C. Kimo Alameda, Ph.D.
Mayor

William V. Brilhante, Jr.
Managing Director

Merrick Nishimoto
Deputy Managing Director

Kehaulani M. Costa
Housing Administrator

Keiko M. Mercado
Assistant Housing Administrator

County of Hawai'i
Office of Housing and Community Development
1990 Kino'ole Street, Suite 102 • Hilo, Hawai'i 96720 • (808) 961-8379 • Fax (808) 961-8685
Existing Housing: (808) 959-4642 • Fax (808) 959-9308
Kona: (808) 323-4300 • Fax (808) 323-4301

October 1, 2025

Ms. Mary Alice Evans, Director
Office of Planning and Sustainable Development
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

Subject: Draft Environmental Assessment
'Āinakō Subdivision Housing Project
TMKs (3) 2-3-030:004, (3) 2-3-030:001 (por.), and (3) 2-3-031:001 (por.)
South Hilo, Hawai'i Island, State of Hawai'i

Dear Director Evans:

With this letter, the Office of Housing and Community Development (OHCD), County of Hawai'i hereby transmits the Draft Environmental Assessment and anticipated Finding of No Significant Impact (DEA-AFNSI) for the 'Āinakō Subdivision Housing Project TMKs (3) 2-3-030:004, (3) 2-3-030:001 (por.), and (3) 2-3-031:001 (por.), in South Hilo on the island of Hawaii for publication in the next available edition of the Environmental Notice.

In addition to this letter, OHCD has submitted the electronic version of the Environmental Review Program submittal form, an electronic version of the DEA in PDF format, and a KML file for the project location on the State of Hawai'i, Office of Planning and Sustainable Development, Environmental Review Program's website.

If there are any questions, please contact OHCD's Neil Erickson at (808) 932-5959 or our consultant Michele Lefebvre at (808) 791-9872 or by email at michele.lefebvre@stantecgs.com.

Sincerely,

Kehaulani M. Costa Digitally signed by KCosta Date: 2025.10.01 14:58:24 -10'00'

Kehaulani M. Costa
Housing Administrator

cc: Michele Lefebvre, Stantec GS, Inc.

3728pnce

EQUAL HOUSING OPPORTUNITY

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Wednesday, October 1, 2025 5:40:38 PM

Action Name

ʻĀinakō Subdivision Housing Project

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, Hawaiʻi

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

(3) 2-3-030:004, (3) 2-3-030:001 (por.), and (3) 2-3-031:001 (por.)

Action type

Agency

Other required permits and approvals

Final Subdivision Approval (Hawaiʻi County Planning Department), Building Permit (Hawaiʻi County Public Works Department), Grading Permit (Hawaiʻi County Public Works Department)

Proposing/determining agency

Office of Housing and Community Development

Agency jurisdiction

County of Hawaiʻi

Agency contact name

Neil Erickson

Agency contact email (for info about the action)

NeilC.Erickson@hawaiicounty.gov

Email address for receiving comments

NeilC.Erickson@hawaiicounty.gov

Agency contact phone

(808) 932-5959

Agency address

1990 Kinoʻole Street
Suite 102
Hilo, HI 96720
United States

Map It

Is there a consultant for this action?

Yes

Consultant

Stantec Consulting Services Inc. and Geometrician Associates

Consultant contact name

Michele Lefebvre

Consultant contact email

michele.lefebvre@stantecgs.com

Consultant contact phone

(808) 791-9872

Consultant address

P.O. Box 191
Hilo, HI 96721
United States
Map It

Action summary

The ʻĀinakō Subdivision Housing Project is designed to provide up to approximately 144 residential units on approximately 61 acres of land in South Hilo. The Project would include up to 82 townhomes, 28 flats, and 34 single-family units, designed to accommodate the needs of the island workforce and their families. The price range of Project units is expected to range from approximately $363,100 to $635,500. The Project would make a small but meaningful contribution to the significant affordable housing shortage in the local market area and is not expected to adversely affect demand for similar private-sector housing projects. The Project would balance the need to provide affordable housing near urban centers and allow residents better access to travel between home, work, and other desirable recreational opportunities. The Project is not expected to have a negative effect on environmental resources. Potential effects to sensitive hydrological, cultural, and archaeological resources present within the Project Area would be minimized and avoided through Project design and implementation of protection measures.

Reasons supporting determination

Chapter 11-200-12 HAR, outlines those factors agencies must consider when determining whether an Action has significant effects:
1. The Project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources. No valuable natural or cultural resources would be committed or lost. No unmitigated impacts to archaeological resources would occur.
2. The Project will not significantly curtail the range of beneficial uses of the environment. The proposed affordable housing development does not curtail beneficial uses of the environment and is consistent with the medium density zoning in the Hilo CDP.
3. The Project will not conflict with the state's long-term environmental policies. The state's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The impact from the Project is minor and does not conflict with policies to improve the environment. It is thus consistent with all elements of the state's long-term environmental policies.
4. The Project will not substantially affect the economic or social welfare of the community or state. The Project will not adversely affect the social welfare of the community and will contribute to services. The Project would generate work for the local construction industry, which would stimulate local economic spending. The Project would balance the social welfare of the community by providing stable housing near the urban core and allow resident households better access and the ability to safely manage commutes between home, work, and recreation. Stable households lead to stable communities and

associated workforce, and promotes a functional economy.
5. The Project does not substantially affect public health in any detrimental way. The Project will not affect public health in any way; wastewater and stormwater will be appropriately treated. Traffic impacts have been taken into careful consideration in Project design.
6. The Project will not involve substantial secondary impacts, such as population changes or effects on public facilities. No adverse secondary effects are expected to result from the Project since existing infrastructure would be utilized and would not require additional county services.
7. The Project will not involve a substantial degradation of environmental quality. The impact from the Project is minor, and would thus not contribute to environmental degradation. BMPs and appropriate erosion control measures would be utilized during construction. Short-term impacts on air and noise quality will be mitigated by employing BMPs. No long-term adverse impacts are expected from the Project.
8. The Project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions. The Project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.
9. The Project will not substantially affect any rare, threatened, or endangered species of flora or fauna or habitat. There are no rare, threatened, or endangered plant species or suitable habitat for these species present within the Project Area, and no effects to these species are anticipated. Endangered Hawaiian hoary bats and Hawaiian hawks, which are island wide-ranging species, will experience no adverse impacts due to mitigation in the form of timing of vegetation removal and/or nest surveys. Additionally, no rare, threatened, or endangered species of fauna are known to exist on or near the Project Area, and none would be directly affected by any Project activities.
10. The Project will not detrimentally affect air or water quality or ambient noise levels. No adverse effects on air quality or noise would occur. The increase in noise levels on the site are acceptable and would be only a moderate, short-term increase in the existing levels. To minimize impacts to air quality during construction, the Project would implement a watering program for dust abatement. Other control measures during construction such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching, and/or using wind screens would also be utilized as necessary to minimize impacts to air quality.
11. The Project does not affect nor would it likely be damaged as a result of being located in environmentally sensitive area such as a floodplain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area subject to storms and sea-level rise. Although the property is located in an area with volcanic and seismic risk, the entire Island of Hawai‘i shares this risk, and the Project is not imprudent to construct. The property is approximately 2.8 miles from the shoreline and outside any flood zone.
12. The Project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies. No scenic vistas and viewplanes identified in the Hawai‘i County General Plan will be adversely affected by the Project.
13. The Project will not require substantial energy consumption. The development will have solar water heating and incorporate efficient appliances, as practical and possible.

Attached documents (signed agency letter & EA/EIS)

- 2025_10_01-NCE-Ainako-OPSD-Transmittal1.pdf
- Ainako-Draft-EA-October-20251.pdf
- Ainako-Draft-EA-Appendices-1-41.pdf
- Ainako-Draft-EA-Appendices-5-61.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. Audio files do not include transcripts, captions, or alternative descriptions. 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 (authorized individual

submitting the project at email)."

Action location map

- PMRF-and-KPGO-Real-Estate-EIS-Location-Boundary.zip

Authorized individual

Michele Lefebvre

Authorized individual email

michele.lefebvre@stantecgs.com

Authorized individual phone

(808) 791-9872

Authorization

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

DRAFT ENVIRONMENTAL ASSESSMENT
ʻĀinakō Subdivision Housing Project

TMKs (3) 2-3-030:004, (3) 2-3-030:001 (por.), and (3) 2-3-031:001 (por.)
South Hilo, Hawaiʻi Island
State of Hawaiʻi

October 2025

Proposing/Approving Agency
Office of Housing and Community Development
1990 Kinoʻole Street, Suite 102
Hilo, HI 96720

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DRAFT ENVIRONMENTAL ASSESSMENT
‘Āinakō Subdivision Housing Project

TMKs (3) 2-3-030:004, (3) 2-3-030:001 (por.), and (3) 2-3-031:001 (por.)
South Hilo, Hawai‘i Island, State of Hawai‘i

PROPOSING/DETERMINING AGENCY:

Office of Housing and Community Development
1990 Kino‘ole Street, Suite 102
Hilo, HI 96720

CONSULTANT:

Stantec Consulting Services Inc.
P.O. Box 191
Hilo, HI 96721

Geometrician Associates
10 Hina Street
Hilo, HI 96720

CLASS OF ACTION:

Use of County Lands
Use of State and County Funds

This document is prepared pursuant to:

The Hawai‘i Environmental Policy Act,
Chapter 343, Hawai‘i Revised Statutes, and
Title 11, Chapter 200.1, Hawai‘i Department of Health Administrative Rules

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APPENDICES

ACRONYMS AND ABBREVIATIONS

A.D.	Anno Domini
ABCFM	American Board of Commissioners for Foreign Missions
AMI	Area Median Income
CCD	Census County Division
CIA	Cultural Impact Assessment
CDP	Community Development Plan
dBA	A-weighted decibel
DBEDT	Department of Business, Economic Development, and Tourism
DEM	Department of Environmental Management
DLNR	Department of Land and Natural Resources
DNL	Day-Night Average A-weighted decibel sound level
DOFAW	Division of Forestry and Wildlife
DOH	Department of Health
DWS	Department of Water Supply
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
HAR	Hawai‘i Administrative Rules
HCM	Highway Capacity Manual
HEA	Hawaii Evangelical Association
HELCO	Hawai‘i Electric Light Company
HRS	Hawai‘i Revised Statutes
LOS	Level of Service
MF	Multifamily
mph	miles per hour
OHA	Office of Hawaiian Affairs
OHCD	Office of Housing and Community Development
PIFWO	Pacific Island Fish and Wildlife Service Office
SIHP	State Inventory of Historic Places
SLUD	State Land Use Districts
TIAR	Traffic Impact Analysis Report
TMK	Tax Map Key
U.S.	United States
UH	University of Hawai‘i
UIC	Underground Injection Control
USCB	United States Census Bureau
USGS	United States Geological Survey
vph	vehicles per hour

SUMMARY OF THE PROPOSED ACTION, ENVIRONMENTAL IMPACTS, AND MITIGATION MEASURES

The ʻĀinakō Subdivision Housing Project (hereafter referred to as "the Project"), is designed to provide up to approximately 144 residential units on approximately 61 acres of land in South Hilo. The Project would include up to 82 townhomes, 28 flats, and 34 single-family units, designed to accommodate the needs of the island workforce and their families. The price range of Project units is expected to range from approximately $363,100 to $635,500. The Project would make a small but meaningful contribution to the significant affordable housing shortage in the local market area and is not expected to adversely affect demand for similar private-sector housing projects. The Project would balance the need to provide affordable housing near urban centers and allow residents better access to travel between home, work, and other desirable recreational opportunities.

The Project is not expected to have a negative effect on environmental resources. Potential effects to sensitive hydrological, cultural, and archaeological resources present within the Project Area would be minimized and avoided through Project design and implementation of protection measures. If previously undocumented archaeological or culturally sensitive resources are encountered during the construction phase of the Project, all work in the area will be halted until the State Historic Preservation Division can be contacted.

1 PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL ASSESSMENT PROCESS

1.1 Project Location and Property Ownership

The County of Hawai‘i Office of Housing and Community Development (OHCD) proposes to construct the ‘Āinakō Subdivision Housing Project (Project) on a County-owned, residentially zoned property in Hilo on Tax Map Key (TMK) (3) 2-3-030:004, a 60.59-acre parcel (Project Area) (see Figure 1). The Project would include construction of a road access corridor easement from Waiānuenue Avenue to the property over two State properties (TMKs (3) 2-3-030:001 and 2-3-031:001), as well as an extension of an existing road (Kilikina Street) to include two points of access. The Project Area is located approximately 2 miles west of downtown Hilo on Hawai‘i Island on the south side of Waiānuenue Avenue near Hilo Medical Center (see Photo 1).

1.2 Project Description

The Project would consist of infrastructure development of single-family and multi-family housing with phased construction to accommodate timing of funding and housing demand. Phase 1 would include construction of up to 82 townhomes and 28 flats (110 residential units), and Phase 2 would include up to 34 single-family units. The total number of units would be up to 144 at final build-out.

A conceptual plan of the layout of the buildings is illustrated in Figures 2 through 4. The layout optimizes the ability to develop the Project Area factoring in topography, hydrology, access, archaeological sites, existing vegetation, and other considerations.

The Project would construct the infrastructure necessary for the development of up to 144 units in the price range from approximately $363,100 to $635,500 (County of Hawai‘i, 2025). The target population for the Project is Hilo’s workforce population (typically teachers, nurses, fire and/or police department employees or staff, and county employees), professional services (scientists, engineers, health care, and information technology employees), and skilled trades personnel (construction, utilities, and manufacturing employees).

1.2.1 Phase 1: Multi-Family Development

1.2.1.1 Phase 1: Housing Units

As shown in the conceptual layout, Phase 1 would include construction of up to 110 units and associated infrastructure would occur in clusters of flats and two-story townhouses on approximately 18.82 acres on TMK (3) 2-3-030:004. Although the numbers may be adjusted during final design and permitting, the Environmental Assessment (EA) analyzes the maximum building height of 82 townhomes and 28 single-story flats in this area. It is anticipated that the entire area would be graded at once including installation of buried lateral utility connections.

Townhomes could be constructed with 2- or 3-bedroom options and the flats would be constructed with 2 bedrooms, for an expected occupancy of 164 to 246 residents in Phase 1. The multi-family townhouses and flats would likely be lightweight wood-framed construction. The subdivision would be organized in clusters of townhomes and flats, with covered parking available at each cluster and on-street parking available for guests.

Common areas in the subdivision would include a community center, playgrounds, a volleyball court, a tennis court, gardens, and open lawn areas. Phase 1 would likely be developed by a developer in a housing agreement with OHCD for sale or rent. The developer would be required to provide management for rentals and property maintenance.

1.2.1.2 Phase 1: Access and Infrastructure

Access to the multi-family units will be primarily from a new road (Kalama Street) to be constructed during Phase 1 across state land (TMKs (3) 2-3-030:001 and 2-3-031:001) mauka of the Hale ʻĀnuenue Restorative Care Center on Waiānuenue Avenue.

Phase 1 infrastructure will include construction of access and interior two-lane roads with wide shoulders for pedestrian and bicycle travel; clearing and grubbing of the site, which is heavily forested with invasive trees; a 10-inch gravity sewer line, a 6-inch force main, a pump station, and other sewer infrastructure; a 6-inch waterline and miscellaneous water infrastructure; drainage improvements including an estimated 14 drywells, drain pipes, and two culverts; a water line; overhead electrical, telephone, and cable lines; and site improvements to include landscape and possible trails throughout.

A roundabout is currently proposed to provide traffic calming within the development, but other solutions may be considered during final design.

The current cost estimate for Phase 1 infrastructure construction and installation is $8.538 million.

1.2.2 Phase 2: Single-Family Development

1.2.2.1 Phase 2: Single-Family Homes

Phase 2 would be constructed following completion of Phase 1. Phase 2 would include the subdivision into 34 lots for single family homes and the construction of a maximum of 34 single-family homes on approximately 15 acres would commence. Grading would occur as individual lots are purchased, rather than all at once. Lots would be sized at 15,000 square feet.

1.2.2.2 Phase 2: Access and Infrastructure

Access to Phase 2 would be from Kalama Street constructed during Phase 1 and from an extension of Kilikina Street. The through connection at Kilikina Street is required because Hawaiʻi County Code 23-48 prohibits a cul-de-sac at the mauka end of the development based on the proposed number of lots. Extending Kilikina Street makes the most sense for the Project's connection to the existing road network and is also consistent with Hawaiʻi County Code 23-44.

Phase 2 infrastructure is similar to that of Phase 1 totaling $6.648 million, and subdivision into 34 lots for single-family homes.

