

**Draft Environmental Assessment for the
Proposed Waikupanaha Agricultural Lots
Project in Waimānalo Ahupua‘a,
Ko‘olaupoko District, O‘ahu Island, Hawai‘i**

Prepared For:

State of Hawai‘i
Department of Hawaiian Home Lands

Prepared By:



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

March 2019

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Draft Environmental Assessment

for the

**PROPOSED WAIKUPANAHA AGRICULTURAL LOTS
PROJECT IN WAIMĀNALO AHUPUA‘A,
KO‘OLAUPOKO DISTRICT, O‘AHU ISLAND**

**Tax Map Key (1) 4-1-008: 002 (por.), 093, 094, 095
and 096**

This environmental document has been prepared pursuant to
Chapter 343, Hawai‘i Revised Statutes

Prepared For:

State of Hawai‘i
Department of Hawaiian Home Lands

Prepared By:

The Limtiaco Consulting Group
Civil Engineering and Environmental Consultants
1622 Kananui Street
Honolulu, Hawai‘i 96817

March 2019

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PROJECT SUMMARY

Proposing/Determination Agency:	Hawai'i Department of Hawaiian Home Lands
Contact:	Mr. Darrell Ing
Location:	Waimānalo Ahupua'a, O'ahu Island
Tax Map Key:	(1) 4-1-008: 002 (por.), 093, 094, 095 and 096
Land Area:	Approximately 30 acres (for identified parcels)
Recorded Fee Owner:	State of Hawai'i
Existing Use:	Open (undeveloped), agriculture, equestrian activities
Proposed Use:	Subsistence Agricultural Homesteads for native Hawaiian beneficiaries
Community Plan Region:	Ko'olaupoko District
Land Use Designations:	
State Land Use	Agriculture
Development Plan	Agriculture
County Zoning	AG-2 General Agriculture
Action Requested:	The Project would consolidate and re-subdivide several contiguous parcels located in Waimānalo in the Ko'olaupoko District. The proposed development of Hawaiian Home Lands would allow the agency to award agricultural lots to beneficiaries on its Agricultural Waitlist and to promote self-sufficiency through farming opportunities. Any areas determined to be unsuitable for development would not be awarded. The layout and configuration of the agricultural lots would be influenced by existing conditions such as topography and drainage features. The Project represents an endeavor by DHHL to award small lots of approximately one acre or less for subsistence agriculture since many lessees are unable to conduct agricultural operations at a commercial scale.
Agency Determination:	Finding of No Significant Impact (FONSI)

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1. SETTING AND PROJECT DESCRIPTION

1.1. Introduction and Background

Certain public lands that have been set aside and placed under the jurisdiction of the Hawaiian Homes Commission as part of the Hawaiian Homes Commission Act of 1920 are “to enable native Hawaiians to return to their lands in order to fully support self-sufficiency for native Hawaiians and the self-determination of native Hawaiians in the administration of this Act, and the preservation of the values, traditions, and culture of native Hawaiians.” The Department of Hawaiian Home Lands (DHHL) is committed to serving its beneficiaries and manages the Hawaiian Homes Lands Trust consisting of over 200,000 acres of land on the islands of Hawai‘i, Maui, Moloka‘i, Lāna‘i, O‘ahu, and Kaua‘i. The mission of DHHL is primarily achieved through the award of 99-year residential, agricultural or pastoral homestead leases to waitlisted beneficiaries for an annual fee of one dollar. Beneficiaries must secure their own financing for residential construction, home improvements and agricultural activities on awarded land. DHHL also utilizes land in its inventory to generate revenue that supports the homesteading priority and improves the general welfare and conditions of native Hawaiians through educational, economic, political, social, cultural, and other programs.

In 2017, DHHL updated its Administrative Rules (Chapters 10-3-24 and 10-3-26, Hawai‘i Administrative Rules) to allow for Subsistence Agricultural Homestead (SAH) lots of not more than three acres in size. The rules specify that lessees are required to, within three years: (1) reside and cultivate subsistence agriculture on their lots, or (2) actively cultivate food crops or raise small livestock or both for subsistence agriculture purposes. DHHL is proposing to consolidate and re-subdivide about 30 acres of its land in Waimānalo Ahupua‘a, Ko‘olaupoko District, O‘ahu Island. “Ko‘olaupoko” and “Ko‘olau Poko” are interchangeably used in this document and generally reflect the preferences of referenced reports or studies. The proposed Waikupanaha Agricultural Lots Project (hereafter “the Project”) will consolidate and re-subdivide about 30 acres of DHHL land, which spans several contiguous parcels identified as Tax Map Keys (1) 4-1-008: 002 (por.), 093, 094, 095 and 096. The Project will include improvements to a segment of Waikupanaha Street along DHHL’s land to its connection with Hihimanu Street (see Figure 1). Completion of the Project will allow DHHL to award agricultural lots to beneficiaries on its Agricultural Waitlist and to promote self-sufficiency through farming opportunities.

There are buildings and structures associated with observed agricultural and equestrian activities within the project site. Field observations and available land use information suggests that the project site has been altered by land-disturbing activities associated with agriculture, animal husbandry and a quarrying operation.

State of Hawai'i lands and funds will be utilized for DHHL's project; therefore, the preparation of an Environmental Assessment (EA) pursuant to Chapter 343, HRS and associated Title 11, Chapter 200, Hawai'i Administrative Rules (HAR) is required. This EA was prepared to examine potential project impacts and to provide for public participation as required and defined in the statutes. The project site is not located within the Special Management Area (SMA).

1.2. Project Need and Objectives

The planning and resource management efforts of DHHL are guided by its General Plan, Strategic Program Plans, Island Plans and Regional Plans. DHHL's stated goal in its General Plan is 170 homestead awards per year or 3,400 homesteads over the next 20 years. A stated objective from DHHL's Strategic Plan for 2012 to 2017 is to implement agricultural homesteading opportunities. According to DHHL's O'ahu Island Plan, 12,956 applicants were awaiting awards on O'ahu as of February 2013: 9,639 beneficiaries had applied for residential leases and there were 3,317 applicants for agricultural leases. "Assuming the General Plan goal of 170 homestead awards per year can be achieved, then approximately 25% (3,029 applicants) of O'ahu's 12,956 applicants can be served within the next 20 years" (PBR Hawaii and Associates, Inc., 2014).

Lands on ridgelines or near cliffs, areas with no access, and Federally constrained areas such as critical habitats or wetlands are not available for homesteading. Approximately 8,154 acres or roughly 4 percent of DHHL's statewide landholdings are on O'ahu and approximately 1,914 acres, which is roughly 23 percent of these lands, are within the Waimānalo Ahupua'a (Ibid.). Vast acreage in Waimānalo, however, includes land on steep slopes and natural drainage channels that are subject to environmental hazards such as rock falls and flooding. On O'ahu, the developable homestead areas are constrained to approximately 720 acres due to environmental and infrastructure considerations (Ibid.). Land in DHHL's inventory that is considered suitable for new SAHs is further reduced to approximately 115 acres scattered within Wai'anae, Waiāhole, and Waimānalo whereas the parcels within Nānākuli, Wai'anae, Kapolei and Papakōlea totaling approximately 605 acres are designated for residential homesteading. In general, there is a high demand for homestead awards on O'ahu whereas DHHL's landholdings are insufficient at this time to accomplish the goal of placing waitlisted beneficiaries on homesteads.

The above-referenced plans were prepared before DHHL's administrative rules pertaining to subsistence agricultural homesteads were updated in 2017. DHHL has observed that the utilization of large agricultural lots awarded to beneficiaries is poor because many lessees are unable to conduct agricultural operations at a commercial scale. The input that DHHL received from agricultural applicants, current farmers utilizing DHHL land, and the University of Hawaii College of Tropical Agriculture and Human Resources (CTAHR) agricultural extension agents suggests "that one-acre

lots are sufficient to support subsistence agriculture, allowing enough space for agricultural plots, a house, an on-site wastewater disposal system, a water catchment tank, and stormwater detention” (Townscape, Inc., 2018). The Project represents one of DHHL’s new endeavors to award smaller lots for subsistence agriculture.

Since 1938, DHHL has awarded 799 residential homesteads, 45 undivided interest leases for residential homesteads in development, and 2 subsistence agricultural homesteads in Waimānalo (PBR Hawaii and Associates, Inc., 2014). The Project will allow DHHL to award agricultural lots to beneficiaries on the Agricultural Waitlist, which is consistent with the agency’s mission. The project site in Waimānalo is within a rural area that continues to support agricultural endeavors.

1.3. Site Location and Description

The project site is located inland and approximately 0.5 miles from Waimānalo Bay. Waikupanaha Street is a two-lane County roadway along the western boundary of DHHL’s parcels. Existing uses to the north, east and south of DHHL’s parcels include a plant nursery, former rock quarry, and uncultivated land, respectively. There is no sewer service to DHHL’s parcels according to the letter dated December 20, 2018 from the City and County of Honolulu, Department of Planning and Permitting (DPP). The existing Waimānalo Wastewater Treatment Plant (WWTP) located along Hihimanu Street is north of the project site. Adequate fire protection to the project site is currently unavailable according to the letter dated December 20, 2018 from the Board of Water Supply (BWS). The nearest BWS fire hydrant is located along Hihimanu Street and approximately 1,400 linear feet from the project site. The surrounding area has residential, agricultural and community uses including Waimānalo Bay State Recreation Area, Waimānalo homestead neighborhoods, Waimānalo Beach Park, Pope Elementary School, Hilltop Ranch, Waimānalo Research Station, Waimānalo District Park, and the Honolulu Polo Club.

The larger geographic area that contains the project site has experienced a long history of significant land-disturbing activities including nineteenth and twentieth century sugarcane production, quarrying operations, and more recent commercial agricultural use and animal husbandry. The southwestern portion of the project site was disturbed by quarrying operations in the 1970s and 1980s. In 2018 when site investigations were conducted, the project site did contain buildings and structures associated with observed agricultural uses and equestrian activities. The current occupants of the lots have month-to-month right-of-entry permits from DHHL for non-homesteading use.

The State land use designation for the project site is Agriculture (see Figure 2). The City and County of Honolulu zoning designation is AG-2 General Agriculture District (minimum land area of three acres for major livestock production, and two acres for all other uses).

