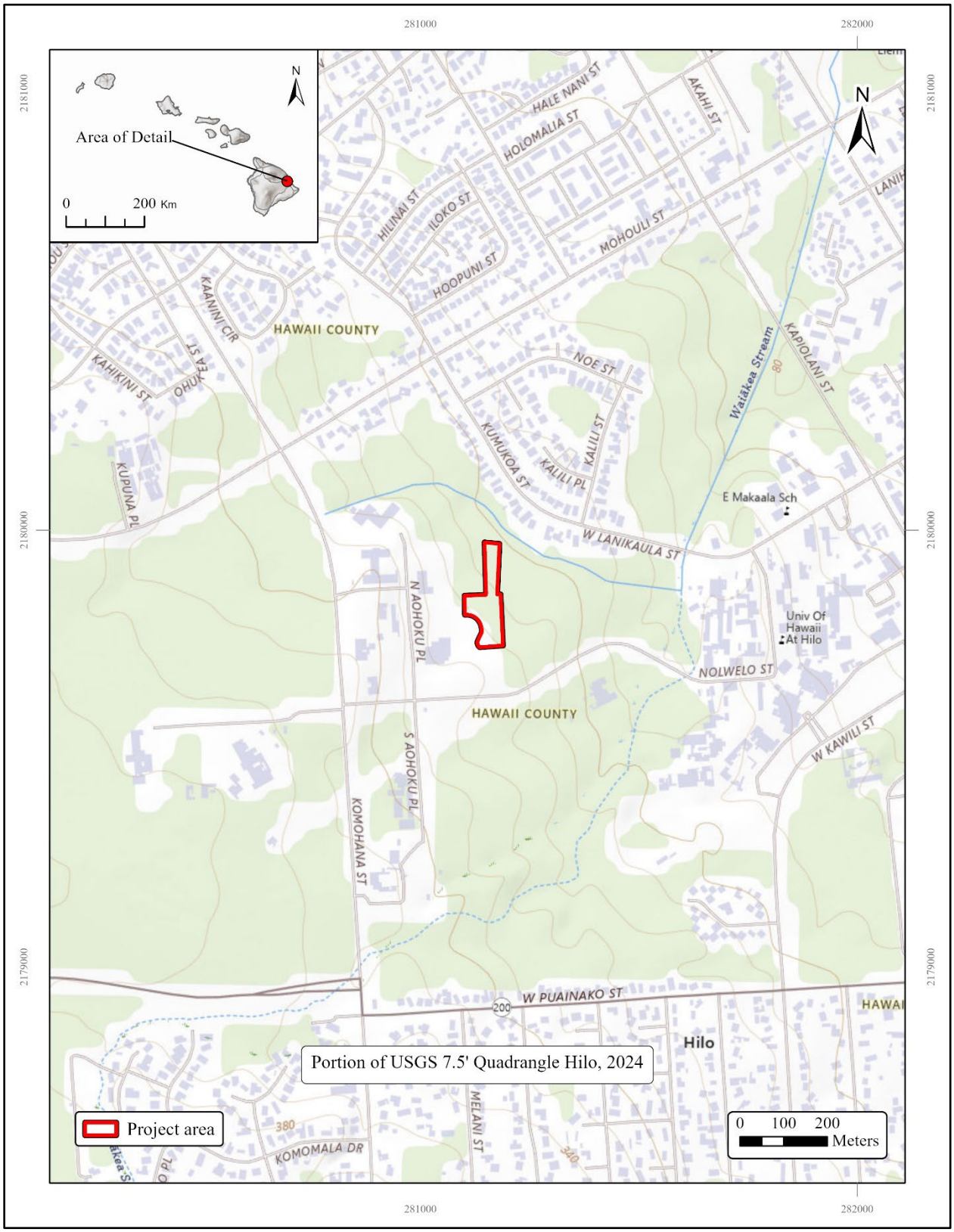

Figure 1. Project area location.

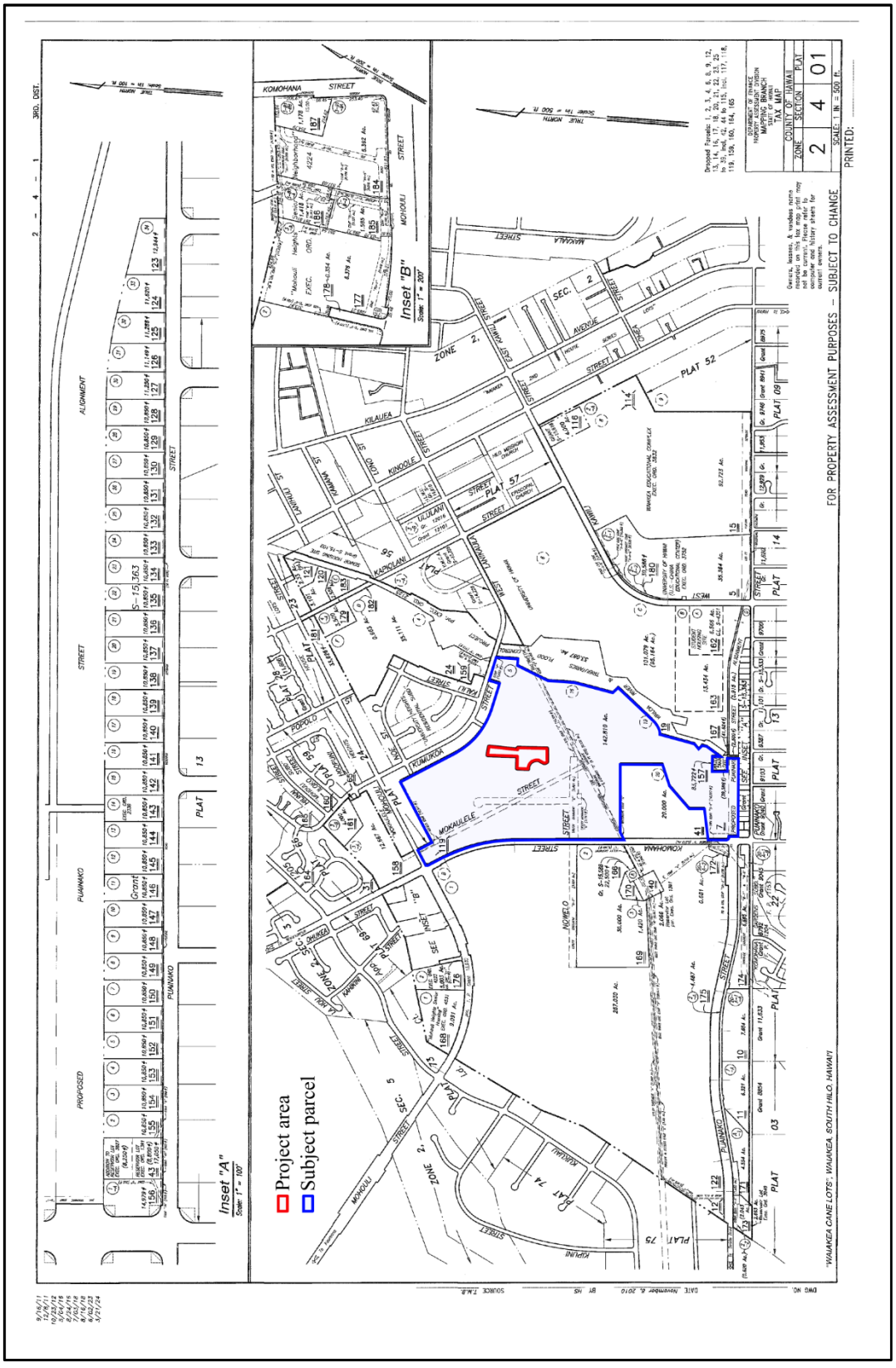

Figure 2. TMK . (3) 2-4-001:007, subject parcel, with project area inset.

Figure 3. Aerial overview of project area.

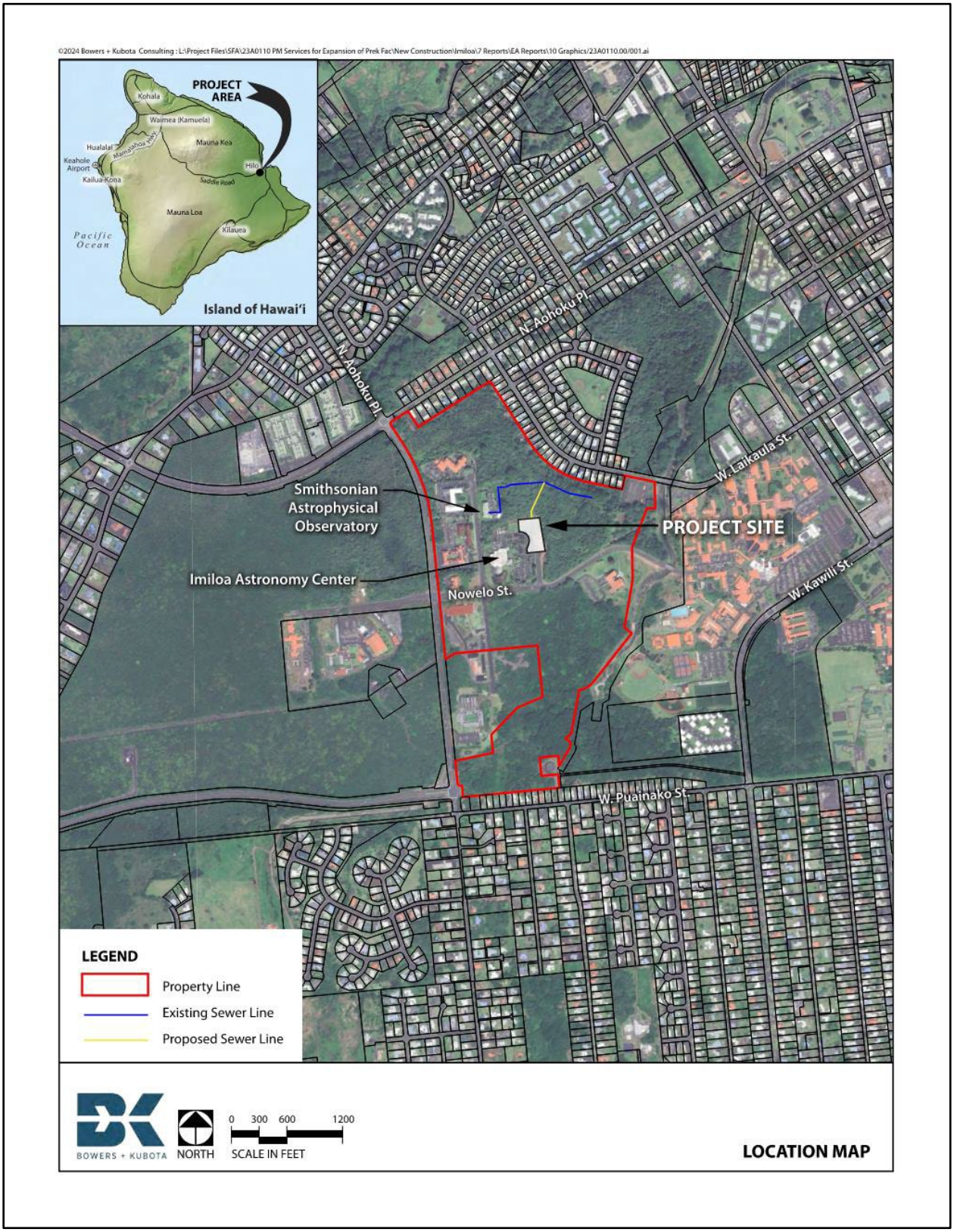

Figure 4. Aerial overview of proposed connecting sewer lines, taken from Bowers and Kubota Final Management plan.