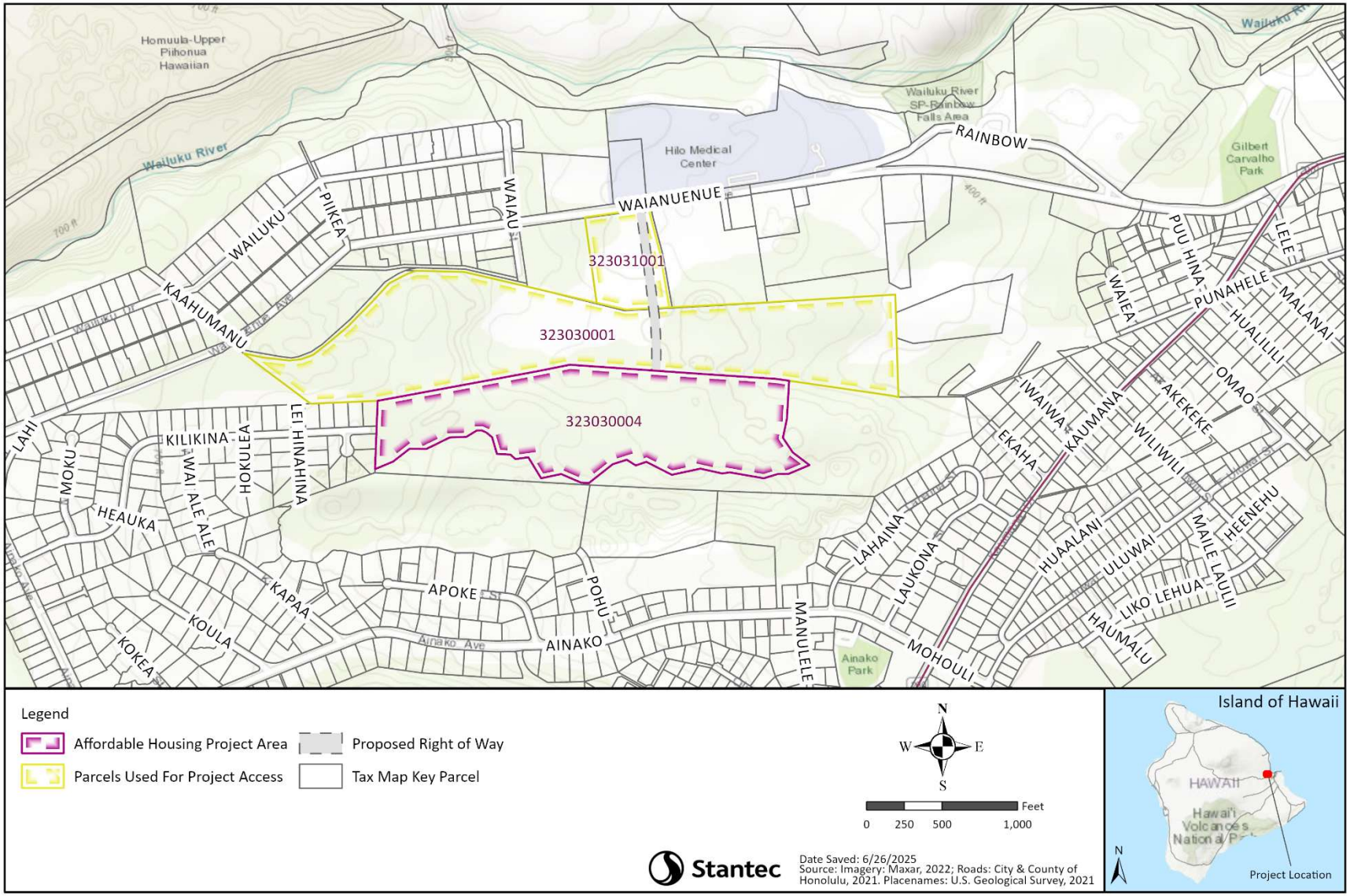


Figure 1 Project Location Map

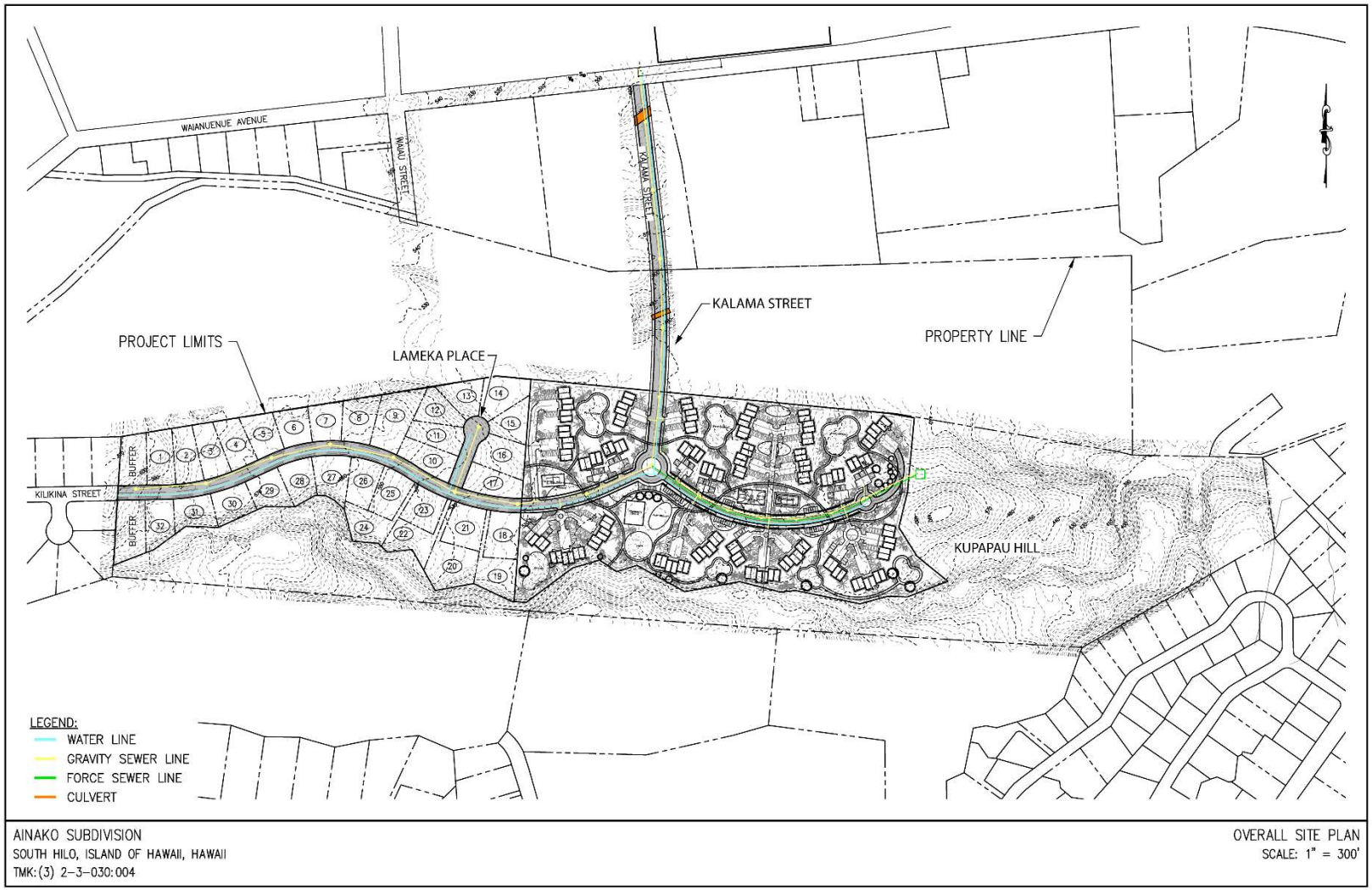


Figure 2 Conceptual Phase 1 and Phase 2 Layout

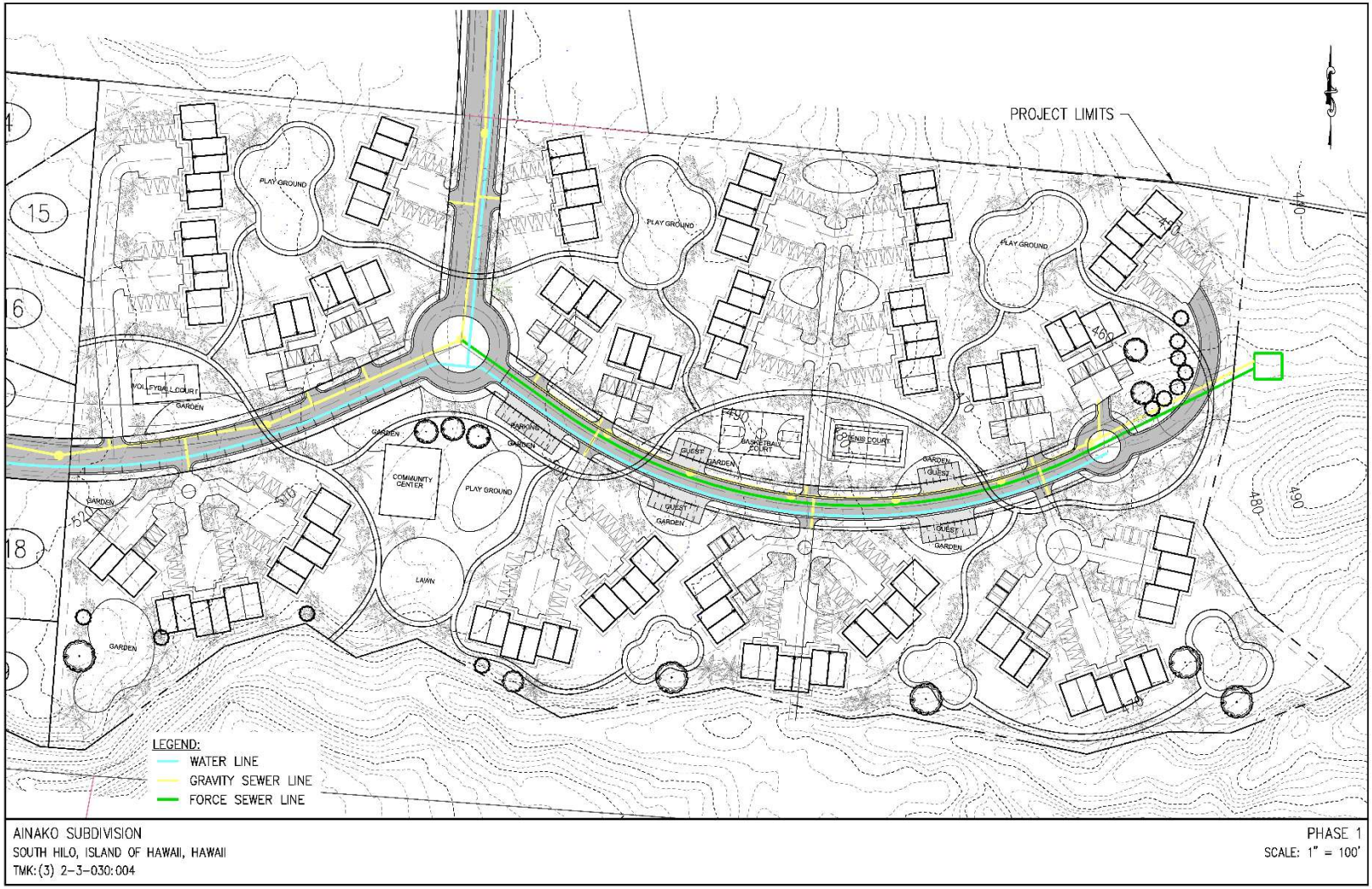
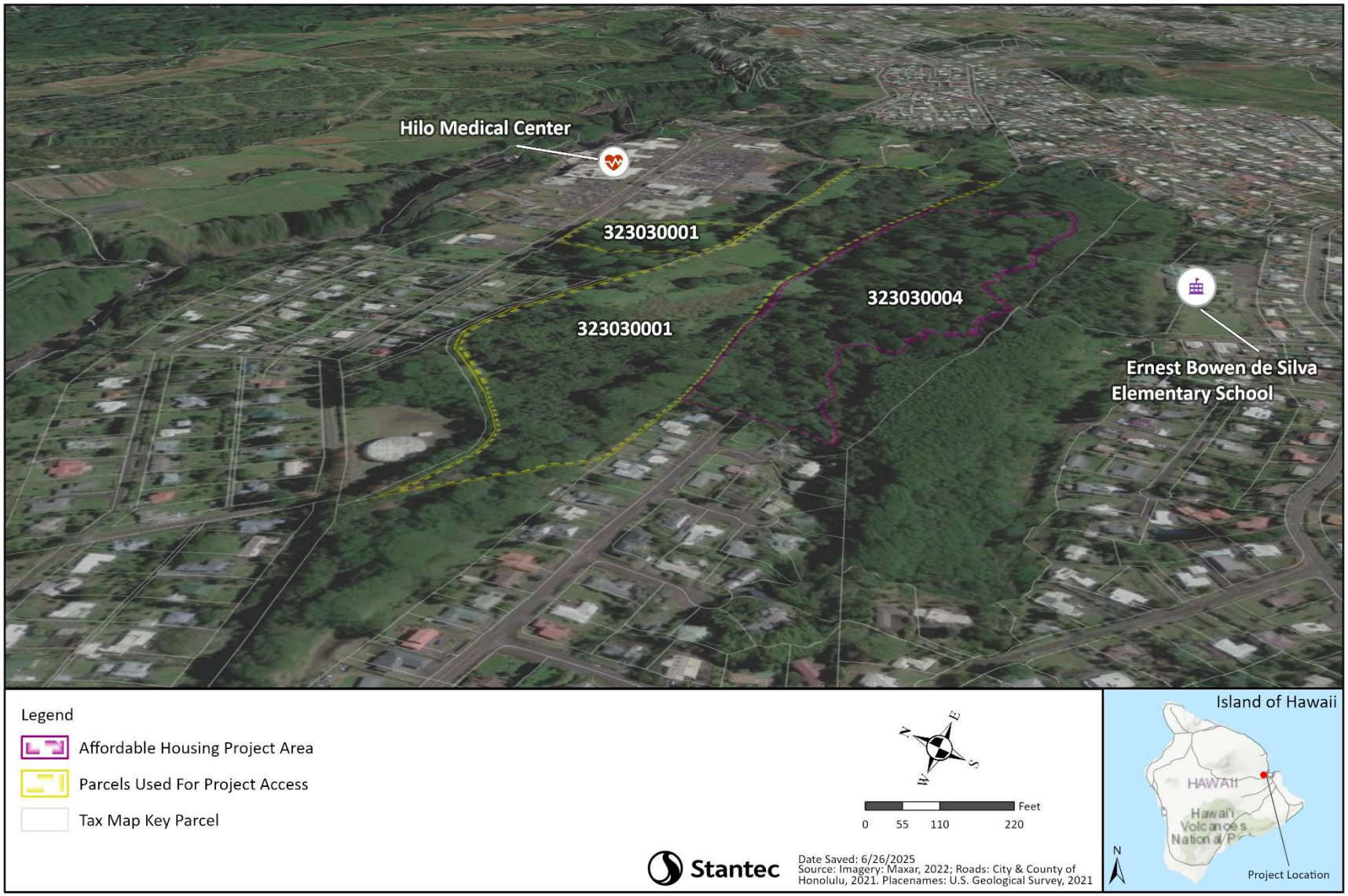


Figure 3 Conceptual Phase 1 Layout

Figure 4 Conceptual Phase 2 Layout

Photo 1 Project Site (facing west)



1.3 Purpose and Need

The purpose of the Project is to assist in meeting the current demand for affordable housing on the Island of Hawai‘i. According to a 2016 report by the State of Hawai‘i Department of Business, Economic Development, and Tourism (DBEDT), Hawai‘i would need 64,700 affordable housing units to meet the demand by 2025, and despite modest growth in housing, the gap continues to widen. The situation is particularly dire for extremely low-income families, with only 29 available affordable units for every 100 families in need in 2022 (Ordonio, 2022). Prospective tenants may face years-long waits for Section 8 vouchers or public housing. Even among those who are qualified to purchase homes, demand outstrips supply, driving up prices and keeping market housing unaffordable. The average home sales price on the Island of Hawai‘i in the fourth quarter of 2024 was approximately $678,000 (DBEDT, 2025).

The ‘Āinakō Subdivision Housing Project is designed to fill the housing need of the “workforce” population. These populations consist of typically teachers, nurses, fire and/or police department employees and staff, state and county engineers, and maintenance staff. The average “workforce, professional services, and/or skilled trades” family consists of working couples and families with an income from 60 to 140 percent of the area median income (AMI), as noted in the Affordable Housing Dashboard on the OHCD website (OHCD, 2025).

The Project would be particularly valuable for satisfying the housing needs of the health care workforce, as it is directly adjacent to the growing Hilo Benioff Medical Center campus. For years, the United States (U.S.) health care workforce has struggled to keep pace with demand. The Association of Community Cancer Centers’ *The Future of the Health Care Workforce in Hawaii* surveyed health care professionals in 2023 and noted that the main factors for the health care workforce deficits are: cost of housing (94 percent), cost of living (92 percent), and inadequate pay for health care providers (74 percent) (https://www.accc-cancer.org/home/news-media).

The Project would provide additional affordable housing in South Hilo in a neighboring area near existing desirable infrastructure, including shopping centers, schools, and other essential needs. The Project is one of more than 150 projects in the county providing from between one to several hundred affordable housing units.

1.4 Environmental Assessment Process

This EA describes the existing environment and discusses possible impacts the proposed Project may have on the environment, presenting mitigation measures for all potential adverse impacts the Proposed Action may generate. This EA is being conducted in accordance with Chapter 343 of the Hawai‘i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200.1, of the Hawai‘i Administrative Rules (HAR), is the basis for the environmental impact process in the State of Hawai‘i. According to Chapter 343, an EA must determine whether any of the impacts are significant according to 13 specific criteria. Chapter 4 of this document states the anticipated finding that no significant impacts are expected to occur. Chapter 5 lists each criterion and presents the preliminary findings for each made by the Hawai‘i County OHCD, the proposing and approving agency. If, after considering comments to the Draft EA, the approving agency concludes that no significant impacts would be expected to occur, then the agency will issue a Finding of No Significant Impact (FONSI), and the action will be permitted to proceed to other necessary approval and permit processes. If the agency concludes that

significant impacts are expected to occur as a result of the Proposed Action, then an Environmental Impact Statement (EIS) must be prepared for the Proposed Action to proceed.