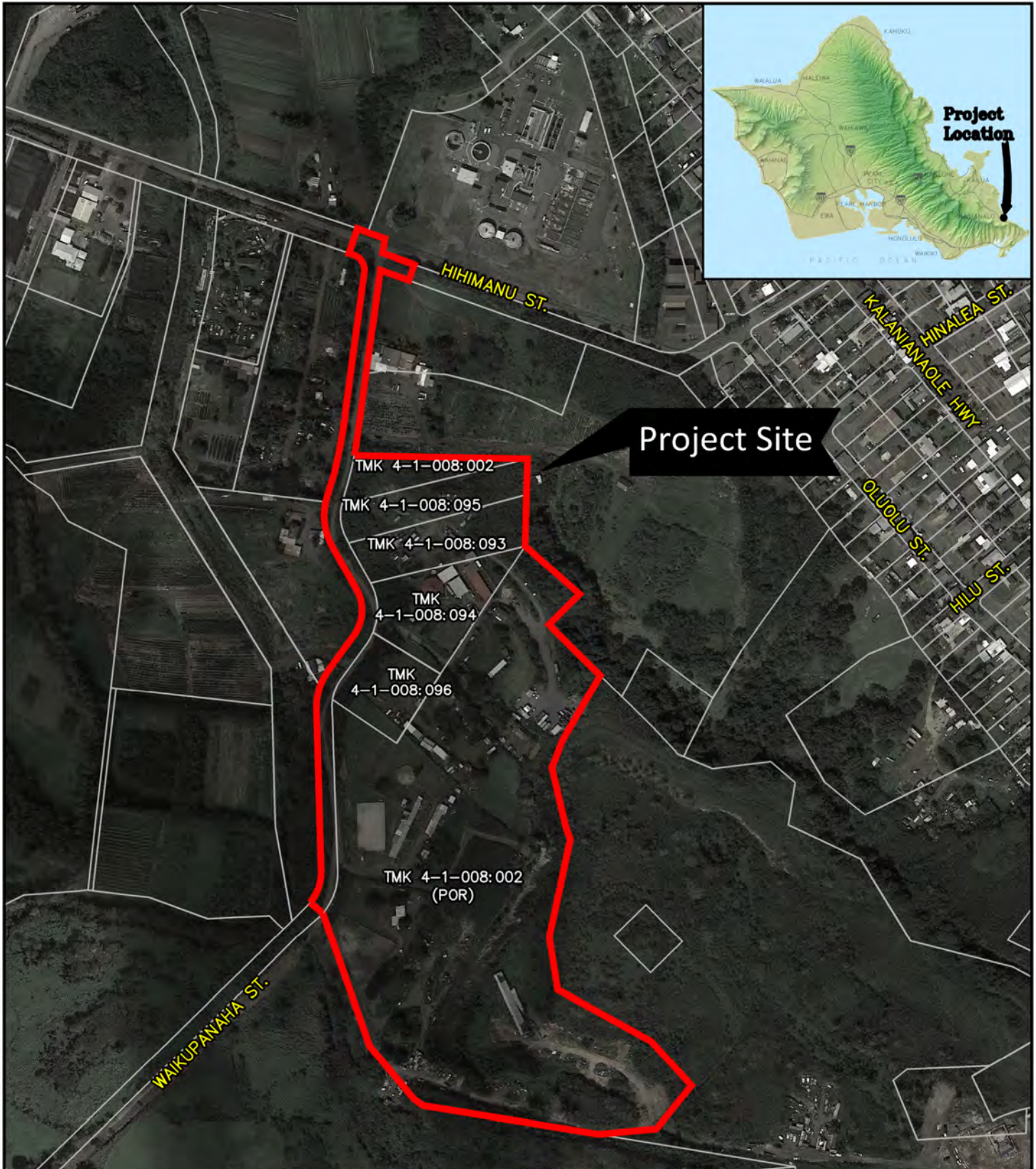
The County's Land Use Ordinance (LUO) specifies a minimum lot width and depth of 150 feet for AG-2. DHHL can exercise its exemption authority when homestead development conflicts with State Land Use Commission guidelines, County zoning regulations, or other land use designations.

1.4. Historical Setting

Information for this section is summarized from the *Archaeological Literature Review and Field Inspection for the Waikupanaha Agricultural Lots Project, Waimānalo Ahupua'a, Ko'olaupoko District, O'ahu, TMKs: [1] 4-1-008:002 (por,) and 093-096* (December 2018) prepared by Cultural Surveys Hawai'i, Inc. (CSH). The draft report was submitted to the Department of Land and Natural Resources, Historic Preservation Division (SHPD) for review on February 9, 2019. The report is expected to be available to the public in accordance with SHPD's protocols. SHPD maintains a library of electronic documents in addition to a physical library of correspondence, reports, plans, and relevant information.

The earliest Hawaiians who settled on the windward coast of O'ahu maintained a sizable native population by utilizing the numerous streams and springs in the Ko'olaupoko area to sustain farming and by managing productive marine resources. The Waimānalo Ahupua'a is a relatively large land division area that extends from the peaks of the Ko'olau Mountains to the coast of Waimānalo Bay. Available records suggest that the traditional Hawaiian population of Waimānalo was clustered along Waimānalo Stream and its upper tributaries were focused on wetland taro and sweet potato cultivation. Waikupanaha is the name of a *mauka* or upland stream that reportedly supported taro, banana trees, and white ginger.

After the unification of the Hawaiian Kingdom, the Waimānalo Ahupua'a was retained by Kamehameha the Great as his own personal property and was later held by his sons Liholiho and Kauikeaouli-Kamehameha II and Kamehameha III. Thomas Cummins married the High Chiefess Kaumakaokane, a relative of Kamehameha I, and received a Royal Patent to an estate of Crown Lands in Waimānalo in 1842. The concepts of private land ownership were introduced to Hawaiian society beginning with the Organic Acts of 1845 and 1846. Land titles were awarded to the monarchy and *ali'i* in 1848; commoners or native tenants received *kuleana* awards for individual parcels in 1850. Kamehameha III and Kamehameha IV sold and mortgaged Crown Lands during their reigns to settle debts. In 1850, the entire Waimānalo Ahupua'a except for *kuleana* awards was leased to Cummins by Kamehameha III for a period of 50 years. Awarded *kuleana* land claims in Waimānalo were primarily along Waimānalo Stream and its upper tributaries.



LEGEND

— PROJECT BOUNDARY

North



MARCH 2019

SCALE: 1" = 150'



THE LIMTIACO CONSULTING GROUP

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ENGINEERING SERVICES FOR WAIKUPANAHA
AGRICULTURAL LOTS ON HAWAIIAN HOME
LANDS IN WAIMĀNALO, O'AHU, HAWAII

Project Location Map

FIGURE

1

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LEGEND

- AGRICULTURE
- URBAN
- PROJECT BOUNDARY

North



MARCH 2019

SCALE: 1" = 150'



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LANDS IN WAIMANALO, O'AHU, HAWAII

State Land Use Map

FIGURE

2

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Thomas Cummins and his son, John A. Cummins, brought cattle and horse ranching to Waimānalo and bought approximately 200 acres of *kuleana* land. In 1880, John A. Cummins founded the Waimānalo Sugar Company and began construction of a sugar mill. As the plantation expanded, former ranch land was converted to cane fields, irrigation ditches and railroad lines were constructed, and other infrastructure was improved. By the 1920s, the area utilized for sugarcane cultivation extended from the floor of Waimānalo Valley to the base of the Koʻolau Range. Waimānalo Sugar Company operated until the early twentieth century and sold its land to the Waimānalo Agricultural Development Company in 1947. The former sugarcane lands have since been utilized for diversified agriculture including chicken farms, a dairy, a piggery, papaya and flower farms, and agricultural research.

The U.S. military, which had established Waimānalo Military Reservation in 1917, changed its name to Bellows Field in 1933. The installation became a permanent military post in 1941 and was later renamed Bellows Air Force Base, then Bellows Air Force Station. At this time, Bellows Air Force Station is utilized for military training and recreation.

In the early 1900s, the Waimānalo Village residential area was established near the Waimānalo Sugar Company's sugar mill since the intent was to provide housing for plantation workers and their families. Transportation to Waimānalo improved once Kalanianaʻole Highway opened in 1924. The Waimānalo Beach Lots subdivision, which consisted of 266 lots on 90 acres of land, was established in 1925. Additional residential development has occurred in the Waimānalo Village, Waimānalo Beach Lots and Waimānalo Hawaiian Homestead subdivisions.

1.5. Technical Considerations

DHHL is proposing to consolidate and re-subdivide several contiguous parcels that encompass approximately 30 acres in total. Any areas determined to be unsuitable for development will not be awarded. The Project will require on-site infrastructure and connections to existing nearby municipal infrastructure, which is primarily along Hihimanu Street. Permanent site infrastructure installed as part of the Project will be designed to comply with applicable regulatory standards that consider the health and safety of residents but are appropriate for a rural area. There are no sidewalks, curb ramps, or crosswalks in the vicinity of the project site; therefore, the Waikupanaha Street improvements and new internal roadways would maintain the existing characteristics of the rural area. Design elements and features of the Project are described below.

- Lot size. The Project is expected to create no more than 30 lots suitable for award to beneficiaries as a result of excluded areas, internal roadways and areas developed for storm water improvements. Each lot will be approximately 0.5 to 0.75 acres in size, which is reportedly sufficient to accommodate

subsistence agriculture uses. The subsistence agriculture program permits but does not require lessees to construct a residence on the lot; therefore, basic utility infrastructure and site access from internal roadways will be provided to each lot. DHHL's lessees will be responsible for their own residential construction, home improvements and agricultural activities.

- Water systems. New underground lines are proposed to be located along Waikupanaha Street and internal roadways to connect the project site to existing potable water infrastructure along Hihimanu Street. The Project proposes a new fire protection infrastructure system to comply with current County regulations. Agricultural irrigation uses at the project site have the potential to be served via a separate irrigation water system (i.e., the State's Waimānalo Irrigation System). DHHL will coordinate its Project with the State of Hawai'i Department of Agriculture with regards to availability and possible connection.
- Wastewater disposal. A new gravity sewer system is proposed to be located along Waikupanaha Street and internal roadways to convey wastewater from the project site to the existing municipal sewer system along Hihimanu Street. The proposed new gravity system will allow for wastewater treatment and disposal at the County's Waimānalo WWTP, which is north of the project site.
- Drainage infrastructure. New site drainage infrastructure including but not limited to drain inlets, manholes, culverts and infiltration basins is proposed to be located along internal roadways and some areas within the project site. The use of new DOH-approved injection wells for storm water runoff will be investigated.
- Waikupanaha Street improvements. The Project provides the opportunity to address the inconsistent width and alignment of Waikupanaha Street. The design standards for rural roadways are expected to apply to the Project. New asphaltic concrete pavement and overhead utility lines may be included as part of the Project. The affected section of Waikupanaha Street is proposed to be paved to its intersection with Hihimanu Street and internal roadways that provide access to homestead lots may also be paved.

The Department of Accounting and General Services (DAGS) indicated in its letter to DHHL dated December 31, 2018 that the Project does not impact any of its existing facilities in the area.

1.6. Environmental Considerations

The Project will utilize and improve land in DHHL's inventory that is considered suitable for agricultural homestead use. DHHL's commitment is to award agricultural lots to beneficiaries on its Agricultural Waitlist and to promote self-sufficiency through farming opportunities. The project site identified in this EA is within a designated agricultural district. There are no known historic properties or cultural features within

the project site. No adverse impacts to water resources, biological resources and cultural practices are anticipated. The Project appears to be consistent with nearby agricultural, residential homestead and community uses. Select areas within the project site appear to have solid waste concerns due to past usage.

The installation of new utility infrastructure that allows for connections to existing municipal water and wastewater treatment facilities is proposed as part of the Project. Temporary lane closures are anticipated for the utility installations and connections. Construction activities associated with the Project would generate short-term effects such as fugitive dust, noise, intermittent traffic, solid waste, and potential disruptions to utility services that would cease upon project completion. Anticipated short-term impacts will be mitigated to the extent practical with the use of appropriate construction techniques and Best Management Practices (BMPs).