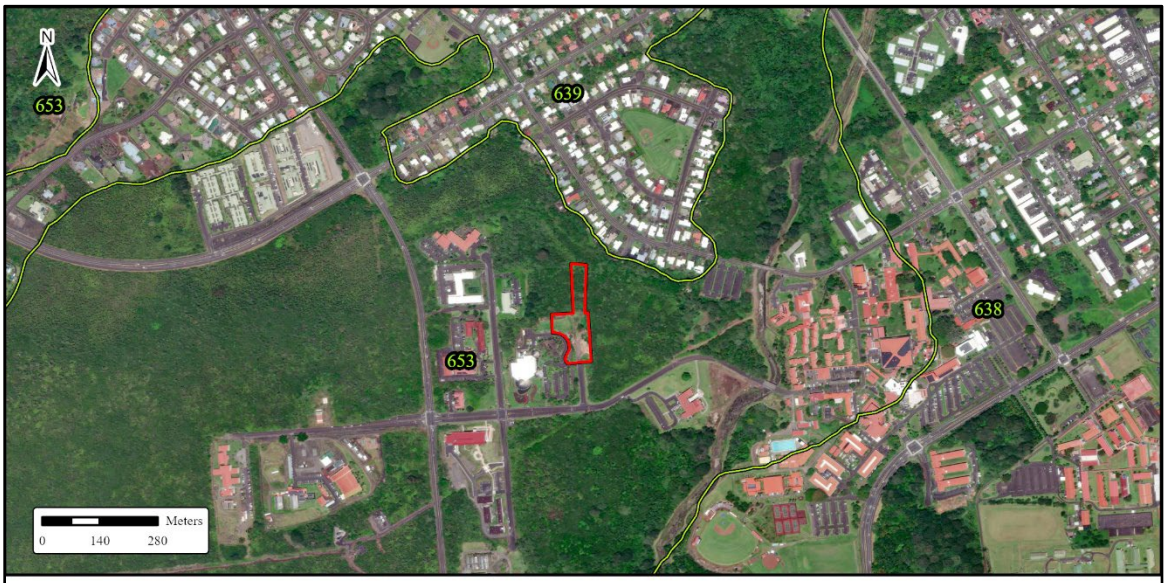

Figure 5. Soils within vicinity of project area.

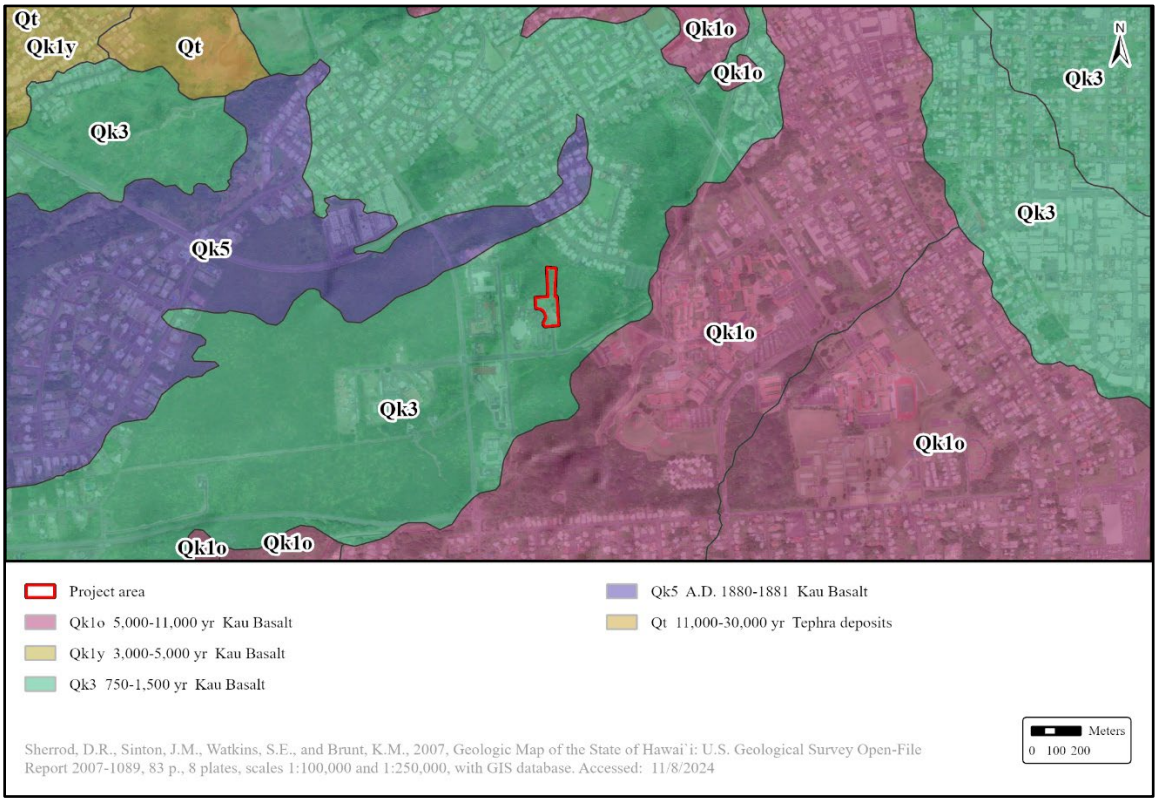

Figure 6. Lava flow ages within vicinity of project area.

Figure 7. Southern cleared and leveled portion of project area, view to northeast.

Figure 8. Rocky, undulating ground covered with thick forest in the northern portion of project area, view to north.

Figure 9. Typical vegetation within northern portion of project area. *Uluhe* thickets and waiwi dominated the forest, view to the northwest.

Figure 10. Hala trees were identified within and around the project area, view to north.

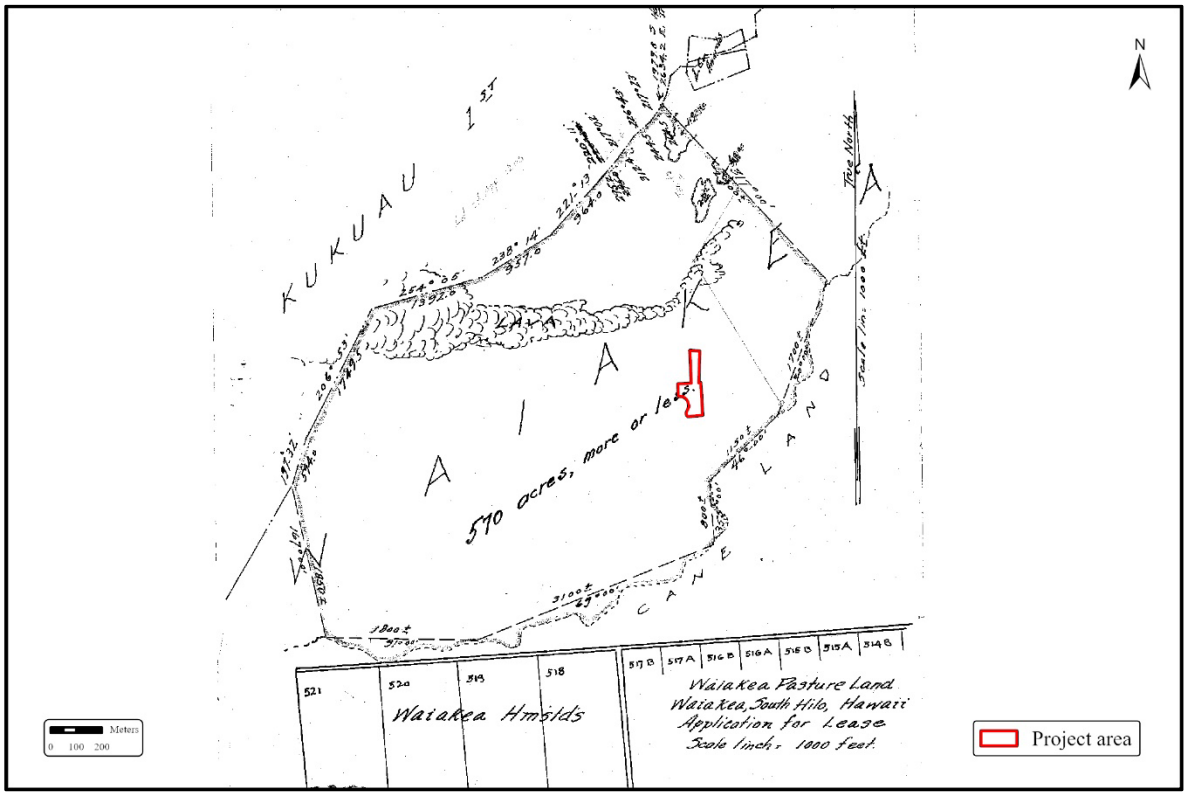

Figure 11. Map accompanying CSF 3172 for the 1919 Waiākea Pasture Land lease (Chaney 1919).

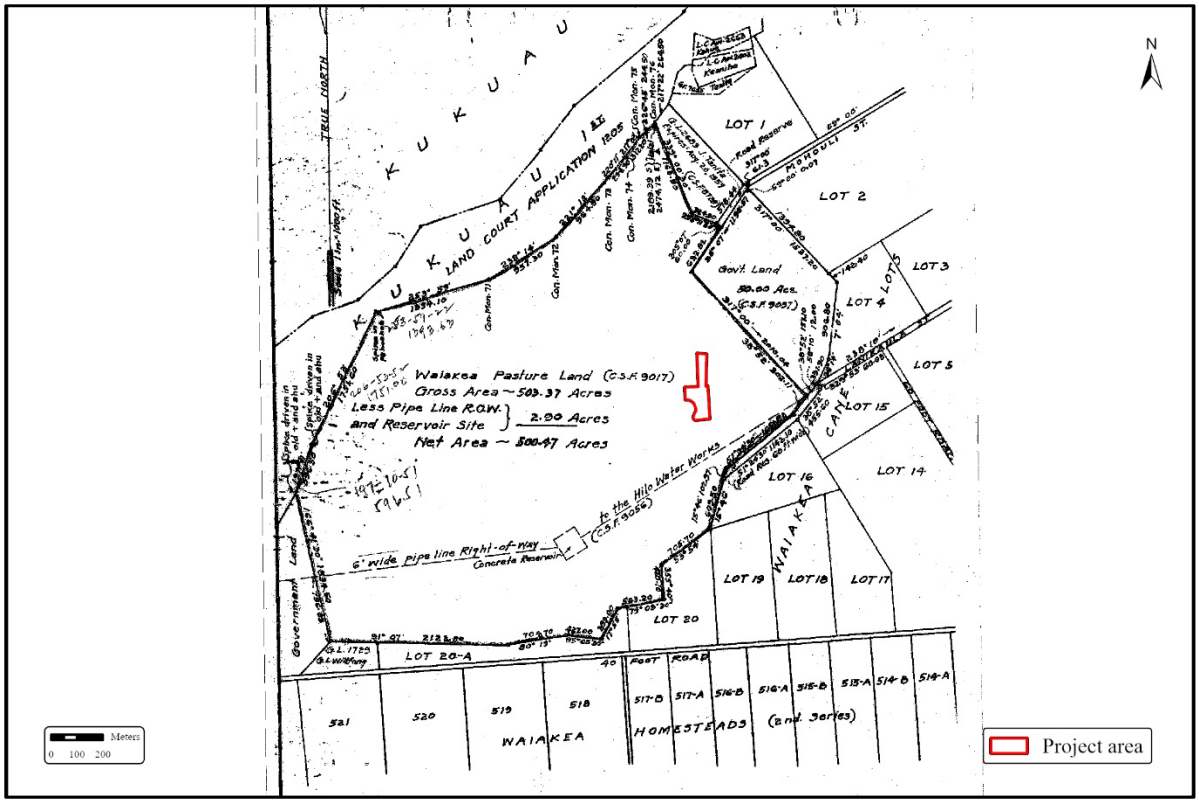

Figure 12. Map accompanying CSF 9017 for the 1939 Waiākea Pasture Land lease (FHWA et al. 2000).