1.5 Public Involvement and Agency Coordination

The following agencies and organizations were consulted by letter/email in August 2024 during development of the EA.

State:

- Department of Health (DOH)
- Department of Land and Natural Resources (DLNR): Land Division, Division of Forestry and Wildlife (DOFAW), and Engineering Divisions
- Office of Hawaiian Affairs (OHA)

County:

- County Council Representative Jenn Kagiwada
- Department of Environmental Management
- Department of Water Supply
- Planning Department

Private:

- Sierra Club, Hawai‘i Chapter
- Hawai‘i Island Chamber of Commerce
- Adjacent Property Owners: Laswell-Hoff, Fujimoto, Larson, DeSilva, Agenten, Hilo 21 LLC

Comments received are contained in Appendix 1.

2 ALTERNATIVES

2.1 Proposed Project

See Section 1.2.

2.2 No Action

Under the No Action Alternative, the Project would not be developed on the site and no ground disturbance associated with the Project would occur. Under this alternative, there would not be 82 townhomes, 28 flats, or 34 single-family residential units (total of 144 units) available in Hilo at this site. The site is owned by the County of Hawai‘i; however, under this alternative the parcel could either be held or sold. The site could be developed as some other type of non-residential project or not be developed for some time.

These options would not help the existing and growing mid-market/workforce population in Hilo. Even if the property is eventually developed in the future, it is not certain that it would be developed as low-income, rental, or for sale units. Encouraging safe and livable housing, attaining diversity of socioeconomic housing, and maintaining a housing supply which allows a variety of choices are goals in the Hawai‘i County General Plan. The No Action Alternative would not meet these goals within the Hilo area.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

The OHCD considered alternative building configurations, alternative building locations and numbers, alternative access, and different numbers of multi-family and single-family units. It was decided that larger structures with stacked 3-story or higher units did not provide prospective buyers the advantage of owning the unit from floor to ceiling and wall to wall. Additionally, larger structures did not match nearby communities, were less aesthetically pleasing, would take longer to permit, and would likely have greater environmental impacts than the 82 townhouses, 28 flats, and 34 single-family unit styles that are proposed for the Project. OHCD considered that the larger structures did not offer a lifestyle to the target market that is conducive to family living on Hawai‘i Island as compared to the townhouses, flats, and single-family style structures.

Alternative design features were considered including wider access roads and standalone rather than clustered structures, but these features limited the amount of green space available for the Project.

Based on early input from members of the ‘Āinakō Terrace community, State Historic Preservation Department, and Cultural Impact Assessment (CIA) interviewees, the development was revised to incorporate preservation of archaeological features. OHCD has eliminated development on the two parcels that are immediately adjacent to existing homes to reduce visual impacts to existing Kilikina Street residents (see Figure 4).

In the end, none of the other alternatives were found to be optimal for the property or the perceived demand in the market, or they resulted in more environmental impacts than the Project, and therefore they were eliminated from detailed analysis.

3 ENVIRONMENTAL SETTING, ENVIRONMENTAL CONSEQUENCES, CUMULATIVE IMPACTS, AND MITIGATION MEASURES

3.1 General Setting

The location for the Proposed Action is referred to throughout this EA as the Project Area (see Figure 1). The sloping, 60.59-acre Project Area is heavily forested with large, non-native trees, while the proposed access route from Waiānuenue Avenue crosses pasture, a forest, and a small, unnamed stream. The entire property and access route that comprise the Project Area are undeveloped. The Project Area is surrounded by housing subdivisions of various ages on the east, west, and south, and by undeveloped state land interspersed with wetlands and leased for pasture on the north.

3.2 Environmental Consequences

This section of the EA includes a description of the environmental setting of the Project as well as the potential impacts to environmental and social resources from the proposed Project and alternatives. Environmental consequences, both primary and secondary, and the cumulative as well as the short-term and long-term impacts are considered. Cumulative impacts result 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 such actions. Cumulative impacts can result from actions that are individually minor, but collectively significant, taking place over a period of time. Cumulative impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of others.

Past projects in the vicinity of the Project Area have included urban development (residential development in the 1970s of ʻĀinakō Terrace and Boiling Pots neighborhoods), infrastructure improvements including road maintenance activities on Waiānuenue Avenue and a Department of Water Supply (DWS) facility south of the Project Area at TMK (3) 2-3-030:005, including a water tank and associated infrastructure. First United Protestant Church, Hilo Benioff Medical Center, Kaiser Medical Health Facility, and East Hawaiʻi Health–Cancer Center are located just north of the Project Area. Ernest B. DeSilva Elementary School is located south of the Project Area.

The most relevant reasonably foreseeable future projects include the Hilo Medical Center New Medical Building (Hilo Medical Center, 2022) and Hilo Medical Center New Administrative Services Building (Hilo Medical Center, 2024). Additionally, at 34 Rainbow Drive, located just east of the Project Area, the OHCD is proposing to renovate the existing Old Hilo Memorial Hospital Building and convert currently unoccupied interior space into floor area expected to be used for offices, storage, and patient rooms. The 34 Rainbow Drive project also proposes to utilize portions of the remaining approximately 25-acre property for various types of affordable rental housing units and supportive services, including a potential State DOH facility (OHCD, 2024).

3.3 Physical Environment

3.3.1 Geology, Soils, and Geologic Hazards, Climate

3.3.1.1 Environmental Setting

Rainfall in the Project Area averages 160 to 170 inches annually. The mean annual temperature is approximately 74 degrees Fahrenheit, slightly cooler than urban Hilo due to its elevation of approximately 400 to 650 feet above sea level (Giambelluca et al. 2013; University of Hawai‘i [UH] Hilo-Department of Geography 1998).

Geologically, the Project Area is located on the lower flank of Mauna Loa (Wolfe and Morris, 1996). The elevation of the Project Area ranges from approximately 400 to 700 feet above sea level. The surface consists of weathered soils derived from regional Pahala Ash deposits and alkalic basalt lava flows on Pleistocene-era (greater than 10,000 years old) lava flows from Mauna Loa. Soils in the Project Area are classified by the U.S. Natural Resources Conservation Service (formerly Soil Conservation Service) as Panaewa, very cobbly hydrous loam, 2 to 10 percent slopes, and Hilo silty clay loam. These soils are widely distributed in the Hilo area and were often used for sugar cane agriculture in the past. They now support diversified agriculture, secondary forest or pasture (U.S. Soil Conservation Service, 1973).

All of Hawai‘i Island is subject to geologic hazards, especially lava flows and earthquakes. Volcanic hazard as assessed by the U.S. Geological Survey (USGS) in this area of Hilo is 3, on a scale of ascending risk 9 to 1 (Heliker 1990:23). The hazard risk is based on the fact that Mauna Loa is an active volcano. Volcanic Hazard Zone 3 areas have had 1 to 5 percent of their surface covered by lava flows or ash since the year 1800 but are at lower risk than Zone 2 areas because of their greater distances from recently active vents and/or because the local topography makes it less likely that flows would cover these areas.

Hawai‘i Island experiences high seismic activity and is at risk from major earthquake damage (USGS, 2000), especially to structures that are poorly designed or built. In October 2006, two damaging earthquakes of magnitude 6.7 and 6.0 struck the west side of Hawai‘i Island, and a 6.9-magnitude earthquake shook Kīlauea in May 2018. These earthquakes caused no known damage to the Project Area or nearby facilities. The Project Area is undulating and incised by active streams and former stream gulches. While it does not appear to be subject to subsidence, minor forms of mass wasting including soil creep are likely in the steeper areas. No lava tube caves were observed, but underground voids of various sizes are likely because of the pāhoehoe substrate.

3.3.1.2 Impacts and Mitigation Measures

Geology, Soils, Geologic Hazards

Geologic conditions impose no substantial constraints on the proposed Project. Most of the surface of Hawai‘i Island is subject to eventual lava inundation, and any facilities in Hilo face some risk. The utilization of the area for affordable housing is not imprudent to undertake. Given the need in East Hawai‘i, the county has determined that it is sensible to construct housing here. Project design would take the seismic setting into account and include geotechnical investigations for soil stability and voids in the lava and mitigate appropriately through grading and placement of engineered fill. Impacts to soils from construction could result in increased erosion or

sedimentation. These impacts would be prevented through best management practices (BMPs) during construction and through requirements of the grading plan prepared for the Project.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be no impacts to geologic features or soils, and there would be no other impacts from geologic hazards under this alternative.

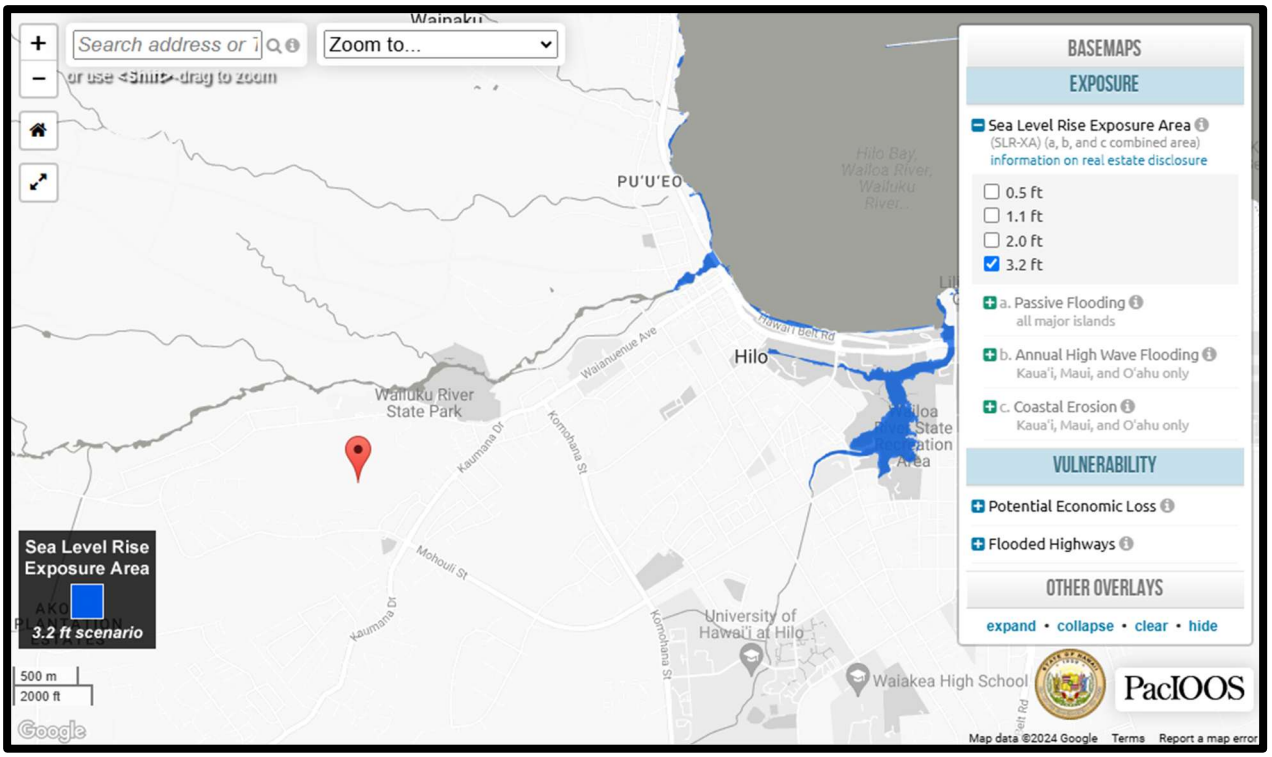
Climate Change

There is a scientific consensus that the earth is warming due to man-made increases in greenhouse gases in the atmosphere, according to the United Nations' Intergovernmental Panel on Climate Change (UH Mānoa Sea Grant, 2014). Global mean air temperatures are projected to increase by at least 2.7 degrees Fahrenheit by the end of the century. This will be accompanied by the warming of ocean waters, expected to be highest in tropical and subtropical seas of the Northern Hemisphere. For Hawai‘i, where warming air temperatures are already quite apparent, not only is the equable climate at risk but also agriculture, ecosystems, the visitor industry, and public health. The State of Hawai‘i identifies climate change adaptation priority guidelines in HRS section 226-109. Additionally, Act 17 of the 2018 Hawai‘i Legislature and Title 11, Chapter 200.1 require analysis of sea-level rise and greenhouse gases in environmental impact statements.

In terms of precipitation, wet and dry season contrasts are expected to increase, and wet tropical areas in particular are likely to experience more frequent and extreme precipitation. In general, rainfall in Hawai‘i has been variable in the recent past with some years drier and some wetter than average. The El Niño Southern Oscillation (i.e., periodic variation in winds and sea surface temperatures in the Pacific Ocean, the warming phase of sea temperature known as El Niño and the cooling phase as La Niña) will likely continue to dominate precipitation patterns from year to year in the tropical Pacific Ocean. Climate change-related increases in air temperatures will lead to more evaporation and more moisture in the air. As a result, the variability in El Niño-related precipitation will probably increase, making rainfall predictions difficult. However, it is very likely that warmer temperatures and larger and more frequent tropical storms and hurricanes will affect the Hawaiian Islands in the future. In order to mitigate for expected increases in precipitation, Project design would direct surface runoff into drywells and seepage pits of sufficient disposal capacity to accommodate reasonably expected increase in runoff.

Due to the elevation of the Project Area at a minimum of 400 feet above sea level, there is no risk to the Project from sea level rise (Figure 5). Construction of infrastructure and housing would involve unavoidable small but non-negligible carbon emissions. Occupation of the housing would entail greenhouse gas emissions that would be essentially the same regardless of where the residents live, leading to no net increase. The Project would not be expected to contribute significantly to global climate change since it is expected to provide housing for individuals and families who already reside in East Hawai‘i.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be no additional impacts from climate change under this alternative.



Source: Pacific Islands Ocean Observing System, 2025

Figure 5 Sea Level Rise Exposure Map

3.3.1.3 Cumulative Impacts

Since there are no impacts associated with climate change and geological conditions from the Project, there are no anticipated cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions to geologic features, soils, geological hazards, or climate change.

3.3.2 Flood Zones and Drainage

3.3.2.1 Existing Environment

Environmental conditions within the Project Area include seeps, springs, streams, and wetlands. The ground in the area is composed of a thin layer of soil over younger and porous lava flow. Many springs in this area were utilized for irrigation in traditional taro agriculture and later for sugar cane using ‘auwai and ditches, traces of which are present in some parts of the Project Area. The Project Area is located approximately 1.8 miles from the ocean at elevations ranging from approximately 400 to 800 feet above mean sea level. Therefore, the Project is outside of the area that would be affected by coastal flooding.

Two surveys for aquatic features were conducted in the Project Area; a jurisdictional waters and wetlands survey was conducted for TMKs (3) 2-3-030: 004 and (3) 2-3-030: 001 (por.) and an aquatic features survey was conducted for the proposed road alignment in TMKs: (3) 2-3-031:001 (por.) and (3) 2-3-030:001 (por.). Both reports are included in Appendix 2. The jurisdictional waters and wetlands survey of the Project Area was completed in 2022 and the survey of aquatic

features in the proposed road alignment was completed in late 2023 (Appendix 2). The Project footprint is within the ʻĀinakō Stream sub-basin in the larger Wailuku Watershed (Parham et al., 2008). Traversing the Project Area from west to east is the ʻĀinakō Stream. ʻĀinakō Stream is not currently listed as a perennial stream in the Hawaiʻi Watershed Atlas or the Hawaiʻi Stream Assessment (Parham et al., 2008; Hawaiʻi Cooperative Park Service Unit, 1990); however, the survey found fishes and invertebrates in the stream indicating flow is perennial (Appendix 2). ʻĀinakō Stream discharges into the Wailuku River located 0.5 mile north of the Project Area. The Wailuku River is the largest and longest surface water feature in the state (National Park Service, 2021) and flows from west to east from Mauna Kea eventually discharging into the Pacific Ocean on the west side of Hilo Bay.

The survey found that ʻĀinakō Stream and three tributaries flow in or near the Project Area (Appendix 2). Tributary A runs from the west end of the Project Area to the confluence with a "spring stream" near the confluence with ʻĀinakō Stream. Tributary A is contained within a deep gulch with steep slide slopes. Tributary B emerges from a mixed forest northwest of the Project Area, is largely channelized, and crosses two wide areas of grassland, and eventually converges with ʻĀinakō Stream north of the Project Area. Tributary C receives flow from a roadside ditch on Waiānuenue Avenue that is directed through a culvert under Waiau Street. The confluence of Tributary C with ʻĀinakō Stream is downslope of the Project Area near Waiānuenue Avenue. Other than potentially the culvert on Waiau Street, Tributary C is largely outside of the Project Area.