1.7. Project Schedule and Cost

The environmental review process, which includes publication and public review of the EA, may be concluded by the end of calendar year 2019. The final design phase and acquisition of necessary permits and approvals for the Project may be completed by Spring 2020, whereby construction may be authorized to begin by the end of calendar year 2020. Funding opportunities and constraints may result in project completion through a multi-year approach for design and construction.

The timing and phasing of design and construction is expected to influence total project costs. Design fees and the costs associated with permits and approvals will be included in the estimate of project costs.

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2. DESCRIPTION OF EXISTING ENVIRONMENT, PROJECT IMPACTS, AND MITIGATION

2.1. Climate and Air Quality Considerations

The climate throughout the State of Hawai'i is generally characterized by mild temperatures with low daily and monthly variability, moderate humidity, persistent trade winds, and abundant sunshine. The project site on the windward side of the island of O'ahu is characterized by mild temperatures and abundant rainfall, especially during the wetter months of November through February. Between 1969 and 2013, the recorded monthly average temperatures in Waimānalo ranged from 64 degrees to 85 degrees Fahrenheit and the average rainfall was 43 inches per year (Western Regional Climate Center, n.d.). Trade winds in the project vicinity are generally from the northeast. Strong winds are known to occur in connection with storm systems that disrupt climatic patterns. Temperatures may be higher due to the combined effects of solar heating and high humidity.

The ambient air quality at the project site may be affected by nearby activities, such as automobile traffic along Waikupanaha Street. The project site is located in a rural area that is positively influenced by northeast trade winds that disperse emissions and other air quality pollutants. Prevailing northeast trade winds can circulate particulates between upland and downslope areas, carry emissions away from the project area and help to disperse airborne pollutants that would otherwise accumulate during calm conditions.

Impacts and Mitigation Measures

No measurable adverse effect on climatic conditions is anticipated from the Project; therefore, no mitigation is warranted or proposed.

Ambient air quality at the project site will be temporarily affected by construction-related vehicles, equipment and activities that would generate fugitive dust and emissions. The construction contractor will be responsible for complying with HAR, Chapter 11-60.1, "Air Pollution Control." The contractor will be responsible for the implementation of erosion and dust control measures as necessary for compliance with the above-mentioned rules. Air pollution control measures may include and are not limited to the use of water wagons, sprinkler systems, and dust fences.

Construction equipment and vehicles shall be properly maintained in order to control vehicular emissions during the short-term construction period. In the long-term, nonpoint air quality impacts will occur from motor vehicles that travel to and from the project site at intermittent intervals. No significant short-term or long-term impacts are anticipated from the Project because exhaust emissions of carbon monoxide and nitrogen oxide emissions would be intermittent and

readily dissipated. Anticipated Waikupanaha Street improvements such as the paving of this roadway with asphaltic concrete may help to ameliorate fugitive dust emissions from vehicular travel.

2.2. Topography, Geology and Soils

The topography for Parcels 093 through 096 and a portion of Parcel 002 is depicted in Figure 3 and ranges between roughly 15 to 100 feet above mean sea level. The parcels contain partially improved land, with a mix of unpaved roads, horse stables, limited areas of concrete pavement (e.g. platforms, walkways, etc.), and overgrown vegetation. There is a hardened dune of limestone material on the southeast part of the project site that was extensively mined. This natural feature extends along the east side of the parcels, wraps around the north end, and continues along the seaward or *makai* side of Waikupanaha Street (AECOS, Inc., 2018).

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (U.S. Department of Agriculture, Soil Conservation Service, 1972) and available soil surveys (U.S. Department of Agriculture, Natural Resources Conservation Service, n.d.), the predominant soil type in the vicinity of the project site is classified as Ewa silty clay loam, moderately shallow, 0 to 2 percent slopes (EmA). The EmA soil type has moderate permeability and very slow runoff with a slight erosion hazard. The south and west portions of the project site are mapped as Mamala cobbly silty clay loam (MnC), which consists of shallow, well-drained soils along the coastal plains on the islands of O‘ahu and Kaua‘i. The soil formed in alluvium deposited over coral limestone and consolidated calcareous sand. The subsoil is approximately 8 inches thick and consists of reddish-brown silty clay loam. The subsoil is approximately 11 inches thick and consists of dark reddish-brown silty clay. The soil is underlain by coral limestone and consolidated calcareous sand at depths of 8 to 20 inches. The MnC loam soil type has moderate permeability, and the erosion hazard is slight to moderate.

From 1965 to 1972, the Land Study Bureau (LSB) of the University of Hawai‘i developed a detailed classification system for the major Hawaiian Islands that was intended as a rating of agricultural productivity based on soil properties and productive capabilities. Lands in the highest productivity agricultural categories were classified with the “A” or “B” rating; there are no “A” or “B” lands within the project site. The Project will affect lands with an “E” rating, which reflects the lowest productivity classification. Soils formed from coral have neutral to alkaline reactions and are high in calcium. Most of the soils have developed from volcanic material and under tropical conditions of high temperature and rainfall. These soils tend to be acidic and fertility levels are relatively low.



LEGEND

 PROJECT BOUNDARY

North



MARCH 2019

SCALE: 1" = 150'



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LANDS IN WAIMĀNALO, O'AHU, HAWAII

Topo Map

FIGURE

3

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Impacts and Mitigation Measures

The Project would generally retain the overall topographic profile for most of the site and there are no obvious topographical features that would obstruct site preparation activities. Consequently, no mitigation is warranted or proposed with respect to topography.

The project site will be properly designed with respect to subsurface conditions and geotechnical concerns within the footprint of construction. Anticipated actions are expected to have no adverse impacts on the underlying geology and soils at the project site such that no mitigation is warranted or proposed.

Earth disturbing activities may create exposed areas and surface-generated sediment that may enter the groundwater if significant rainfall occurs during grading, which has the potential to impact surface water and marine resources. DHHL's contractor must follow State and County regulations regarding storm water runoff. Development-generated runoff is expected to be disposed of on site and not directed toward any adjacent properties. Graded areas affected by project actions will be stabilized and the Project will create more paved roadways within the site, which reduces the long-term potential for erosion and sediment transport. Mitigation that addresses sediment-laden runoff is discussed in Section 2.3, Water Resources.

2.3. Water Resources

The project site is within the Waimānalo Aquifer System Area (ASYA) and part of the Windward Aquifer Sector Area. The following descriptions that pertain to potable and non-potable (mostly for irrigation) water are excerpts from the *Ko'olau Poko Sustainable Communities Plan* that was adopted in August 2017.

Potable Water

In 2015, the region consumed 13.4 million gallons per day (mgd) of potable water, approximately 4.0 mgd of which was imported from sources within the Ko'olau Loa region. The BWS projects future water demand based on population growth rather than number of dwellings. Therefore, while additional housing is expected to be built in Ko'olau Poko, notably by the Department of Hawaiian Home Lands (DHHL) in Waimānalo and Waiāhole, with the slight decline in projected population over the next couple of decades (as noted in Chapters 1 and 2) potable water demand in the region is expected to remain stable, especially when water conservation measures are implemented. No new source, storage, or transmission mains are planned in the region, but existing source, storage, and water mains must be repaired and replaced as needed.

Irrigation Water

In Waimānalo, the State provides water to farmers from the Maunawili Ditch, which was built by Waimānalo Sugar Company. Its source is high-level water tunnels, springs, and streams in Maunawili and Waimānalo Valley. The system delivers an average of about 0.75 mgd of water.

The Underground Injection Control (UIC) line demarcates the boundary between non-drinking water aquifers and underground sources of drinking water. The project site is *mauka* or above the UIC line, which indicates that the underlying groundwater is considered a potential source of drinking water. Limited types of injection wells are allowed if DOH approval is obtained before any injection well construction commences and a UIC permit is issued before any injection well operation occurs. The letter dated December 18, 2018 from the Department of Health, Safe Drinking Water Branch states that injection wells used for the subsurface disposal of wastewater, sewage effluent, or surface runoff are subject to environmental regulation and permitting under HAR Chapter 11-23, titled “Underground Injection Control.”

The project site contains no aquatic features including streams and wetlands (or marshes, swamps, bogs, etc.) that would be considered jurisdictional under the Clean Water Act (AECOS, Inc., 2018). Waimānalo Bay is roughly 0.5 miles northeast from the project site. The nearest potentially jurisdictional water is Puha Stream, which is approximately 1.2 miles west of the project site and beyond Waikupanaha Street. The remnants of a ditch that may have been used for irrigation are present in the vicinity of the northeast portion of the project site. Two man-made agricultural ditches supply the Waimānalo Irrigation System, which provides irrigation water to approximately 160 Waimānalo farms (Group 70 International, 2011). The Kailua Ditch is seaward or *makai* of Waikupanaha Street and the Maunawili Ditch is inland or *mauka* of Waikupanaha Street. The letter dated December 19, 2018 from the Department of Agriculture (DOA) indicates that the Waimānalo Irrigation System, which ends near the southwest corner of the project site, does not service DHHL’s land. Storm run-off from the project site flows in the direction of the existing grade and naturally percolates into ground water since there is no municipal drainage system within the project site.

Nonpoint source pollution from agricultural and urban activities including runoff containing nitrogen, phosphorus, and/or sediments is considered to be a threat to coastal ecosystems. Discharges of sediments and pollutants from sewage injection wells and defunct septic tanks may further contribute to harmful environmental impacts that may be noticeable in the nearshore environment.

Impacts and Mitigation Measures

Project actions are not expected to impact water resources, especially since no streams will be diverted and no new potable water sources will be developed. No significant impacts to surface water quality would occur because the project site is devoid of such resources including wetlands, perennial streams, or other sensitive riparian habitats. DHHL will obtain the required approval and permit from DOH for any injection well that is incorporated as part of the Project. The long-term use of the homestead lots for subsistence agricultural endeavors is not anticipated to result in contamination of the underlying aquifer and groundwater sources in the Waimānalo ASYA.

The State of Hawai'i, Department of Land and Natural Resources, Division of Aquatic Resources (DAR) stated in its letter dated December 12, 2018 that it generally supports the Project with regards to providing subsistence property to beneficiaries. The letter also recommends the following measures with regards to concerns about sediment run-off and erosion, which may harm aquatic habitats:

DAR recommends that the project operators utilize erosion control and land-based sources of pollution (LBSP) barrier measures at all development sites where there is the opportunity for sediment discharge into nearby waters (e.g., any site where there will be excavation, grading, or sediment/pollutant producing activities). These measures could include many types of barriers (e.g., sediment barriers/bags, silt screens, environmental socks, petroleum absorption diapers, etc.) that limits the amount of sediment or LBSP (e.g., petroleum products, chemicals, debris, etc.) to the maximum extent practicable.

Another good practice would be to keep all unearthed or loose soil covered by native vegetation (grass, shrubs and trees) to minimize rain and wind erosion.

DAR recommends that the applicant take steps to plant native vegetation that actively retain surface storm-water run-off and sediment during precipitation events. Planting an effective vegetated buffer, down slope and between agricultural plots site will help capture soil and pollutants and absorb excess surface runoff from precipitation before they reach the shoreline.