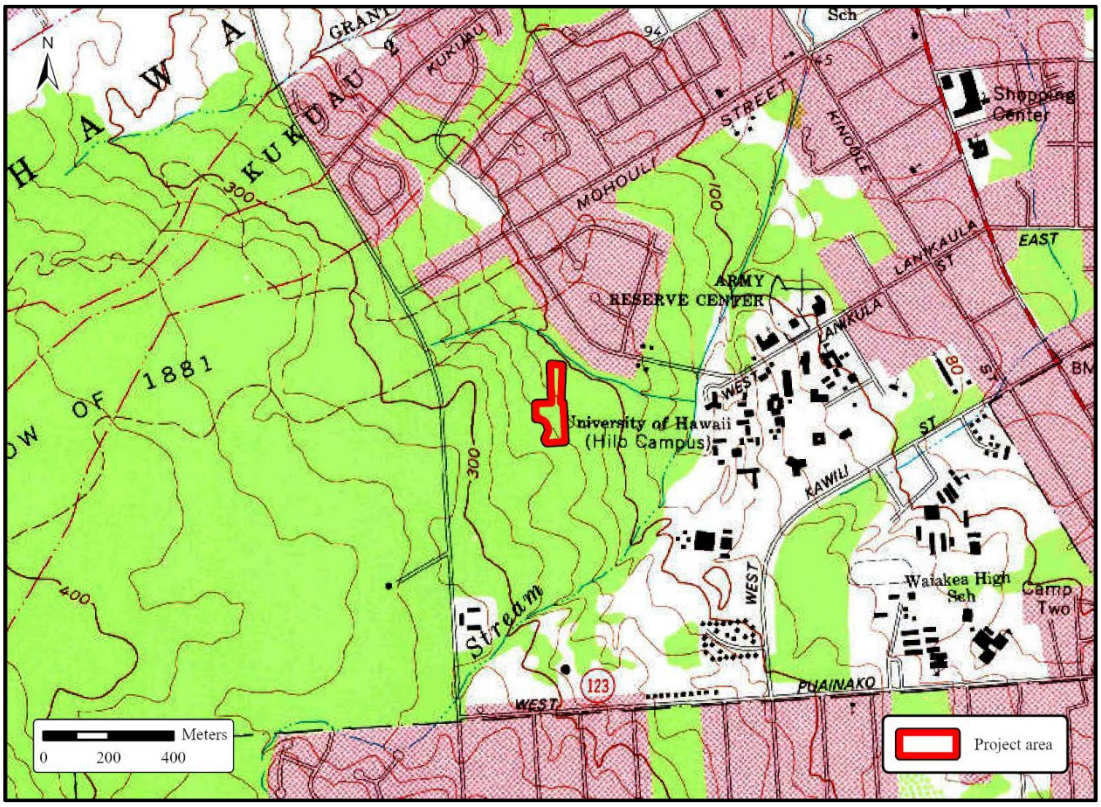

Figure 13. 1981 USGS topographical map of vicinity of project area.

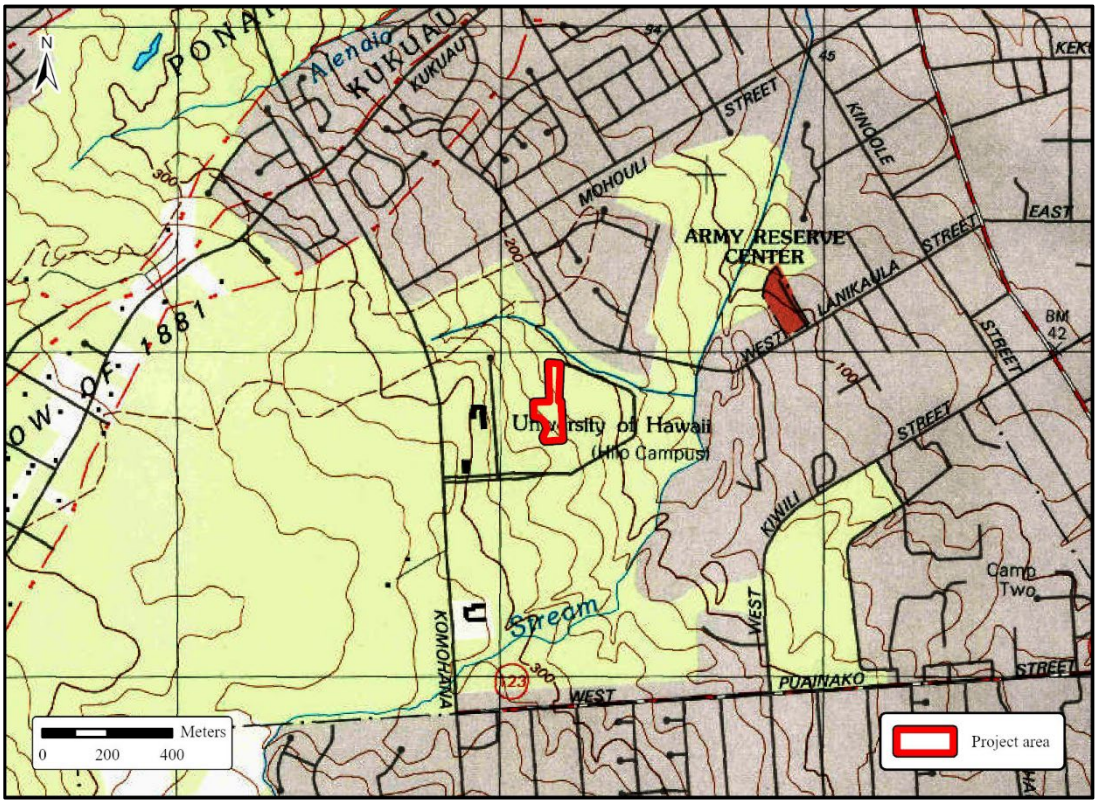

Figure 14. 1995 USGS topographical map of vicinity of project area with development showing.

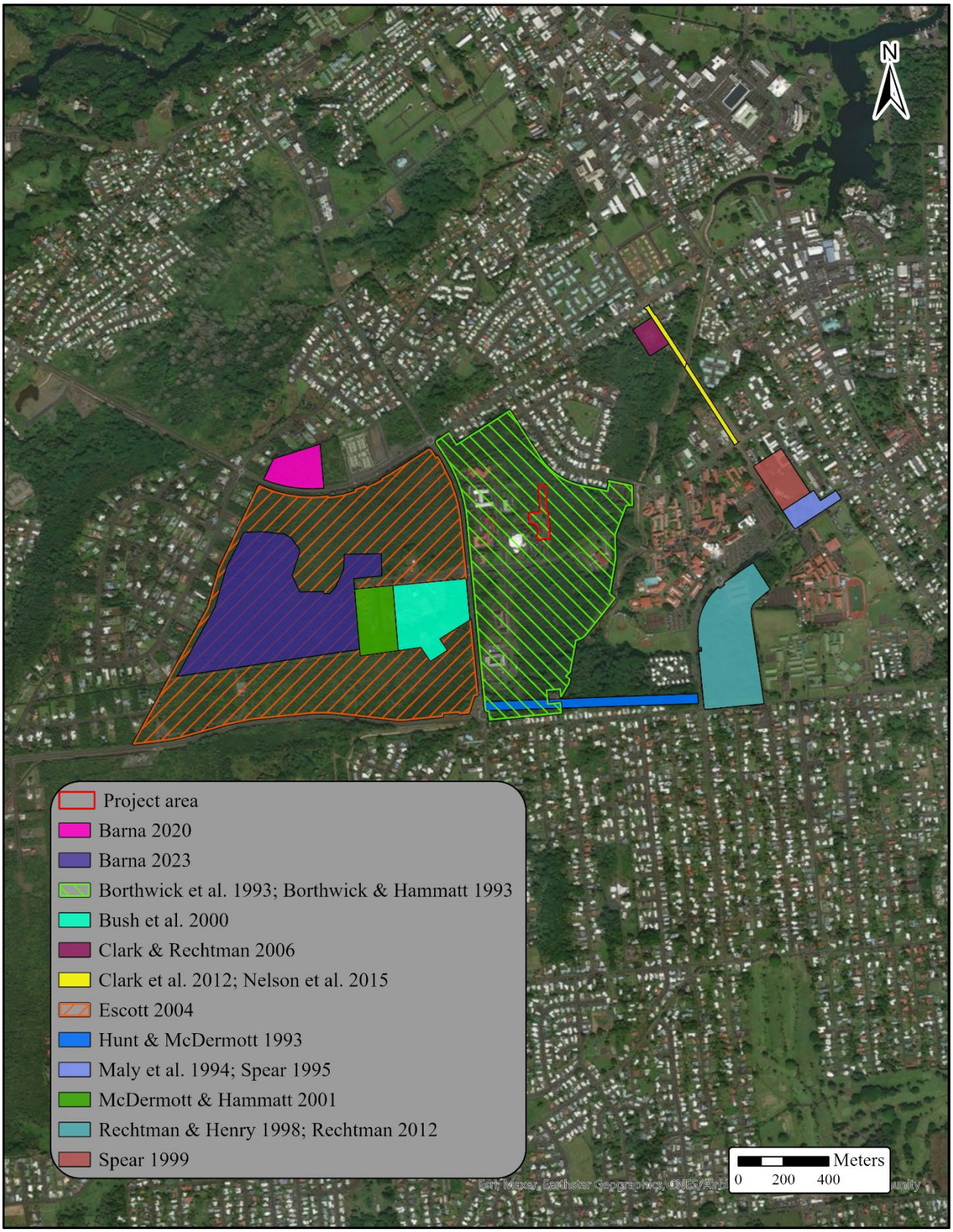

Figure 15. Previous archaeological studies within vicinity of project area.