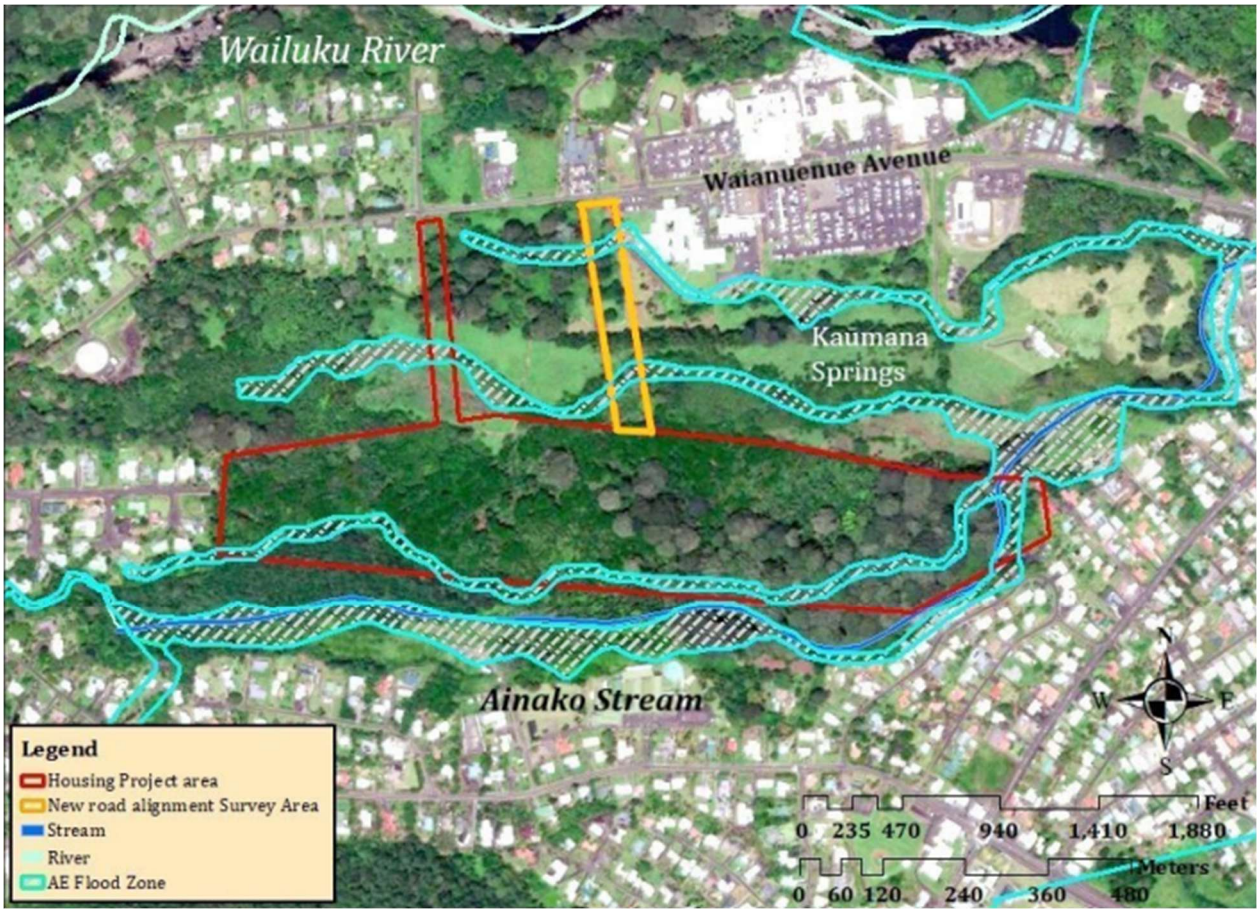
Kaūmana Springs stream is located at the eastern side of the Project Area at the base of Kupapaʻu Hill (Appendix 2). The spring is surrounded by a low concrete wall and clear water can be observed bubbling to the surface. Water seeps over the concrete walls and the stream is additionally fed by groundwater emerging throughout the length of a channel that extends from the spring to the confluence with ʻĀinakō Stream.

The USGS estimated three-decade annual rainfall for ʻĀinakō sub-basin at 171 inches (USGS, 2019). The majority of the rainfall in the area occurs from November through March, although rain occurs in the area at various times throughout the year. ʻĀinakō Stream and Kaūmana Springs are within an AE Federal Emergency Management Agency (FEMA) Flood Zone. AE zones are estimated to be inundated by a 1 percent annual chance of a (100-year) flood (FEMA, 2018). The remaining Project Area is in a non-special flood hazard area estimated to less than 0.2 percent annual chance floodplain as seen in Figure 6.

3.3.2.2 Impacts and Mitigation Measures

The Project would be required to follow County regulations and polices related to flood control and drainage in addition to Chapter 27 of the Hawaiʻi County Code. Chapter 27 requires the difference between pre-development and post-development runoff to be contained onsite, limiting impacts. A drainage study would be prepared prior to the implementation of the Project, with the approval from the Department of Public Works, ensuring that runoff from the Project Area would not be directed toward adjacent properties.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be no impacts to flood zones or drainage under this alternative.



Source: AECOS, 2024

Figure 6 Surface Water Bodies In Project Area

3.3.2.3 Cumulative Impacts

Since there are no impacts associated with the flood zones and drainage from the Project, there are no anticipated cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions to flood zones or drainages.

3.3.3 Water Bodies and Water Quality

3.3.3.1 Existing Environment

Surface Waters

The Project Area is approximately 2,000 feet south of Wailuku Stream (commonly known as the Wailuku River), the major drainage of this part of Hilo. The Wailuku River is the longest and largest surface water feature in the state with a length of 28 miles (National Park Service, 2021). The Project Area is within the drainage basin of Wailuku Stream. The slopes of Hilo in the 400- to 800-foot elevation exhibit a number of springs that emerge from abundant near surface groundwater derived from precipitation in the forests above, which are situated on highly permeable recent lava flows. ʻĀinakō Stream originates from springs located just west of the Project and then flows near the Project Area's southern margin before cutting through the eastern tip of the Project Area

at low elevations. Flow from springs within the eastern end of the Project Area and the lands just to the north join ʻĀinakō Stream before it connects with Wailuku Stream at an elevation of about 200 feet above sea level. Marshy wetlands flank the springs found north of the Project Area. No ponds, lakes, or other water features are present in or near the Project Area. Figure 6 depicts the surface water bodies in the area.

Groundwater

The aquifer underlying Hilo is classified by the State of Hawaiʻi Commission On Water Resource Management as the Hilo Aquifer System Area, a unit of the Northeast Mauna Loa Aquifer Sector. Despite a number of wells, pumping for water use takes up only a small fraction of this aquifer's vast sustainable yield of 349 million gallons per day. Protection of aquifer water quality is vital everywhere and critical for those areas lying mauka of the Underground Injection Control (UIC) Line, which includes the great majority of the island, including the Project Area. The DWS supplies potable water for Hilo through a number of wells located generally in the mid-elevations to ensure high water quality but minimize pumping costs. No domestic potable wells are located close enough to the Project Area to cause concern (see maps at https://www.higp.hawaii.edu/hggrc/wells/wells.php). The state's UIC program ensures that wells used to inject water or other fluids into groundwater aquifers do not contaminate drinking water sources. Injection wells located above the UIC line require permits or exemptions to ensure they are properly located and designed to meet safety standards.

3.3.3.2 Impacts and Mitigation Measures

For larger development projects, a concern is that surrounding water resources may be negatively impacted during the construction and operation phases. The quantity of water that would be drawn from the Hilo Aquifer System is not expected to have an effect on the overall flow or quality.

Impacts to surface water quality could occur during construction from accidental spills or increased erosion. The Project would be required to follow County regulations and policies related to flood control and drainage, in addition to Chapter 27 of the Hawaiʻi County Code. Chapter 27 requires the difference between pre-development and post-development runoff to be contained onsite, limiting impacts. A drainage study would be prepared prior to the implementation of the Project, with the approval from the Department of Public Works, ensuring that runoff from the Project Area would not be directed toward adjacent properties.

Potential impacts to water quality would also be prevented through BMPs during construction and through requirements of the grading plan prepared for the Project.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be no impacts to water bodies or water quality under this alternative.

3.3.3.3 Cumulative Impacts

Since there are no impacts to water bodies or water quality from the Project, there are no anticipated cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions to flood zones.

3.3.4 Flora, Fauna, and Ecosystems

3.3.4.1 Existing Environment

Flora

A biological survey was conducted for the Project Area in 2024 (Appendix 3). In the *Manual of the Flowering Plants of the Hawaiian Islands*, Gagne and Cuddihy (1990) classified the natural, pre-human vegetation in areas with similar geology, elevation, and rainfall as the Project Area as Lowland Wet Forest. Dominant species were likely ʻōhiʻa trees (*Metrosideros polymorpha*), uluhe (*Dicranopteris linearis*), and hapuʻu ferns (*Cibotium* spp.), with a large variety of other trees, shrubs, ferns, sedges, grasses, and herbs. This original community in the general area was long ago eradicated or heavily degraded by sugar cane cultivation, cattle grazing, and clearing for small farms and residences. The vegetation outside towns in the area is now either managed (i.e., farms, pasture, or landscaped grounds) or adventive "communities" of various alien weeds. Small remnants of native forest still remain in places.

An undated State of Hawaiʻi EA prepared for the proposed Kaūmana Springs County Park (Hawaiʻi County Department of Parks and Recreation, n.d.) that would have occupied this Project Area and several others noted concerning the general area:

> Years ago, this area was used for agriculture, and even the casual hiker can see evidence of this use demonstrated by the furrowed land and the rock mounds and walls which were created when the land was cleared for cultivation. Agricultural use also eliminated most of the area's large trees. Today, most of the remaining significant trees are located in linear bands which designate property boundaries or water courses. The agricultural land now consists primarily of pastureland and scrub growth which invaded the area as the fields were abandoned. There are also a few residences along the periphery of the pasture land except for the windrows of trees defining the park boundaries, most of the vegetation within the proposed park site is of recent origin, and virtually none is more than 25 years old.

Examination of the USGS maps from various dates along with aerial photographs from 1954, 1965, and 1977 indicate that during this period the majority of the Project Area gradually became reforested while the road corridor was part of sugar cane fields. Aerial imagery from the last 20 years indicate very little change except on the southwest margin, where clearing of albizia (*Falcataria moluccana)* and grading occurring on an adjacent property appears to encroach onto a few acres of the property.

The Project Area was surveyed for biological resources on several days between August 2022 and January 2024. The Project Area is heavily forested, with a few clearings and a small area of pasture in the north. Prominent tree species in the upper canopy include very tall albizia trees—especially dominant in the makai half of the property—along with autograph tree (*Clusia rosea*), African tulip (*Spathodea campanulata*), and large stands of Alexandra palm (*Archontophoenix alexandrae*), with some kukui (*Aleurites moluccana*) and Chinese banyan (*Ficus microcarpa*). The understory is composed of seedlings of the trees above, especially Alexandra palm, along with thickets of strawberry guava (*Psidium cattleianum*), palmgrass (*Setaria palmifolia*), Australian tree fern (*Sphaeropteris cooperi*), warabi fern (*Diplazium esculentum*), shoebutton ardisia (*Ardisia elliptica*), and hare's foot fern (*Phlebodium aureum*). Herbs and grasses are uncommon except near the steeper streambanks, in limited clearings, and at the mauka margin of the property with Kilikina Street, where a wide variety of weedy species are present. ʻĀinakō Stream cuts through

the makai portion of the property, leaving an isolated remnant that is adjacent to the backyards of homes on Ekaha and Lahaina Street.

The new proposed road access begins just mauka of Hale ʻĀnuenue and would extend across two state parcels. The first 400 feet of the proposed road has been modified heavily by grazing and landclearing for an unpaved road and other uses. It crosses a very small, intermittent drainage not identified as a stream on the USGS topo map. The final 300 feet of the proposed road is heavily wooded with non-native trees including *Eucalyptus* sp., strawberry guava, deviltree (*Alstonia macrophylla*), and mule's foot fern (*Angiopteris evecta*), among many others. Topographically, it consists of the steep, wooded banks of an unnamed and apparently permanent spring-fed stream. In both of the drainage features in this access corridor, there are wetlands or aquatic plant species in the genus *Cyperus*, along with primrose willow (*Ludwigia octovalvis*), California grass (*Urochloa mutica*), Job's tears (*Coix lachryma-jobi),* and other plants. Only one common indigenous species is found in this streamside flora and no rare or threatened or endangered aquatic plants are present.

All plant species found in the Project Area during the surveys are listed in Table 1. Only two were native, the indigenous (native to the Hawaiian Islands and elsewhere) and very widespread sedges *Cyperus polystachyos* and *Scleria testacea*. No endemic (found only in the Hawaiian Islands) plants were seen. No rare or unusual native plant species were present. Several common Polynesian introductions were also present: kukui, ti (*Cordyline fruticosa*), taro (*Colocasia esculenta*), ʻape (*Alocasia macrorrhizos*), and banana (*Musa* sp.).

Table 1 Plant Species List on Project Area

Scientific Name	Family	Common Name	Life Form	Status
Adiantum raddianum	Pteridaceae	Maidenhair Fern	Fern	A
Ageratum conyzoides	Asteraceae	Ageratum	Herb	A
Aleurites moluccana	Euphorbiaceae	Kukui	Tree	A
Alocasia macrorrhizos	Araceae	ʻApe	Shrub	PI
Alstonia macrophylla	Apocynaceae	Deviltree	Tree	A
Angiopteris evecta	Marraticeae	Mule's Foot Fern	Fern	A
Ardisia elliptica	Myrsinaceae	Shoebutton Ardisia	Tree	A
Archontophoenix alexandrae	Arecaceae	Alexandra Palm	Tree	A
Bambusa vulgaris	Poaceae	Yellow Clumping Bamboo	Grass	A
Begonia reniformis	Begoniaceae	Grape-Leaf Begonia	Herb	A
Blechnum appendiculatum	Blechnaceae	Blechnum	Fern	A
Caladium lindenii	Araceae	Indian Kale	Shrub	A
Catharanthus roseus	Apocynaceae	Madagascar Periwinkle	Shrub	A
Cecropia obtusifolia	Cecropiaceae	Cecropia	Tree	A
Cenchrus purpureus	Poaceae	Napier Grass	Herb	A
Centella asiatica	Apiaceae	Asiatic Pennywort	Herb	A
Cestrum nocturnum	Solanaceae	Night Blooming Jasmine	Shrub	A
Chamaecrista nictitans	Fabaceae	Partridge Pea	Herb	A
Chloris sp.	Poaceae	Chloris	Herb	A
Thelypteris parasitica	Thelypteridaceae	Downy Wood Fern	Fern	A
Miconia hirta	Melastomataceae	Koster's Curse	Shrub	A
Clusia rosea	Clusiaceae	Autograph Tree	Tree	A
Coffea arabica	Rubiaceae	Coffee	Shrub	A
Coix lacryma-jobi	Poaceae	Job's Tears	Grass	A
Cordyline fruticosa	Asparagaceae	Ti	Shrub	PI

Scientific Name	Family	Common Name	Life Form	Status
Colocasia esculenta	Araceae	Taro	Shrub	PI
Commelina diffusa	Commelinaceae	Honohono	Herb	A
Crassocephalum crepidioides	Asteraceae	Crassocephalum	Herb	A
Crotalaria pallida	Fabaceae	Rattlepod	Herb	A
Cuphea carthegenensis	Lythraceae	Tarweed	Herb	A
Cyperus gracilis	Cyperaceae	McCoy Grass	Herb	A
Cyperus halpan	Cyperaceae	Cyperus	Herb	A
Cyperus involucratus	Cyperaceae	Umbrella Sedge	Herb	A
Cyperus polystachyos	Cyperaceae	Pycreus	Sedge	I
Desmodium triflorum	Fabaceae	Desmodium	Herb	A
Dichorisandra thyrsiflroa	Commelinaceae	Blue Ginger	Herb	A
Dieffenbachia sp.	Araceae	Dumb Cane	Herb	A
Digitaria sp.	Poaceae	Digitaria	Herb	A
Diplazium esculentum	Athyriaceae	Warabi	Fern	A
Dracaena reflexa var. *angustifolia*	Asparagaceae	Money Tree	Tree	A
Elephantopus spicatus	Asteraceae	Elephantopus	Herb	A
Epipremnum aureum	Araceae	Pothos	Vine	A
Eucalyptus sp.	Myrtaceae	Eucalyptus	Tree	A
Erechtites valerianifolia	Asteraceae	Fireweed	Herb	A
Etlingera elatior	Zingiberaceae	Torch Ginger	Shrub	A
Falcataria moluccana	Fabaceae	Albizia	Tree	A
Ficus microcarpa	Moraceae	Banyan	Tree	A
Fraxinus uhdei	Oleacea	Tropical Ash	Tree	A
Hedychium coronarium	Zingiberaceae	White Ginger	Herb	A
Hedychium flavescens	Zingiberaceae	Yellow Ginger	Herb	A
Heliconia spp.	Heliconiaceae	Heliconia	Herb	A
Hyptis pectinata	Lamiaceae	Comb Hyptis	Shrub	A
Ipomoea triloba	Convolvulaceae	Little Bell	Vine	A
Justicia betonica	Acanthaceae	White Shrimp Plant	Shrub	A
Litchi chinensis	Sapindaceae	Lychee	Tree	A
Ludwigia octovalvis	Onagraceae	Kamole	Herb	A
Macaranga mappa	Euphorbiaceae	Bingabing	Shrub	A
Mangifera indica	Anacardiaceae	Mango	Tree	A
Medinilla cumingii	Melastomataceae	Medinilla	Shrub	A
Megathyrsus maximus	Poaceae	Guinea Grass	Herb	A
Melastoma spp.	Melastomataceae	Melastoma	Shrub	A
Melinis minutiflora	Poaceae	Molasses Grass	Herb	A
Melochia umbellata	Sterculiaceae	Melochia	Tree	A
Musa sp.	Musaceae	Banana	Herb	PI
Nephrolepis multiflora	Nephrolepidaceae	Sword Fern	Fern	A
Oplismenus hirtellus	Poaceae	Basket Grass	Herb	A
Oxalis corniculata	Oxalidaceae	Creeping Wood Sorrel	Herb	A
Paederia foetida	Rubiaceae	Maile Pilau	Vine	A
Panicum repens	Poaceae	Wainaku Grass	Grass	A
Paspalum conjugatum	Poaceae	Hilo Grass	Herb	A
Paspalum urvellei	Poaceae	Vasey Grass	Herb	A
Passiflora edulis	Passifloraceae	Lilikoi	Vine	A
Persea americana	Lauraceae	Avocado	Tree	A
Phlebodium aureum	Polypodiaceae	Hare's Foot Fern	Fern	A
Pseudoelephantopis spicatus	Asteraceae	Elephant's Foot	Herb	A
Psidium cattleianum	Myrtaceae	Strawberry Guava	Tree	A