The plant species listed by DAR as effective native soil stabilizers with water and soil retention capabilities include beach vitex (*Vitex rotundifolia* or *pōhinahina*), beach dropseed (*Sporobolus virginicus* or *'aki'aki*), oval-leaf clustervine (*Jaquemontia sandwicense* or *pā'ūohi'iaka*) and beach morning glory (*Ipomoea pes-caprae* or *pōhuehue*). The University of Hawai'i, College of

Tropical Agriculture and Human Resources may also have other plant species suggestions.

A short-term and temporary impact of the Project may occur from the generation of sediment-laden surface runoff during earth-disturbing activities, especially if heavy rains coincide with the activity. A National Pollutant Discharge Elimination System (NPDES) Permit for discharges of pollutants, including stormwater runoff is required for the disturbance of one acre or more of total land area pursuant to HAR Title 11, Chapter 55, "Water Pollution Control" effective December 6, 2013. The construction contractor will be responsible for implementing a storm water management plan to minimize erosion and sediment loss at the project site in accordance with State and County regulations. Erosion control Best Management Practices will be used to mitigate stormwater runoff from entering the State waters.

The long-term impact of the Project is the creation of more impermeable surface area, which increases storm water runoff from the project site. The Project proposes to implement several measures to address the quantity and quality of stormwater generated at the project site. Measures include, but are not limited to, infiltration/sediment basins, grassed swales, injection wells, and the planting of native vegetation. Proposed stormwater mitigation will be in compliance with State and County regulations. Site infrastructure for the homestead lots such as the installation of proper drainage features and swales may ultimately improve surface runoff and reduce nonpoint source pollution concerns as compared to existing conditions.

2.4. Solid Waste and Hazardous Materials

The Kapaa Transfer Station is approximately seven (7) miles northwest of the project site. The disposal of commercial or farm waste is not allowed at the transfer facility, which accepts household generated self-haul rubbish. The County continues to explore waste reduction strategies including composting and waste-to-energy facilities to avoid further landfill development. Waste recyclers divert recoverable material from the waste stream.

No visual remnants of vent or fill pipes, dispensers, etc. that are typically associated with underground or above-ground storage tanks were observed during the site reconnaissance by EnviroServices and Training Center, LLC (ETC) on October 4, 2018 that was undertaken as part of the Phase I Environmental Site Assessment (ESA). There are solid waste concerns associated with past usage such as two illegal auto mechanics and "chop-shops" on DHHL's parcels. During site reconnaissance, ETC observed the presence of solid waste (e.g. rusted automotive parts, scrap metal, storage trailers, etc.) commonly associated with automotive activities. Interview findings also revealed that a large pit was excavated on the northwest corner of

DHHL's land to dispose of the solid waste associated with the "chop-shops." It is suspected that petroleum products and/or hazardous materials may have been disposed of into the pit; however, ETC did not discover the pit during their observations.

ETC also learned through interviews that illegal dumping had occurred on the land for many years. The project site therefore contains areas that were reportedly utilized to dispose of construction and/or demolition debris (e.g. aggregate, roofing materials, concrete with rebar, etc.) via an unauthorized sub-lease. The following excerpt from the Phase I ESA identifies the following recognized environmental conditions (RECs) that pertain to DHHL's land:

Contaminant impacts associated with a potential release from the three unlabeled 55-gallon drums containing unknown substances, located within the Cook's Ranch and former Char Ranch tenant spaces.

The potential presence of residual contamination associated with past and prior usage of the Subject Property (e.g. auto mechanic, trucking activities, suspect solid waste dumping, etc.).

Impacts and Mitigation Measures

As a result of the Project, the RECs from past usage are expected to be ameliorated by appropriate actions including but not limited to the proper removal and disposal of solid waste. Construction activities at the project site would temporarily increase the volume of solid waste such as excavated material that must be transported off-site for proper disposal. Waste material from construction will be collected and transported off-site by a commercial service provider for proper disposal. DHHL is expected to ensure that appropriate waste management and disposal practices are implemented by the construction contractor. In the long-term, each lessee will be responsible for solid waste disposal. DHHL will encourage green waste recycling to the extent possible. No adverse impacts are anticipated.

2.5. Natural Hazards

Natural hazards that pose potential island wide effects are tropical cyclones, earthquakes, floods and tsunami inundation. Sea level rise has the potential to threaten life and property in coastal and low elevation areas. Steep cliffs and areas containing a build-up of dry vegetation may be more susceptible to rockfalls and wildfires, respectively. In general, the exposure to natural hazards from unpredictable events is no greater at the project site than at other locations on O'ahu. Rockfalls and wildfires on O'ahu that have caused loss of life or damage to property were localized hazards. Many wildfires are caused by human actions of an intentional nature or as a result of negligence.

Many tropical cyclones have passed close enough to affect the State of Hawai'i since the recording of such events began in the 1950s. Hurricane Iwa in 1982 and Hurricane Iniki in 1992 both brought destructive winds and torrential rains that resulted in significant property damage. Hurricane Iniki was connected to six deaths.

The most recent earthquakes to have statewide impacts occurred on October 15, 2006. The earthquakes, which occurred off the Kona coast of Hawai'i, had magnitudes of 6.7 and 6.0. The event caused property damage and triggered an island-wide electrical blackout on O'ahu.

The project site covers multiple flood designations on the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency. The Zones include Zones AE, XS, and X. Portions of Waikupanaha Street and Hihimanu Street are in Zone AE, which is a designation for inundation areas of high-risk. Zones XS and X refer to inundation areas of low-to-moderate risk that are outside the 0.2 percent annual chance (or 500-year) floods. Most of the project site is within Zone X.

Tsunami Evacuation Zone maps for the State of Hawai'i identify low lying areas where excavation is recommended since extensive damage to life and property may occur from seismic sea waves. The County's Department of Emergency Management updated the tsunami evacuation zone maps in 2010 to incorporate a public safety buffer that provides better zone recognition. The project site is completely outside the Tsunami Evacuation Zone; however, the northern portion of the project site is within the Extreme Tsunami Evacuation Zone, which is a second zone that recognizes very large (magnitude 9+) earthquakes and resulting tsunami events.

Climate change and sea level rise have the potential to increase the dangers from flooding and storms. The timeframe for experiencing the effects of various sea level rise scenarios is unknown and there are no sea level rise exposure areas within the project site in the 3.2 feet scenario prepared by the National Oceanic and Atmospheric Agency.

There are no apparent rockfall hazards in the vicinity of the project site and the Project excludes the development of areas containing cliffs or steep slopes. Threats from wildfires are unlikely but possible since there is abundant vegetation within DHHL's parcels. Drought conditions and high winds could exacerbate the fire hazard.

Impacts and Mitigation Measures

The threats to humans and property from unpredictable natural events will always be present. Proposed activities at the project site would not affect the occurrence of naturally occurring hazards. Clearing and grubbing for the development of the subdivision, and subsequent use by lessees would reduce the threat from wildfires. New utility infrastructure will be designed for regulatory

compliance and are expected to be less vulnerable to the effects of sea level rise such as infiltration caused by tidal fluctuations that influence the groundwater table.

The Project is not expected to significantly increase the risks to human health or property. No adverse impacts are anticipated to Pope Elementary School and Waimānalo Elementary and Intermediate School, which are designated hurricane evacuation shelters. Similarly, no adverse impacts are anticipated to the County's ambulance service, which is provided from the Waimānalo Fire Station.

2.6. Floral and Faunal Resources

The project site is within a larger geographic area that has experienced a long history of significant land-disturbing activities including large-scale agriculture, livestock and ranching activities that altered the natural environment. The U.S. Fish and Wildlife Service in its letter dated December 14, 2018 noted the federally protected species that are most likely to occur within the vicinity of the project area and stated that "this list is not comprehensive and should only be used for general guidance." The agency's letter identified one mammal, three bird species, no insects and no plants:

Hawaiian hoary bat (*Lasurus cinereus semotus*) or 'ōpe'ape'a
Band-rumped storm-petrel (*Oceanodroma castro*) or 'akē'akē
Hawaiian petrel (*Pterodroma sandwichensis*) or 'ua'u
Newell's shearwater (*Puffinus auricularis newelli*) or 'a'o

No species of plants or animals currently proposed for listing or listed under either the federal or State of Hawai'i endangered species statutes were recorded during the survey of DHHL's parcels that was conducted by biologists from AECOS, Inc. on October 4, 2018. The Hawaiian short-eared owl (*Asio flammeus sandwichensis* or *pueo*) may forage in the area, the Hawaiian hoary bat (*Lasiurus cinereus semotus* or *ōpe'ape'a*) may roost in tall tree species, and seabirds including the Hawaiian petrel (*Pterodroma sandwichensis* or *'ua'u*) and Newell's shearwater (*Puffinus auricularis newelli* or *'a'o*) may fly over the area. The O'ahu population of the Hawaiian short-eared owl is state-listed as endangered. The biologists from AECOS, Inc. observed no seabird breeding colonies or nesting sites in the project area.

Aquatic features (e.g., streams and wetlands) and federally delineated critical habitat are not present in the survey area according to the biological survey report prepared by AECOS, Inc. The biologists from AECOS, Inc. characterize existing vegetation at the project site as highly variable due to current and past usage. There are ornamental species and weeds within and adjacent to existing equestrian facilities. The previously disturbed areas of the project site with no current human activity appear to contain no

remnant native plant assemblages: the open areas are dominated by Guinea grass (*Megathyrsus maximus*) that excludes most other plants and other areas are covered by *koa haole* (*Leucaena leucocephala*) shrubland. Ruderal weeds, *koa haole* scrub and dense Guinea grass are present in the former limestone quarry area. There is *koa haole* scrub along Waikupanaha Street and shrubs of mock orange (*Murraya paniculata*) at the base of hardened limestone dunes that were mined when the quarry was operational. The suitable roosting areas for Hawaiian hoary bats are stands of ironwood (*Casuarina equisetifolia*) and gunpowder tree (*Trema orientalis*) that grow along the limestone cliff, tall and dense *koa haole* found at the base of the quarry, and other woody vegetation taller than 15 feet.

Impacts and Mitigation Measures

The Project is not expected to displace any federal or State of Hawai'i listed species of plants or insects since the project site is devoid of these protected resources. Site preparation work such as clearing and grubbing is expected to involve the necessary removal of on-site vegetation. DHHL will consider implementing the following measures that would avoid or minimize adverse impacts to Hawaiian hoary bats, Hawaiian short-eared owls, and protected seabirds that were not detected during the biological survey but may frequent the project area:

Woody vegetation taller than 15 feet that may serve as potential bat roosts should not be removed during the bat pupping season between June 1 and September 15 since bat pups or female bats carrying pups may be less able to rapidly vacate a disturbed roost tree. The use of barbed wire to top fence lines should be avoided since this may entangle flying bats. The removal of tall trees found to be utilized by bats may be addressed by replanting similar-sized trees; however, this practice may be more easily implemented for agricultural endeavors such as a cultivated orchard. Existing tall trees may remain within the project site, to the extent possible.

A survey for Hawaiian short-eared owl ground-nesting activity should be undertaken immediately prior to the start of grading in locations that are undeveloped and without regular human activity. If a nest is discovered, no activity that could disturb nesting may proceed and DLNR must be notified.