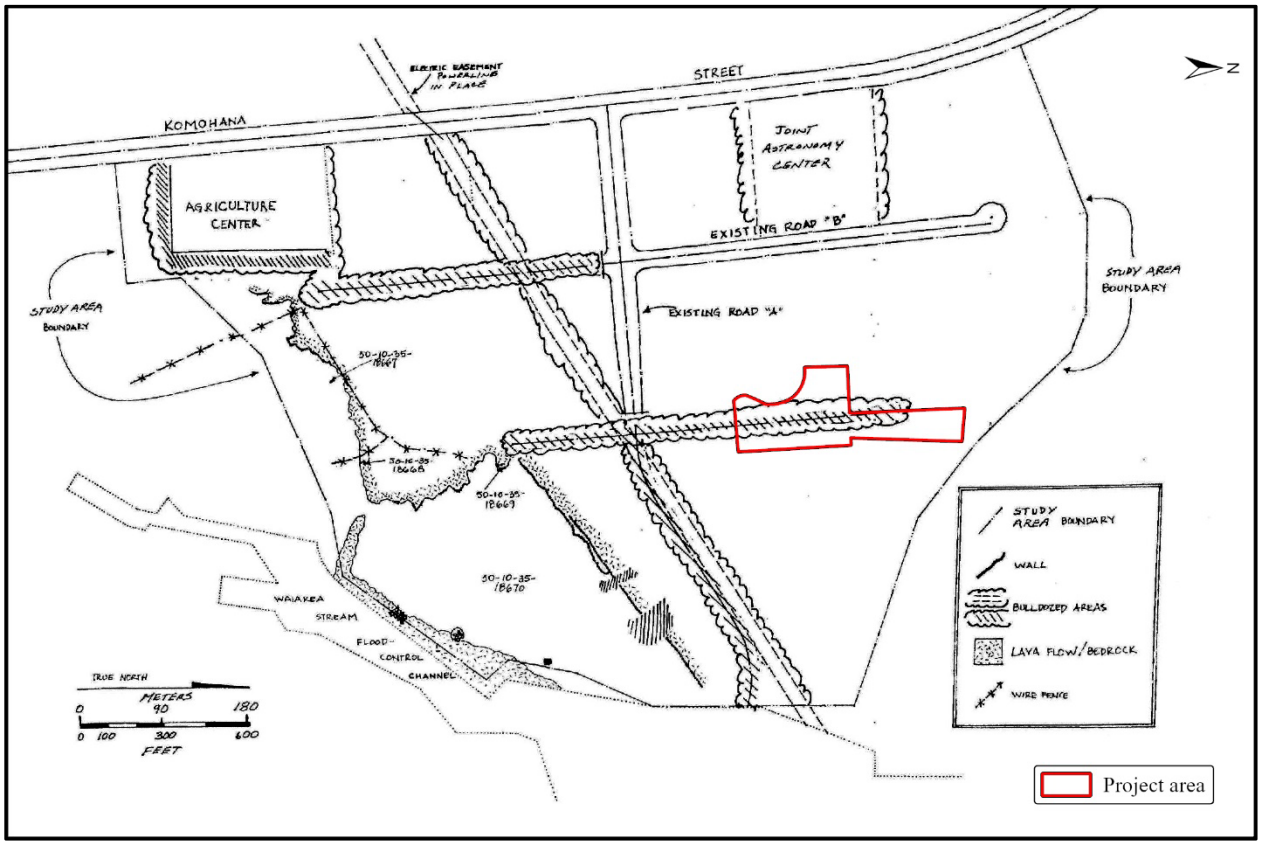

Figure 16. Site map from Borthwick's (1993) AIS.

APPENDIX D:
Draft Traffic Impact Assessment Report

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DRAFT TRAFFIC ASSESSMENT REPORT

FOR THE PROPOSED

`IMILOA PRE-KINDERGARTEN SCHOOL

HILO, HAWAI`I ISLAND
TAX MAP KEY: 3-4-001: PORTION OF 007

I. Introduction

A. Project Description

Hawai`i School Facilities Authority is proposing to develop `Imiloa Pre-Kindergarten (Pre-K) School in Hilo, Hawai`i Island. The project site is identified as Tax Map Key: 3-4-001: Portion of 007. The proposed project will be located at the north end of `Imiloa Place in the University of Hawai`i at Hilo, immediately east of `Imiloa Astronomy Center. Primary access will be provided from Komohana Street via Nowelo Street. Figure 1 depicts the project location and study area.

The proposed `Imiloa Pre-K School will consist of three buildings, totaling 6,962 square feet of gross floor area and 13 parking stalls. The school's parking lot will be located on `Imiloa Place along the west side of the project site. `Imiloa Pre-K School is expected to employ up to 23 staff. The design enrollment is 80 students. The school hours will be from 7:30 AM to 3:30 PM.

Students can be dropped off after 7:00 AM and should be picked up before 4:30 PM. A cul-de-sac will be constructed on `Imiloa Place, fronting the project site, to provide the drop-off and pick-up area. Figure 2 depicts the proposed site plan.

The proposed `Imiloa Pre-Kindergarten School is expected to open in the Fall of 2027. For the purpose of this Traffic Assessment Report, the Year 2028 is used as the planning horizon for the first full year of operation.

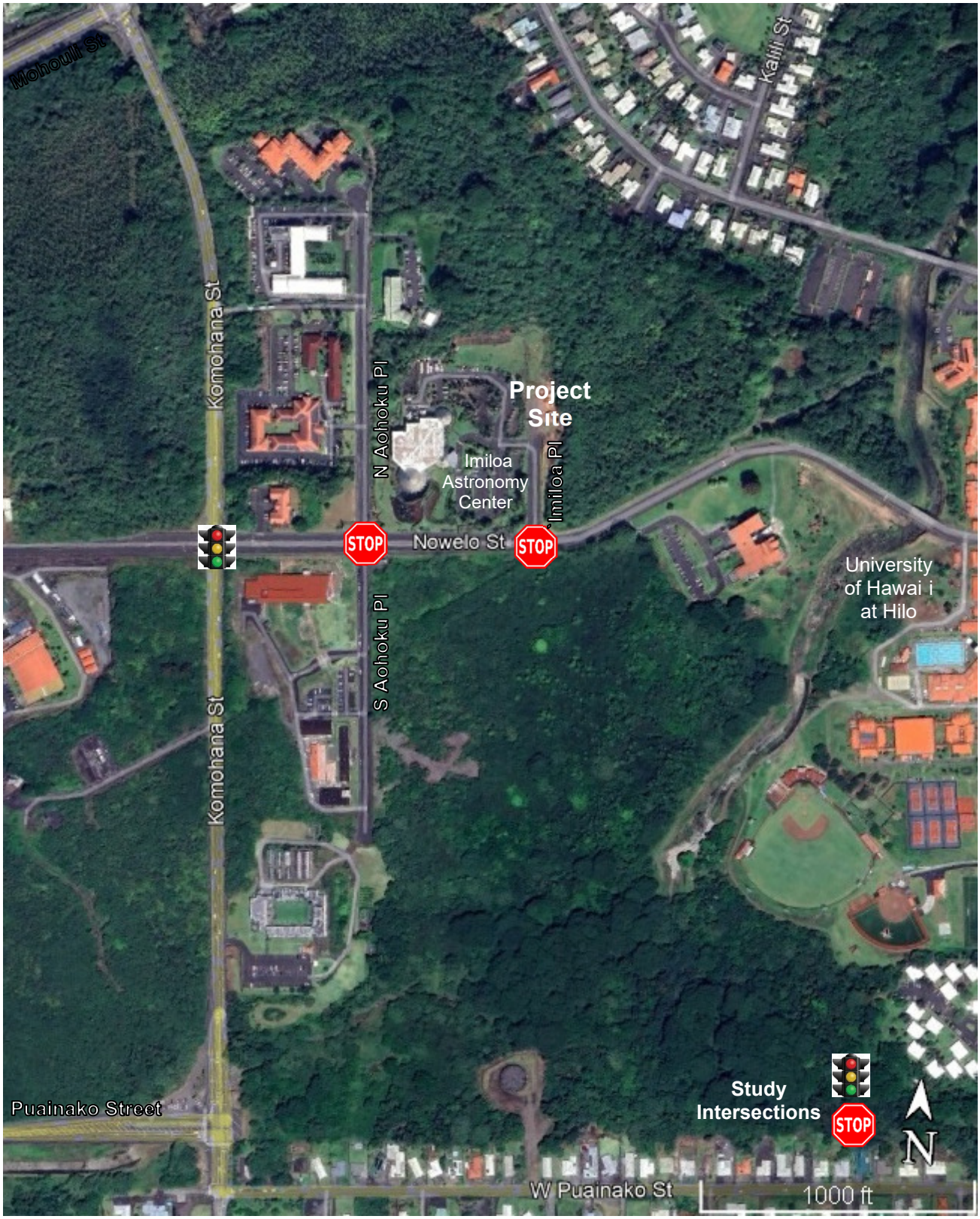

Figure 1. Location Map and Study Area

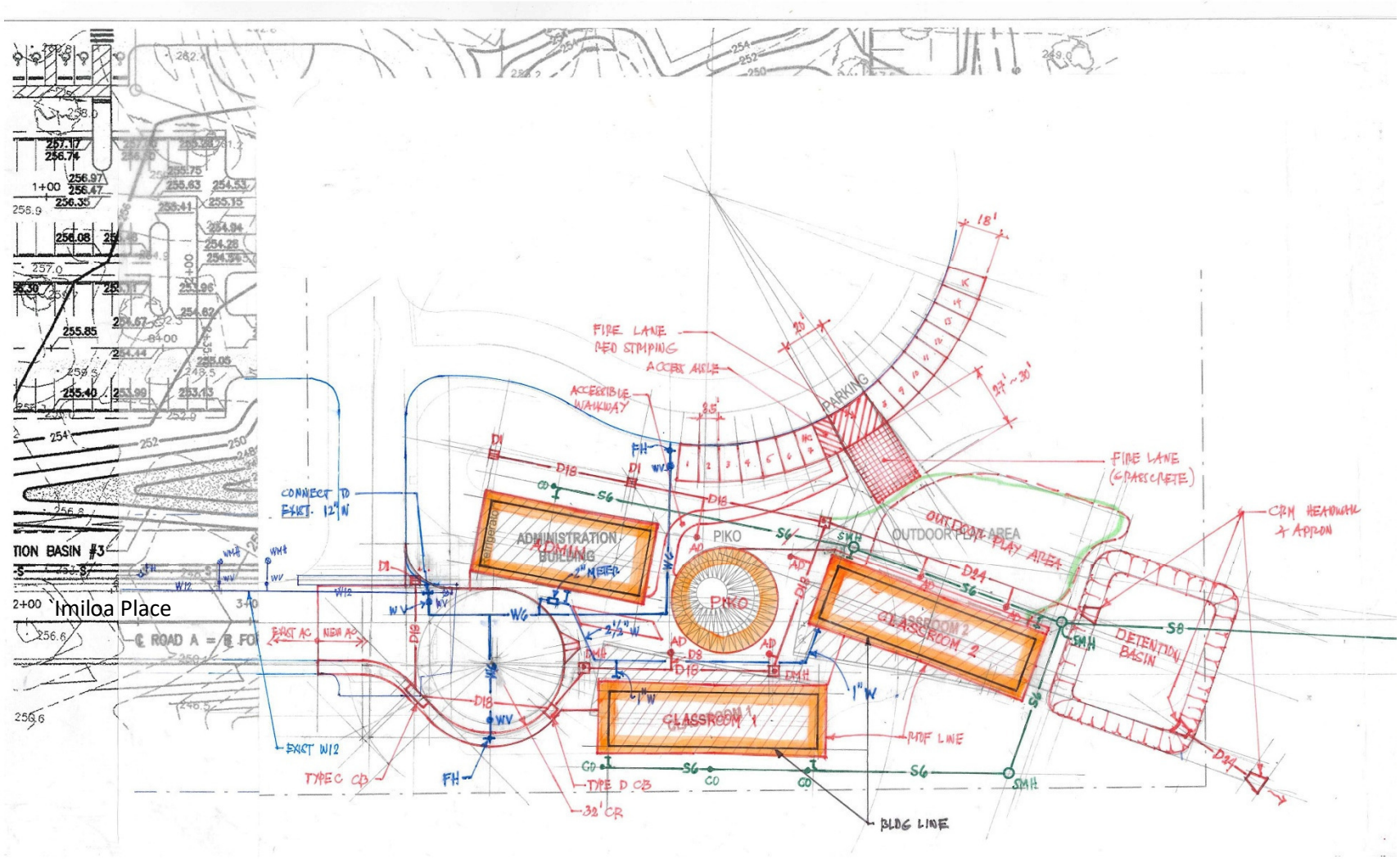

Figure 2. Proposed `Imiloa Pre-Kindergarten School Site Plan

B. Purpose and Scope of the Study

The purpose of this study is to analyze the traffic impacts resulting from the development of the proposed `Imiloa Pre-Kindergarten School. This report presents the methodologies, findings, and recommendations of the study. The scope of this study includes:

1. Description of the proposed `Imiloa Pre-Kindergarten School.
2. Turning movement traffic count surveys during the AM and PM peak periods of weekday traffic at the following intersections:
   - `Imiloa Place and Nowelo Street
   - North/South Aohoku Place and Nowelo Street
   - Komohana Street and Nowelo Street
3. Evaluation of existing roadways and traffic conditions.
4. Estimation of the future traffic demands without the proposed project.
5. Analysis of the future traffic conditions without the proposed project, in order to establish the baseline conditions from which to measure the traffic impacts of the proposed project.
6. Development of the weekday AM and PM peak hour trip generation characteristics for the proposed project, using generally accepted techniques developed by the Institute of Transportation Engineers.
7. Analysis of the AM and PM peak hour traffic impacts resulting from the development of the proposed `Imiloa Pre-Kindergarten School.
8. Estimation of the AM and PM peak hour vehicle queuing, due to the drop-off and pick-up operations of the proposed `Imiloa Pre-Kindergarten School.
9. Recommendation of traffic improvements, as necessary, that would mitigate the traffic impacts identified in this study.