Scientific Name	Family	Common Name	Life Form	Status
Psidium guajavum	Myrtaceae	Common Guava	Tree	A
Rhynchospora caduca	Poaceae	Beakrush	Grass	A
Ricinus communis	Euphorbiaceae	Castor Bean	Shrub	A
Rubus rosifolius	Rosaceae	West Indian Raspberry	Shrub	A
Sacciolepis indica	Poaceae	Glenwood Grass	Herb	A
Schefflera actinophylla	Araliaceae	Octopus Tree	Tree	A
Scleria testacea	Cyperaceae	Nutgrass	Sedge	I
Setaria palmifolia	Poaceae	Palmgrass	Herb	A
Sida rhombifolia	Malvaceae	Broomweed	Herb	A
Spathodea campanulata	Bignoniaceae	Africa Tulip	Tree	A
Spermacoce assurgens	Rubiaceae	Buttonweed	Herb	A
Sphaeropteris cooperi	Cyatheaceae	Australian Tree Fern	Fern	A
Sphagneticola trilobata	Asteraceae	Wedelia	Herb	A
Sporobolus indicus	Poaceae	Smutgrass	Herb	A
Stachytarpheta jamaicensis	Verbenaceae	Jamaican Vervain	Shrub	A
Syngonium sp.	Araceae	Syngonium	Vine	A
Tibouchina herbacea	Melastomataceae	Cane Tibouchina	Shrub	A
Trema orientalis	Ulmaceae	Gunpowder Tree	Tree	A
Urochloa mutica	Poaceae	California Grass	Herb	A
Zingiber zerumbet	Zingiberaceae	ʻAwapuhi	Herb	PI

Note: A = alien, E = endemic, I = indigenous, PI = Polynesian introduction

No threatened or endangered plant species listed by the U.S. Fish and Wildlife Service (USFWS) appear to be present on the property, nor are there uniquely valuable habitats. No existing or proposed federally designated Critical Habitat is present on or near the Project Area.

Fauna

Dozens of alien bird species, many of which were intentionally brought to Hawaiʻi, found it suitable habitat and now make the islands their home. Lowland, non-shoreline properties on the windward side of Hawaiʻi Island covered in alien forest are likely to have an almost exclusively non-native bird fauna. None of the forest birds for which Hawaiʻi is famous as a showcase of evolution are likely to be present. Most of these native birds are found primarily or exclusively in the montane forests outside the mosquito belt (generally above 4,000 feet in elevation), where native plant resources are still present and *Culex* mosquitos are absent or scarce.

The only forest bird likely to utilize this low-elevation property is the Hawaiian hawk or ʻio (*Buteo solitarius*). The Hawaiian hawk generally prefers ʻōhiʻa forest habitat but is known to breed successfully in both native and non-native forests. It occurs throughout the Island of Hawaiʻi from sea level to 8,530 feet in elevation. Hawks often forage in forests near agricultural tracts and nest in tall trees of a variety of species. Most nesting occurs in native ʻōhiʻa trees, although hawks may also nest in non-native trees, including eucalyptus, ironwood, mango, coconut palm, and macadamia.

Since the property is adjacent to streams and wetlands and contained some springs and small streams, several Hawaiian waterbirds could be present. Almost certainly present at times would be the common, indigenous black-crowned night heron, or ʻaukuʻu (*Nycticorax nycticorax hoactli*), especially in the wetlands on the property margins. Less likely are various other threatened and endangered waterbirds, which tend to prefer more open habitat and larger ponds and have not been reported from this area. These include the listed endangered Hawaiian duck or koloa maoli

(*Anas wyvilliana*), Hawaiian stilt or ae‘o (*Himantopus mexicanus knudseni*), and the Hawaiian coot or ‘alae ke‘oke‘o (*Fulica alai)*. Koloa maoli are almost never seen in streams in the Hilo area and prefer open upland ponds further west in the Hāmākua District. Ae‘o have occasionally been spotted in certain coastal and inland ponds, but generally in areas of shallow water with mudflats, which are lacking on the property. The ‘alae ke‘oke‘o is frequently observed in calm open waters, including only 4 miles east in the large, brackish Loko‘aka Ponds and similar waters. The threatened Hawaiian goose or nēnē (*Branta sandvicensis*) is a wide-ranging bird that is frequently seen in a variety of environments and elevations throughout the Island of Hawai‘i, including ponds and streams. Historically, flocks moved between high-elevation feeding habitats and lowland nesting areas. A preliminary search of records found no sightings of any of the listed waterbirds nearby, with the exception of nēnē, which has been noted in the parking lots of the tourist attractions at Rainbow Falls, Boiling Pots, and Kaūmana Caves, where tourists unfortunately feed and imperil them.

Finally, although seabirds and shorebirds would not normally be expected in the Project Area, the grassy area of the access corridor and particularly the marsh Project Area margins could attract the migratory resident Pacific golden-plover or kolea (*Pluvialis fulva*). This bird frequently rests and forages not only on the shoreline but in pastures and open fields throughout the State of Hawai‘i during its residence here from August to April. As with all of the Island of Hawai‘i, several listed seabirds may fly over the island’s interior between the months of May and November, including the endangered Hawaiian petrel or ‘ua‘u (*Pterodroma sandwichensis*), the endangered band-rumped storm petrel or ‘akē‘akē (*Hydrobates castro*), and the threatened Newell’s shearwater (*Puffinus newelli*). These seabirds hunt over the ocean during the day and fly to higher elevations at night to nest. Although each of these seabirds may fly over the property on their way to and from mountain nesting areas and the open ocean, no suitable nesting habitat for any of them is present on the property.

Five separate reconnaissances on the property, all during mid-day, provided snapshots of the bird fauna. A total of 10 bird species were observed, all common non-natives (Table 2). Multiple long-term observations made at all times of the day and in different seasons would undoubtedly reveal additional species, most of them also likely non-native.

Table 2 Bird Species Observed in the Project Area

Scientific Name	Common Name	Status
Acridotheres tristis	Common myna	Alien Resident
Cardinalis cardinalis	Northern cardinal	Alien Resident
Estrilda astrild	Common waxbill	Alien Resident
Geopelia striata	Zebra dove	Alien Resident
Leiothrix lutea	Red-billed leiothrix	Alien Resident
Paroaria capitata	Yellow-billed cardinal	Alien Resident
Crithagra mozambica	Yellow-fronted canary	Alien Resident
Sicalis flaveola	Saffron finch	Alien Resident
Spilopelia chinensis	Spotted dove	Alien Resident
Zosterops japonicus	Warbling white-eye	Alien Resident

It is highly likely that Hawaiian hoary bats (*Lasiurus cinereus semotus*), the only native Hawaiian land mammals, are sometimes present in the Project Area, especially on the margins with less densely forested properties. They have been found throughout the Island of Hawai‘i. Bats may forage for flying insects on or near the property on a seasonal basis and may also roost in trees

and large shrubs. Bats are often visible while they are feeding on flying insects near dusk and dawn at various locations around the Island of Hawai‘i. The presence of these bats can also be verified by echolocation detectors. If a bat is detected during a night’s study, this merely indicates that they were present in the area. Determination of bat populations or usage patterns requires much more sophisticated, long-term studies. Conversely, the absence of bat detections does not indicate an absence of bats, which may have been absent for only a night, a week, or a season, or may have simply gone undetected. No bats were observed in the surveys, which took place in daylight and did not use any bat detection equipment. For the purposes of this assessment, it is assumed that Hawaiian hoary bats are present at least some of the time. Hawaiian hoary bats are vulnerable to disturbance during the summer pupping season (June through September) and require special mitigation measures.

Numerous individuals and abundant sign of feral or semi-feral pigs (*Sus scrofa*) were present. Domestic cattle (*Bos taurus*) graze nearby. It is highly probably that small Indian mongooses (*Herpestes a. auropunctatus*), mice (*Mus* spp.), rats (*Rattus* spp.), cats (*Felis catus*), and domestic dogs (*Canis f. familiaris*) are present. None of these alien mammals have conservation value and all are deleterious to native flora and fauna.

There are no native terrestrial reptiles or amphibians in Hawai‘i. No reptiles were observed on the property, but various species of skink (Family: Scincidae), gecko (Gekkonidae), and anoles (Dactyloidae) could be present. Two species of amphibians were detected, the highly invasive coqui frogs (*Eleutherodactylus coqui*) and the American bullfrog (*Rana catesbeiana*). It is likely that bufo toads (*Bufo marinus*) and perhaps several other species are present as well. As with non-native mammals, these species lack conservation value and harm native flora and fauna.

No invertebrate survey was undertaken as part of the survey, but in general, rare, threatened or endangered invertebrates on Hawai‘i Island tend to be associated with either higher-elevation, older substrate rainforests (e.g., various Hawaiian fruit flies or *Drosophila*), coastal dry shrubland (e.g., various yellow-faced bees or *Hylaeus*), the summit of Mauna Kea (wēkiu bug or *Nysius wekiuicola*), extremely dry, disturbed ‘a‘ā flows (Blackburn’s sphinx moth or *Manduca blackburnii*), or aquatic settings in estuaries or at high elevations (various damselflies or *Megalagrion*). The Project Area does not contain suitable habitat for any threatened or endangered invertebrates.

3.3.4.2 Impacts and Mitigation Measures

Flora

The history of continuous disturbance coupled with a location in the lowlands has resulted in a vegetation on the property that has little to no value in terms of conserving native vegetation or threatened or endangered plant species. No adverse impacts to the conservation of native vegetation or to rare, threatened, or endangered species are expected as a result of future development.

Fauna

Without mitigation, projects that involve construction in most vegetated areas of Hawai‘i risk impacts to threatened and endangered species. For this Project, it is critical to strictly implement avoidance and mitigation measures for Hawaiian hawks, Hawaiian waterbirds, the Hawaiian goose, Hawaiian seabirds, and the Hawaiian hoary bat. With these measures, impacts can be reduced to levels that are not likely to adversely affect these species.

OHCD will require the following mitigation measures to be implemented in all phases of the Project in order to avoid and minimize impacts to threatened and endangered native birds and the Hawaiian hoary bat.

Hawaiian hawks

These birds were delisted by the federal government in 2019, but they are still listed as endangered by the State of Hawai'i. The primary concern for housing projects is disturbance of nesting hawks during construction. Hawaiian hawk nest building is protracted, beginning up to 2 months before the first egg is laid and continuing into the nestling period. Egg-laying generally occurs from March to June, and fledging season occurs from July to September. Both adults feed fledglings, which are dependent on adults for up 9 months. Given the vegetation context and the isolation of the property from nearby homes and farms, there is a small possibility that hawk nesting occurs on or near the property. If nests were close enough, grading, tree removal, and other construction activities might disturb nesting. To minimize impacts to Hawaiian hawks:

- *Avoid earthmoving within 100 meters of tall trees or tree cutting during the breeding season for Hawaiian hawks (March through the end of September). If this time period cannot be avoided, arrange for a hawk nest search to be conducted by a qualified biologist. If hawk nests are present in or near the Project Area, all land clearing activity should cease until the expiration of the breeding and fledging season.*

Hawaiian waterbirds

Hawaiian waterbirds are primarily vulnerable to disturbance from nearby construction during nesting. To avoid and minimize potential impacts to Hawaiian waterbirds:

- *Incorporate applicable USFWS Pacific Island Fish and Wildlife Service Office (PIFWO) BMPs regarding work in aquatic environments into the Project design.*
- *Have a biological monitor that is familiar with the species' biology and conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the Project Area prior to Project initiation. Repeat surveys again within 3 days of Project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).*
- *In areas where waterbirds are found to be present, post and implement reduced speed limits, and inform Project personnel and contractors about the presence of endangered species on-site or nearby.*

If a Hawaiian waterbird nest or active brood is found in the Project Area:

- *Contact the PIFWO and/or DLNR-DOFAW within 24 hours for further guidance.*
- *Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.*
- *Have a biological monitor that is familiar with the species' biology present in the Project Area during all construction or earthmoving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.*

Hawaiian geese are vulnerable during nesting and their unafraid behavior makes them particularly at risk. To avoid and minimize potential impacts to the Hawaiian goose:

- *Do not approach, feed, or disturb Hawaiian geese if they fly over or land in the Project Area.*
- *If Hawaiian geese are observed loafing or foraging within the Project Area during the breeding season (September through April), halt work and have a biologist familiar with the nesting behavior of Hawaiian geese survey for nests in and around the Project Area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).*
- *Cease all work immediately and contact PIFWO for further guidance if a nest is discovered within a radius of 150 feet of proposed work, or a previously undiscovered nest is found within said radius after work begins.*
- *In areas where Hawaiian geese are known to be present, post and implement reduced speed limits, and inform Project personnel and contractors about the presence of endangered species on site.*

Hawaiian seabirds

The primary cause of mortality in these seabird species in Hawai‘i is thought to be predation by alien mammal species at the nesting colonies. Collision with man-made structures is another significant cause. 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 predatory mammals including cats and mongooses. If development activities incorporate outdoor lighting, they may attract endangered seabirds. To avoid or minimize impacts to threatened or endangered seabirds:

- *No construction or unshielded equipment lighting will be used after dark between the months of April and October. All permanent lighting will be shielded in strict conformance with the Hawai‘i County Outdoor Lighting Ordinance (Hawai‘i County Code Chapter 9, Article 14), which requires shielding of exterior lights so as to lower the ambient glare caused by unshielded lighting. Furthermore, all lighting will be low-blue spectra and utilize the minimum necessary number of fixtures, with timers or cutoff switches as practical.*

Hawaiian hoary bats

These bats are vulnerable to disturbance during the bat birthing and pup rearing season, when roosting mother bats may not be able to successfully move pups when their tree roosting sites are disturbed. Hawaiian hoary bats are also in danger of being entangled and killed by top strands of barbed wire on fences. Therefore, to minimize impacts to the endangered Hawaiian hoary bat:

- *Shrubs and trees taller than 15 feet will not be removed or trimmed between June 1 through September 15, and no top-strand barbed wire should be used.*

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be no impacts to flora, fauna, and ecosystems under this alternative.

3.3.4.3 Cumulative Impacts

Impacts to flora, fauna, and ecosystems from the Project are expected to be minor. The minor impacts would be limited due to the small quantity of native species currently present within the

Project Area. Mitigation measures mentioned above would further reduce any potential impacts to flora, fauna, and ecosystems of concern at the Project Area.

Therefore, the cumulative impacts with the Project in combination with past, present, or reasonably foreseeable future actions for flora, fauna, and ecosystems are expected to be minor.

3.3.5 Noise

3.3.5.1 Environmental Setting

Noise in the Project Area is low to moderate; the main source of noise at the site is traffic travelling on Waiānuenue Avenue.

The Department of Housing and Urban Development assess environmental noise using day-night average A-weighted decibels (dBA) sound level (DNL). DNL is a representation of the average noise during a typical day of the year. DNL levels of 55 or less are typical of a suburban area. DNL levels of 55 to 65 are typical of urbanized areas with high levels of street traffic. DNL levels above 65 are representative of dense urbanized areas with large highways and/or airports.

DOH, Community Noise Control set permissible noise levels to provide for the prevention, control, and abatement of noise pollution in the state consistent with HAR section 11-46.

The Project Area is zoned Single-Family Residential District (minimum building site area of 10,000 square feet) (RS-10) and Single-Family Residential District (minimum building site area of 15,000 square feet) (RS-15). Single family dwellings are in a Class A zoning district as defined by (HAR section 11-46-3). The maximum permissible sound level in a class A zoning district is 55 dBA from 7:00 a.m. until 10:00 p.m. and 45 dBA from 10:00 p.m. to 7:00 a.m. (HAR section 11-46-4).

3.3.5.2 Impacts and Mitigation Measures

During the construction phase of the Project, there are expected to be moderate, short-term increases in noise levels from the operations of heavy equipment. If construction noise is expected to exceed DOH “maximum permissible” property-line noise levels, the builder must obtain a permit as pursuant to HAR section 11-46 prior to construction. The construction contractor would consult with DOH to determine if a permit will be required and if any noise reduction measures are necessary. Therefore, the Proposed Action is not expected to impact existing residential areas within the vicinity of the Project Area.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged from current conditions. There would be no impacts to noise levels from this alternative.