Seabirds, especially fledglings, that may fly at night can become disoriented by night-time lighting sources including construction lights, residential lighting and street lights. Potential impacts will be avoided by performing the majority of construction work during daytime hours whereby night time work is avoided. Outdoor lighting should be dark sky compliant, properly shielded and directed towards the ground.

The letter dated December 21, 2018 from the Department of Land and Natural Resources, Division of Forestry and Wildlife (DFW) provides recommendations to encourage DHHL to consider agroforestry in its land use decisions and to share options for potential agroforestry uses with lessees. Growing agroforestry trees together with more traditional agricultural crops may increase tree canopy and carbon sequestration, improve soil health, and reduce harmful agricultural practices that can degrade the watershed. DFW's letter mentions its Forest Stewardship Program, which may require neighboring lessees to work together through an organization such as a homestead association since there is a minimum lot size requirement of five acres for participation in the program. Federal agroforestry programs may also be available for smaller lot sizes.

2.7. Archaeological Resources

The project site does not contain and is located away from Waimānalo properties listed on the Federal or Hawai'i Register of Historic Places. Research conducted by CSH provided the environmental, cultural, historic and archaeological background for the project area, which is part of the geographic area that has experienced a long history of intensive land use. Pre-Contact or early historic archaeological resources that may have been present in the project area are likely to have been heavily disturbed or completely removed since "commercial sugarcane agriculture covered the entire project area by at least 1884" and there was subsequent animal husbandry and agricultural activities in the last 40 years (Shideler and McDermott, 2018). In the 1970s and 1980s, quarrying operations occurred on "a substantial southeastern portion of the project area" (Ibid.).

A pedestrian inspection of DHHL's parcels was conducted on October 4, 2018 by CSH to observe current land use, assess the potential for remnants of past land use, and document the general characteristics of the project area. CSH observed several modern features (such as a dry-stone stacked basalt wall feature, limestone boulder walls, bulldozer push piles) and there were "no indications of plantation-era structural remains or deposits, or other later structural remains or deposits that are older than 50 years" (Ibid.). The archaeological literature review and field inspection (LRFI) report was submitted to SHPD for review on February 7, 2019.

Impacts and Mitigation Measures

There are no known archaeological and cultural resources that would be endangered by the Project. Unanticipated discoveries of archaeological and cultural resources may occur during the various phases of construction such as site preparation, roadway improvements and utility installations. DHHL shall require its contractor to immediately halt construction activities and notify SHPD

in Kapolei in the event any unanticipated sites or remains such as bone or charcoal deposits, human burials, rock or coral alignments, pavings or walls are encountered. DHHL has requested SHPD's concurrence with a determination of "no historic properties affected" pursuant to HAR §13-275-7.

2.8. Cultural Practices and Resources

CSH is conducting a cultural impact assessment (CIA) to help identify the potential effect of the Project on cultural beliefs, practices, and resources. In November 2018, CSH initiated its effort to contact and consult with Native Hawaiian Organizations, agencies, and community members including descendants of the area; this effort continued through January 2019 and has not been completed. The CIA report will document the consultation effort by CSH that involved outreach via letters, email, telephone calls and in-person contact.

A group of *kūpuna* (elders) have shared their knowledge of Waimānalo with CSH. One of DHHL's current permittees has endeavored since 1990 to support horse owners. Hawaiian traditions such as *pa'u* horsemanship, *pa'u* draping, lei making, hula, native Hawaiian plant knowledge and the history of *pa'u* are shared through activities hosted at the established equestrian facility on a portion of parcel 02 within the project site.

Impacts and Mitigation Measures

DHHL appreciates the efforts by current permittees to preserve and promulgate cultural practices; however, surveyed applicants on the O'ahu agriculture waitlist have indicated during the O'ahu Island Plan process that their strong preference is to receive an agriculture award in Ko'olaupoko and Waimānalo in particular.

2.9. Visual Resources

Waimānalo is a rural community that is characterized by low-density residential communities, small businesses and agricultural lots interspersed with green space. Dense vegetation and mature canopy trees provide the visual element of green space and help to obscure existing building elements and human activity. The area surrounding the project site has agricultural uses and low-density residential homesteads.

Impacts and Mitigation Measures

Completion of the Project, which will allow the award of subsistence property to beneficiaries, will not significantly alter the visual character of the Waimānalo area since subsistence agriculture is expected to be consistent with surrounding residential and agricultural land uses. Vegetated areas within the project site will be necessarily cleared for site preparation and the creation of

roadways and utility infrastructure. The incorporation of agroforestry practices by beneficiaries in their subsistence agricultural endeavors has the potential to reintroduce trees and other plants that are appropriate for the Waimānalo area.

2.10. Noise

The project site is located in a rural community where the primary noise source is related to vehicular traffic along Kalanianaʻole Highway and secondary roadways. In general, there is low background noise in the vicinity of the project site since there is low vehicular activity along Waikupanaha Street. Dense vegetation helps to reduce or buffer audible background noise emanating from the main arterial through Waimānalo during periods of increased human activity and travel such as in the morning and late afternoon. Intermittent noise from other sources such as the sirens at Waimānalo Fire Station also contribute to the background noise environment.

Impacts and Mitigation Measures

Audible noise from construction vehicles, heavy equipment and impact tools is expected to fluctuate during the various phases of construction. The mitigation of noisy activities to inaudible levels will not be practical in all cases due to the intensity and exterior nature of the work. The necessary removal of dense vegetation may allow more construction noise from site preparation and utility installation to emanate beyond the immediate vicinity of the work area. Construction noise is temporary in nature and will cease upon completion of the Project.

Project activities shall comply with the provisions of HAR Title 11, Chapter 46, “Community Noise Control.” The noise regulations require a noise permit if the noise level from construction activity is expected to exceed allowable levels stated in the Chapter 11-46 rules. It shall be the contractor’s responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment and to maintain noise levels within regulatory limits. If construction activities occur outside of the allowable timeframes designated for the noise permit (i.e., nighttime, Sunday, holiday) and exceed allowable noise levels, a noise variance must be obtained prior to commencement of construction activities, as required. The construction contractor will obtain the appropriate permit or approvals (e.g., Notice of Intent to Construct, Community Noise Permit, or Noise Variance). DHHL will ensure that the contractor complies with all permit conditions. Potential noise impacts will also be mitigated by performing the majority of construction work during daytime hours (as opposed to night work), thereby avoiding the creation of construction noise impacts during the quieter nighttime hours.

Noise from human activity at the project site is expected to be similar to the sounds emanating from nearby areas. Landscaping within the homestead lots may help to reduce or buffer the sounds of human activities.

2.11. Site Access, Circulation and Traffic

Kalanianaʻole Highway (State Route 72) is mostly an undivided, two-lane, primary arterial route connecting Waimānalo to Kailua and to Makapuʻu with a posted speed limit of 35 miles per hour. Residential structures, commercial buildings, public facilities (e.g., Waimānalo Fire Station, Waimānalo Public Library, Waimānalo Elementary and Intermediate School) and various community facilities (e.g., Waimānalo Health Center and St. George Church) are located along Kalanianaʻole Highway. There is a reduced speed limit of 25 miles per hour for the segment of the highway through Waimānalo town: the reduced speed zone begins before the Tinker Road entrance to Bellows Air Force Station and continues past the horse boarding facility to the perimeter of the Olomana Golf Club property. Waikupanaha Street, which connects to Hihimanu Street, are collector roadways that provide vehicular access from inland areas to Kalanianaʻole Highway.

The established Waikupanaha Street right-of-way is 40 feet. In some sections, the existing rural roadway is very narrow and encroaches into DHHL's parcels. Road network improvements described in the Waimānalo Regional Plan were meant to extend and connect Ilauhole Street with Waikupanaha Street to provide an emergency evacuation route from existing homestead subdivisions in the tsunami inundation zone to inland areas. The Ilauhole Street extension and Waikupanaha Street improvements were proposed in 2006 and considered a priority; however, the funding that was appropriated in 2009 lapsed and subsequent attempts to fund all of the road network improvements were unsuccessful (Group 70 International, 2011). The Waikupanaha Street improvements that were proposed as phase 2 of the project included creating two lanes with an approximate right of way of 55 feet, paving, installation of sidewalks, drainage, sewer pipes, telecommunication lines and lighting (Ibid.).

The City and County of Honolulu provides bus services to the Waimānalo area via Kalanianaʻole Highway. There are bus stops along the east and west bound lanes of the highway. Existing bus routes provide service from Kailua to Waimānalo to Sea Life Park, from Waimānalo to Kailua, and from Waimānalo to downtown Honolulu.

Bicycle and pedestrian facilities near the project site are limited. No planned improvements for non-motorized travel are in the vicinity of the project site. The County's priority for walking and bicycling is to create safe routes to schools, parks and bus stops along Kalanianaʻole Highway where there is adequate space within the existing right of way.

Impacts and Mitigation Measures

Disruptions to vehicular, bicycle and pedestrian traffic during the various phases of construction will be intermittent and temporary in nature and any affected crossing should be maintained with the highest safety measures during construction. The bus routes, bus stops, and paratransit operations are not expected to be impacted by construction activities within the project site. Appropriate traffic control devices and warning signs will be installed and the traffic flow will be directed by construction personnel or by law enforcement personnel, when necessary. Temporary traffic lane closures are anticipated for utility installations and connections.

The Project provides the opportunity to properly realign Waikupanaha Street within the County's right of way. The letters dated December 19 and 20, 2018 from the County's Department of Transportation Services (DTS) and the Department of Facility Maintenance, respectively, state that any damage or deficiencies caused by the construction of proposed improvements must be corrected to County standards, be accepted by the County and meet Americans with Disabilities Act (ADA) requirements. Access driveways to homestead lots will be designed and constructed to County standards. Proposed improvements will maintain the road network in this rural area, which has no sidewalks, curb ramps, or crosswalks. Improvements to Waikupanaha Street may include new asphaltic concrete pavement and the relocation of utility poles with overhead lines.

A multi-modal transportation impact assessment will be completed as recommended by the DTS since the Project will attract more residents and visitors. A traffic impact analysis report (TIAR) will assess potential traffic impacts to Kalaniana'ole Highway from the Project and nearby development as recommended by the State of Hawaii Department of Transportation (HDOT) in its letter dated January 3, 2019. A traffic management plan that addresses short-term impacts during construction will be submitted to DTS and DPP for review.

DHHL's contractor will be required to implement Best Management Practice controls at the project site to prevent dirt and debris on County roadways. The contractor will also obtain a street usage permit from DTS for any construction-related work that may require the temporary closure of any traffic lane on a County street. DTS also recommended that the details and status of the Project should be shared with area representatives, the neighborhood board, area residents, businesses, emergency personnel (e.g., fire, ambulance and police) and O'ahu Transit Services, Inc. (OTS) especially if there are anticipated impacts to the local street network.

2.12. Utilities (Water, Wastewater, Drainage)

Existing utility infrastructure is primarily located along Hihimanu Street, which is north of the project site. Letters from County agencies indicate that there is no adequate fire protection and no sewer service at the project site at this time. The nearest BWS fire hydrant is located along Hihimanu Street and approximately 1,400 linear feet from the project site according to the letter dated December 20, 2018 from the Board of Water Supply (BWS). Underground lines along Hihimanu Street convey wastewater to the Waimānalo WWTP, which serves the windward coast of O‘ahu from Makapu‘u to Waimānalo. There are no drainage facilities along Waikupanaha Street that retain or direct stormwater runoff.