C. Methodologies

1. Capacity Analysis Methodology

The highway capacity analysis, performed in this study, is based upon procedures presented in the Highway Capacity Manual (HCM), published by the Transportation Research Board. HCM defines the Level of Service (LOS) as "a quantitative stratification of a performance measure or measures representing quality of service." HCM defines six (6) Levels of Service from the traveler's perspective, ranging from the best LOS "A" to the worst LOS "F". LOS translates the complex mathematical

results of the highway capacity analysis into an A through F grading system to simplify the roadway performance for decision-makers.

Intersection LOS is primarily based upon the average delay (d) in seconds per vehicle (sec/veh). The LOS delays at unsignalized intersections, which include stop-controlled intersections and roundabouts, are generally shorter than signalized intersections, due to the drivers' expectation and acceptance of longer delays at higher-volume signalized intersections.

LOS's "A", "B", and "C" are considered satisfactory Levels of Service. LOS "D" is generally considered a "minimum acceptable" operating Level of Service, in accordance with the Hawai`i County Code Chapter 25 Section 25-2-46 Concurrency Requirements. The Concurrency Requirements consider LOS's "E" and "F" as "worse than the acceptable" Levels of Service. Intersection LOS is primarily based upon the average delay (d) in seconds per vehicle (sec/veh). Table 1 summarizes the HCM LOS criteria.

Table 1. Intersection Level of Service Criteria (HCM)

LOS	Signalized Control	Unsignalized Control	Description
	Delay d (sec/veh)		
A	d≤10	d≤10	Control delay is minimal.
B	10<d ≤20	10<d≤15	Control delay is not significant.
C	20<d≤35	15<d≤25	Stable operation. Queuing begins to occur.
D	35<d≤55	25<d≤35	Less stable condition. Increase in delays, decrease in travel speeds.
E	55<d≤80	35<d≤50	Unstable operation, significant delays.
F	d>80	d>50	High delays, extensive queuing.

Synchro is a traffic analysis software that was developed by Trafficware. Synchro is an intersection analysis program that is based upon the HCM methodology. Synchro was used to calculate the Levels of Service for the intersections in the study area. Worksheets for the capacity analysis, performed throughout this report, are compiled in the Appendix.

2. Trip Generation Methodology

The trip generation methodology is based upon generally accepted techniques that were developed by the Institute of Transportation Engineers (ITE) and published in Trip Generation, 11th Edition. The ITE trip rates were developed by correlating the total vehicle trip generation data with various activity/land use characteristics, such as the vehicle trips per hour (vph) per student. The ITE fitted curve equations were used to estimate the trip generation.

3. Queuing Methodology

The queuing analysis for the drop-off/pick-up area is based upon the following equation, presented in Transportation and Land Development (Stover and Koepke).

$$M = \frac{\text{Ln } P_{x>m} - \text{Ln } (Q_M)}{\text{Ln } (\rho)} - 1$$

M = number of vehicles in the queue

$P_{x>m}$ = probability that the queue will exceed M = 95 percent

s = dwell time (minutes)

Q = 60/s = service rate per position (vph)

q = traffic demand (vph)

N = number of loading/unloading spaces(vehicles)

$\rho = q/(NQ)$

Q_M = Table 8-11 (Transportation and Land Development)

The dwell time (s) is the time spent loading/unloading children and walking to/from the school grounds. M is the expected 95-percentile ($P_{x>m}$) queue, i.e., the vehicle queue that is expected to be exceeded five (5) percent of the time.

II. Existing Conditions

A. Roadways

Komohana Street is a two-way, two-lane collector roadway between Waianuenue Avenue and Ainaola Drive in South Hilo. Exclusive left-turn lanes are provided in both directions on Komohana Street at its signalized intersection with Nowelo Street. The posted speed on Komohana Street is 45 miles per hour (mph).

Nowelo Street is a two-way, two- to four-lane local street, which provides access to the University of Hawai`i at Hilo. Nowelo Street intersects Komohana Street at a signalized four-legged intersection. Paved sidewalks are provided on both sides of Nowelo Street.

A midblock crosswalk is located on Nowelo Street, about 60 feet west of `Imiloa Place. The posted speed on Nowelo Street is 15 mph.

North Aohoku Place is a two-way, two-lane cul-de-sac street, which provides access to the Institute for Astronomy. South Aohoku Place provides access to Daniel K. Inouye College of Pharmacy. North/South Aohoku Place intersects Nowelo Street at a stop-controlled four-legged intersection.

`Imiloa Place is a 36-foot wide, two-way, two-lane cul-de-sac street, which provides access to `Imiloa Astronomy Center. `Imiloa Place intersects Nowelo Street at a stop-controlled Tee-intersection. Curbs and paved sidewalks are provided on both sides of `Imiloa Place. The posted speed on `Imiloa Place is 15 mph.

B. Existing Peak Hour Traffic Volumes and Operating Conditions

1. Field Investigation and Data Collection

Turning movement traffic count surveys were conducted on Tuesday, April 16, 2024 through Thursday, April 18, 2024, during the weekday AM and PM peak periods of traffic, at the following intersections:

- Komohana Street and Nowelo Street
- Nowelo Street and North/South Aohoku Place
- Nowelo Street and `Imiloa Place

The traffic count surveys included pedestrian traffic, crossing the roadways, and bicycle traffic. The traffic signal timing and phasing were based upon the existing conditions, which were observed during the field investigation. The traffic count data are presented in the Appendix.

2. Existing AM Peak Hour Traffic

The existing AM peak hour of traffic occurred between 7:00 AM and 8:00 AM. Komohana Street carried about 1,400 vehicles per hour (vph), total for both directions at Nowelo Street. Between Komohana Street and North/South Aohoku Place, Nowelo Street carried about 150 vph, total for both directions. The AM peak hour traffic volume on Nowelo Street was about 100 vph at `Imiloa Place, total for both directions. `Imiloa Place carried 13 vph, total for both directions.

The intersection of Komohana Street and Nowelo Street operated at LOS "B", during the existing AM peak hour of traffic. All the individual traffic movements at the intersection operated at satisfactory Levels of Service (LOS), i.e., LOS "C" or better.

North/South Aohoku Place operated at LOS "B" at Nowelo Street, during the existing AM peak hour of traffic. `Imiloa Place operated at LOS "A" at Nowelo Street. Figure 3 depicts the existing AM peak hour traffic volumes.

3. Existing PM Peak Hour Traffic

The existing PM peak hour of traffic occurred between 3:15 PM and 4:15 PM. Komohana Street carried about 1,400 vph, total for both directions. Nowelo Street carried about 160 vph, , total for both directions, between Komohana Street and North/South Aohoku Place. The PM peak hour traffic volume on Nowelo Street was about 90 vph at `Imiloa Place. `Imiloa Place carried about 30 vph, total for both directions.

During the existing PM peak hour of traffic, the intersection of Komohana Street and Nowelo Street operated at LOS "A". The individual traffic movements at the intersection operated at satisfactory Levels of Service.

North/South Aohoku Place and `Imiloa Place operated at LOS "A" at Nowelo Street, during the existing PM peak hour of traffic. The existing PM peak hour traffic volumes are depicted in Figure 4.

III. Future Traffic Conditions

A. Background Growth in Traffic

The Federal-Aid Highways Transportation Plan for the District of Hawai`i (TPDH) was prepared for the State of Hawai`i Department of Transportation (DOT), in cooperation with the County of Hawai`i Department of Public Works and Planning Department. The TPDH developed long-range travel forecasts for Hawai`i Island based upon future socio-economic conditions. The TPDH projected an annual growth rate of about 1.14 percent in vehicle trips in South Hilo. The annual growth rate was uniformly applied to the existing traffic conditions to estimate the Year 2028 peak hour traffic demands without the proposed project.

B. Traffic Analysis Without Project

1. Year 2028 AM Peak Hour Traffic Analysis Without Project

During the Year 2028 AM peak hour of traffic without the proposed project, all the intersections in the study area are expected to continue to operate at satisfactory Levels of Service. Figure 5 depicts the Year 2028 AM peak hour traffic volumes without the proposed project.