3.3.5.3 Cumulative Impacts

There are no adverse impacts to noise in the Project Area; there are no anticipated cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions from noise.

3.3.6 Air Quality and Scenic Resources

3.3.6.1 Environmental Setting

Air quality in Hawai'i is generally good, below criteria levels for most pollutants in most locations at almost all times. There are no DOH air monitoring stations in the immediate vicinity of the Project Area. The nearest site is the Waiānuenue Avenue monitoring site which is located on Waiānuenue Avenue approximately 0.4 mile northeast of the Project Area. Air pollution in Hilo, when present, is mainly derived from volcanic emissions of sulfur dioxide, which convert into particulate sulfate and produce a volcanic haze (vog) that can affect North and South Hilo. Vog concentrations are dependent on the amount of sulfur dioxide emitted from neighboring volcanos, the distance downwind, and the wind direction and speed on a given day. Minor levels of air pollution are also produced from urban uses including traffic and other nearby industrial activities.

As stated in the General Plan, "The natural beauty of the South Hilo district is dominated by Mauna Kea and Mauna Loa. From various locations in the area, there are magnificent views of the mountains. Hilo Bay provides a picturesque front yard for Hilo. From the bay the land gently slopes upward towards Mauna Kea and Mauna Loa. Throughout the district there are waterfalls, including the famous Akaka Falls and nearby Kahuna Falls, Rainbow Falls, and others" (Hawaii County Planning Department, 2005).

In the Draft Hawai'i County General Plan 2045, 34 natural beauty sites as seen in Table 3 were identified in the South Hilo District. Natural beauty is defined as a multifaceted and aesthetic resource experienced by human perceptions (Hawaii County Planning Department, 2005).

Table 3 Natural Beauty Sites of South Hilo District

Site	Ahupua'a or Region
Banyan Drive Scenic Area	Waiākea
Lili'uokalani Gardens	Waiākea
Viewpoint of Hilo Bay area with Mauna Kea in Background	Waiākea
Viewpoint of Hilo Bay with Mauna Kea in Background	Waiākea
Coconut Isle (Mokuola)	Waiākea
Reeds Bay (Shoreline)	Waiākea
Ice Pond	Waiākea
Viewpoint-Shoreline (Leleiwi Point)	Waiākea
Lehia Park (Undeveloped)	Waiākea
Viewpoint-Shoreline (Kēōkea Point)	Waiākea
Linikai (Onekahakaha) Beach Park shoreline	Waiākea
Waiāhole Fish Pond	Waiākea
Hale o Lono Fish Pond	Waiākea
Leleiwi Park shoreline	Waiākea
Lokoaka Pond, Akahi Pond, & Kionakapahu Pond	Waiākea
Viewpoint-Shoreline (Waiuli Point)	Waiākea
Wailoa River Area (Hoakimau Fish Pond, Mohouli Fish Pond, Waiākea Fish Pond)	Waiākea
Pu'u o Hāla'i	Ponahawai
Rainbow Falls & Area (Wailuku River Park)	Pi'ihonua
Kaimukanaka Falls & Area	Pi'ihonua
Boiling Pots & Area	Pi'ihonua

Site	Ahupuaʻa or Region
Viewpoint on hilltop looking over Hilo Bay	Ponahawai
Waiʻale Falls & Area	Piʻihonua
Peʻepeʻe Falls & Area	Piʻihonua
Viewpoint from lower Wailuku Bridge looking makai	Piʻihonua
Viewpoint from lower Wailuku Bridge looking mauka	Piʻihonua
ʻĀleʻAleʻa Point looking towards Hilo Bay	Wailua
Keakanini Falls	Piʻihonua
Hawaiʻi Falls	Piʻihonua
HonoliʻI Beach Area and Stream	Alae
Onomea Bay Area	Kahaliʻi-Onomea
Onomea Arch (fallen)	Onomea
ʻAkaka & Kahūnā Falls	Honomu
Kolekole Gulch	Kuhua-Kaiwiki
Hakalau Bay/Gulch Area	Hawkalaunui-Kamae

Source: Hawaiʻi County Planning Department, 2024

3.3.6.2 Impacts and Mitigation Measures

Short-term impacts on air quality could potentially occur due to Project construction, primarily through exhaust emissions from onsite construction equipment and dust from soil excavation and other associated construction activities. Watering programs can be implemented at the construction site to control and limit surface dirt from becoming dust. In areas prone to dust, additional control measures can be implemented to reduce dust. Construction equipment emit air pollutants from engine exhaust into the immediate area. Production of engine exhaust is made by both stationary and mobile equipment in the Project Area. The contractor will prepare a dust control plan compliant with provision in (HAR section 11-60.1, Air Pollution Control) and (HAR section 11-60.1-33, Fugitive Dust).

Impacts to identified natural beauty sites in the County of Hawaiʻi General Plan are not expected to occur through the development of the Project.

Views from neighboring homes would change as a result of vegetation being cleared during Project construction. Views of the Project Area are dominated by very tall albizia trees, as well as autograph trees, African tulip trees, and large stands of Alexandra palms (as described in Section 3.3.4). Following construction, the view makai from areas above the Project Area would change to include views of Hilo town and its bay previously blocked by the tall trees. Some views from areas mauka of the Project Area would change to now include the Project Area and surrounding neighborhoods. These changes would result in viewsheds consistent with residential areas throughout East Hawaiʻi.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged from current conditions. There would be no impacts to air quality or scenic resources from this alternative.

3.3.6.3 Cumulative Impacts

Since there are expected to be minimal impacts from the Project, any potential cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions to air quality or scenic resources would be minor.

3.3.7 Hazardous Materials and Wastes

3.3.7.1 Existing Environment

A Phase 1 Environmental Site Assessment (ESA) was performed in 2022 for the proposed Project Area by MNA Environmental, LLC. A Phase 1 ESA aims to identify recognized environmental conditions that exist in the Project Area, and existing recognized environmental conditions in the Project Area that have the potential to impact the Project Area. In conducting a Phase I ESA, evidence is collected regarding the recognized environmental conditions of the study site. Evidence collected may include the following:

- Record search of federal and state databases of known hazardous material use, storage, and releases;
- Interviews with landowners, neighborhood residents, and other involved parties concerning the subject property's historic land use;
- Other record searches, including aerial photography, fire insurance, property tax records; and
- A visual survey and relevant immediately surrounding areas.

A recognized environmental condition of a potential sugarcane cultivation was documented on and in close proximity to the subject property. A record search of the DOH map indicated that while historical sugar cane cultivation was common in the area surrounding the subject property, the subject property was not within areas used for sugarcane production. Sugarcane production sites were documented within 0.25 mile of the subject property to the north and the south boundaries. Production of sugarcane at adjacent sites to the north and south took place from 1900 to 1937. Due to the close proximity of documented sugarcane cultivation, it is possible that sugarcane production may have taken place on the subject property and had been undocumented.

3.3.7.2 Impacts and Mitigation Measures

No impacts to hazardous materials or waste are expected from the Project or the No Action Alternative.

3.3.7.3 Cumulative Impacts

Since there are no impacts from the Project, there are no anticipated cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions to hazardous materials or wastes.

3.4 Socioeconomics

The Project Area is located within Census Tract 208.02 in the South Hilo District of the Island of Hawai'i. The Project would provide needed affordable housing in the area. The population as measured in the 2010 U.S. Census for Hilo, a Census County Division (CCD), was 43,263 (U.S. Census Bureau [USCB], 2010). Table 4 provides information on the socioeconomic characteristics of the State of Hawai'i, the County of Hawai'i, and Hilo CCD, from the U.S. Census Bureau.

Table 4 Population Characteristics

Location	Population 2010	Population 2020	Percentage Population Change 2010-2020 (percent)	Population Forecast Estimated 2030
State of Hawai‘i	1,360,301	1,455,271	7.0	1,679,640
Hawai‘i County	185,079	200,629	8.4	247,210
Hilo District	43,263	44,186	2.1	N/A

Key: N/A = Not Applicable
Sources: USCB 2019a, 2019b, 2019c; DBEDT 2024

The Hilo District is more racially diverse than both the State of Hawai‘i and the County of Hawai‘i with approximately 12.04 percent within the Hilo District identifying as white compared to 22.90 percent and 33.58 percent peoples identifying as white in the state and county, respectively (Table 5). Asians, Native Hawaiian, and other Pacific Islanders make up a smaller portion of the population within the state, county, and district. Percentages in Table 5 are calculated for state, county, and district population in 2020.

Table 5 Race and Ethnicity

Race or Ethnicity	State of Hawai‘i (Percent)	Hawai‘i County (Percent)	Hilo District (Percent)
White	22.90	33.58	12.04
Black or African American	1.61	0.62	0.88
American Indian and Alaska Native	0.30	0.51	0.06
Asian	37.24	19.74	34.33
Native Hawaiian and Other Pacific Islander	10.82	14.00	14.30
Hispanic	9.97	12.29	12.43
Some Other Race	1.84	2.01	0.55
Two or More Races	15.91	29.53	29.55

Sources: USCB 2019a, 2019b, 2019c

3.4.1 Economy and Employment

Hawai‘i County’s primary economic drivers include the following: retail trade; educational services, and health care and social assistance; arts, entertainment, and recreation; and accommodation and food services; collectively making up approximately 44,473 jobs within Hawai‘i County as seen in Table 6. Currently as of April 2025, Hawai‘i County had an unemployment rate of approximately 2.8 percent.

Table 6 2023 Industry Employment

Industry	State of Hawai‘i	Hawai‘i County	Hilo District
Agriculture, forestry, fishing and hunting, and mining:	7,824	2,993	520
Construction	48,447	6,304	1,621
Manufacturing	19,364	2,130	301
Wholesale trade	14,541	2,149	864
Retail trade	75,243	11,455	2,639
Transportation and warehousing, and utilities:	45,247	3,974	1,050
Information	9,436	892	281

Industry	State of Hawai‘i	Hawai‘i County	Hilo District
Finance and insurance, and real estate and rental and leasing:	40,733	4,149	1,275
Professional, scientific, and management, and administrative and waste management services:	73,376	8,934	1,932
Educational services, and health care and social assistance:	148,668	17,498	6,016
Arts, entertainment, and recreation, and accommodation and food services:	97,746	15,520	2,821
Other services, except public administration	33,710	4,518	973
Public administration	53,500	6,739	2,211

Sources: USCB 2023a, 2023b, 2023c

3.4.2 Income

In Hawai‘i County as of 2021, the industries with the highest average wages include Information at ($135,369), Utilities at ($110,584), and Management Companies and Enterprises at ($80,549), (State of Hawai‘i, 2022). Median household income for Hawai‘i County lags behind the state’s household income by approximately 24 percent, while the Hilo District is approximately 26 percent behind the state (Table 7).

Table 7 Median Household Income, Mean Household Income, and Poverty Rate of Individuals

Location	State of Hawai‘i	Hawai‘i County	Hilo District
Household Median Income past 12 months (2023 inflation adjusted dollars)	$95,322	$74,580	$78,267
Household Mean Income past 12 months (2023 inflation adjusted dollars	$124,713	$98,515	$105,957
Percent Below Poverty Line past 12 months	10.1	17.5	18

Sources: USCB 2023d, 2023e, 2023f, 2023g, 2023h, 2023i

3.4.3 Housing

Deciding a residence is a decision that is based on a combination of factors including but not limited to job proximity, housing availability, community activities, natural views, and access to public goods and services. Table 8 includes the available number of occupied and vacant number of housing units in 2023; the vacancy rate in Hilo is lower than the rest of the state.

Table 8 Housing Vacancy Rates within the Area of Analysis (2023 Estimates)

Location	Total Housing Units (2023)	Occupied Housing Units (2023)	Vacant Housing Units (2023)	Vacancy Rate (percent)	Vacancy Rate by Type (Percent)	
					Homeowner Units	Rental Units
State of Hawai‘i	572,042	493,898	78,144	13.7	0.8	8.6
Hawai‘i County	91,549	73,933	17,616	19.2	0.7	16.5
Hilo District	18,403	16,722	1,681	9.1	0.9	6.7

Source: USCB 2023j, 2023k, 2023l

3.4.3.1 Impacts and Mitigation Measures

The Project is not expected to affect population size or demographics since it is expected to provide housing for existing residents in East Hawai‘i. The units developed under the Project would not have an adverse impact on other similar projects within the market area. Indicators point to a significant demand for affordable housing units. The Project would address a small portion of this needed demand.

The Project would generate work for the local construction industry. The Project would balance the need to provide affordable housing near urban centers and allow residents better access to travel between home, work, and other desirable recreational opportunities.

3.4.3.2 Cumulative Impacts

Since there are no impacts from the Project, there are no anticipated cumulative impacts from the Project in combination with past, present, or reasonably foreseeable future actions to socioeconomics. The Project will not cumulatively affect land use as it is already consistent with community plans.

3.5 Cultural Practices and Sites

HRS 343 and HAR 11-200.1 require an environmental review of a Proposed Action to include consideration of effects on the cultural practices of the community and state. The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The County also has Article XII Section 7 obligations to protect all rights, customarily and traditionally exercised for subsistence, cultural, and religious purposes and possessed by ahupua‘a tenants who are descendants of native Hawaiians (kānaka ‘ōiwi) who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights. In *Ka Pa‘akai O Ka ‘Aina v. Land Use Commission*, the Hawai‘i Supreme Court articulated an analytical framework to assist state agencies in balancing the State’s obligation to protect traditional and customary practices against private property (as well as competing public) interests, by requiring specific findings and conclusions about:

- the identity and scope of “valued cultural, historical, or natural resources” in the relevant area, including the extent to which traditional and customary native Hawaiian rights are exercised in the relevant area;
- the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the Proposed Action; and
- the feasible action, if any, to be taken by the [agency] to reasonably protect native Hawaiian rights if they are found to exist.

3.5.1 Hawaiian Cultural Context

As described in the CIA (Appendix 4), Hawaiian scholars and scholars working in Hawai‘i, both past and present, have argued for a pluralistic outlook on ancestral Hawaiian origins from Kahiki. In the fields of archaeology, folklore, Hawaiian studies, and linguistics, researchers have argued that Polynesians arrived in the Hawaiian Islands sometime between Anno Domini (A.D.) 1000 and A.D. 1200. This initial migration on intricately crafted wa‘a kaulua (double-hulled canoes) to

Hawai‘i from Kahiki, the ancestral homelands of Hawaiian deities and peoples from southern Pacific islands, occurred at least from initial settlement to the 13th century. Knowledgeable and skilled kū‘auhau (individuals trained in the discipline of remembering genealogies and associated ancestral stories) published accounts of episodic migrations in the Hawaiian language. Kānaka ‘Ōiwi (Native Hawaiians) brought from their homelands certain Polynesian customs and beliefs: the major gods Kāne, Kū, Lono, and Kanaloa (who have cognates in other Pacific cultures); the kapu system of political and religious governance; and the concepts of pu‘uhonua (places of refuge), ‘aumakua (ancestral deity), and mana (divine power). They also brought the cultural belief that living organisms were hānau ‘ia (born) out of a time of eternal darkness (pō) and chaos (kahuli) and adapted these beliefs to reflect their deep connection to their environment. For example, the Kumulipo, Hawai‘i’s most famed ko‘ihonua (a cosmogonic genealogical chant), establishes a birthrank genealogical order for all living beings. One such genealogical relationship that remains widely accepted in Hawai‘i is the belief that kalo (taro) plants—as well as other plants, land animals, and sea creatures—are elder siblings to humans. This concept of hierarchical creation underpins the belief that all life forms are intimately connected, and that in the Hawaiian world view, “natural” and the “cultural” are one and the same. The ‘āina (“that which feeds,” the land), is also genealogically related to Hawaiians in this belief system, and was perhaps most revered (Appendix 4).

3.5.2 Pre-Contact Era

The upland kula (plains) of Punahoa 2 and Pi‘ihonua, including the Project Area, were integrated into the traditional moku (“district”) and ahupua‘a-based social, political, and ecological system practiced during the Pre-Contact era. In this system used to mālama the ‘āina, the moku of Hilo was divided into ahupua‘a and smaller subdivisions that were tended by the maka‘āinana (people of the land, or commoners) for the ali‘i who stewarded the āina (land, “that which feeds”) and its people. Within the large moku, resource management was done in a decentralized way by ali‘i ‘ai moku (literally, the chief who eats/consumes the land) using the smaller social-ecological communities (ahupua‘a). Boundaries of ahupua‘a were generally defined by topography and natural resources, and extended from the nearshore fishing grounds toward the mountains to provide access to the range of available resources in a given place. The Project Area, located at about 500 feet above sea level, appears to have been located in what Samuel Kamakau refers to as the wao kanaka or possibly in grasslands located makai of that zone. Models created by Sam Ohu Gon et al. (2018) of the extent of Hawaiian traditional cultivation within the “āina momona” or “sweet land” suitable for intensive agriculture suggest that the Project Area was near the margins of this extent, but might have been used for gardens and tree crops, where dryland taro and bananas were grown along with other crops. There were traditional planting methods for taro and sweet potatoes adapted to wetter rain-fed conditions like those in the Project Area (Appendix 4).