Impacts and Mitigation Measures

A short-term and temporary impact of the project would occur from the generation of additional sediment-laden surface runoff during construction and demolition work. Appropriate erosion control BMPs will be used to minimize the amount of soil transported in stormwater runoff during construction activities. All construction activities will comply with applicable Federal, State and County regulations and rules for erosion control as previously discussed in Section 2.3 Water Resources.

Connections and new underground lines installed along Waikupanaha Street and internal roadways may be necessary to extend potable water service from the County’s system to the project site. The civil drawings will be submitted to the Honolulu Fire Department for review and approval to ensure that on-site fire protection requirements are met. DHHL will consider a separate, non-potable water system for irrigation and coordinate with the State of Hawai‘i Department of Agriculture with regards to extending necessary infrastructure to the project site from the State’s Waimānalo Irrigation System.

Connections and new underground lines installed along Waikupanaha Street and internal roadways are similarly needed to convey domestic wastewater to the County’s Waimānalo WWTP. A new sewer connection is subject to review and approval by DPP. Wastewater from the Project will be conveyed via a gravity fed system to existing municipal treatment and disposal infrastructure.

New internal roadways for the Project will increase impervious areas, thereby increasing stormwater runoff. The anticipated impact will be offset by the development of an on-site stormwater mitigation/drainage systems to address the quality and quantity of stormwater leaving the site. The site drainage plan must comply with applicable County drainage standards and requirements. Some of the measures being considered include, but are not limited to, infiltration/sediment basins, grassed swales, and plantings of native vegetation.

The Project may also utilize new injection wells for storm water runoff that require DOH approval prior to the commencement of construction.

2.13. Power and Communications

The Hawaiian Electric Company, Inc. (HECO) provides electrical power in the project area. HECO requires continued access to any easements established for the maintenance of its facilities and has no objections to the Project according to correspondence on November 26, 2018.

Communication services are available from service providers such as Hawaiian Telcom, Sandwich Isles Communication, and Spectrum. Overhead communications lines are usually co-located on utility poles along Kalaniana'ole Highway and established roadways.

Impacts and Mitigation Measures

Proposed construction activities have the potential to disrupt power and communication systems but these effects are expected to be short-term and temporary. There are no anticipated long-term impacts associated with establishing new service connections. The Waikupanaha Street improvements described in Section 2.11 Site Access, Circulation and Traffic may include the relocation of utility poles with overhead lines. Service to DHHL's parcels will be coordinated with HECO and the appropriate communication service providers since some services may be upgraded to accommodate the Project.

2.14. Socio-Economic Characteristics

The estimate of the resident population on O'ahu from the 2010 U.S. Census was 953,207 people, which represents 70 percent of the statewide population (PBR Hawaii and Associates, Inc., 2014). A comparison of the 2000 and 2010 resident population of the Ko'olaupoko area shows a decline of 2,835 people from 115,164 to 117,999 people (PlanPacific and Department of Planning and Permitting, 2017). The population decline in Ko'olaupoko is projected to continue through 2035 (Ibid.). The resident population of the rural community of Waimānalo as roughly covered by the boundaries of the Waimānalo Neighborhood Board No. 32 was estimated to be 11,141 people in 2010 (State of Hawai'i Department of Business, Economic Development and Tourism, 2018). The estimate of the resident population for Hawaiian Home Lands in Waimānalo was 2,944 people for the 2012 to 2016 period (Ibid.).

A small cluster of commercial and small business establishments are located near Waimānalo Village in the Rural Commercial Center of Waimānalo and along Kalaniana'ole Highway. Approximately 2,000 acres in Waimānalo are part of DHHL's land inventory (PBR Hawaii and Associates, Inc., 2014). The Waimānalo Villages is a

DHHL housing areas that is closest to the project site. DHHL's O'ahu Applicants Beneficiary Study indicates that the average household size for O'ahu (at 2.95) and for Ko'olaupoko (at 3.13) are smaller than the average household of 4.56 people for the Waimānalo Homestead community (Ibid.). The median household income for O'ahu (at \$70,093) and for Ko'olaupoko (at \$85,088) are higher than the median household income of \$68,594 for the Waimānalo Homestead community (Ibid.).

Impacts and Mitigation Measures

The Project is expected to insignificantly increase the resident population in Waimānalo. DHHL is striving to fulfill its mission by providing subsistence agricultural homestead lots to beneficiaries pursuant to its Administrative Rules. The various phases of construction will create short-term jobs for people in design and construction. In the long-term, the Project is expected to insignificantly affect the socio-economic characteristics of Waimānalo.

2.15. Public Services and Facilities

Law enforcement is provided by the City and County of Honolulu, Honolulu Police Department. The nearest police station relative to the project area is the Kāne'ohe District Station in Kāne'ohe.

The County's fire protection services are provided by the Honolulu Fire Department. The Waimānalo Fire Station is located along Kalaniana'ole Highway and across from the Waimānalo Elementary and Intermediate School, which is a designated hurricane evacuation shelter. This shelter can accommodate persons with special health needs and caged household pets. Pope Elementary School is also an evacuation shelter.

The County's Emergency Medical Services Division provides ambulance service from the Waimānalo Fire Station. The nearest emergency care facility relative to the project area is Castle Medical Center in Kailua. The Waimānalo Health Center located along Kalaniana'ole Highway and across from the Waimānalo Elementary and Intermediate School is a non-profit Community Health Center that serves a federally-recognized area where residents have barriers to receiving health care.

Waimānalo is within the Kailua-Kalāheo Complex-Area, which is served by ten (10) elementary schools, three (3) intermediate schools and four (4) high schools. There are also several private schools in the region.

Impacts and Mitigation Measures

No significant adverse impacts to police, fire, medical, emergency shelter services or schools will occur from the Project.

2.16. Recreational Resources

The recreational resources in the project area are Waimānalo District Park, Bellows Field Beach Park, Waimānalo Bay Beach Park and Waimānalo Polo Field. Other opportunities for shared-use facilities (e.g., a high school with a football field, track or swimming pool) and non-profit recreation centers (e.g., a YMCA or YWCA) are not present within the rural community of Waimānalo.

Impacts and Mitigation Measures

The Project is expected to have no adverse impact on recreational facilities.

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3. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

3.1. State Land Use District

The State Land Use Law (Chapter 205, HRS) is intended to preserve, protect, and encourage the development of lands in the State for uses which are best suited to the public health and welfare for Hawaii's people. All lands in the State are classified into four land use districts by the State of Hawai'i, Land Use Commission: Urban, Agricultural, Conservation, and Rural. Lands in the Agricultural District are intended for the cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills, employee quarters, etc.) and land with significant potential for agriculture uses. The project site is entirely located within the Agricultural District and the Project is consistent with the intent of this land classification (refer to Figure 2).

3.2. Hawai'i Coastal Zone Management Program

The Hawaii Coastal Zone Management (CZM) Program was created in 1977 through the enactment of Chapter 205A, Hawaii Revised Statutes to coordinate federal, state, and county agency efforts in the comprehensive management of Hawai'i's coastal resources. The Hawai'i CZM Program is administered by the Office of Planning, but each of the four counties are responsible for administering the program locally through Special Management Area (SMA) permits and shoreline setback provisions in their respective counties. The coastal zone encompasses the entire state, as there is no point of land more than 30 miles from the ocean. The Project supports the following policies and objectives of the CZM from HRS Section 205A-2.

1. Recreational Resources

Objectives. Provide coastal recreational opportunities accessible to the public.

Policies. Improve coordination and funding of coastal recreational planning and management; and

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

- (i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
- (ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
- (iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

- (iv) *Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
- (v) *Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
- (vi) *Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*
- (vii) *Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
- (viii) *Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.*

The Project is located away from the coast and is not within the SMA. Coastal water quality will be protected since appropriate erosion control BMPs will be used to minimize the amount of soil transported in stormwater runoff during construction activities.

2. Historic Resources

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

Policies. *Identify and analyze significant archaeological resources;*

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

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

According to the archaeological literature review and field inspection, there are no known historic resources that would be endangered by the Project. DHHL shall require its contractor to comply with all State and County rules and laws pertaining to historic preservation. Construction activities will be halted and SHPD will be notified in the event any unanticipated archaeological or historic sites are encountered.

3. Scenic and Open Space Resources

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

Policies. *Identify valued scenic resources in the coastal zone management area;*

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

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

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

The Project is located inland and is not expected to diminish coastal scenic views areas or open space resources.

4. Coastal Ecosystems

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

Policies. *Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*

Improve the technical basis for natural resource management;

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

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

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

The Project is sited away from the shoreline and is not expected to disrupt or degrade coastal water ecosystems. No stream diversions or channelization would occur from the Project. DHHL's construction contractor will be responsible for implementing a storm water management plan and controlling runoff that can transport loose soil, excess nutrients and other pollutants. A NPDES permit will be required to ensure compliance with BMPs during construction.

5. Economic Uses

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

Policies. *Concentrate coastal dependent development in appropriate areas;*

Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating

facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

- (i) Use of presently designated locations is not feasible;*
- (ii) Adverse environmental effects are minimized; and*
- (iii) The development is important to the State's economy.*

The Project does not involve coastal development; therefore, the policies pertaining to coastal economic development do not apply.

6. Coastal Hazards

Objectives. *Reduce hazard to life and property from tsunامي, storm waves, stream flooding, erosion, subsidence, and pollution.*

Policies. *Develop and communicate adequate information about storm wave, tsunامي, flood, erosion, subsidence, and point and nonpoint source pollution hazards;*

Control development in areas subject to storm wave, tsunامي, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

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

Prevent coastal flooding from inland projects.

Coastal hazards are not expected to be exacerbated by the Project, which is located inland and away from the coastline. The Project includes the installation of new on-site drainage systems that address the quality and quantity of stormwater leaving the site, which would help to reduce nonpoint source pollution into streams.

7. Managing Development

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

Policies. *Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;*

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

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

The Project does not impact or influence the development review process. The environmental review process includes opportunities for public participation and comments pertaining to a variety of issues and topics including coastal resources and hazards.

8. Public Participation

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

Policies. Promote public involvement in coastal zone management processes; Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

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

The environmental review process provides opportunities for public participation and responses that address received comments. DHHL has sought feedback from its applicants on the Project. The Project is not located within the SMA.

9. Beach Protection

Objectives. Protect beaches for public use and recreation.

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

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

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

Public access to beach areas will not be affected by the Project, which is located inland and away from beaches and the shoreline. The Project does not involve the construction of erosion-protection structures seaward of the shoreline.

10. Marine Resources

***Objectives.** Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*

***Policies.** Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*

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

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

Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

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

The Project is located inland and does not involve the use or development of marine and coastal resources.

3.3. Hawai'i State Plan

The Hawai'i State Plan (Chapter 226, HRS) outlines broad goals, policies and objectives to serve as guidelines for the future growth and development of the State. The excerpts below are pertinent Hawai'i State Plan objectives, policies, and priority guidelines that pertain to DHHL's project. The project site includes DHHL land in Waimānalo, which is a region on O'ahu that has an established Hawaiian community and supports agricultural endeavors.