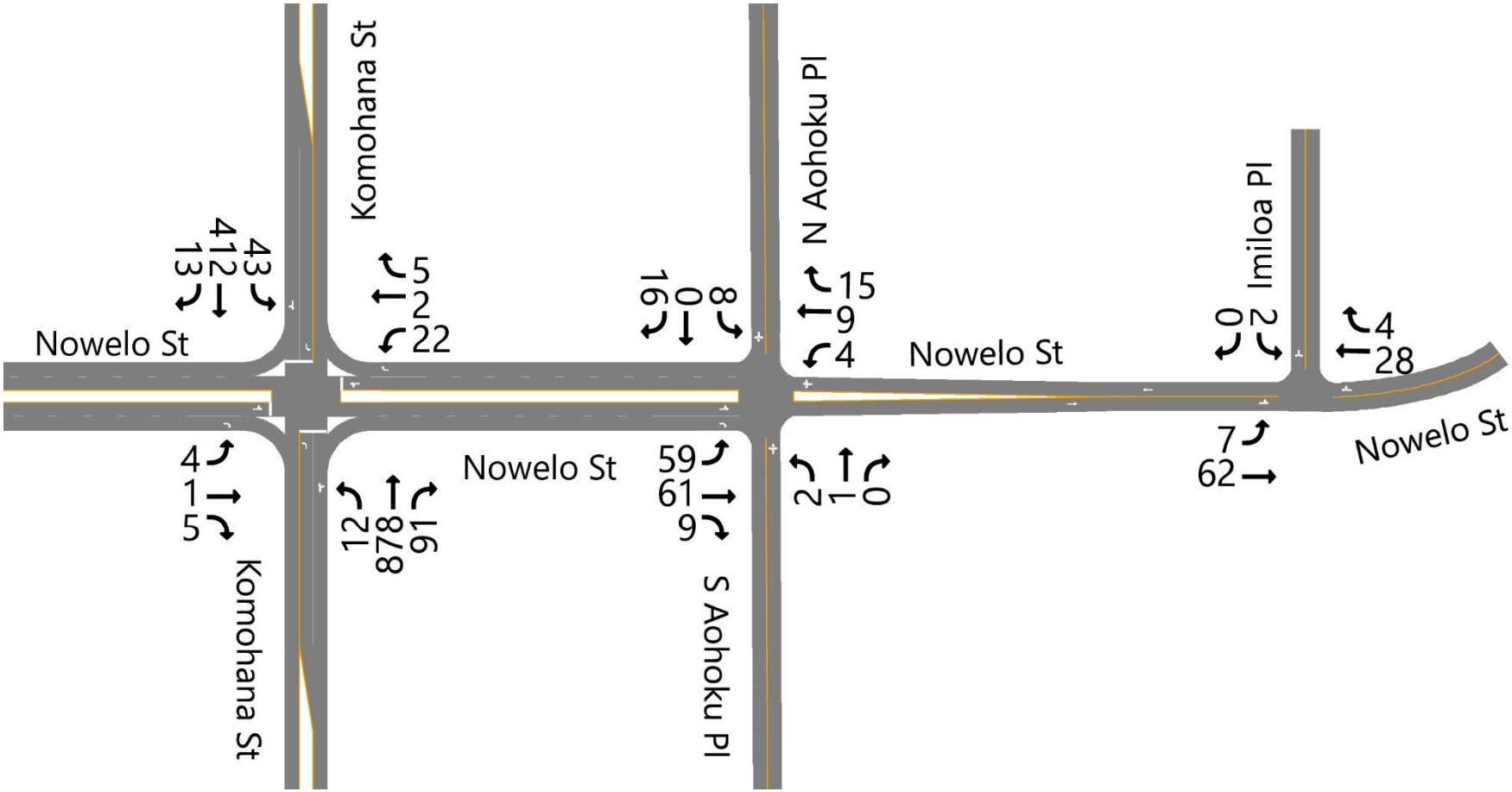

Figure 3. Existing AM Peak Hour Traffic

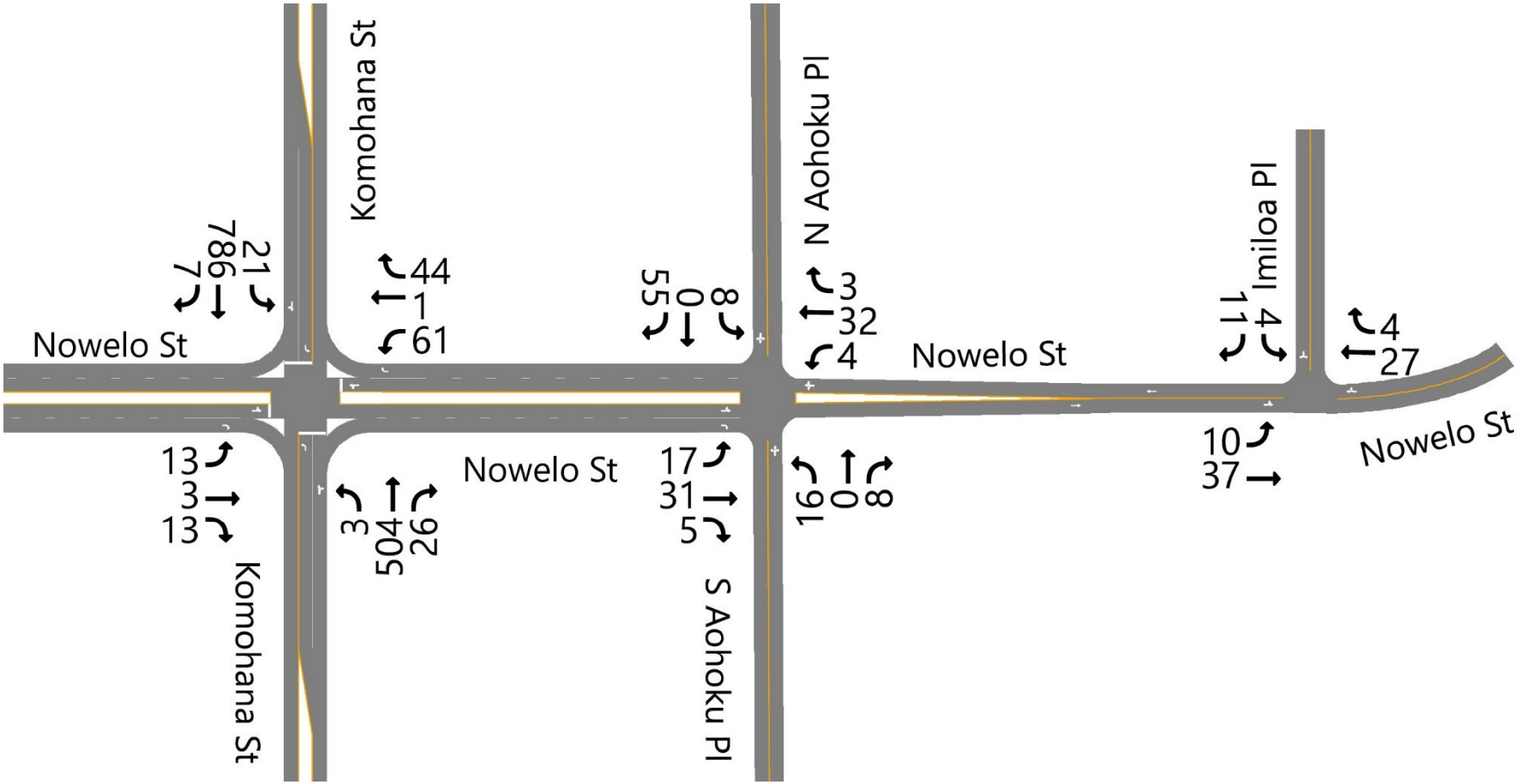

Figure 4. Existing PM Peak Hour Traffic

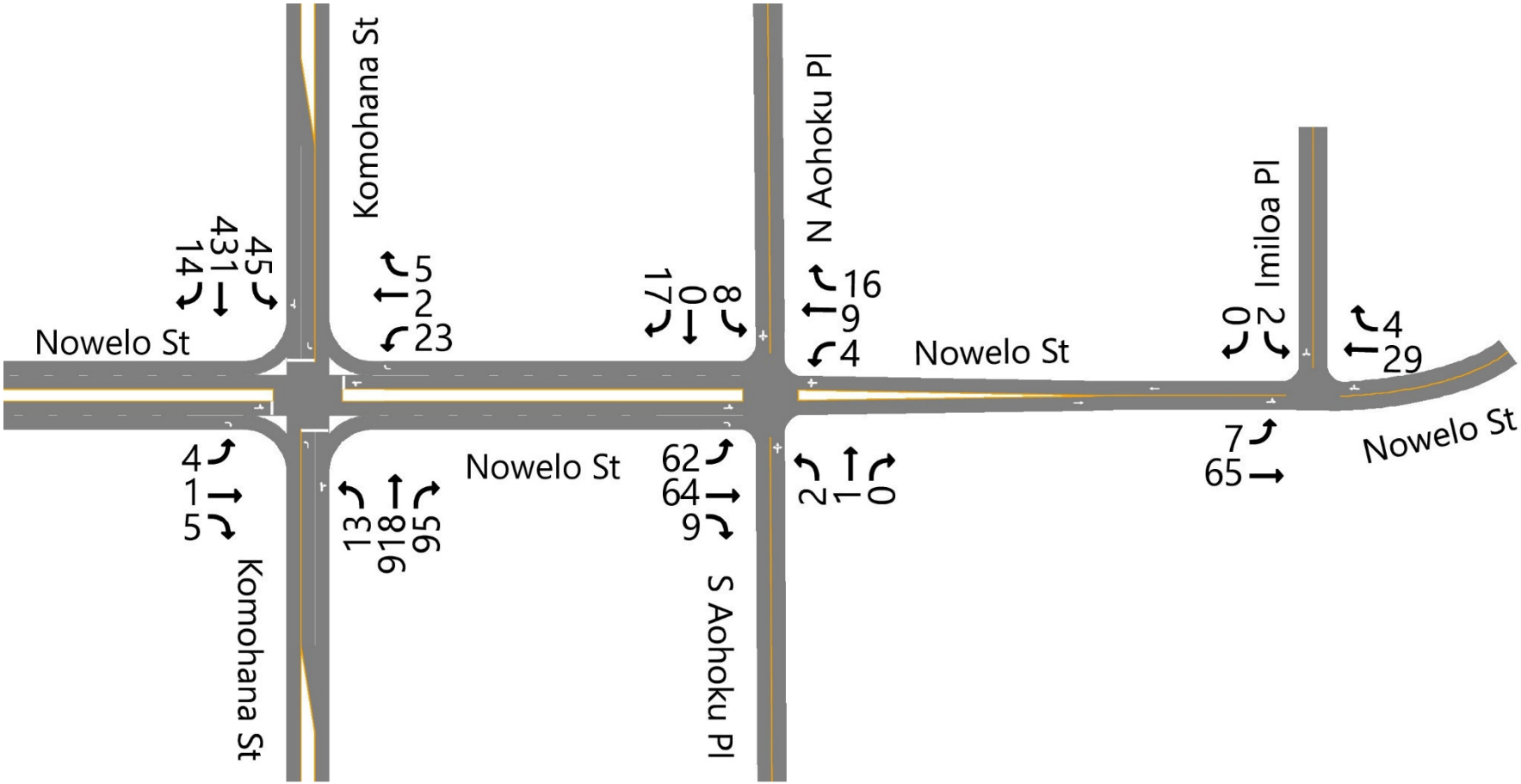

Figure 5. Year 2028 AM Peak Hour Traffic Without Project

2. Year 2028 PM Peak Hour Traffic Analysis Without Project

The intersections in the study area are expected to continue to operate at satisfactory Levels of Service, during the Year 2028 PM peak hour of traffic without the proposed project. The Year 2028 PM peak hour traffic volumes without the proposed project are depicted in Figure 6.

IV. Traffic Impact Analysis

A. Trip Generation Characteristics

The trip generation characteristics for the `Imiloa Pre-Kindergarten School were based upon the ITE trip rates for a daycare center. The proposed `Imiloa Pre-Kindergarten School is expected to generate totals of 61 vph and 60 vph, during the AM and PM peak hours of traffic, respectively. The trip generation characteristics for the `Imiloa Pre-Kindergarten School are summarized in Table 2.

Table 2. Trip Generation Characteristics

Peak Hour	Direction	Vehicle Trips
AM Peak Hour	**Enter**	32
	Exit	29
	Total	61
PM Peak Hour	**Enter**	28
	Exit	32
	Total	60

B. Traffic Analysis With Project

1. Trip Distribution

The traffic assignments were based upon the existing traffic circulation patterns. Figures 7 and 8 depict the AM and PM peak hour site-generated traffic assignments, respectively.

2. Year 2028 AM Peak Hour Traffic impact Analysis With Project

During the Year 2028 AM peak hour of traffic with the proposed project, the intersection of Komohana Street and Nowelo Street is expected to operate at an overall LOS "C". The shared through/right-turn movement on northbound Komohana Street is expected to operate at LOS "D". The other traffic movements at the intersection are expected to operate at satisfactory Levels of Service.