During this period, Hawaiian oral traditions developed and came to include forms such as mo‘olelo (historical stories), ka‘ao (legendary stories), and various styles of mele and oli (songs, poetry, chants). Punahoa appears by name in only a few stories that have been collected in print. A few well-known stories involve natural features in the ahupua‘a and members of the family of Hina. In others, the protagonists of the story live there, or visit during the course of the story’s events. Some of these mo‘olelo and ka‘ao include *Hina-I-Ka-Ahi A Me Hina-I-Ka-Wai (The Woman In The Fire And The Woman In The Water)*, *Māui Finding Fire*, *Kaao No Kana A Me Niheu (Legend Of*

Kana And Niheu), and *Kaao No Kapuaokaoheloai (Legend Of Kapuaokaoheloai)*. The rains of Hilo and their interplay with the Wailuku River are also common themes, often in mele or ʻōlelo noʻeau (proverbial sayings) (Appendix 4).

3.5.3 Post-Contact Era

Families associated with the Kamehameha line resided near the shore in Punahoa and Piʻihonua as they were establishing the kingdom in the late 1700s, and resources further mauka would have been used to provide for the coastal settlements (Appendix 4).

Seven years after the arrival of American missionaries in 1820, Punahoa 2 was given to Joseph Goodrich of the American Board of Commissioners for Foreign Missions (ABCFM) by King Kamehameha III and Kaʻahumanu. During this period, the ABCFM grew its presence in Punahoa, building meeting houses, establishing farms and plantations, and after the arrival of the Lyman missionary family in 1832, founding the Hilo Boarding School. The Hilo Boarding School obtained its water through an ʻauwai (which came to be known as the Hilo Boarding School Ditch) that transported water from Punahoa mauka. Solomon P. Kaeloholani testified that it was dug in 1813 under the purview of the konohiki of Punahoa, named Aki. Another version, provided by Fredrick Lyman and other Hawaiian Evangelical Association leaders, attributes the construction of the ditch to the Rev. Joseph Goodrich in 1824. By the 1850s, suitable farmland makai of the Project Area began to be planted with sugar cane. These sugar plantations would grow into the dominant agricultural endeavor in Hilo, ultimately surrounding the Project Area with cane fields and tapping the waters that flow through it (Appendix 4).

3.5.4 The Māhele

In Punahoa 2, six claims for native tenant kuleana were filed in addition to the ahupuaʻa-wide claim by the ABCFM. Only four of these claims were awarded. All native tenant claims were limited to lands makai of Hālaʻi Hill, more than 7/8 of a mile from the Project Area. This means that no lands were claimed within the Project Area. This does not necessarily mean that Hawaiian tenants were not using the Project Area before or after the Māhele. Hawaii Registered Map 1744, made in 1853, shows trails near the ahupuaʻa boundaries leading to houses mauka of the project area near present-day Akolea Road, as well as a house at the foot of Kupapau Hill probably outside the Project Area. Names associated with awarded claims include Kaapa, Apiki and Kahuhu, and Aipinepine. Names associated with denied claims are Puali, Asa Kaeo, and “John Nomore.” In Piʻihonua, the situation was similar, with all claims made in the makai portion of the ahupuaʻa. No claims were made in the vicinity of the Project Area in Piʻihonua (Appendix 4).

3.5.5 The Late 19th Century and Early 20th Century

In 1853, the ABCFM reorganized as the Hawaii Evangelical Association (HEA). At various times in the late 19th century, the HEA leased the Project Area, along with about 1,900 acres extending mauka to the forest. The Project Area was divided into 15 lots ranging from 1.15 acres to more than 12 acres. The Hilo Sugar Company leased the Project Area from the HEA primarily to take water from the springs located at the makai end near Kupapaʻu Hill. Other portions of the HEA’s property were used for grazing and, where possible, to grow sugarcane. In 1917, the County of Hawaiʻi acquired the Project Area through a condemnation proceeding in order to obtain the springs and establish a reservation around them to prevent contamination from agriculture or

livestock. The springs supplied water into the Hilo town water system until the 1970s when surface springs were abandoned in favor of wells (Appendix 4).

3.5.6 Consultation for the Proposed Project

Consultation included written and in-person communication with knowledgeable individuals and organizations. Table 9 lists the groups and individuals contacted by email for consultation and the results of the invitations to consult. All interviews were conducted in an informal "talk-story" style. Interview participants were given a consultation packet containing topics to discuss, maps, and photographs (Appendix 4).

Table 9 Groups and Individuals Contacted for Consultation

Name	Organization	Contacted	Notes
Kaweni Ibarra	Office of Hawaiian Affairs	March 25, 2025	Received email response
Kevin Sullivan, Kim Tanaka	County of Hawai'i Planning Department-Cultural Resources Commission	March 25, 2025	Requested a presentation for the commission
Terri Napeahi	Aha Moku Council	March 25, 2025, June 15, 2025	No response
Pi'ilani Ka'awaloa	Mokupuni Po'o, Moku O Keawe, Aha Moku Advisory Committee	June 25, 2025	No response
Jordan Calpito, Christian Omerod	Department of Land and Natural Resources-State Historic Preservation Division, History and Culture Branch	March 25, 2025	Requested submittal via Hawai'i Cultural Resources Information System, March 27, 2025
Sean Nāleimaile, Nicole Mello	Department of Land and Natural Resources-State Historic Preservation Division, Archaeology Branch	March 25, 2025	Requested submittal via Hawai'i Cultural Resources Information System, March 27, 2025
Kiersten Faulkner	Historic Hawai'i Foundation	March 25, 2025, June 15, 2025	No response
Ronald and Doreen Kodani	Pi'ihonua Hawaiian Homestead Community residents	March 25, 2025, June 15, 2025	Interviewed July 23, 2025
Leileihua Yuen	Punahoa 2 Resident	March 25, 2025	Interviewed June 17, 2025

3.5.7 Cultural Resources and Practices Identified in the Project Area

Cultural practices and beliefs (including important natural, cultural, and historic resources and practices associated with them) were identified based on direct testimony of resources and practices, observation of resources in the Project Area that are known from other sources to have cultural value, and reference to known cultural resources or practices in archival sources. The study identified:

- **Wahi Kūpuna (Places Significant to Kānaka 'Ōiwi)** that include natural landforms and archaeological sites.
    - Pu'u Mohihi/Pu'u Moohihi/Kupapau Hill, a cinder cone located outside the development footprint but within the Project Area that may be associated with sweet potato cultivation or possibly traditional burials.

- The Hilo Boarding School Ditch (State Inventory of Historic Places [SIHP] 50-10-35-14947), which was developed and managed as part of the traditional Hawaiian water management system before it was improved for use by the Hilo Boarding School.
- An agricultural site complex (SIHP 50-10-35-18969) used until the early 20th century, likely beginning earlier than the 19th century.

- **Wai (Fresh water)** flowing in ʻĀinakō Stream and its tributaries, Kaūmana Springs Stream, and other springs in the eastern end of the Project Area. Consultation did not indicate that any particular person or group is using the wai within the project area, but nevertheless this resource is considered critical for the life of the ʻāina, the Hawaiian people, and everyone else dependent on it.
- **Lāʻau (Plants) with traditional Hawaiian cultural uses.** These include ʻape, awapuhi, digitaria, hōʻiʻo, kamole, and kukui. A very small number of plants that represent "feral" or possibly remnant crops of kalo, kī, and maiʻa were also found, as were edible introduction like avocado, guava, liliko'i, lychee, mango, strawberry guava, and West Indian raspberry. One interviewee reported gathering hōʻiʻo near the Project Area. No specific practices were identified in the Project Area involving the plants named above.
- **Holoholonā (Animals) with traditional Hawaiian cultural value**. ʻIo (Hawaiian hawks) and ʻōpeʻapeʻa (Hawaiian hoary bats) are presumed to be present in the Project Area at least some of the time, but were not directly observed. They are considered to be resources with traditional Hawaiian cultural importance that are occasionally present in the Project Area.
- **No specific traditional Hawaiian cultural practices** were identified that occur within the Project Area. No specific traditional Hawaiian cultural practices were identified that require access to the Project Area.

3.5.8 Impacts and Mitigation Measures

Impacts to identified cultural resources and practices could result from physically altering cultural resources, practices, or beliefs; from isolating cultural resources, practices, or beliefs from their setting; or from introducing elements which may alter the setting in which cultural practices take place. Vegetation clearance and grading for the Project would physically alter identified cultural resources. The Project would also result in a substantial increase in the number of people, some likely to be Kānaka ʻŌiwi, accessing the area. Negative impacts could include:

- The removal of groups of plants or individual plants with traditional Hawaiian cultural significance. Mitigation of these impacts would include the creation of community cultural gardens using plants with traditional Hawaiian cultural significance in the planned community center and green spaces within the development.
- The project would also remove habitat that is suitable for ʻōpeʻapeʻa (Hawaiian hoary bat) and ʻio (Hawaiian hawks). To minimize impacts to ʻio, the Project would avoid earthmoving within 100 meters of tall trees or tree cutting during the breeding season for Hawaiian hawks (March through the end of September). To minimize impacts to ʻōpeʻapeʻa, shrubs and trees taller than 15 feet would not be removed or trimmed between June 1 through September 15, and no top-strand barbed wire should be used.

- Destruction of features of the archaeological site complex (SIHP 50-10-35-18969), primarily agricultural clearing mounds and wall remnants. These effects would be mitigated through a combination of preservation, public interpretation, historical data recovery, and archaeological data recovery. Archaeological monitoring would be used to help clearance crews avoid damaging preservation and data recovery features, as well as identify features that had been obscured by vegetation during the current field work. Monitoring would also be a safeguard against inadvertent discoveries of archaeological deposits or human burials

Positive impacts would include:

- Easier access to cultural resources in the undeveloped portions of the Project Area for cultural practitioners due to the addition of sidewalks and streets.
- The design of the Project minimizes potential contamination of the wai by the Project by connecting to the County sewer to treat wastewater. The Project would be required to follow County regulations and policies related to flood control and drainage.
- Public interpretation of wahi kupuna in the preservation areas would be used to educate about the culture and history of Project Area, especially the importance of the entire water cycle and its physical and cultural connections to Hawaiian culture.

3.5.9 Cumulative Impacts

No specific cultural practices were identified within the Project Area. Short-term impacts to plants and animals with traditional Hawaiian cultural importance would be mitigated as described above. Therefore, there are no anticipated cumulative impacts from the Project to cultural practices in combination with past, present, or reasonably foreseeable future actions.

3.6 Historic and Archaeological Resources

An archaeological inventory survey was conducted with fieldwork in March and September 2024 of the entire Project Area. The survey included archival research and consultation with OHA and knowledgeable native Hawaiian community members regarding sites evaluated as significant under Criterion “e” for their important value to the native Hawaiian people due to associations with cultural practices once carried out, or still carried out at the property or due to associations with traditional beliefs, events, or oral accounts—these associations being important to the group’s history and cultural identity.

3.6.1 Existing Resources

Four archaeological resources were identified. Three are evaluated to be significant. No historic architectural resources were identified. The identified archaeological sites are listed in Table 10. SIHP 50-10-35-14947 is a portion of the Hilo Boarding School ditch. SIHP 50-10-35-18696 is an agricultural site complex with 181 individual archaeological features, including 5 complexes with a total of 29 subfeatures. These features include 111 mounds, 23 freestanding walls, 15 terraces, 8 mound/platforms , 5 complexes, 5 modified outcrops, 4 rock piles, 3 retaining walls, 2 ditches, 2 enclosures, 2 platforms, and 1 modified spring. Nearly all of these features are in poor condition due to the heavy growth of albizia, guava, and autograph trees that have disturbed them with their roots. Site 50-10-35-T1 is a portion of the Kaūmana Springs Hilo City Water Works, consisting of

the concrete foundation of a spring house and a cast iron water pipe extending makai from the spring. This spring no longer feeds the Hilo water supply. Site 50-10-35-T2 is the Kupapa‘u Hill Hawaii Triangulation Station used by land surveyors during the late nineteenth and early twentieth century

Table 10 Existing Resources and HRS chapter 6E significance

Site	Type	Function	Age	Significance*
14947	Hilo Boarding School Ditch	Water infrastructure	Historic	a, b, c, e
18696	Kaumana Springs Agricultural Site	Agriculture, Habitation	Precontact/Historic	a, d
T1	Kaumana Springs Hilo Water Head	Water Infrastructure	Historic	a, c
T2	Kupapa‘u Hill Trig Station	Land Survey	Historic	Not Significant

Note: * = Significance to which the elements in the Project Area contribute.

3.6.2 Impacts and Mitigation

3.6.2.1 Impacts

The proposed project will require grading and will create a modern residential neighborhood on what historically was an agricultural landscape. The Proposed Action would result in physical damage to features of SIHP 50-10-35-18969. This physical damage will result in harmful effects to the site’s integrity of design, workmanship, and setting that are important for conveying its association with the history of agricultural development. It will also impact the site’s potential to yield information related to the timing and nature of agricultural development and habitation at this site. Effects to SIHP 50-10-35-14847 and T1 would be limited to effects to the setting of these sites, in which additional residential development would be imposed on a formerly rural setting. This by itself, however, would not be considered adverse, because the two sites would still be able to convey their significance.

3.6.2.2 Mitigation

A combination of Preservation, Historical Data Recovery, and Archaeological Data Recovery are recommended as mitigation for the proposed project effects to the three significant historic properties in the Project Area.

Preservation

A “Historic Agriculture Preserve” at the mauka end of the Project Area would focus on the agricultural history of the Project Area. This area would preserve 16 agricultural features representative of the types of features found throughout SIHP 50-10-35-19686 and would preserve the portion of the Hilo Boarding School Ditch SIHP 50-10-35-14847 and its setting within the Project Area. A “Kaūmana Springs Historic Preserve” would be located immediately east of the proposed development area, north of Kupapa‘u Hill. It would focus on preserving and interpreting the modified springs identified in the Project Area. Nine features would be included in this preservation area, including modified springs (Features 01-09E and 03-18), as well as surrounding constructed features. Preservation areas focused on historic habitation would be created around Features 03-09 and 05-08 of Site 19686. Limited data recovery at these sites

could be used to collect more information to aid in public interpretation. In addition to formal preservation of the above named features, the design of open spaces and parks within the subdivision could incorporate features for passive or informal preservation as well.

Data Recovery

Historical Data Recovery is recommended to mitigate effects that would occur site-wide. Information gaps remain concerning how the Project Area was managed by the ABCFM, HEA, and County, including the timing of the creation of the 15 historic lots and names of people or families that may have been tenants on the land. Additional archival research at the archives consulted for the current study and others may yield this and other information. Results of the research could be made available to the residents and the general public, and could also be incorporated into the final project design, for example, to name public spaces such as parks and the community center.

Archaeological data recovery is recommended for select formal features (e.g., mounds) with functions that are not readily apparent. Recovery of data related to their age and internal structure may help with understanding how a mound's form relates to its age and use. Data recovery is also recommended for habitation features with limited interpretation potential due to their condition. Data recovery could focus on research questions related to confirming or refining the age and duration of their occupation. Data recovery is also recommended for Feature 11-04, which may be an animal pen or a walled garden. Analysis of the soil chemistry inside and outside of the enclosure might provide evidence of how it was used, including what types of animals or crops were kept in the enclosure.

Archaeological Monitoring

Due to the heavy overgrowth in some portions of the Project Area, archaeological monitoring is recommended during vegetation clearance prior to development activities. The monitor would be used to help clearance crews avoid damaging preservation and data recovery features, as well as identify features that had been obscured by vegetation during the current field work.

The thick tree canopy in the Project Area hindered the ability of the field archaeologists to obtain high-precision Global Positioning System signals during portions of the survey. It is recommended that an archaeologist be involved with on-the-ground topographic surveying that may occur during additional design or pre-construction work to ensure that project engineering drawings accurately include archaeological features designated for preservation or data recovery

3.6.3 Cumulative Impacts

Beginning in the late 19th century, commercial sugarcane cultivation, grazing, and residential development on the lands surrounding the Project Area altered the landscape from its earlier condition. The Project Area is one of two locations where archaeological features representing Precontact or Historic agriculture can be found in the mauka portions of Hilo town. The other is located to the south in a portion of Punahoa 2 and Punahoa 1 makai of Akolea Road. The loss of portions of SIHP 50-10-35-19686 (the agricultural complex) would contribute to the cumulative impacts of past development. Those cumulative impacts would be mitigated by preserving and interpreting portions of the archaeological site as proposed above.

3.7 Infrastructure

3.7.1 Utilities and Public Services including Wastewater Treatment and Solid Waste Management

3.7.1.1 Existing Facilities and Services

Electrical power to the Project Area would be supplied by Hawai‘i Electric Light Company (HELCO). Telephone and data service is provided by Hawaiian Telcom. Portable water is supplied by the DWS. Water is treated under the supervision of the Department of Environmental Management (DEM) through Hilo’s municipal wastewater treatment.

Emergency services including fire, police, and emergency medical services are available in South Hilo. The nearest fire station is the Hawai‘i Fire Department-Hilo Station located approximately 1.9 miles away to the east from the Project Area. The nearest police station is the Hawai‘i Police Department located approximately 2.2 miles away to the east from the Project Area. Emergency medical services are provided by the Hawai‘i Fire Department and the Hilo Benioff Medical Center. The medical center is located approximately 0.3 mile away to the north of the Project Area.