§226-3 Overall theme. Hawaii's people, as both individuals and groups, generally accept and live by a number of principles or values which are an integral part of society. This concept is the unifying theme of the state plan. The following principles or values are established as the overall theme of the Hawaii state plan:

- (1) Individual and family self-sufficiency refers to the rights of people to maintain as much self-reliance as possible. It is an expression of the value of independence, in other words, being able to freely pursue personal interests and goals. Self-sufficiency means that individuals and families can express and maintain their own self-interest so long as that self-interest does not adversely affect the general welfare. Individual freedom and individual achievement are possible only by reason of other people in society, the institutions, arrangements and*

customs that they maintain, and the rights and responsibilities that they sanction.

- (2) Social and economic mobility refers to the right of individuals to choose and to have the opportunities for choice available to them. It is a corollary to self-sufficiency. Social and economic mobility means that opportunities and incentives are available for people to seek out their own levels of social and economic fulfillment.*
- (3) Community or social well-being is a value that encompasses many things. In essence, it refers to healthy social, economic, and physical environments that benefit the community as a whole. A sense of social responsibility, of caring for others and for the well-being of our community and of participating in social and political life, are important aspects of this concept. It further implies the aloha spirit--attitudes of tolerance, respect, cooperation and unselfish giving, within which Hawaii's society can progress.*

The overall theme of the Hawai'i State Plan is supported by the Project, which will provide native Hawaiian beneficiaries with more opportunities for self-sufficiency and self-reliance through subsistence agriculture.

3.4. Complete Streets Program

State and county transportation departments are required to adopt complete streets policies pursuant to Hawai'i State Act 54, Session Laws of Hawai'i 2009. All users of highways including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities should be afforded convenient access and mobility. Rural road standards are expected to apply to the Project, which creates subsistence agricultural homesteads intended for DHHL beneficiaries who will cultivate the land. The anticipated low volume of traffic resulting from the Project would allow for pedestrian travel and bicycling along Waikupanaha Street.

3.5. City and County of Honolulu General Plan

The County's *General Plan: Objectives and Policies* (1992 edition, amended in 2002) sets forth broad statements of social, economic, environmental, and design objectives and policies which are desired over the long-term. The 2017 revision of the General Plan was transmitted from DPP to the Planning Commission in February 2018, and transmitted from the Planning Commission to the City Council for further action on April 20, 2018. Thus, the following General Plan policies and objectives that pertain to the Project are from the amended 2002 version of the General Plan.

I. Population

Objective C: To establish a pattern of population distribution that will allow the people of Oahu to live and work in harmony.

Policy 3: Manage physical growth and development in the urban-fringe and rural areas so that:

(b) Their population densities are consistent with the character of development and environmental qualities desired for such areas.

II. Economic Activity

Objective C: To maintain the viability of agriculture on Oahu.

Policy 5: Maintain agricultural land along the Windward, North Shore, and Waianae coasts for truck farming, flower growing, aquaculture, livestock production, and other types of diversified agriculture.

III. Natural Environment

Objective A: To protect and preserve the natural environment.

Policy 1: Protect Oahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.

Policy 4: Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water-recharge areas, distinctive land forms, and existing vegetation.

IV. Housing

Objective C: To provide the people of Oahu with a choice of living environments which are reasonably close to employment, recreation, and commercial centers and which are adequately served by public utilities.

Policy 1: Encourage residential developments that offer a variety of homes to people of different income levels and to families of various sizes.

VII. Physical Development and Urban Design

Objective D: To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.

Policy 4: Maintain rural areas as areas which are intended to provide environments supportive of lifestyle choices which are dependent on the availability of land suitable for small to moderate size agricultural pursuits, a relatively open and scenic setting, and/or a small town, country atmosphere consisting of communities which are small in size, very low density and low rise in character, and may contain a mixture of uses.

Objective E: To create and maintain attractive, meaningful, and stimulating environments throughout O'ahu.

Policy 5: Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.

X. Culture and Recreation*Objective A: To foster the multiethnic culture of Hawaii.**Policy 4: Encourage the protection of the ethnic identities of the older communities of Oahu.*

The Project is aligned with the County's General Plan and would create a Hawaiian homestead community that contributes to maintaining agricultural land in a rural area of Oahu for subsistence agriculture uses. The lands affected by the Project are designated to be used for the fulfillment of the Hawaiian Homes Commission Act, whereby these lands will be available for the native Hawaiian ethnic population as defined by the Act.

3.6. Ko'olau Poko Sustainable Communities Plan

Eight community-oriented plans for the County are intended to help guide government action and decision-making. The plans for six regions of O'ahu have been designated as "Sustainable Communities Plans" to highlight the intent that these areas are not to be heavily developed, and that the existing communities and special qualities of each region should be sustained and improved. Each Development Plan and Sustainable Communities Plan implements the objectives and policies of the General Plan and serves as a guide for public policy, investment, and decision making within each respective region. Together with the General Plan, these documents guide population and land use growth over a 20- to 25-year time span.

The *Ko'olau Poko Sustainable Communities Plan* that was adopted in August 2017 emphasizes the protection of the region's agricultural lands, physical and biological resources, open space and view plans. The Plan states that the region "is expected to experience essentially no growth over the 25-year projection horizon" (PlanPacific and Department of Planning and Permitting, 2017). The Project is consistent with the stated policy for future land use and development in the region: maintain and promote small-scale agricultural uses in the mauka areas of Waimānalo and from Kahalu'u north to Kualoa. The project site falls within a designated Agricultural Area according to the maps included in the Plan. The following excerpts pertain to the Project.

2. The Vision for Ko'olau Poko's Future - Key Elements2.1.2 Preserve and promote open space and agricultural uses

The preservation, continuation, and potential expansion of agricultural land use provides jobs and economic activity; promotes food security; offers the choice of a rural lifestyle proximate to a major metropolitan area; and maintains open space and a rural ambience in a section of the island that is famed for its natural beauty. In Ko'olau Poko, agricultural use is sustained

by both commercially successful operations and subsistence or culturally-based farming.

2.1.7 Maintain the Community Growth Boundary to protect agricultural, open space, and natural resources.

The “rural” areas within the Community Growth Boundary consist of smaller, more dispersed, less intensively developed residential communities and towns than those of Ko‘olau Poko’s “urban fringe” areas; namely, the sections of Waimānalo, Kahalu‘u, Wai‘āhole and Waikāne in the State Urban District where there are clusters of parcels that are less than two acres in size occupied by dwellings or buildings used for community or commercial purposes other than agriculture. Development character is generally low-density, low-rise, small scale, and reflective of a “country” setting.

3. Land Use Policies, Principles, and Guidelines

3.4 AGRICULTURAL USE

3.4.1 Policies

Encourage agricultural use of small lots.

Adopt development and public works standards that are appropriate and cost effective for rural, agricultural areas.

Provide support infrastructure, services and facilities to foster and sustain agricultural operations.

Modify standards for public infrastructure in rural and agricultural areas in accord with the character and needs of such areas.

3.4.2 Guidelines

Adopt standards for roadway and other infrastructure design that are appropriate and intended for continued agricultural use rather than residential use.

Require the acknowledgement of agricultural standards in the subdivision process and in all deeds to lots.

3.5 RESIDENTIAL USE

The Community Growth Boundary is established to preserve open space and agricultural areas and contain the spread of development. Therefore, housing capacity in Ko‘olau Poko will be increased only by:

- *Subdivision of larger residential lots into smaller parcels at various locations throughout the region*
- *Residential development on Marine Corps Base Hawai'i and lands under the jurisdiction of the Department of Hawaiian Homelands or the Office of Hawaiian Affairs.*

3.5.1 Policies

Protect the character of existing residential areas and enhance desirable residential amenities.

3.5.2 Guidelines

3.5.2.1 Rural Communities

Adopt development standards and design guidelines for residential-designated areas within the Community Growth Boundary in order to:

- *Allow relatively narrow roadway widths*
- *Allow the use of detention basins and grassed swales for stormwater drainage instead of concrete curbs and gutters*

3.6 COMMERCIAL AND INDUSTRIAL USES

3.6.1 Policies

3.6.5.1 Light Industrial and Extractive Industries

Policies pertaining to light industrial and extractive industries are as follows:

- *Promote a re-use plan for the quarry site in Waimanālo that supports the development of Hawaiian Home Lands residential lots and a neighborhood mini-park.*

4. Public Facilities and Infrastructure Policies and Guidelines

4.2 WATER SYSTEMS

4.2.3 Policies

Encourage all new development to install and use dual water systems.

4.2.4 Guidelines

Require installation of low-flush toilets, flow constrictors, and other water conserving devices in commercial and residential developments.

Use recycled (R-1 or R-2) water for the irrigation of golf courses, as well as for landscaping, and agricultural areas where this would not adversely affect potable groundwater supply or other aspects relating to public health.

Investigate the feasibility of small-scale rain catchment systems in agricultural areas to use for irrigation, groundwater recharge and filtering of stormwater runoff sediments.

Confirm that adequate potable and non-potable water is available prior to approval of new residential and commercial development.

4.3 WASTEWATER MANAGEMENT

4.3.3 Policies

Direct all wastewater produced within the Community Growth Boundary to municipal or military sewer service systems.

Use reclaimed water for irrigation and other uses, where feasible, in accordance with the Guidelines for the Treatment and Use of Recycled Water (May 15, 2002) by the State Department of Health and the No Pass Line established by the Board of Water Supply.

4.4 ELECTRICAL AND COMMUNICATIONS SYSTEMS

4.4.1 Policies

Place new utility distribution lines underground and implement a long-range program for systematically relocating existing overhead lines underground.

4.4.2 Guidelines

Co-locate communications and power equipment and devices with similar facilities in order to minimize the number of supporting structures and dispersal sites.

4.6 DRAINAGE SYSTEMS

4.6.1 Policies

Promote drainage system design that emphasizes control and minimization of non-point source pollution and the retention of storm water on-site and in wetlands.

View storm water as a potential irregular source of water that should be retained for recharge of the aquifer rather than quickly moved to coastal waters.

Select natural and man-made vegetated drainageways and retention basins as the preferred solution to drainage problems wherever they can promote water recharge, help control non-source pollutants, and provide passive recreation benefits.

4.6.2 Guidelines

Emphasize retaining or detaining storm water for gradual release into the ground as the preferred strategy for management of storm water.

The Project is consistent with the stated elements of the vision for the Ko'olaupoko region: maintaining the rural ambience and sustaining agricultural use for subsistence or culturally-based farming. DHHL will coordinate with the County to incorporate the goals and guidelines into its Project (e.g., the adoption of standards that are appropriate and cost effective for rural, agricultural areas) to the extent practicable.

3.7. City and County of Honolulu Land Use Ordinance

The County's LUO (Chapter 21 of the ROH) regulates land use in accordance with adopted land use policies, including the General Plan and the Development/Sustainable Community Plans. The zoning for the project site is AG-2 General Agriculture District (minimum land area of three acres for major livestock production, and two acres for all other uses) and the minimum lot width and depth must be 150 feet. The letter dated December 20, 2018 from DPP to DHHL indicates that "DHHL has the authority to exempt its lands from regulation by the LUO."