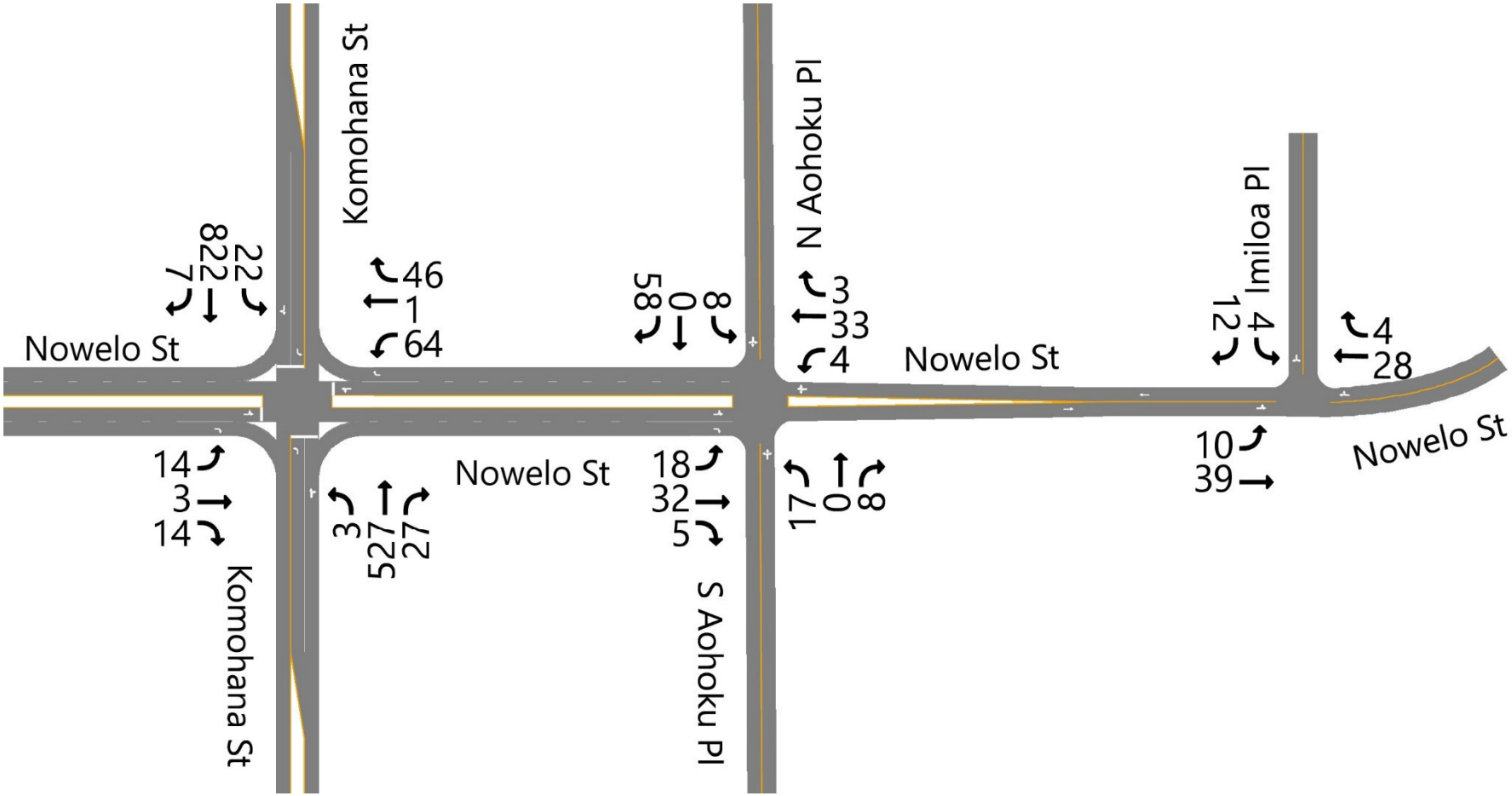

Figure 6. Year 2028 PM Peak Hour Traffic Without Project

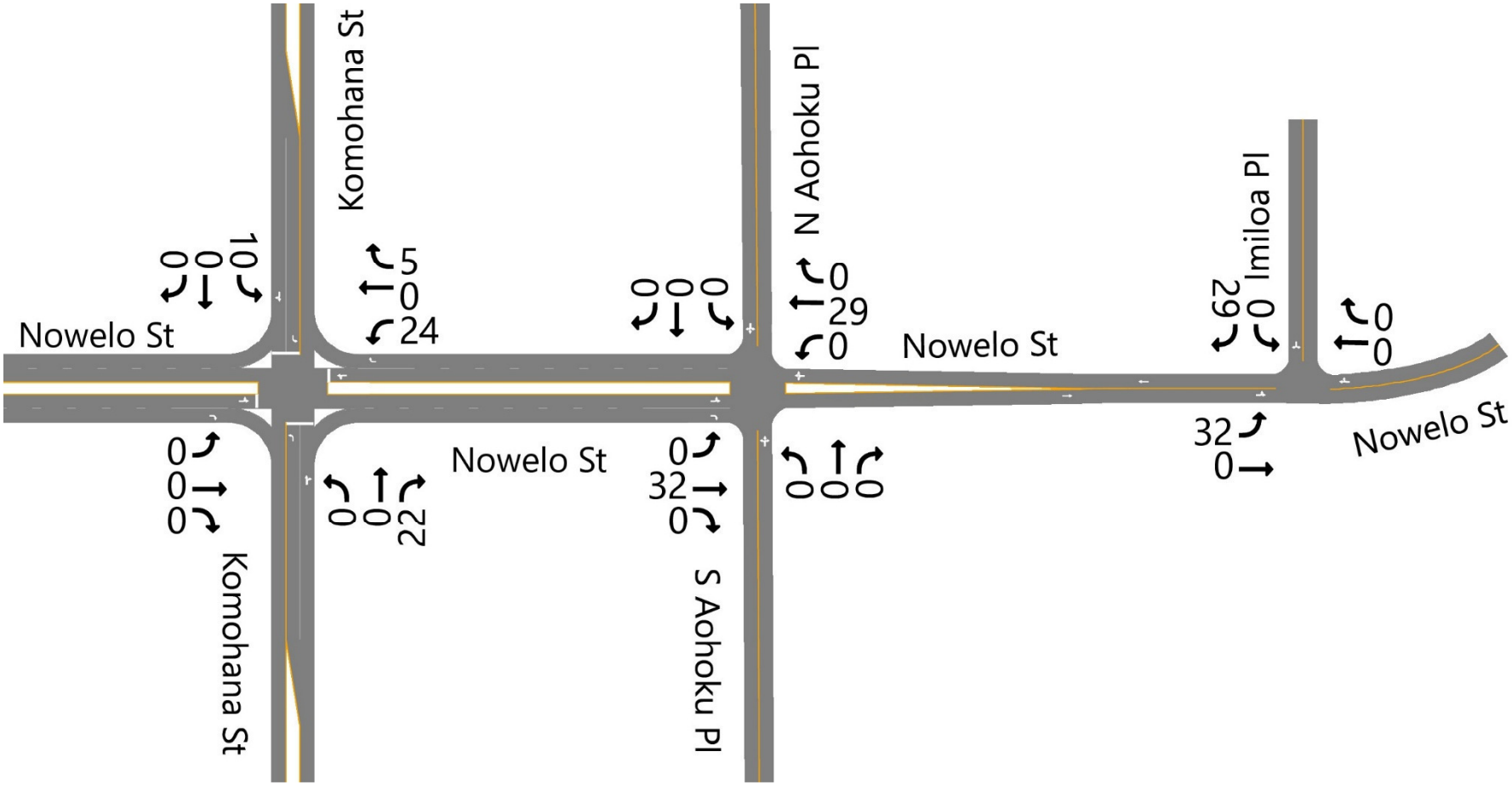

Figure 7. AM Peak Hour Traffic Assignment

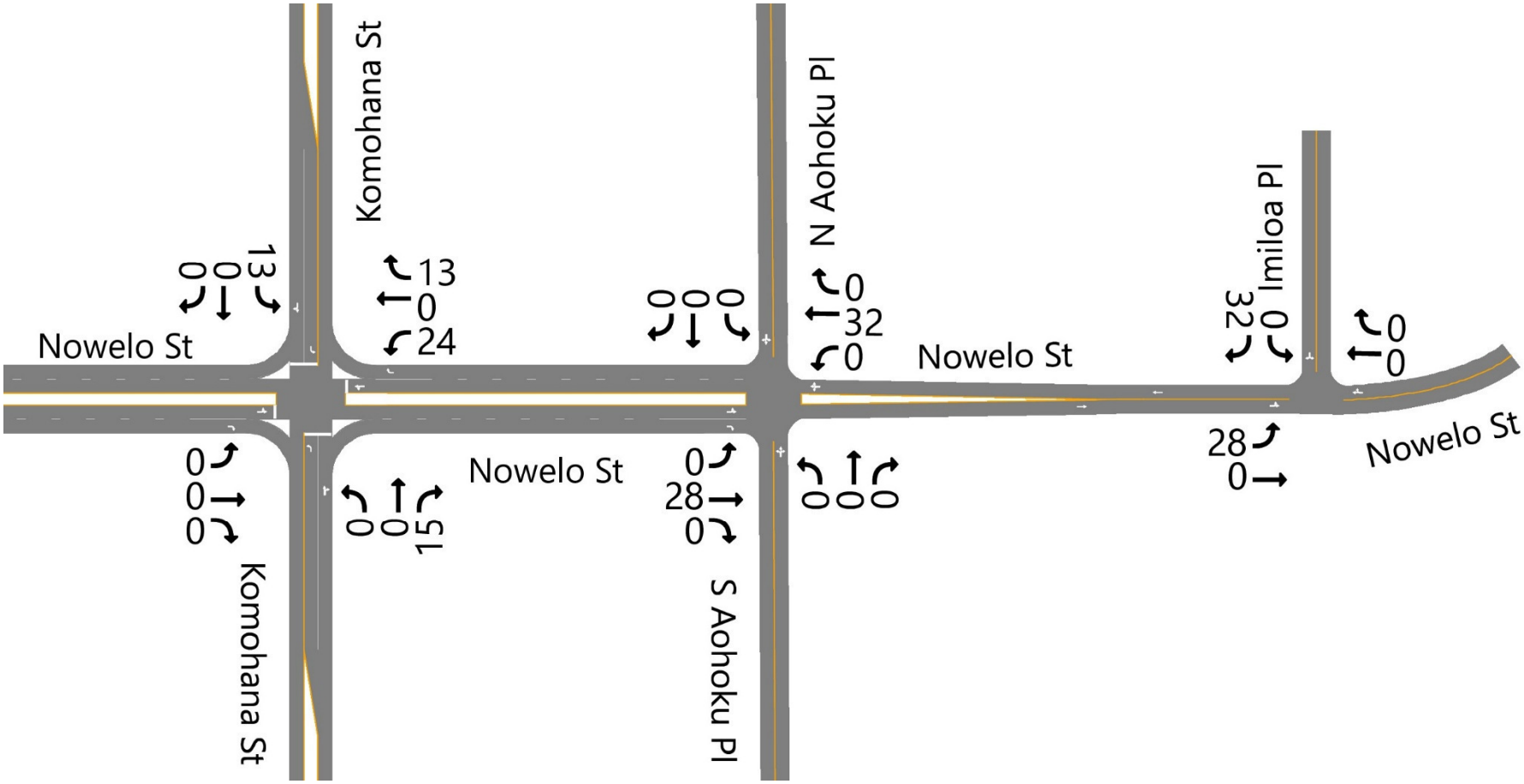

Figure 8. PM Peak Hour Traffic Assignment

The other intersections in the study area are expected to operate at LOS "B" or better, during the Year 2028 AM peak hour of traffic with the proposed project. Figure 9 depicts the Year 2028 AM peak hour traffic volumes with the proposed project.