Educational services in the area are provided by an elementary school, middle school, high school, community college, and state university. The nearest elementary school is the Ernest Bowen de Silva Elementary School located approximately 0.1 mile away from the Project Area. The nearest middle school is the Hilo Intermediate School located approximately 1.2 miles away from the Project Area. The nearest high school is the Hilo High School located approximately 1.2 miles away from the Project Area. The nearest community college is the Hawai‘i Community College located approximately 2.9 miles away from the Project Area. The nearest university is UH Hilo located approximately 2.4 miles away from the Project Area.

The Project is designed to serve the demand of the South Hilo region.

3.7.1.2 Impacts and Mitigation Measures

The Project design would include utility hookups and sewer connections. As the development Project would include up to 144 housing units in a city with more than 20,000 units, it is expected to have only minor impacts to the County utilities and public service resources. The Project would not impose any substantial demand on utility and/or service providers affecting other users ability to access utilities and services in the surrounding area. Coordination with utility and service providers (HELCO, DWS, DEM, and Hawaiian Telcom) would be completed during the design and construction phases of the Project.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be utilities and public service resources under this alternative.

3.7.1.3 Cumulative Impacts

The companies and agencies that provide utilities and public services have plans to accommodate development such as the Project. Therefore, there are no anticipated cumulative impacts from the Project to infrastructure in combination with past, present, or reasonably foreseeable future actions.

3.7.2 Traffic

3.7.2.1 Existing and Proposed Facilities

A Traffic Impact Analysis Report (TIAR) for the Project was prepared in 2025 with data collected in 2023 and is included in Appendix 6. The analysis included intersections at ʻĀinakō Avenue and Kilikina Street, Waiānuenue Avenue and Kaiser Permanente Entry Driveway, Kaūmana Drive and Waiānuenue Avenue/Lele Street, Waianuenue Avenue and Carvalho Park Driveway, Kaūmana Drive and Carvalho Park Driveway, and Kaūmana Drive and Mohouli Street/ʻĀinakō Avenue. Locations of traffic study intersections can be seen in Figure 7.

Figure 7 Traffic Study Intersections Relative to Project Area

The traffic analysis was conducted using a capacity analysis and a trip generation methodology. The capacity analysis was based upon procedures presented in the Highway Capacity Manual (HCM), 6th Edition, 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." The six LOS identified in the HCM range from the best at LOS "A" to the worst LOS "F". A LOS of "A", "B", and "C" are generally considered satisfactory. The trip generation methodology was based upon the techniques developed in the Institute of Transportation Engineers and published in the Trip Generation Manual, 11th Edition. The total vehicle trip generation data was made using various land activities/characteristics, including the vehicles per hour (vph) per dwelling unit.

ʻĀinakō Avenue is a two-way, two-lane collector roadway between Kaūmana Drive and Waiānuenue Avenue. To the north, ʻĀinakō Avenue continues as Lahi Street to Waiānuenue Avenue. To the south, ʻĀinakō Avenue continues as Mohouli Street from Kaūmana Drive to Kilauea Avenue. The posted speed on ʻĀinakō Avenue is 35 miles per hour (mph).

Waiānuenue Avenue is a two-way, two-lane collector roadway from Kamehameha Avenue to the east Piihonua Road to the west. Waiānuenue Avenue provides the primary access to the Hilo Medical Center. The posted speed on Waiānuenue Avenue is 35 mph.

Kaūmana Drive is a two-way, two-lane collector roadway between the Daniel K. Inouye Highway (Saddle Road) and Waiānuenue Avenue. To the east, Kaūmana Drive continues as Waiānuenue Avenue. Kaūmana Drive is signalized at its intersection with Mohouli Street/ʻĀinakō Avenue, and at Waiānuenue Avenue/Lele Street. The posted speed on Kaūmana Drive is 35 mph.

Kilikina Street is a two-way roadway, two-lane, no outlet local roadway in ʻĀinakō Terrace. Kilikina Street intersects ʻĀinakō Avenue at a stop-controlled Tee-intersection. The posted speed on Kilikina Street is 25 mph.

Existing morning peak hour traffic in the study area occurred from 7:15 a.m. to 8:15 a.m. Peak vehicles per hour were recorded between 200 vph and 700 vph. LOS was recorded between LOS "A" to LOS "D."

Existing evening peak hour traffic in the study area occurred from 3:45 p.m. to 4:45 p.m. Peak vehicles per hour were recorded between 100 vph and 950 vph. LOS was recorded between LOS "A" to LOS "D."

3.7.2.2 Impacts and Mitigation

The proposed Project is expected to generate totals of 76 vph and 96 vph during the morning and evening peak hours of traffic, respectively (Appendix 6).

Morning Peak Hour Traffic Analysis

Kilikina Street is expected to continue to operate at LOS "B" at ʻĀinakō Avenue, during the Year 2040 morning peak hour of traffic with the proposed Project.

During the Year 2040, morning peak hour traffic with the proposed Project is expected to operate at an overall LOS "D" at the intersection of Kaumana Drive and Mohouli Street/ʻĀinakō Avenue. The shared through/right-turn movement on eastbound ʻĀinakō Avenue, the left-turn movement on westbound Mohouli Street, and the shared through/right-turn movement on northbound Kaumana Drive are expected to operate at LOS "E" during the Year 2040 morning peak hour traffic with the proposed Project.

The other intersections in the study area are expected to operate at satisfactory LOS.

Evening Peak Hour Traffic Analysis

During the Year 2040, evening peak hour of traffic with the proposed Project, Kilikina Street is expected to operate at LOS "A" at ʻĀinakō Avenue. Kalama Street is expected to operate at LOS "B" at Waianuenue Drive.

The intersection of Kaumana Drive and Mohouli Street/ʻĀinakō Avenue is expected to operate at the acceptable LOS, i.e., LOS "D" or better, during the Year 2040 evening peak hour traffic with the proposed Project. The other intersections in the study area are expected to operate at satisfactory LOS.

Alternate Waiānuenue Avenue Project Access

The new Project access road from the Kilikina Street Extension is expected to intersect Waiānuenue Avenue opposite the Kaiser Permanente Entry Driveway. The new Project access road is expected to operate at LOS "B" at Waiānuenue Avenue during the morning and evening peak hours of traffic. The other intersections in the study area are not expected to be impacted by the alternative Project access to Waiānuenue Avenue.

The traffic analysis indicates that the intersections in the study area are not expected to be significantly impacted by the development of the proposed Project, and no traffic mitigation measures are recommended in the TIAR.

Under the No Action Alternative, the Project would not be constructed and the site would remain unchanged under the current conditions. There would be no additional traffic under this alternative.

3.7.2.3 Cumulative Impacts

The intersections in the Project Area are sufficient for supporting the increased traffic that would be seen from the implementation of the Project. Therefore, there are no anticipated cumulative impacts from the proposed Project in combination with past, present, or reasonably foreseeable future actions from traffic.

3.8 Consistency with Government Plans and Policies

3.8.1 Hawai‘i State Land Use Law Use District Boundaries

The State Land Use Commission establishes State Land Use Districts (SLUD) pursuant to HRS Chapter 205. The basic intent of the law is to regulate the classification and uses of lands in the state in order to accommodate growth and development as needed, and to retain and protect important agricultural and natural resources areas. All state lands are classified as Urban, Rural, Agricultural, or Conservation, with consideration given to county general and development plans in determining the classification.

The majority of the Project Area is within the SLUD Urban District. Urban districts generally include lands that are characterized by "city-like" concentrations of people, structures, and services.

3.8.2 Hawai‘i State Plan and Hawai‘i State Functional Plans

The Hawai‘i State Planning Act (Chapter 226 HRS, as amended) is a broad policy document that establishes a set of themes, goals, objectives, and policies that are meant to serve as a guide for the future long-range development of the state.

Goal 226-4 (1) – A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i's present and future generations.

The Project would create the potential for up to 144 single-family dwellings. It would enhance housing opportunities near downtown.

Goal 226-4 (2) – A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.

The Project would set aside land to enhance the natural beauty and characteristics of the surrounding area, adding to visual experiences by local peoples.

Goal 226-4 (3) – Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

The Project would provide opportunities for physical, social, and economic growth for the community through additional housing opportunities to the community.

3.8.3 County of Hawai‘i General Plan

The General Plan for the County of Hawai‘i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai‘i (Hawai‘i County Planning Department, 2005). The plan was adopted by ordinance in 1989 and revised in 2005. The General Plan has gone through an update in July 2024 and is in the final stage (Hawai‘i County Planning Department, 2024). The General Plan itself is organized into 13 functional elements. In general, the Project would be consistent with the goals, policies and objectives, standards, and principles for several function areas. The Project is consistent with the following relevant goals and policies of the county.

Goal 2.2 (b) – Economic development and improvement shall be in balance with the physical, social, and cultural environments of the Island of Hawai‘i.

The Project would develop up to 144 single-family dwelling units designed around the natural environment found in the Project Area.

Goal 4.2 (b) – Maintain and, if feasible, improve the existing environmental quality of the island.

The Project would be in alignment with the policies, goals, and plans for preserving the quality of the environment of the island.

Goal 7.2 (c) – Maximize opportunities for present and future generations to appreciate and enjoy natural and scenic beauty.

The Project would set aside land to preserve the natural environment for generations to use and enjoy into the future.

Goal 8.2 (f) – Ensure that alterations to existing land forms, vegetation, and construction of structures cause minimum adverse effect to: water resources, and scenic and recreational amenities; and minimum danger of floods, landslides, erosion, siltation, or failure in the event of an earthquake.

The Project would be built in a manner that avoids long-term detrimental effects to the natural environment.

Goal 9.2 (d) – Create viable communities with affordable housing and suitable living environments.

The Project would provide additional housing opportunities in the area.

Goal 9.2 (h) – Make affordable housing available in reasonable proximity to employment centers.

The Project is located in close proximity to major areas with professional opportunities.

3.8.4 Hilo Community Development Plan

The Hawai‘i County General Plan requires that Community Development Plans be adopted by the County Council for each judicial district in the county. The Hilo Community Development Plan (Hilo CDP), which the County Council adopted in May 1975, covers the judicial district of North and South Hilo. The Hilo CDP establishes a vision for future growth by identifying the County's major policies concerning the type and location of future development, focusing on the economic, social, and environmental needs to create a desirable future lifestyle for the residents of Hilo.

In order to achieve this vision, the Hilo CDP presents guiding principles that are the foundation for the recommendations described across 13 chapters: 1) natural resources and shoreline; 2) economic element and demographic analysis; 3) land use; 4) transportation; 5) housing; 6) public facilities; 7) recreation; 8) historic sites; 9) public utilities; 10) flood control and drainage; 11) natural beauty and urban form; 12) environmental quality; and 13) implementation.

Specific Hilo CDP recommendations most applicable to the Project are as follows:

Land Use

- *Location adjacent to the downtown so that multi-family development can contribute to revitalization of the downtown.*
- *Concentration in areas with good existing or planned utility systems.*

The Project would provide multi-family developments approximately 2.8 miles away from the "city center" identified in the Hilo CDP as (the area from downtown to Hilo Shopping Center). Development of the Project would be carried out after required considerations have been made to ensure effective use of existing and planned utility systems in the Project Area.

Housing

- *In addition to improving individual housing structures, it is important that the total residential neighborhood environment be safe, healthy, convenient, and attractive.*

The Project would be designed and developed with the goal of maintaining and improving the overall neighborhood environment established within the community.

Environmental Quality

- *To improve and conserve the quality of the air, water, and earth resources for the benefit of present and future generations through balanced and integrated planning of the man-made environment in the Hilo urban area.*
- *To assure that environmental concern and awareness become an integral part of the community development process in Hilo.*

The Project would be developed in a manner that preserves the natural resources in the area for current and future residents to utilize.

3.8.5 County Zoning

The zoning regulations for the County of Hawai‘i are prescribed in Chapter 25 of the Hawai‘i County Code and applied and administered within the framework of the Hawai‘i County General Plan. Under the Zoning Code, various zoning districts are established to regulate the type of development and permitted uses of property and are depicted on zoning district maps.

The Project Area is currently zoned Residential, RS-10 and RS-15, which are the single-family residential district with a minimum building site area of 10,000 square feet, and single-family residential district with a minimum building site area of 15,000 square feet, respectively.

3.8.6 Required Permits and Approvals

The Project require granting the following permits and approvals (Table 11).

Table 11 Existing and Required Permits for the Project

Permit Title	Agency
Final Subdivision Approval	Hawai‘i County Planning Department
Building Permit	Hawai‘i County Public Works Department
Grading Permit	Hawai‘i County Public Works Department

The HRS Chapter 201H process in Hawai‘i is designed to help developers build affordable housing more efficiently by offering exemptions from certain state and county regulations. Chapter 201H is the part of the HRS that empowers the Hawai‘i Housing Finance and Development Corporation and/or County agencies to support affordable housing projects that have at least 50 percent plus one unit of the project units affordable to households earning 140 percent or less of the AMI. Developers can request exemptions from zoning, planning, and construction standards to reduce costs and speed up development. As this is a County project, OHCD will apply to the Hawai‘i County Council for 201H consideration. At this time, OHCD intends to request exemptions from certain street standards to 1) increase density on a portion of the project from Single-Family Residential (minimum building site area of 10,000 square feet) (RS-10) to an Multifamily (MF) category; 2) omit curb/gutter/sidewalks and allow a traffic circle; 3) waive some setback requirements; and 4) waive permit and review fees. Certain other exemptions or waivers may be requested as the project develops. OHCD will prepare a report that outlines the request and the compliance rationale and then submits the request and findings to the Hawai‘i County Council. The Council will hold a hearing to solicit public input and then make a decision on whether to approve the application exemptions and move the project forward.

4 DETERMINATION

Based on the findings below, the Hawai‘i County Office of Housing and Community Development has preliminarily determined that the proposed Project would not significantly affect the environment, as impacts would be minimal, and the agency intends to issue a FONSI. This determination will be reviewed based on comments to the Draft EA, and the Final EA will present the final determination.

5 FINDINGS AND REASONS

Chapter 11-200-12 HAR, outlines those factors agencies must consider when determining whether an Action has significant effects:

1. The Project will not involve an irrevocable commitment or loss or destruction of any natural or cultural resources. No valuable natural or cultural resources would be committed or lost. No unmitigated impacts to archaeological resources would occur.

2. The Project will not significantly curtail the range of beneficial uses of the environment. The proposed affordable housing development does not curtail beneficial uses of the environment and is consistent with the medium density zoning in the Hilo CDP.

3. The Project will not conflict with the state's long-term environmental policies. The state's long-term environmental policies are set forth in Chapter 344, HRS. The broad goals of this policy are to conserve natural resources and enhance the quality of life. The impact from the Project is minor and does not conflict with policies to improve the environment. It is thus consistent with all elements of the state's long-term environmental policies.

4. The Project will not substantially affect the economic or social welfare of the community or state. The Project will not adversely affect the social welfare of the community and will contribute to services. The Project would generate work for the local construction industry, which would stimulate local economic spending. The Project would balance the social welfare of the community by providing stable housing near the urban core and allow resident households better access and the ability to safely manage commutes between home, work, and recreation. Stable households lead to stable communities and associated workforce, and promotes a functional economy.

5. The Project does not substantially affect public health in any detrimental way. The Project will not affect public health in any way; wastewater and stormwater will be appropriately treated. Traffic impacts have been taken into careful consideration in Project design.

6. The Project will not involve substantial secondary impacts, such as population changes or effects on public facilities. No adverse secondary effects are expected to result from the Project since existing infrastructure would be utilized and would not require additional county services.

7. The Project will not involve a substantial degradation of environmental quality. The impact from the Project is minor, and would thus not contribute to environmental degradation. BMPs and appropriate erosion control measures would be utilized during construction. Short-term impacts on air and noise quality will be mitigated by employing BMPs. No long-term adverse impacts are expected from the Project.

8. The Project is not one which is individually limited but cumulatively may have considerable effect upon the environment or involves a commitment for larger actions. The Project is not related to other activities in the region in such a way as to produce adverse cumulative effects or involve a commitment for larger actions.

9. The Project will not substantially affect any rare, threatened, or endangered species of flora or fauna or habitat. There are no rare, threatened, or endangered plant species or suitable habitat for these species present within the Project Area, and no effects to these species are

anticipated. Endangered Hawaiian hoary bats and Hawaiian hawks, which are island wide-ranging species, will experience no adverse impacts due to mitigation in the form of timing of vegetation removal and/or nest surveys. Additionally, no rare, threatened, or endangered species of fauna are known to exist on or near the Project Area, and none would be directly affected by any Project activities.

10. The Project will not detrimentally affect air or water quality or ambient noise levels. No adverse effects on air quality or noise would occur. The increase in noise levels on the site are acceptable and would be only a moderate, short-term increase in the existing levels. To minimize impacts to air quality during construction, the Project would implement a watering program for dust abatement. Other control measures during construction such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching, and/or using wind screens would also be utilized as necessary to minimize impacts to air quality.

11. The Project does not affect nor would it likely be damaged as a result of being located in environmentally sensitive area such as a floodplain, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal area subject to storms and sea-level rise. Although the property is located in an area with volcanic and seismic risk, the entire Island of Hawai‘i shares this risk, and the Project is not imprudent to construct. The property is approximately 2.8 miles from the shoreline and outside any flood zone.

12. The Project will not substantially affect scenic vistas and viewplanes identified in county or state plans or studies. No scenic vistas and viewplanes identified in the Hawai‘i County General Plan will be adversely affected by the Project.

13. The Project will not require substantial energy consumption. The development will have solar water heating and incorporate efficient appliances, as practical and possible.

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