3.8. City and County of Honolulu Building Permits

Chapter 18 of the ROH consolidates the building, electrical and plumbing permits (including permits for the construction of sidewalks, curbs and driveways) into a single permit. Fees associated with building permit applications are assessed based on the value of the work to be performed. DHHL intends to submit permit applications to the County for approval, and to have County inspectors monitor the work. As indicated in Section 1.4 Site Description, State of Hawai'i agencies may construct improvements without building permits.

§18-3.1 Required.

- (a) Exceptions. A permit shall not be required for the types of work listed below. Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in violation of the provisions of the technical codes or any other laws or ordinances of this jurisdiction.*
- (13) Work performed for any state government agency, except where permits are specifically requested by the agency.*

3.9. City and County of Honolulu Special Management Area Permit

Hawai'i's Coastal Zone Management (CZM) program, established pursuant to the Hawai'i Coastal Zone Management Act (Chapter 205A, HRS, as amended), is administered by the State of Hawai'i, Office of Planning and provides for the beneficial use, protection, and development of the State's coastal zone. The CZM area consists of the entire State of Hawai'i and the Act involves a system of permits to manage coastal development and encourage public participation. Any significant development within the SMA requires permit approval from the appropriate County.

On the Island of O'ahu, the SMA permit process is administered by the DPP and acted upon by the City Council pursuant to Chapter 25 of the ROH. The project site is approximately 0.5 miles from the shoreline and outside the SMA. No SMA permit is required for the Project.

4. POSSIBLE ALTERNATIVES

4.1. No-Action

The “No Action” alternative implies that DHHL’s current practice of allowing a few permittees to utilize its land would continue. A current permittee is the Cook Ranch, which has endeavored to perpetuate the culture and art of *pa‘u* horsemanship since 1990. This ranch hosts a supportive equestrian group founded in 1981 that maintains the knowledge of Hawaiian language and native Hawaiian plants, the traditions of hula and lei making, and the history of *pa‘u*.

As a result of no action at this time, the project site in Waimānalo may continue to be utilized for endeavors that do not directly meet DHHL’s mandate of enabling native Hawaiians to return to their lands. There would be no commitment of funding or capital improvement costs to develop the project site into agricultural homesteads for native Hawaiians on the O‘ahu Island Agricultural Waitlist. Furthermore, there would be no improvements to Waikupanaha Street and portions of this roadway would continue to encroach into DHHL’s parcels. Maintaining status quo is therefore less favorable than the proposed action from DHHL’s perspective.

4.2. Delayed Action

A delayed action implies that a project of similar scope and size to the proposed action would occur at an unspecified future date. The environmental impacts resulting from a delayed action are generally expected to be the same as the proposed action so long as environmental conditions remain similar to the evaluated conditions described in this EA.

The development of agricultural homesteads for native Hawaiians at a later date may result in increased construction costs due to inflation, changes in economic conditions or the labor supply. In addition, building materials and labor costs tend to increase with time. A delayed action may therefore necessitate a greater funding commitment for improvements or a reduction in the scope and size of the project. Hence, DHHL does not favor a delayed action.

4.3. Agricultural Homesteads on Alternate Site

An alternative site on any land that is not already under the purview of DHHL would require negotiations to acquire in fee or through a land swap. As identified in the *O‘ahu Island Plan* (PBR Hawaii and Associates, Inc., 2014), approximately 2,600 acres of DHHL land on O‘ahu including about 1,430 acres in Waimānalo are unsuitable or unavailable for homesteading due to existing environmental conditions (e.g., steep slopes, rockfall hazards, flooding concerns, etc.) or conflicts with conservation and preservation objectives for wetlands, critical habitat and listed species habitat. These vast areas do not directly support homesteading, which is DHHL’s mission, and do not

provide revenue generation in support of the mission; however, beneficiaries have expressed the desire to keep conservation lands in DHHL's inventory. The absence of an acquisition process for DHHL with established review criterion suggests that there is low potential at this time for new land to be acquired in fee or through a land swap as an alternative homesteading site.

The project site represents a small portion of approximately 115 acres of DHHL land scattered within Wai'anae, Waiāhole, and Waimānalo that are considered suitable for SAHs. The use of other DHHL land on O'ahu for the development of agricultural homesteads for native Hawaiian beneficiaries would presumably require a similar environmental review process and the identification of appropriate mitigation. The investigation of DHHL land in Wai'anae and Waiāhole implies that the agricultural homesteads would be developed at a later date and may result in increased construction costs due to delay as mentioned in Section 4.2 Delayed Action.

Other parcels of DHHL land in Waimānalo that comprise at least 30 acres in size are undeveloped or further away from existing residential communities and established community facilities. A site with no existing utility infrastructure may involve additional delay to install site infrastructure and more land disturbance for necessary access connections, which increases the impacts on the environment as compared to the proposed action. The options to site the proposed facility at another location is therefore possible but less desirable than the proposed action. Consequently, DHHL does not favor the development of agricultural homesteads at another site at this time.

4.4. Agricultural Homesteads on Existing Site (the Preferred Alternative)

The development of agricultural homesteads for native Hawaiian beneficiaries would involve landform alterations and site work in a region that has vehicular access, utility infrastructure and a history of agricultural use. The anticipated visual impact from a developed subdivision where native Hawaiians beneficiaries may reside and actively cultivate subsistence agriculture is expected to be consistent with surrounding and nearby development in rural Waimānalo. The Project also provides the opportunity to improve and realign Waikupanaha Street to fall within the County's right of way since portions of the existing roadway encroach into DHHL's parcels. Construction activities are expected to generate short-term environmental impacts such as fugitive dust, noise, intermittent traffic, solid waste, and potential disruptions to utility services that would cease upon project completion. Proposed mitigation that addresses anticipated project impacts is identified in this EA.

The proposed action addresses project objectives with minimal environmental harm and represents a more prudent use of existing resources than other alternatives. The development of agricultural homesteads would allow the utilization of DHHL land in Waimānalo, which is a region on O'ahu that has an established Hawaiian community and supports agricultural endeavors. The preferred alternative represents the

commitment by DHHL to enable native Hawaiians on the O‘ahu Island Agricultural Waitlist to return to their lands. For all of these reasons, DHHL has determined that the proposed action represents the preferred alternative.

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5. PERMITS AND APPROVALS

Although exact permitting and approval requirements will be determined during the design phase, the following list contains permits and approvals that may be required for the Project:

State of Hawai'i

- National Pollutant Discharge Elimination System Permit
- Community Noise Permit
- Community Noise Variance
- Non-Covered and/or Covered Source Permit (Air Quality)
- Lane Use Permit for Construction Work
- Oversized and Overweight Vehicles on State Highways Permit

City and County of Honolulu

- Building Permit
- Grubbing, Grading, and Stockpiling Permit
- Erosion Control Plan/Best Management Practices
- Permit to Work Within County Right-of-Way

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6. DETERMINATION

A Finding of No Significant Impact (FONSI) determination is anticipated for the Project, which is not expected to have a significant impact on the physical or human environment. The supporting rationale for this finding as established in HAR Title 11, Chapter 200, Section 12 is discussed below.

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

The Project is not expected to endanger any natural or cultural resources. DHHL's lessees will be informed of the potential for native plants and animals, primarily birds, to inhabit and pass through the property. The proper protocol for managing important species will be developed with lessees. DHHL will ensure that its contractor stops work and contacts SHPD immediately if any unanticipated buried archaeological or cultural resources are encountered during construction.

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

No beneficial uses of the environment will be curtailed as a result of the Project, which represents the commitment by DHHL to enable native Hawaiians on the O'ahu Island Agricultural Waitlist to return to their lands. Completion of the Project ensures the beneficial use of DHHL-owned land that is in a strategic location for agricultural endeavors including subsistence agriculture.

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

The Project is not in conflict with State Environmental Policy, inclusive of its individual policies, goals, and guidelines for population growth; natural resources; biological resources; transportation; energy; and culture, as discussed in the individual resource categories throughout this EA.

- (4) *Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;*

The Project does not substantially or negatively affect the economic or social welfare and cultural practices of the community or State. Short-term jobs for people in design and construction are expected to be created as a result of the Project. Completion of the subsistence agriculture homestead represents the commitment by DHHL to provide opportunities for native Hawaiian beneficiaries to supplement their incomes with agricultural products grown on their lots and to possibly reside.

(5) Substantially affects public health;

Public health will not be adversely affected during the construction phases of DHHL's project. Short-term and temporary effects such as surface runoff, fugitive dust, noise, intermittent traffic, solid waste, and potential disruptions to utility services are expected to cease upon project completion. The implementation of construction BMPs will minimize temporary impacts. Completion of the Project would provide on-site infrastructure that is associated with the subsistence agricultural homestead.

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

No secondary impacts such as population shifts are anticipated from the completion of the subsistence agricultural homestead, which is expected to provide no more than 30 lots for award to beneficiaries. Utility demands for potable water, wastewater disposal, solid waste disposal and power will be coordinated with the State, City or service provider and are expected to be insignificant due to the size and scope of the Project.

(7) Involves a substantial degradation of environmental quality;

The Project is not expected to degrade environmental quality. Environmental impacts that may occur during the various phases of construction will be mitigated through the implementation of construction BMPs, as appropriate. Appropriate mitigation measures have been identified throughout this EA so they may be implemented.

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

The Project represents a long-term commitment by commitment by DHHL to enable native Hawaiians on the O'ahu Island Agricultural Waitlist to engage in subsistence agriculture on their lands. The subsistence agricultural homestead in Waimānalo does not commit DHHL or others to additional related actions.

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

No species listed by the U.S. Fish and Wildlife Service or in the Endangered Species Act are expected to be significantly impacted by the Project. The project site does not contain habitat for proposed, candidate, or listed threatened or endangered species. DHHL will inform its lessees about the proper protocol for managing important species, primarily birds, that may inhabit and pass through the property.

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

Short-term impacts to air quality, water quality or ambient noise levels may occur during construction. No State or Federal air quality or water quality standards should be violated during or after construction. Environmental impacts will be mitigated through proper construction techniques and compliance with applicable DOH rules and regulations. The Project is not expected to negatively impact ambient air quality and background noise levels.

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

The project site is not situated within an environmentally sensitive area and is not anticipated to affect such areas. Permanent site infrastructure installed as part of the Project will be designed to comply with applicable regulatory standards that consider the health and safety of residents but are appropriate for a rural area. Drainage improvements will be designed to minimize the potential for localized flooding.

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

The Project will not obstruct or affect scenic vistas and view planes in the project area. Landscaping by DHHL's lessees may further reduce the visual impact of the subsistence agricultural homestead in Waimānalo.

(13) Requires substantial energy consumption.

The new agricultural activities and homes represent an insignificant increase in energy consumption since the Project will create no more than 30 lots for award to native Hawaiian beneficiaries.

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Site Photographs

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Photo #1

Overview of the project site with residential development and Waimānalo Bay in the distance.



Photo #2

Overview of the project site with the Koʻolau Range in the distance.



Photo #3
Overview of the area within the project site that is utilized for equestrian activities.



Photo #4
Observed solid waste concerns from past usage within the project site.