3. Year 2028 PM Peak Hour Traffic impact Analysis With Project

The study intersections are expected to continue to operate at satisfactory Levels of Service, during the Year 2028 PM peak hour of traffic with the proposed project. The Year 2028 PM peak hour traffic volumes with the proposed project are depicted in Figure 10.

C. Drop-Off and Pick-Up Traffic Operations

1. Drop-Off and Pick-Up Procedures

The cul-de-sac at the north end of `Imiloa Place will be used for the drop-off and pick-up operations at the proposed `Imiloa Pre-Kindergarten School. The cul-de-sac will be able to accommodate up to six (6) vehicles parked curbside, while providing for vehicles to turn around and exit the cul-de-sac. Parents will park their vehicles and walk their children into and out of the school grounds. A parent, legal guardian, or other authorized individual must sign their child in and out each day and make their child's arrival and departure known to the school staff. Only those listed as the child's designated individuals or emergency contacts may sign their child in and out. Children will not be permitted to enter or leave the school grounds without being accompanied by an adult.

2. Dwell Time Study

A parking study was previously conducted by The Traffic Management Consultant at the KCAA Mother Rice Preschool in Honolulu, Hawai`i. The purpose of the study was to estimate the school's drop-off and pick-up operations "dwell time", i.e., the time required for a parent/guardian to park his/her vehicle, unload/load their child, walk to/from the school, and exit the school parking lot. Parents parked their vehicles in the school parking lot and walked to/from the gated school entrance where the child was signed in/out.

During the AM peak hour of traffic, the dwell times of thirty-eight (38) vehicles entering the site were recorded. The dwell times ranged from 4 minutes to 29 minutes, averaging about 9 minutes per vehicle. The dwell times of fifteen (15) vehicles were recorded during the peak 15-minute period of the PM peak hour of traffic. The dwell times ranged from 4 minutes to 18 minutes, with an average dwell time of 8.5 minutes per vehicle.

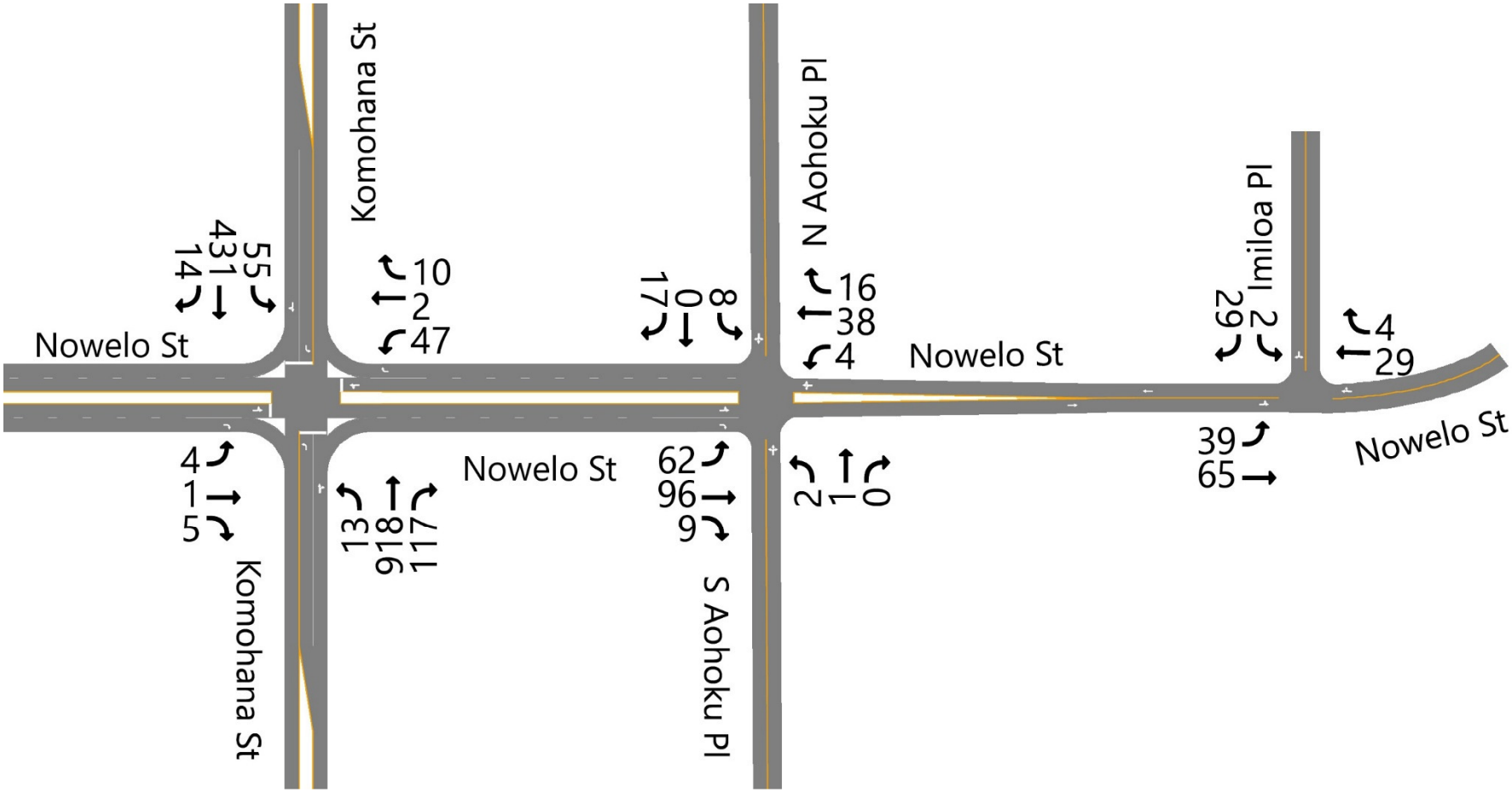

Figure 9. Year 2028 AM Peak Hour Traffic With Project

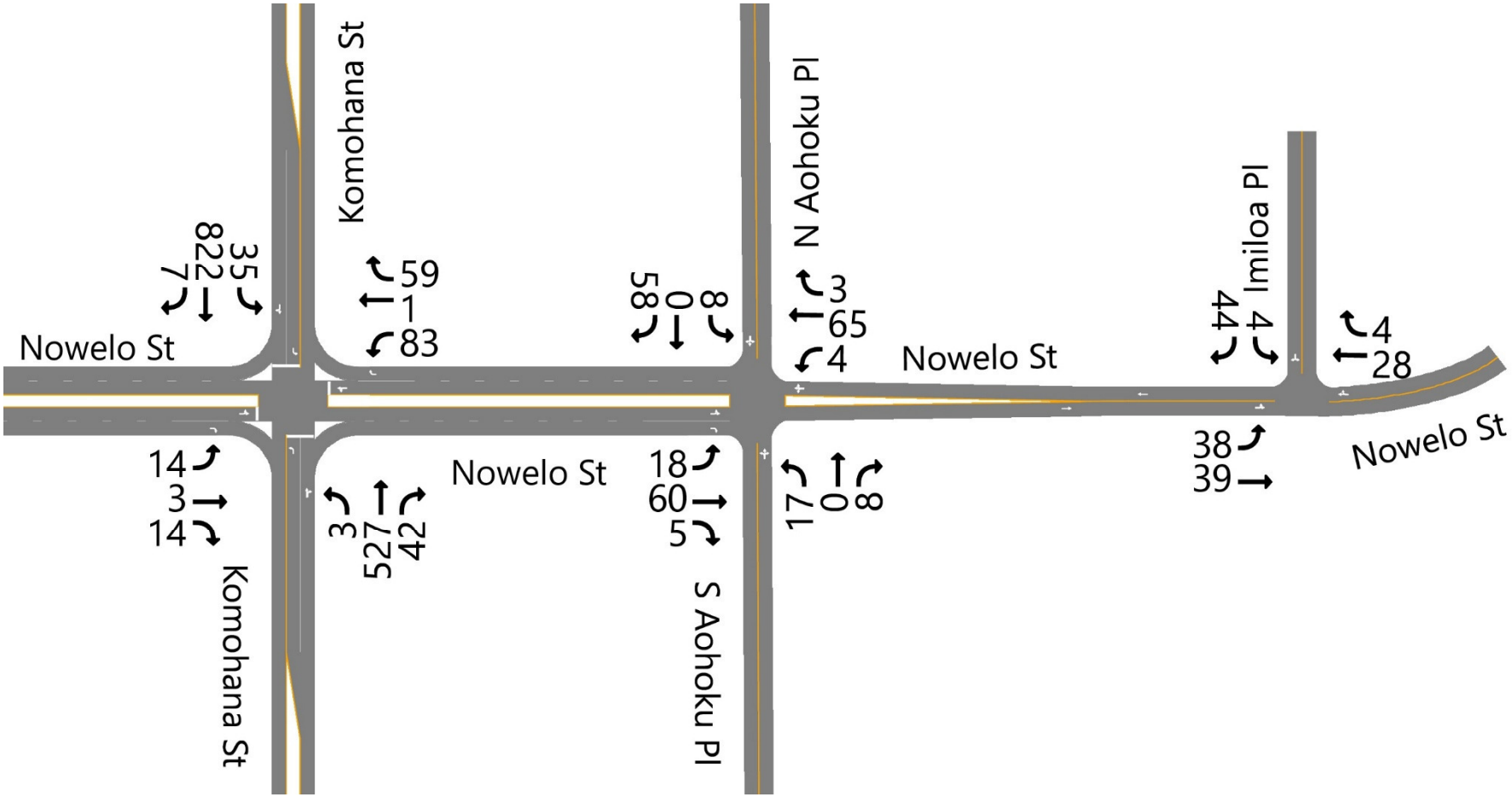

Figure 10. Year 2028 PM Peak Hour Traffic With Project

3. Queuing Analysis

If all the drop-off/pick-up operations occur within the cul-de-sac, the 95-percentile queue can be expected to extend about 240 feet along `Imiloa Place during the AM peak hour. During the PM peak hour of traffic, the pick-up queue can be expected to extend about 80 feet along `Imiloa Place.

If parents opt to park along `Imiloa Place and walk their children to/from the school grounds, the 95-percentile queues of parked cars along `Imiloa Place are expected to be about four (4) vehicles and three (3) vehicles, during the AM and PM peak hours of traffic, respectively.

V. Recommendations and Conclusions

A. Recommendations

1. Construct the cul-de-sac on `Imiloa Place, fronting the school, to accommodate both the curbside parking and vehicle turn around movements.
2. The drop-off/pick-up operations could be improved by providing staff to assist in the unloading/loading children out of and into their vehicles and checking the children in and out of school.
3. A parking management plan should be implemented during special events.
4. Traffic mitigation measures are not recommended at this time.

B. Conclusions

The drop-off and pick-up operations can be expected to extend onto `Imiloa Place. However, `Imiloa Place is wide enough to accommodate parking on both sides of the roadway, while maintaining the two-way traffic flow. Furthermore, `Imiloa Place is a low-volume, local road which will only provide access to `Imiloa Astronomy Center as well as the proposed `Imiloa Pre-Kindergarten School.

The study intersections are expected to operate at the minimum acceptable Levels of Service or better during the AM peak hour of traffic with the proposed project. During the PM peak hour of traffic with the proposed project, the study intersections are expected to operate at satisfactory Levels of Service. `Imiloa Place is expected to operate at LOS "A", during the AM and PM peak hours of traffic with the proposed project. The proposed `Imiloa Pre-Kindergarten School is <u>not</u> expected to significantly impact traffic during the peak hours of traffic.